



MINISTRY OF ICT & NATIONAL GUIDANCE

A Knowledge and Productive Society driven by ICT & National Ideology

DIGITAL TRANSFORMATION ROADMAP

2023/2024 - 2027/2028



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Appreciation

Authors: Amos Mpungu, Raymond Kugonza, Rowena Turinawe, Osbert Osamai, Steven Kirenga and Sylvia Nakanwagi.

Strategic Contributors: Senior Management Team (Ministry of ICT & National Guidance), Peter Kahiigi, Innocent Fred Ejolu, Berna Mugema, Nathan Tumuhameye, Vivian Ddambya, Hadijah Nabbale, and Dr. Grace Ssekakubo.

ABBREVIATIONS

AI	Artificial Intelligence	SME	Small and Medium Enterprises
AR	Augmented Reality	UCC	Uganda Communications Commission
CDN	Content Distribution Network	UCUSAF	Uganda Communications Universal Service Access Fund
DUV	Digital Uganda Vision	UPL	Uganda Posts Limited
DPG	Digital Public Good	UN	United Nations
ESO	Entrepreneur Support Organization	VR	Virtual Reality
GDP	Gross Domestic Product	4IR	Fourth Industrial Revolution
GoU	Government of Uganda	E-services	electronic SErvices
IDES	Inclusive Digital Economy Scorecard	B2B	Business to Business
IMT	International Mobile Telecommunications	UNDP	United Nations Development Programme
IT	Information Technology	ITU	International Telecommunications Union
ICT	Information and Communications Technology	STEM	Science, Technology, Engineering and Math
IoT	Internet of Things	5G	5th generation mobile network
KIW	Kampala Innovation Week	6G	6th generation mobile network
LEO	Low-Earth Orbit	KYC	Know Your Customer
LG	Local Government	PPDA	Public Procurement and Disposal of Public Assets Authority
MDA	Ministry, Department, Agency	APIs	Application Programming Interfaces
MNO	Mobile Network Operator	CO 2	carbon di-oxide
MoICT & NG	Ministry of ICT and National Guidance	DTPWG	Digital Transformation Program Working Group
MoLHUD	Ministry of Lands, Housing and Urban Development	CSOs	Civil Society Organisations
MoTIC	Ministry of Trade, Industry and Cooperatives	NGOs	Non-Government Organizations
MSME	Micro, Small and Medium Enterprise	M&E	Monitoring and Evaluation
NBI	National Backbone Infrastructure	BoU	Bank of Uganda
NCIP	Northern Corridor Integration Projects	UICT	Uganda Institute of Information and Communications Technology
NDP	National Development Plan	MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
NITA-U	National Information Technology Authority – Uganda	MoES	Ministry of Education and Sports
NIISP	National ICT Initiatives Support Programme	NMS	National Medical Stores
NPA	National Planning Authority	OPM	Office of the Prime Minister
NRM	National Resistance Movement	PDPO	Personal Data Protection Office
PKI	Public Key Infrastructure	SFIA	Skills Framework for the Information Age
RAN	Radio Access Network		
SDG	Sustainable Development Goals		
SFIA	Skills Framework for the Information Age		



FOREWORD



The Digital Transformation Roadmap, now therefore, builds onto the commitments set under the Digital Uganda Vision by focusing on that that we must do as a country to achieve operational momentum and make great strides that translates paper to action.

Government of Uganda has made huge advancements in both the promotion and implementation of ICT as an enabler for the Digital Transformation in Uganda. This is anchored in Uganda Vision 2040 that was conceptualized to strengthen the fundamentals of the economy by harnessing the abundant opportunities around the country. These opportunities include ICT. The measures to achieve the Vision 2040 aspirations are included in five-year span National Development Plans. The current National Development Plan is heavily focused on increasing investment in ICT as one of the productive sectors able to improve livelihoods, generate employment and produce goods for export substitution as well as import substitution. In order to drive this further within the ICT Sector, the Ministry of ICT and National Guidance developed the Digital Uganda Vision that describes our commitments to ensure we increase our maturity stature in Digital Transformation and provide support to all the sectors of the economy. The Digital Transformation Roadmap, now therefore, builds onto the commitments set

under the Digital Uganda Vision by focusing on what we must do as a country to achieve operational momentum and make great strides that translates paper to action. I am confident that, implementation of this Roadmap will over the next five years set a strong foundation upon which Digital Transformation will accelerate for both public and private sector.

This is a demonstration of further commitment of the Ministry of ICT and National Guidance to support efficient service delivery and responsive cost effective public administration as well as overall social economic transformation.

I thank all stakeholders that have made contributions towards development of this Roadmap.

For God and My Country

Hon. Dr. Chris Baryomunsi, MP
Minister for ICT & National Guidance

X @chrisbaryomunsi1





The hallmark of Digital Transformation is the integration of ICT into our ways of life. Over the years, we have seen the positive contributions that we have accrued as a country by adopting ICT as an enabler for service delivery and business. Digital Transformation breaks the traditional barriers of time and distance that were hindering access to services, information and growth of the digital economy. It is based on this that ICT has consistently been earmarked at national development planning level as a priority sector for social economic development. Global ICT related indices and national performance shows us where we have performed well and also the challenges that we face. The Digital Uganda Vision (DUV) identified five pillars and commitments in order to address these challenges. These aspirations are aligned to Uganda's overall Vision 2040.

Therefore, the Digital Transformation Roadmap addresses how we gain operational momentum to attain these aspirations as spelt out in the DUV. The Roadmap is the rallying point for optimizing our scarce resources based on cohesion across both public and private sector. It builds on the earlier gains by

PREFACE




The Roadmap is the rallying point for optimizing our scarce resources based on cohesion across both public and private sector.

focusing our resources on the key enablers that we must implement in order to further unlock economic growth, create a more inclusive and resilient economy.

The Ministry of ICT and National Guidance thanks the Ministry of Education & Sports, Development Partners, and Uganda's thriving ICT community. This Roadmap's strategic vision for Uganda's digital transformation was shaped by your substantial contributions, insights, and participation. I also thank my committed Ministry of ICT and National Guidance personnel. This roadmap was created by your dedication, hard work, and creativity. The UNDP Country Office in Uganda's consistent assistance has helped us strengthen digital transformation. Finally, Centenary Technology Services, your organization's expertise and commitment helped create Uganda's first Digital Transformation Roadmap. We begin a journey that will change our nation's digital landscape forever.

Dr. Aminah Zawedde (PhD)
Permanent Secretary Ministry of ICT & National Guidance

 [@azawedde](#)

EXECUTIVE SUMMARY

The ICT Sector is an undeniable enabler for Uganda's social economic growth. The ICT sector continues to grow at an average growth rate of 14.8% and contributes 9% to Uganda's Gross Domestic Product (GDP). The growth is a result of a combination of policy decisions and investments that have led to infrastructure coverage, increased internet penetration and roll out of e-services among others. This demonstrates the potential for ICT to further catalyze social economic growth of the Country. According to the International Telecommunications Union (ITU), a 10% increase in broadband penetration yields 1.4% in GDP growth.

Cognizant of the potential of ICT, the Ministry of ICT and National Guidance has developed this Digital Transformation Roadmap that identifies the key enablers to achieve the commitments set out in the Digital Uganda Vision. The roadmap therefore focuses on the how to get there whereas the Digital Uganda Vision sets the aspirations aligned to the overall national agenda set in the Vision 2040. The Roadmap is therefore aligned to the DUV pillars and designed to fit in a five year cycle given the dynamic and ever changing ICT landscape. This allows the country to create a firm foundation and also remain responsive to the environment changes.

The purpose of this roadmap is to guide the digital transformation efforts of Uganda, enabling it to capitalize on emerging technologies, enhance economic competitiveness, and improve the lives of our citizens. The document begins by assessing the current digital landscape in our country, the positioning of Uganda internationally and the current state of digital transformation. We acknowledge the rapid pace of technological advancements, changing consumer behaviour, and the need for seamless integration of digital solutions across sectors. The country has made great progress in developing the legal and regulatory environment for digital transformation, developing e-services and cyber security. However, more work is required around integration of e-services, expansion of ICT infrastructure, acceleration of digital skilling, reduction of the cost of internet, increased innovation and the application of emerging technologies.

The roadmap highlights the following key objectives :

PROMOTE DIGITAL SERVICES:

We shall embark on the development of digital and electronic services across the key priority sectors in Government to support the delivery of services to citizens and residents of Uganda.



02

01

ENHANCE DIGITAL INFRASTRUCTURE & CONNECTIVITY:

We will invest in the development of robust and reliable digital infrastructure, including high-speed broadband networks, data centres, and cloud computing capabilities. This will ensure widespread access to digital services and enable seamless connectivity across urban and rural areas.

FOSTER INNOVATIONS AND ENTREPRENEURSHIP:

We will create a conducive environment for innovation and entrepreneurship, promoting research and development, startup incubation, and collaboration between academia, industry, and the Government. By nurturing a thriving digital ecosystem, we can drive technological breakthroughs and fuel economic growth.

03

04

05

PROMOTE CYBER-SECURITY, DATA PROTECTION AND PRIVACY:

We will establish a robust framework for digital governance, ensuring data privacy, cyber security, and protection of intellectual property. By fostering trust in digital systems and implementing transparent regulations, we can build a safe and secure digital environment for our citizens and businesses.

EMPOWER DIGITAL SKILLS AND LITERACY:

Recognizing the importance of digital skills in the digital age, we will focus on equipping our citizens with the necessary knowledge and capabilities. We will prioritize digital literacy programs, up-skilling and re-skilling initiatives, and promote STEM education to bridge the digital divide and ensure equal opportunities for all.

To realize our vision and objectives, we have devised a comprehensive implementation plan, which includes the following key components:

DIGITAL SERVICES:

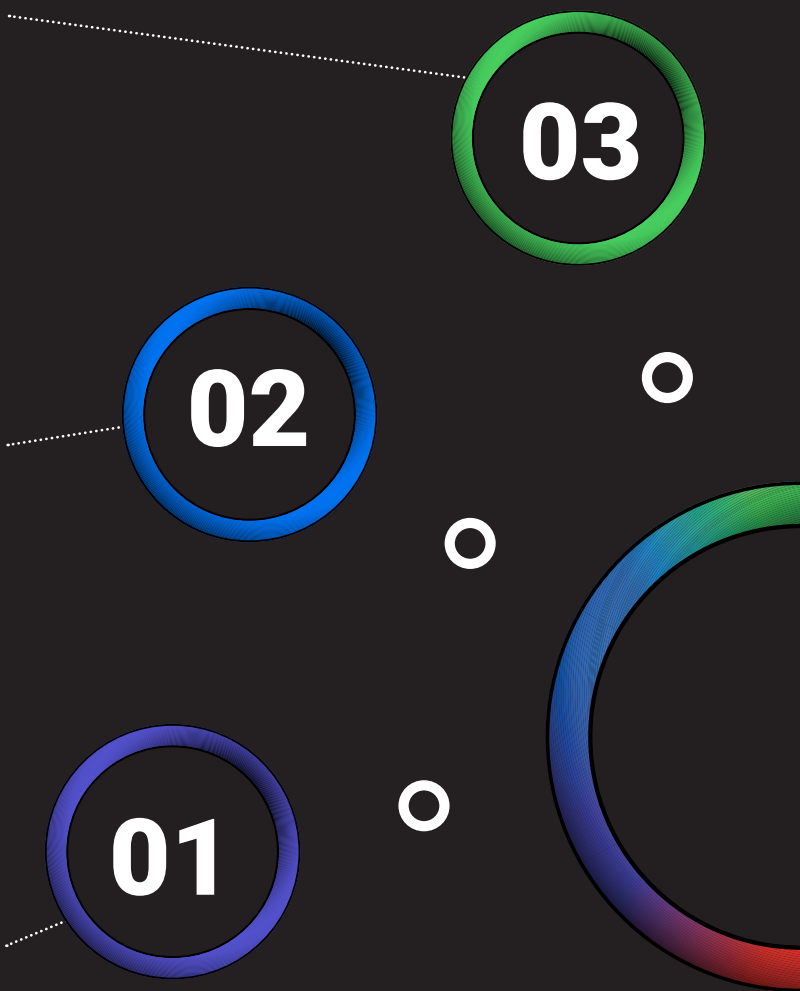
These projects shall include the development of e-services, systems and applications for key priority sectors of the Government and private sector. It also includes standardization of software; implementation of big data and emerging technologies strategies and capacity building and mindset change programs.

INFRASTRUCTURE DEVELOPMENT:

This will involve enhancing and building networks, data centers, shared application platforms and providing equipment for access, use and development of digital services.

POLICY AND REGULATORY REFORMS:

We will review and update existing policies and regulations to align with the digital transformation agenda. This will involve streamlining bureaucratic processes, promoting innovation-friendly policies, and ensuring a level playing field for digital businesses.





04

INVESTMENT AND FUNDING:

We will allocate significant investments and secure funding from public and private sources to support the implementation of digital initiatives. This will involve creating venture capital funds, providing incentives for digital startups, and attracting foreign direct investment in the digital sector.

05

STRATEGIC PARTNERSHIPS:

We will forge strategic partnerships with industry leaders, technology providers, and international organizations to leverage their expertise and resources. Collaborative initiatives will include knowledge sharing, joint research and development projects, and capacity building programs.

06

AWARENESS, TRAINING AND ADOPTION CAMPAIGNS:

We will launch comprehensive awareness, training and adoption campaigns to educate citizens, businesses, and government entities about the benefits and opportunities of digital transformation. These campaigns will promote digital skilling and literacy, showcase successful digital initiatives, and facilitate the adoption of digital technologies.

The Digital Transformation Roadmap presents a strategic framework to guide Uganda’s digital transformation journey. By prioritizing digital infrastructure, digital services, cyber security and privacy, innovation, skills, and governance, we aim to create a digitally inclusive and thriving society. Through strategic partnerships, investments, and awareness campaigns, we will empower our citizens and businesses to embrace the digital future, ensuring sustainable economic growth and improved quality of life for all.



1.0

DEVELOPMENT CONTEXT

1.1 BACKGROUND

Uganda has since the late 2000s accelerated its advancement of the ICT sector and digital transformation in general through, expansion of the telecommunications and internet infrastructure, digitalization of public services, enactment of IT and cyber legislation and capacity building. This digital transformation roadmap is meant to actualize the Digital Uganda Vision 2040 for Uganda to achieve the following benefits:

ECONOMIC GROWTH AND COMPETITIVENESS:



Digital transformation presents a significant opportunity for Uganda to drive economic growth and enhance its competitiveness on both regional and global scales. By adopting digital technologies and leveraging the power of data and connectivity, Uganda can unlock new business models, increase productivity, and attract foreign direct investment.

INCLUSIVE DEVELOPMENT AND SOCIAL IMPACT:



Digital transformation has the potential to bridge the digital divide and promote inclusive development in Uganda. By focusing on digital literacy programs and up-skilling initiatives, the digital transformation roadmap can empower citizens with the necessary digital skills to participate in the digital economy. Digital technologies can also enhance service delivery in sectors such as healthcare, education, agriculture, and financial services, improving access to quality services for rural communities and vulnerable populations.

EFFICIENCY AND EFFECTIVENESS IN GOVERNMENT SERVICES:



Digital transformation can streamline government processes and improve the delivery of public services in Uganda. By digitizing government operations, implementing e-governance systems, and fostering digital connectivity, the roadmap can enhance administrative efficiency, reduce corruption, and provide citizens with convenient and transparent access to government services.



INNOVATION AND ENTREPRENEURSHIP:



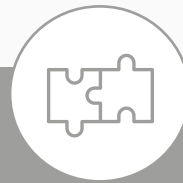
The digital transformation roadmap will provide an enabling environment for innovation and entrepreneurship in Uganda. By promoting digital startups, supporting research and development, and fostering collaboration between academia, industry, and the government, Uganda can nurture a vibrant digital ecosystem. This will encourage the emergence of local digital solutions, drive technological innovation, and create a conducive environment for digital entrepreneurship, job creation, and wealth generation.

DATA-DRIVEN DECISION MAKING:



Digital transformation facilitates the collection, analysis, and utilization of data for informed decision-making in various sectors. By embracing data analytics and artificial intelligence, Uganda can harness the power of data to drive evidence-based policy making, optimize resource allocation, and improve service delivery. The roadmap will prioritize data governance, privacy, and security to ensure the responsible and ethical use of available data for processing.

REGIONAL INTEGRATION AND COLLABORATION:



Digital transformation can strengthen Uganda's position in regional integration efforts and enhance collaboration with neighboring countries. By aligning its digital infrastructure, policies, and standards with regional frameworks, Uganda can facilitate cross-border trade, promote digital connectivity, and participate actively in regional digital initiatives. This will open new markets, expand economic opportunities, and foster regional cooperation in the digital space.

1.2 INTERNATIONAL

GLOBAL ICT DEVELOPMENT INDEX

As per the Global ICT Development Index, Uganda is below the general average of nationwide telephone penetration in Africa of **74.60 per 100 inhabitants**.

GLOBAL INNOVATION INDEX

On the Global Innovation Index, Uganda ranks at **position 114** globally and is also ranked amongst **the top 10** in the category of least developed countries. This is another positive indicator showing an increase in the development and consumption of ICT services in the country.

GLOBAL CONNECTIVITY INDEX

On the Global Connectivity Index, Uganda is rated at position **77 out of 79 profiled countries**. Uganda's internet penetration rate is at an **average of 43%**. The number of registered internet users has steadily grown over the years to **over 20 million**. This shows that internet usage in Uganda has gradually increased year after year.

GLOBAL CYBER SECURITY INDEX

Uganda ranked the **72nd** globally in the Global Cyber security Index **out of the 182 countries in 2020** and the **9th out of 43 in Africa** with a score of **69.98% from the 65th rank out of 193 countries in 2018** and the **7th in Africa with score of 62.10%**. Uganda performed fairly well on the legal measures pillar with a score of **15.64 out of 20 (78.20%)**, followed by cooperative measures with **15.64 out of 20 (78.15%)**, technical measures with a score of **14.19 out of 20 (70.95%)**, organizational measures with **13.65 out of 20 (68.25%)** and least on capacity development with **10.87 out of 20 (54.35%)**. In addition to this, Uganda ranks **62nd on the National Cyber security Index** globally, **5th in Africa and 1st in the East African Region**.

E-GOVERNMENT DEVELOPMENT INDEX

Uganda's ranking on the E-Government Development Index has improved by **over 5%**. This as a result of Government massive effort to embrace e-government for improvement of service delivery efficiency and effectiveness.

WORLD BANK'S GOVTECH MATURITY INDEX

As per the World Bank's GovTech Maturity Index, Uganda's index value increased from **0.639 in 2020 to 0.858 in 2022** and as such moved from **Group B to Group A** of GovTech leaders. This shows that Uganda has improved across all the four core areas considered in the GovTech Maturity Index. These four core areas cover government systems, public service delivery, digital citizen engagement and govtech enablers.



NETWORKED READINESS INDEX

Uganda ranks **116th** on the Networked Readiness Index. This Index consists of four pillars which include technology, people, governance and impact (growth and well-being in society and the economy). Uganda's main strength in this index relates to governance. In addition, this index ranks Uganda as 16th in Africa in the group of low-income countries. This relates to a score above the regional average with specific regard to technology and governance and also outperforms the average in Africa in the areas of access, content, regulation, inclusion and quality of life.

Uganda's area of potential improvement is capacity building that measures awareness campaigns, training, education, and incentives for cyber security capacity development.

THE OVERALL FINDING

The overall finding is that Uganda scores highly on digital policy and regulation and lower across skills, innovation and inclusiveness as well as infrastructure.

INCLUSIVE DIGITAL ECONOMY SCORECARD (IDES)

Uganda is also one of the 4 countries that have been assessed using the Inclusive Digital Economy Scorecard (IDES). The IDES identifies catalyst areas that spur the growth of an inclusive digital economy. A country that undertakes the assessment is able to further identify priority interventions to accelerate a robust digital economy over the domains of policy and regulation, infrastructure, innovation as well as skills. To date, 24 countries have been assessed using the IDES. The latest assessment rates Uganda at **33% under the skills domain, 77% under the policy and regulation domain, 42% under the innovation domain and 51% under the infrastructure domain.**

1.3 NATIONAL CONTEXT

The National IT Survey (2022) conducted to understand the availability, access, usage, affordability and satisfaction with IT infrastructure, equipment and services amongst individuals, households, Government entities (both central and local government), and businesses identified the following key findings:

MINISTRIES, DEPARTMENTS AND AGENCIES (MDAS)

6% have an internal Enterprise Architecture.

5% have internal IT interoperability frameworks.

LOCAL GOVERNMENT (LG)

Adoption of ICT is still low with only 5.6% of staff routinely using a computer for work purposes.

61% had internet access.

BUSINESSES AND IMPLICATIONS

One in two businesses (55%) had internet access, and only one in every three businesses had a business website. Among the businesses with internet access, 58% had received orders, while 52% had placed orders for goods and services.

While the use of mobile money is high, businesses largely relied on cash on delivery/pickup for both sales and purchases. This highlights the need to develop both digital payments and delivery logistics systems to facilitate trade.

HOUSEHOLDS

Household-level internet access is still severely limited, with 94% having no access at all. Consistent with other indicators is the urban-rural digital divide, with 13% of the households in urban areas having a working internet connection compared to 3.2% in rural areas.

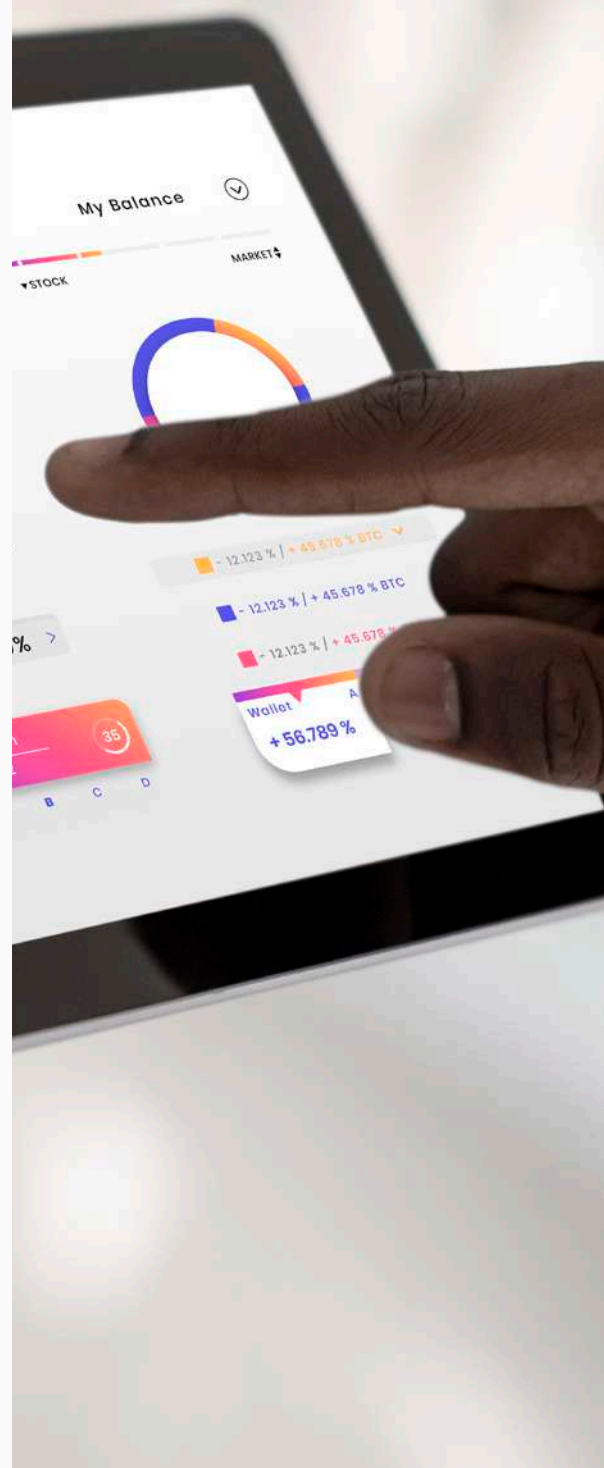
The proportion of households with working landline telephones was only 1%, but those with working mobile phones was 33%, consistent with the historical shift from landlines to mobile phones.

There are still major challenges regarding access to power, a major factor in access to online services. Only 20% of the households nationally have access to the electricity grid (55% for urban and 8% for rural).

INDIVIDUALS

Overall, 74% of all individuals had used a mobile phone in the three months prior to the survey – with the percentage in urban areas (83%) being higher than that in rural areas (71%). A gender divide is also evident, the corresponding percentage for men and women being 80 and 70% respectively. A total of 87% of those who had used phones, owned a mobile phone with the respective figures for rural and urban being 85% and 92%. While a gender divide still exists in phone ownership among those who had used phones, the gap is narrower, with 90% for men and 85% for women.

About half of all individuals (49%) had a registered mobile money account in their names compared to one in 10 individuals (10%) that had a personal bank account, underscoring the high importance of mobile money on an otherwise largely unbanked population.





The latest domestic highlights released by Uganda Communications Commission (Q2, 2022) indicate the following:

TELEPHONE SUBSCRIPTIONS

Fixed and mobile subscriptions grew by more than 690,000 new subscriptions. This translates into an 8% year on year growth in subscriptions.

NETWORK CONNECTED DEVICES

Total number of network connected devices is 36.1 million up from 35 million at the end of March 2022. 40% of new terminals are smart gadgets while the basic feature phones are 60%.

This translates into a 12% year on year growth.

BROADBAND CONNECTIONS

On a year-on-year comparison, the twelve months ended June 2022 recorded 1.9 million new broadband subscriptions. This is an 8% year-on-year growth in broadband subscriptions equaling the 8%-year growth in total mobile connections recorded during the same period.

In terms of penetration, the 23.7 million broadband subscriptions translate into a broadband penetration of 55 internet connections for every 100 Ugandans.

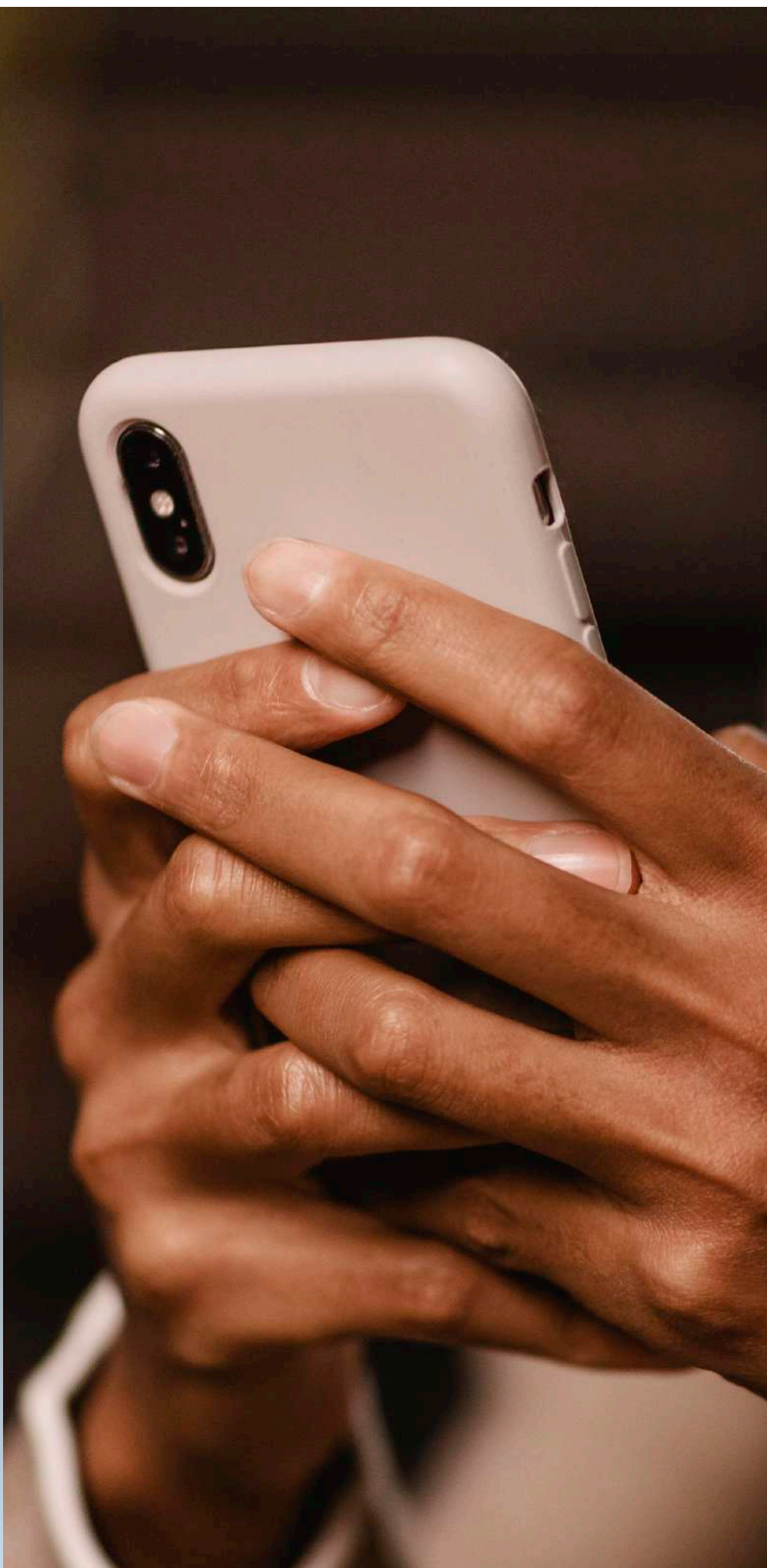


MOBILE AND ELECTRONIC MONEY SUBSCRIPTIONS

Of the 40.7 million digital wallets, 36.9 million wallets were Mobile Network Operator (MNO) -mobile money wallets linked to MTN Uganda, Airtel Uganda and UTL.

Non-MNO linked digital wallets accounted for 10% of total wallets with a total count of 3.8 million wallets administered by licensed non-MNO Payment Service Providers.

The value of mobile money transactions grew from UGX 5.46 trillion in 1Q22 to UGX 5.99 trillion in 2Q22.



1.4 CONTRIBUTION OF ICT TO GROSS DOMESTIC PRODUCT

The contribution of ICT to Gross Domestic Product (GDP) is estimated at 9% significantly contributing to national revenue. In addition, the proportion of employment in the ICT sector is 2.3 million people. The growth in ICT's contribution to GDP is attributed to considerable initiatives made by both Government and private players in expansion of infrastructure coverage, development of e-services among others. According to National Planning Authority (NPA), the information and communi-

cations services continued to grow at an average growth rate of 14.8%. However, contribution from other activities such as computer programming as well as the ICT trade and manufacturing industries remained low.

1.5 DIGITAL UGANDA VISION 2040

The Government of Uganda (GoU) through the Ministry of ICT and National Guidance developed the Digital Uganda Vision (DUV) 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 development of the DUV took into consideration the following national cyber related laws, regulations, policies, strategies and national related strategic plans:

- a) NRM Manifesto.
- b) All ICT related laws and regulations enacted after 2014.
- c) All ICT policies, plans, guidelines and strategies put in place after 2014.
- d) Uganda Vision 2040.
- e) National Development Plan III.

Cognizant of Uganda's commitments at the global, continental and regional level, the DUV further considered the following:

- a) Uganda's progress on achieving the Sustainable Development Goals.
- b) Africa Agenda 2063.
- c) East Africa Vision 2050.

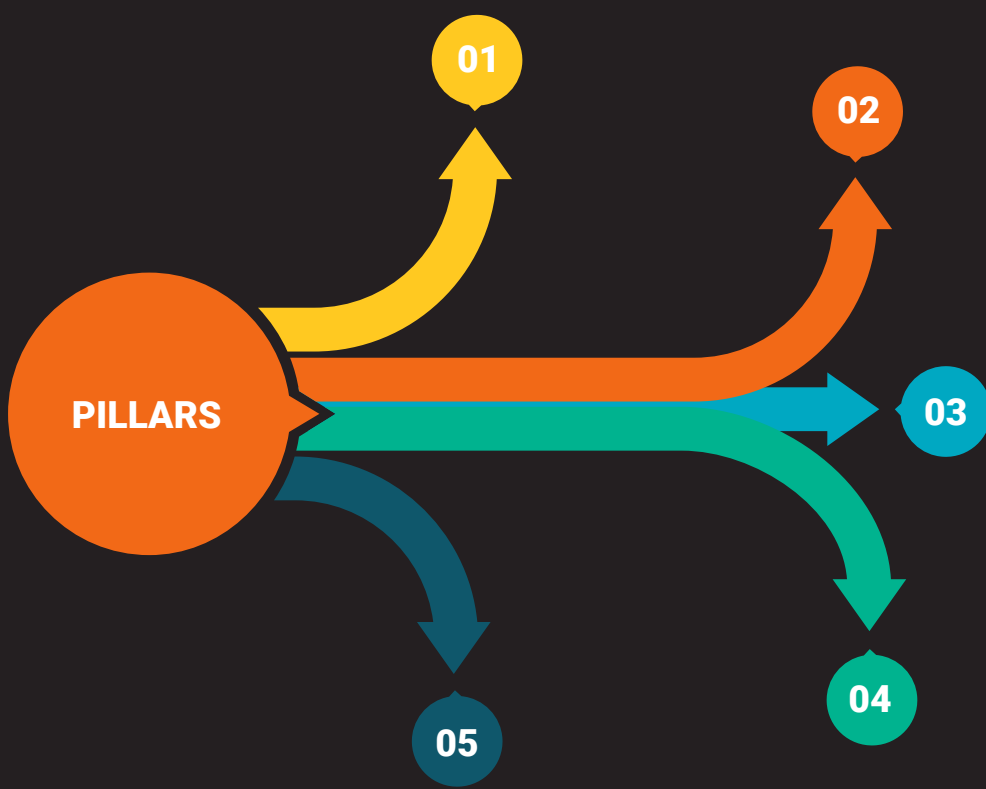
Taking the above into consideration, the DUV identified five pillars that are critical in attaining the vision of transforming Uganda into a modern and prosperous country within 30 years. The five pillars are noted below :

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.

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.



Pillar 3:

Cyber-security and data protection and privacy which provides assurance that digital services are safe, secure, protected, and trusted when in use.

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.

Pillar 4:

Digital Skills which focus 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.

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



The outcomes will have a positive impact on enhancing Uganda's performance in various global ICT and Digital Economy related indexes.

Based on the above, the DUV spells out the aspirations for a digitally enabled society in Uganda. In order to gain operational traction, the Ministry of ICT and National Guidance identified the need for a digital transformation roadmap, anchored to the DUV, with a focus on a responsive drive to achieve the desired outcome.

2.0 DIGITAL TRANSFORMATION ROADMAP

The DUV described the ends, and the digital transformation roadmap focuses on the means to catalyze. The roadmap therefore identifies key interventions at the operational level mapped to the DUV pillars as a strong foundation to leapfrog growth.

2.1 PILLAR ONE: DIGITAL INFRASTRUCTURE AND CONNECTIVITY

The National Broadband Baseline Survey (2022) identified the gaps for improvement of the broadband value chain in Uganda. The key issues identified correlate with the performance of the country in the various indices related to ICT infrastructure. These issues cut across three stages of the broadband value chain as noted below:

The first focusing on the first mile shows that international connectivity to neighboring countries is adequate. However, the study identified room for growth given the landlocked nature of the country and the opportunity to act as a hub for neighboring countries on connectivity.

The second focusing on the middle mile shows a lot of limitations. The middle mile includes national backbone, data centers, internet exchange points, content distribution networks which are important components for driving increased usage of internet-based services and applications. As such, access to fiber nodes (where users can be connected) is limited with only 29% of the population living within 10km of such nodes.

The third focusing on the last mile shows significant challenges. Broadband adoption is low despite good broadband coverage and relatively fast speeds. Whereas over time, the cost of data

for end users and organizations has reduced, affordability was identified as a challenge. The survey reported that mobile broadband is cheap in absolute terms but not affordable in relative terms for the masses. In addition, smart phone penetration is still low with over 70% of connected phones categorized as feature/basic phones. Another aspect of last mile is the current limitations in the use of traditional postal addresses which creates challenges in delivery of physical goods and e-trade logistics. In addition, the survey identified limitations that cut across broadband policies, legal and regulatory overlaps and complexity, spectrum licensing as well as investments in Radio Access Networks and Fiber.

In order to address the above limitations, the following are the key enablers to achieve significant growth for the country as relates to infrastructure and connectivity:

MAPPING TO DUV INTERVENTIONS ON DIGITAL INFRASTRUCTURE AND CONNECTIVITY

- a) Implement an ICT enabling policy framework.
- b) Coordinate (across and within countries, within government and with private sector).
- c) Conduct routine cost benefit analyses on suitability of installation of new edge infrastructure.

ROADMAP ENABLERS

Rationalization of broadband policies and establish a single policy source.

Adopt the Radio Spectrum Management Policy.

Develop guiding principles for spectrum allocation to enable a balance among the desired outcomes of increasing broadband access at prices affordable to consumers; ensuring fair competition; eliminating hoarding; and ensuring efficient utilization.

Expand the National Backbone Infrastructure (NBI) to reach all districts. The earlier survey mentions that extending fibre access is necessary because high bandwidth applications, especially video, require fibre backhaul to operate effectively. Microwave links can be used, especially in rural areas, but as demand grows, microwave will be increasingly congested and is not a long-term solution to high density population areas. Fibre is also generally more reliable than microwave in inclement weather. This will further provide a reliable digital rail for roll out of enterprise e-services and enhance connectivity (and security) for large footprint agencies that are increasingly getting digital such as the Electoral Commission, National Identification and Registration Authority. In addition, this will support Uganda's commitments under the Northern Corridor Integration Projects (NCIP) to facilitate interconnection of national networks in order to ensure cross border and international connectivity aimed at achieving ubiquitous broadband services in the region.

Develop facilities sharing regulations.

Enforce existing fair competition regulations.

Enhance capacity (compute and storage) for the Government Cloud.

Design alternative spectrum models to encourage innovation.

Support community networks through tools such as license exempt spectrum.

Create a social purpose International Mobile Telecommunications (IMT) spectrum license to support community operated cellular networks.

License Low-earth Orbit (LEO) technology to provide backhaul for small wireless operators to help bridge the digital divide.

Develop an investment plan to roll out fibre [New technologies such as 5G (and soon 6G) demand significant bandwidth that alternatives cannot supply].

Subsidize the expansion of the Radio Access Network (RAN) site roll out after the connection of all districts to fibre.

In addition to the above, the following are necessary to enhance the soft infrastructure requirements:

Development of a National Public Key Infrastructure (PKI) strategy to support trust in use of e-services across public and private sector.

Regulatory interventions to incentivize network operators to peer at the Uganda Internet Exchange Point.

Regulatory interventions to recognize, promote and attract Content Distribution Networks (CDNs) and Cloud Providers to establish Data Centers or Points of Presence in country.

Enhance and re-purpose use of regional postal outlets as e-service delivery points.

Develop the digital addressing platform to enable last mile delivery of physical goods, parcels and documents which is a missing link and one of the challenges in e-commerce.

Develop the national spatial data infrastructure to provide trusted geospatial data for government and business.

Establish a national payment switch that connects different payment networks and allows for interoperability of payment instruments and bank accounts.

The above enablers will contribute to the following outcomes by 2028:



Internet penetration



Broadband coverage in the country



2.2 PILLAR TWO: DIGITAL SERVICES

Government of Uganda has implemented several initiatives to promote and grow use of Digital Services. These initiatives cut across legal and regulation that provide for the legality of the use of ICT to deliver services, use of shared infrastructure such as the Government Cloud and integration hub as well as operational guidance and strategies to drive an interconnected Government and promote data sharing.

The latest operational guidance has led to the development of the GoU Enterprise Architecture that describes the main principles, models, building blocks and general guidelines for implementation of digital services for citizens, businesses and public administration. As such, Uganda has an adequate legal and policy environment to support digital services. Government has undergone a tremendous transition in how it leverages ICT to

improve internal efficiency and also how it delivers its services. As a result, Government has over 236 Information Systems with over 140 ICT driven innovations. The estimate in percentage increase for the growth in number of automated systems in Government over the last six financial years is over 500%. However, requirements concerning performance measurement of services is fragmented or inadequate.

The quality of information services is uneven across sectors. Although, there is an increase in active e-services, re-use of data is still siloed even with sectors which negatively affects the realization of the 'once-only' principle. This is largely driven by institutional stone walls and traditional procedures that leads to low trust in accuracy and quality of data. This hampers quick decision making and wastage of

funds in maintenance of multiple information systems as well as fatigue amongst users on uncoordinated data collection initiatives. Basically, the findability, quality and speed of use of data for decision-making and planning with analytical support is inferior.

Furthermore, limitations in accessing the Identification Registry for KYC (Know Your Customer) purposes has increased the cost and duration for onboarding a user. The next level of focus should be on harmonized implementation as well as enhancing the experience and responsiveness for digital services.

Based on this, the following are the key enablers to achieve significant growth for the country as relates to digital services:

MAPPING TO DUV INTERVENTIONS ON DIGITAL SERVICES

- a) Review and automate integrated end to end government business and service delivery processes.
- b) Facilitate access to and utilization of e-Governance services including e-cities.

- Promote citizen awareness,
- c) engagement and participation.

ROADMAP ENABLERS

Development of single identifiers, shared digital registries and related catalogue of information systems and services within sectors to promote data exchange, meta data management. The digital registries will act as sources of truth within sectors to reduce on duplication of efforts and also eliminate data silos as well as promote the 'once-only' principle.

Development and implementation of a citizen e-service co-creation strategy that will drive user focus engagement and include citizens in the design and enhancement of digital services.

Development and implementation of the National Big Data Strategy.

Each MDA to develop a minimum of three flagship integrated e-services to enable roll out of e-services across all NDPIII programs compliant with e-service regulation and standards drawn from the Sector ICT interventions listed in the DUV.

Establishment of a testing and certification scheme for software to ensure that quality standards are met and our services are exportable.

Capacity building for ICT cadre and policy makers in Government to ensure Government has in place the right competencies to drive the digital transformation agenda.

Development of a digital mindset change program to increase appreciation and support for digital services amongst the top management layer of MDAs and LGs and adoption of the digital first fast for service delivery as well as promote data governance.

Promote and ensure continual enhancement of digital shared services.

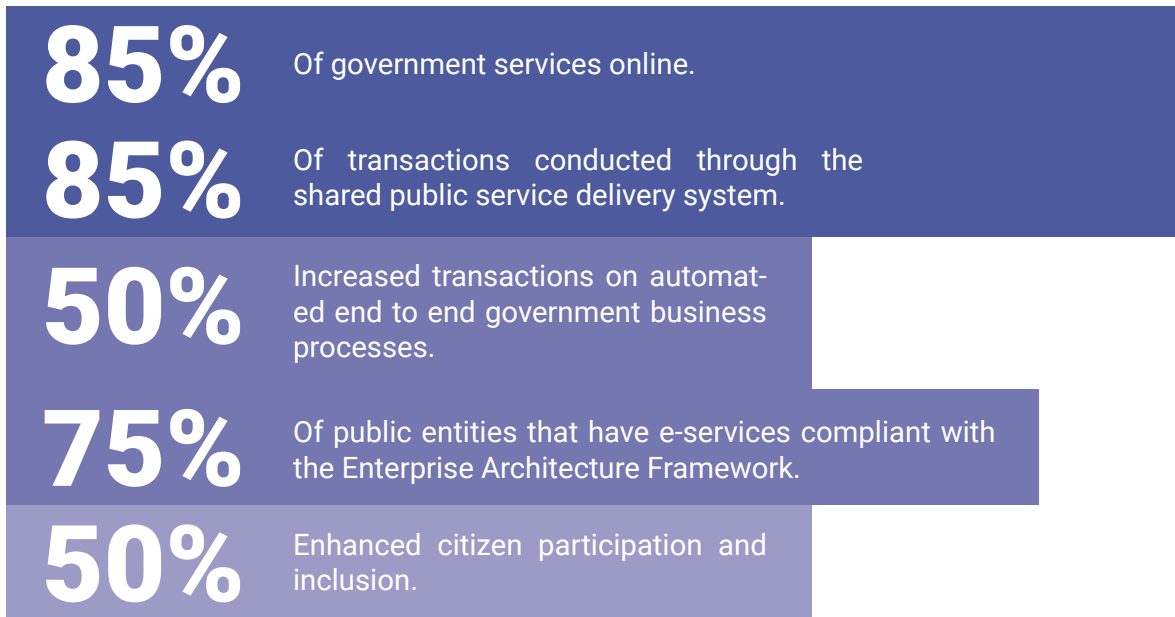


Improve access to KYC digital services to enable ease in roll out of digital services that require user identification.

Develop a Digital Service Standard that will promote enhanced user experience (user centric) and mandate service performance metrics to drive continual improvements and also increase transparency and accountability The Standard will also provide for principles related to:

- a) Digital access and inclusion of people with disabilities;
- b) Needs of people with poorer digital skills/ low digital literacy; and
- c) Needs of diaspora that need to access e-services back home.

The above enablers will contribute to the following DUV outcomes by 2030:

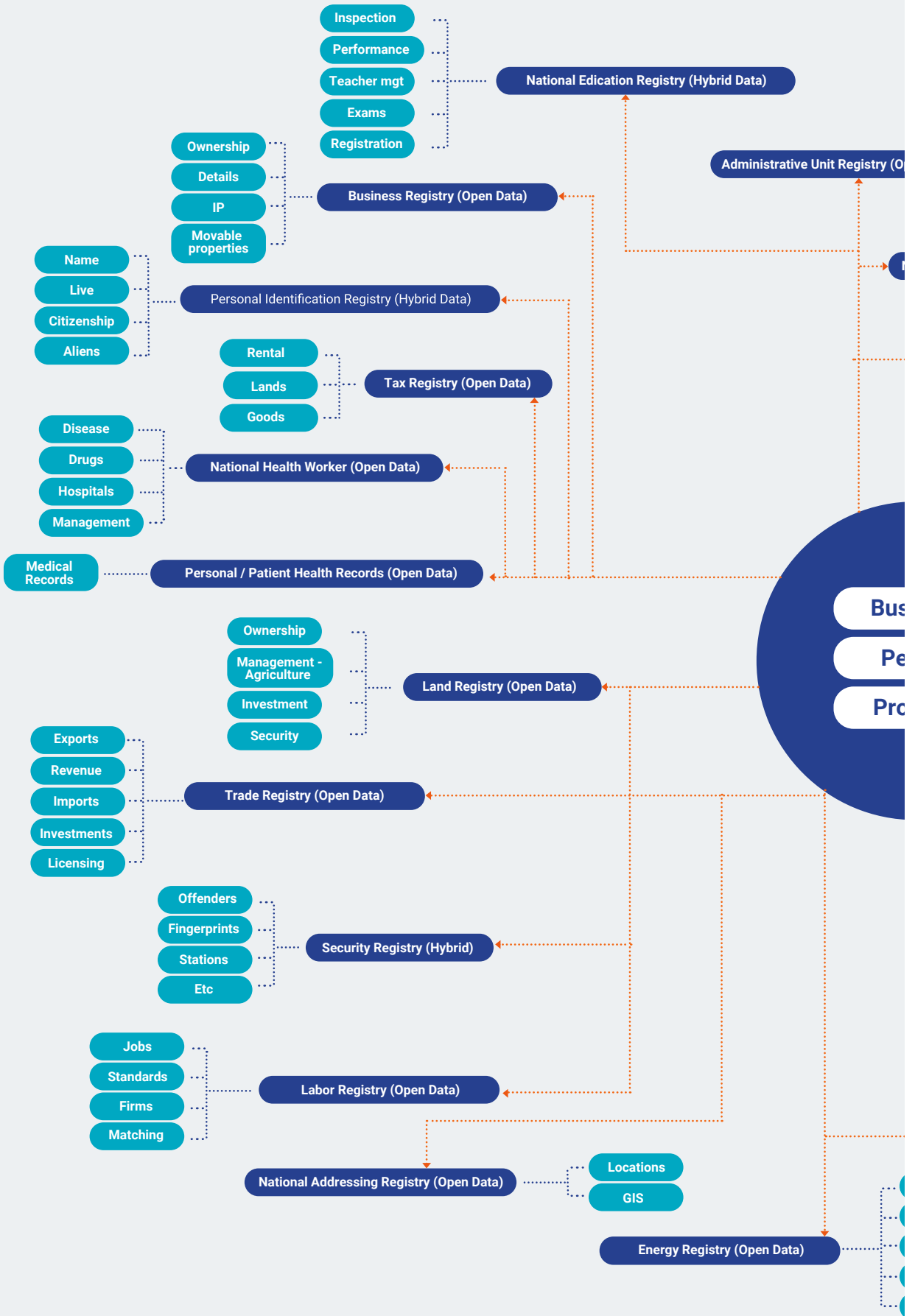




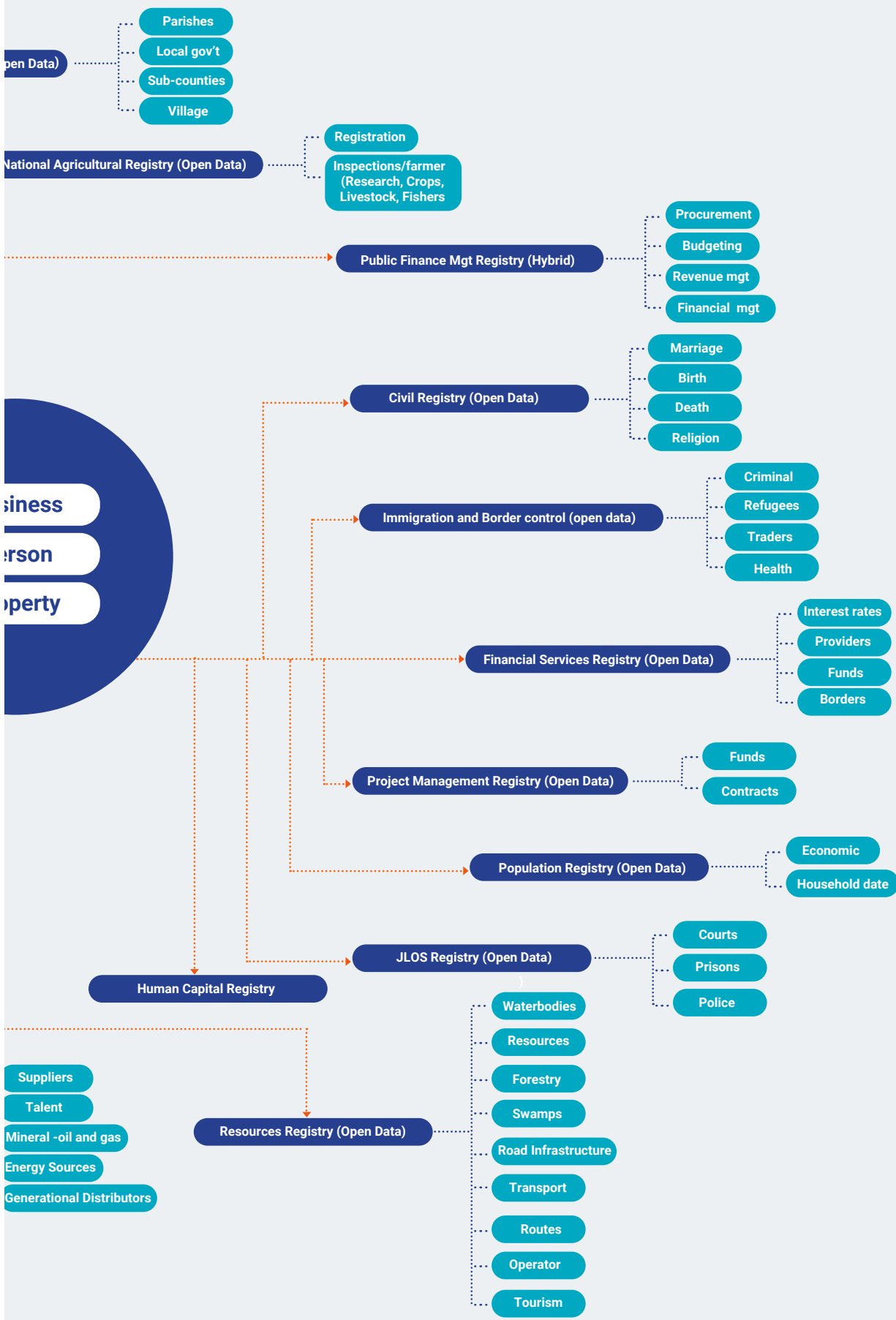
Mind Map for E-services and the development of single Registries

In the Digital Transformation Roadmap, priority services and registries have been identified for digitization and integration. These e-services and registries have been selected based on two key strategic documents; the priority sectors in the National Development Plan 2020/21 - 2024/25 and the key interventions in the Digital Uganda Vision .





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2.3 PILLAR THREE: CYBER SECURITY, DATA PROTECTION AND PRIVACY

Uganda has performed fairly and has been consistently rated in the top percentile of indices on the continent and in the region. However, the cyber threat landscape keeps on evolving. In addition, the increase in use of digital services across both public and private sector increases the cyber risk and exposure of the country. The potential for the total transformation of the economy and the attendant social impact is best demonstrated by the pervasive expansion and use of mobile money services in Uganda.

Also, to note, the DUV focuses on building a digitally enabled society that is agile and able to adapt to emerging technologies and trends. Cyber security continues to be a challenge in Uganda and the share of cyber related (computer) crimes to total economic crimes is on the rise. Therefore, it is important to have in place a robust and solid cyber security approach that establishes measures to ensure security of digitalization process and help to protect Uganda and its citizens in cyberspace.

It's based on this, that the current National Cyber security Strategy (2022) adopted the whole-of nation principle where reduction of overall national cyber risk is a shared responsibility. In addition, Uganda has a robust legal and regulatory framework for data protection and privacy with an operationalized Personal Data Protection Office. With the National Cyber security Strategy (2022) providing the required guidance, the next level of focus should be on harmonized implementation. Based on this, the following are the key enablers to achieve significant growth for the country as relates to cyber security, data protection and privacy.

MAPPING TO DUV INTERVENTIONS ON CYBER SECURITY, DATA PROTECTION AND PRIVACY

- a) Building appropriate cyber security and data protection capabilities.
- b) Enhanced security of digital online services.
- c) Ensure protection of privacy of personal data.
- d) Enhanced monitoring, enforcement and compliance to cyber security, data protection and privacy standards.

ROADMAP ENABLERS

Fostering a safe and trusted digital economy

Prioritize support for Small and Medium Enterprises.

Expand Cyber security Investments.

Threat preparedness and response

Promote National Cyber risk assessments.

Enhance national and sectoral incident response and information sharing.

Robust cyber security ecosystem

Enhance protection of National Critical Information Infrastructure.

Enhancement on enforcement and compliance with the Personal Data Protection and Privacy Act.

Cyber skilled Uganda

Raise public cyber security awareness.

Enhance knowledge through research and development.

Active and reliable partner of the international community

Increase bi and multi-lateral dialogue at the regional level.

Build capacity and confidence through international collaboration.

Promote calls for action for responsible state behavior in cyberspace.

The above enablers will contribute to the following outcomes by 2028:

75%

of entities with access to adequate and relevant capacity for increased operational and responsive cyber security.

75%

of public entities in compliance with the National Information Security Framework.

75%

of all entities in compliance with data protection and privacy legal and regulatory framework.

85%

Enhanced protection of National Critical Information Infrastructure.

2.4 PILLAR FOUR: DIGITAL SKILLING



The Fourth Industrial Revolution in which we now live requires citizens to have basic digital literacy in order to interact, navigate and make use of digital content and services. In addition, the work place is changing across Government and private sector through the fast adoption of ICT. This change is increasingly affecting all sectors and professionals. Job creators will also require digital literacy skills. The present way of work and life is fast getting digital. The implication of this change is that we must be forward looking and integrate digital skills within our education system as early as the entry level of primary school. This will require retooling for the teachers as well as education for the students. Government of Uganda, under the Uganda Communications Universal Services Access Fund (UCUSAF) set up ICT labs in over 1,000 secondary schools, tertiary institutions and universities across various regions of the country as well as trained over 3,800 teachers on basic computer literacy.

This intervention has mainly focused on secondary schools. The current focus from UCUSAF is to gain more leverage through implementing the ICT training for teachers within the teacher training colleges. The school labs have also been used to train over 300,000 citizens drawn from school neighboring communities on basic digital literacy skills. In order to enhance its sustainability, 500 citizens were trained through Uganda Institute of Information and Communication Technology to be able teach community members. In addition to this, Uganda Communications Commission further activated the establishment of ICT Clubs within supported schools in order to support peer to peer learning and innovation within student communities. Besides Government intervention, private sector schools have undertaken the most investment to equip their schools with ICT labs and also attract competent ICT trainers. However, the focus has mainly been to the students that are studying ICT related subjects at O' Level and A' Level.

The primary and tertiary uptake of ICT is still limited due to a mix of factors that involve funding, infrastructure, teaching skill and electricity challenges. The UCUSAF has limited funding that can take only additional 70 computer laboratories every year and also addresses ongoing maintenance costs and connectivity. Overall, digital skilling is still laced with challenges to achieve the desired critical mass of students that have been readied for the fourth industrial revolution. Based on this, the following are the key enablers to achieve significant growth for the country as relates to digital skilling:

MAPPING TO DUW INTERVENTIONS ON DIGITAL SKILLING

- a) Develop and implement a national digital skills formation framework.

ROADMAP ENABLERS

Development of the digital skilling pilot program. The design of the pilot program will in addition address the following key aspects:

- a) Inclusion of people with disabilities; and
- b) Inclusion of the girl child

The above enablers will contribute to improved spectrum of digital skills through enhanced curricula and pedagogy including for persons with special needs.

2.5 PILLAR FIVE: INNOVATION AND ENTREPRENEURSHIP

To a large extent, the ICT products and services used across public and private are have been developed elsewhere. The local innovation and startup landscape is still nascent and therefore we have imitated local commercialized ICT products. The local startup ecosystem involves a few innovation hubs and Entrepreneur Support Organizations (ESOs) with most of them concentrated within Kampala Capital City and limited areas out of Kampala. There has been positive movement to consolidate the previous efforts in order to combine synergies through the establishment of the Association of Innovation and Entrepreneurship Support Organization in 2019. This has led to the rise of the Kampala Innovation Week (KIW) which has so far had four editions all promoting local innovations and sharing success stories in the country. To further further enhance the growth of the local innovation ecosystem, the Government of Uganda established the National ICT Initiatives Support Programme (NIISP).

The Programme primarily aims at facilitating growth and development of the local software applications and innovations by providing access to seed capital as well as working environment under the National ICT Innovation Hub. The NIISP has over the last five years supported over 24 startups of which four (4) have increased their market access beyond Uganda. The fund has realized notable local development and implementation of enterprise cost effective solutions such as the Electronic Government Procurement System and Education Management Information System leading to significant cost savings. This has demonstrated that locally developed solutions can meet business objectives. In addition, the Ministry of ICT in 2022 unveiled an initiative named 'Discover Africa's Innovation Powerhouse,' geared towards profiling successful Ugandan innovators and supporting them obtain access to new markets and funding at the global level. Furthermore, the Procurement and Disposal of Public Assets Authority (PPDA) issued out Guidelines in 2018 that created reservation schemes to promote local content (including local innovations) in public procurement.

Albeit there are still operational challenges related to obtaining support from Government MDAs to accept or use products and services developed by Ugandan startups. Based on this, the following are the key enablers to achieve significant growth for the country as relates to innovation and entrepreneurship:

MAPPING TO DUV INTERVENTIONS ON INNOVATION AND ENTREPRENEURSHIP

- a) Development of an ecosystem that promotes development and commercialization of local ICT products and solutions including data and collaborative research.

ROADMAP ENABLERS

Enhance the National ICT Innovation hub at the Ministry of ICT and National Guidance to:

Provide shared services as digital rails for use by startups.

Champion access to Government e-services and APIs through UgHub by private sector.

Drive mindset change to increase the acceptance of locally developed innovations.

Ensure sustainability of digital national projects through enhancing the Hub structure.

Enhance support for growth of the startup ecosystem by creating digital centers of excellence as well as in country and off shore promotion of Uganda's innovations building on the Uganda as Africa's Innovation Powerhouse campaign.

Enhancing access to funding for startups.

Promote use of sandbox environments with regulators to support innovators and systematic experimentation.

The above enablers will contribute to the following outcomes by 2030:

Increase in Number to 282 ICT innovation products developed and commercialized.

Increase in Digital Centers of Excellence in the productive centers of the country.

Strengthened partnerships for knowledge sharing.

2.6 SYSTEMATIC EXPERIMENTATION

Government has generally had a slow response to the uptake of new and emerging technologies. This is mainly due to the gaps in knowledge and also lack of a formalized approach to experiment and allow use of emerging technologies within both service delivery and public administration. Globally, advancements in technologies have led to improved effectiveness and efficiency in service delivery. Businesses that adopt these have experienced positive returns on investment as well as positive impact on productivity and ease of doing business. Last year, Government through the Ministry of ICT and National Guidance made initial progress towards use of emerging technologies through the establishment of the National 4IR Strategy and the Framework for Ethical AI. In addition to shift from a 'regulate and forget' to a 'responsive, interactive approach,' the Ministry of ICT and National Guidance signed a Memorandum of Understanding with Sunbird Artificial Intelligence (AI) geared towards leveraging Artificial Intelligence Systems to increase the use of ICT services for Uganda's social and Economic development in accordance with NDP III. Sunbird AI is a non-profit organization which focuses on developing open-source, practical, African centered systems that primarily works with partners to use data technology to improve planning, decision making and strengthening feedback between Citizens and policy makers.

This Digital Transformation Roadmap recognizes the value of emerging technologies and as such provides for the following commitments to support systematic experimentation of new and emerging technologies in Uganda:

- a) To initiate and fund pilot projects for the adoption of innovative solutions.
- b) To promote relevant innovation-related cooperation with the private sector and development partners.
- c) Increase and coordinate the commissioning of digital government related research and development activities across the country and disseminate and put to use their results.
- d) To increase regulator collaboration by increasing knowledge that will enhance responsiveness that enables experimentation using new and emerging technologies.
- e) Increase collaboration with relevant associations to create and grow Centers of Excellence on use of emerging technologies.

Through the Digital Transformation Program, the Ministry of ICT and National Guidance will initiate systematic experimentation in the following areas within the first two years of the approval of the Roadmap using a proof of concept approach:

SOURCE DOCUMENT

National 4IR Strategy

ROADMAP ENABLERS

Agriculture:

Traceability using blockchain to enhance transparency, validation and authenticity on agricultural produce origin in an immutable and secure manner. This will improve competitiveness for most exported agricultural produce in Uganda. As a result, blockchain can be tested out to support ethical production over the agriculture life cycle.

SOURCE DOCUMENT

National 4IR Strategy

ROADMAP ENABLERS

Remote sensing and analytics to assess weather patterns and predict the impact of adverse weather conditions on future yield and farming season planting.

Smart credit risk assessments to provide financial institutions with agriculturally-relevant and data driven models to assess risk and develop credit scoring that fit the needs of small holder farmers. This will allow them to have access to capital.

Mobile delivered digital extension services to up-skill farmers knowledge and capabilities to increase productivity embedded with AI capabilities and natural language processing.

Human Capital

Enhancing teacher and student capabilities through digital tutoring as a channel to delivery of quality education to populations who remain hard to reach including a blend of Augmented Reality (AR) and Virtual Reality (VR).

Aligning the education system to meet the needs of 4IR by equipping youth with knowledge, skills and capabilities to participate in transformation of the economy as well as increase employment opportunities both in country and offshore. Micro-credentialing and online courses can be used to acquire specific skills to meet the global demand in areas such as blockchain.

Enhancing medical supply chains using blockchain to enhance the integrity of medical supply chains and overcome current challenges of counterfeit medicines by facilitating proof of authenticity.



Improving emergency response and supply of relief items and medical supplies in hard to reach areas or disaster affected areas using unmanned aerial vehicles.

Smart contracts can be automated to incentivize good behavior from all stakeholders and improved feedback loops for long-term sustainability and delivery of good plans.

Water and Environment

Internet of Things (IoT) remote sensing to predict disasters and improve proactive response as well as early warning in communities prone to occurrences such as mud slides and flooding.



Managing water resources using a fusion of IoT sensors, cloud-based water management systems for a sustainable borehole management Programme in Uganda.

Land

Using blockchain to enhance security and transparency in land registration as well as reduce on forgeries and legal disputes related to land ownership in Uganda. Countries that have implemented this have realized the benefits in reduction in paperwork, reduction in fraudulent activities, enhanced speed in transactions, improved property verification and unlocking capital.

e-Participation

Using blockchain to incentivize community participation in planning, idea generation, and community driven supervision of service delivery. Blockchain-based planning platforms can include educational resources, token-based participation incentives, and a feedback loop between stakeholders. This would encourage community engagement and better integrate local communities in the planning, developing value chains, improving public confidence, and improving services for sustainable success.



SOURCE DOCUMENT

Ethical AI Framework for Uganda

ROADMAP ENABLERS

Develop a National AI Strategy that will provide guidance on the social value, societal unity, and social impact arising from the use of artificial intelligence and other data-driven technologies.

Invest in AI literacy and research to empower people to effectively use and interact with AI systems, reduce digital divides, stimulate ethical AI development and further understanding of AI-related social, legal and ethical implications.

Mobile delivered digital extension services to up-skill farmers knowledge and capabilities to increase productivity embedded with AI capabilities and natural language processing.

Develop ethical framework guides and self-assessment tools to help empower people to effectively use and interact with AI systems, reduce digital divides, stimulate ethical AI development and further understanding of AI-related social, legal and ethical implications.

Establish a Data and AI Ethics Council to act as a “steward” of the AI Ethics Principles and to co-ordinate independent research into best practices and standards for the ethical application of data and AI technologies to benefit society. This Data and AI Ethics Council should have representation from relevant academic and industry stakeholders and should engage with national, regional, and international expertise as needed.

2.7 PRESERVING THE ENVIRONMENT

Use of IT enabled services helps to promote green environment due to reduction in paper-based transactions. In addition, advancements in technologies have led to use of cloud setups based on virtualized servers that reduces on the percentage of energy consumption as well as carbon dioxide (CO₂) emissions into atmosphere. The other advantage of such advancements is reduced cost of equipment on local servers.

The Digital Transformation Roadmap will further promote preservation of the environment and use of Green IT through the following:

- a) Reduction of energy consumption by promoting the use of cloud services and designing e-services to run by default in virtualized environments.
- b) Promote the use of end computing devices especially modern versions that use less energy.
- c) Disposal off e-waste in compliance with the National e-waste Policy.
- d) Promotion of Environmental, Health and Safety best practices to protect human health and the environment as we increasingly utilize ICT products and services.
- e) Continuous greening of the National Backbone Infrastructure (NBI) transmission sites using solar energy. Government will further encourage Internet Service Providers to implement green initiatives that reduce carbon emissions at transmission sites.

Collectively, this will enable the ICT Sector to demonstrate commitment to the UN Sustainable Development Goals on climate action as well as affordable and clean energy.

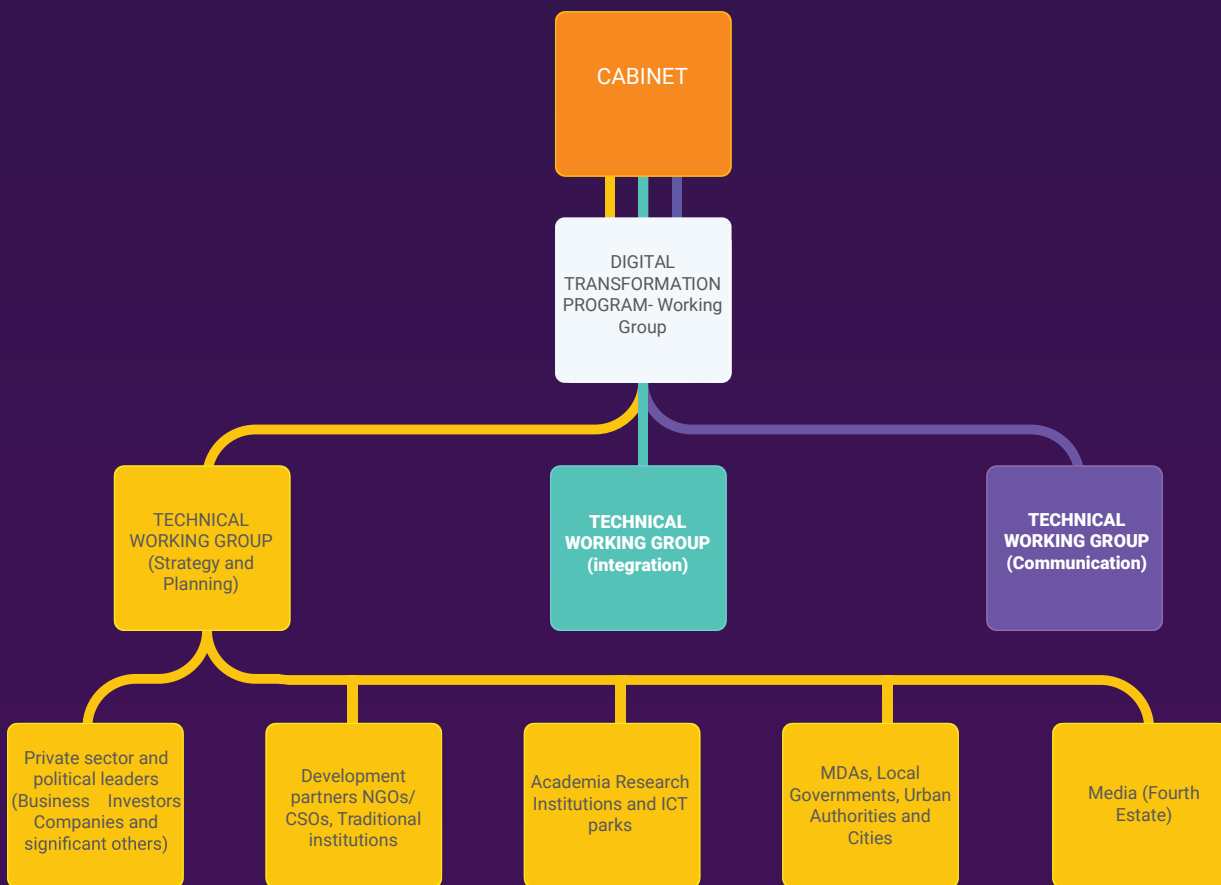


3.0

GOVERNANCE AND RESOURCE MOBILIZATION

3.1 IMPLEMENTATION ARRANGEMENTS

The Governance that will drive the implementation, monitoring and evaluation for this Roadmap will re-use the existing institutional framework established within the Digital Uganda Vision. The Governance is indicated in the illustration below :





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)	<p>This Working Group comprises of heads of MDAs under the Digital Transformation Program. The DTPWG will take on the following roles:</p> <ul style="list-style-type: none"> a) Coordinating the DUV Implementation; b) Organizing and guiding quarter meetings and activities of management structures; c) Preparation and dissemination of Action Plans (including costing and Monitoring Frameworks) and ensuring alignment with NDP III, Manifesto and Presidential Directives; d) Preparation and dissemination of quarterly, semi-annual and annual DUV implementation reports; e) Facilitating the annual DUV performance reviews; and f) Organizing DUV monitoring, inspection and other activities to enable collection of physical data to facilitate evidence-based reporting.
Technical Working Group – Strategy and Planning	<p>The TWG on strategy and planning will be constituted by DT-PWG which is now in place. This WG shall:</p> <ul style="list-style-type: none"> a) Ensure broad stakeholder consultation in discussing key issues and harmonize Government and stakeholder positions; b) Examine and review of DUV related policies and plans, reviewing past performance, emerging policy issues and future spending pressures; c) Formulate DUV Implementation plans in line with the Roadmap and their alignment to the national budget; and d) Monitoring the implementation of the sub-component DUV areas of the Roadmap.



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:

- a) Reviewing and clear sub-component DUV areas of the Annual and semi-annual DUV performance reports before consideration by the DUV Secretariat;
- b) Developing position papers on policy and strategic issues in the thematic area for consideration by cabinet;
- c) Reviewing new project concept notes and make recommendations to DUV WG for clearance;
- d) Facilitating dialogue with partners (DPs, CSOs, etc.) around each program on emerging policy and technical issues aimed at increasing impact on DUV outcomes; and
- e) Ensuring timely sharing and dissemination of key information to PWGs and program institutions to facilitate implementation of DUV activities.

Implementing Partners

- a) Private Sector;
- b) Development partners, NGOs and CSOs as well as Traditional Institutions;
- c) Academia: Schools, and Training Institutions and ICT Parks;
- d) Local Governments, Urban Authorities and Cities; and
- e) Media (Fourth Estate).

Ref: Digital Uganda Vision (variation)

In addition, the resource mobilization shall follow the financing measures identified within the Digital Uganda Vision which include:

- a) Appropriations from the national budget to various implementing MDAs and LGs;
- b) Development partners;
- c) Provision of pre-financing through Uganda Development Bank;
- d) Leveraging private equity funds; and
- e) Domestic revenue mobilization.

3.2 CROSS SECTOR COLLABORATION

Collaboration with responsible Ministries, Departments and Agencies has been identified as necessary to influence the right interventions to address the following key challenges that affect Digital Transformation but are outside the ambit of the Ministry of ICT and National Guidance :

ACCESS TO ELECTRICITY

The National IT Survey (2022), the National Baseline Survey and Infrastructure Blueprint and several index measures identified gaps in the national electricity grid coverage as a driving factor to low adoption of ICT related services and devices. Government is undertaking various efforts through Ministry of Energy and Mineral Development to increase the national electricity grid coverage using a mix of hydro generated electricity, solar and other renewable energy generation projects. The collaboration will align the coverage increase plan with areas where Government can invest internet infrastructure extension or reuse investments in energy for increase in coverage of fiber. The increase in electricity grid coverage has a positive impact on ensuring available supporting infrastructure for extra nodes and empowering access for end users.

01

HARMONIZATION OF TAXES FOR ICT RELATED PRODUCTS AND SERVICES

The National Baseline Survey and Infrastructure Blueprint highlighted the stalement between tax and ICT policies. On one hand, Government strives for increased access to ICT goods and services and on other hand establishes taxes that hamper the earlier aspirations. In addition, the conflict in taxation versus access creates Uganda as a less favorable destination for ICT related investments in the region. In addition, local assemblers and manufacturers of ICT devices similarly face a tax burden which leads to a higher price in terms of device cost for end users. Ministry of ICT and National Guidance should pursue collaborations with the Ministry of Finance, Planning and Economic Development to harmonize the taxation approach for ICT goods and services that will spur access as well as create an attractive environment for ICT related investment. This will enable Uganda seize the opportunity of transformation into a regional ICT hub.

02

03

COLLABORATION WITH MINISTRY OF LOCAL GOVERNMENT AND LOCAL GOVERNMENT ADMINISTRATION TO CREATE A FAVORABLE OPERATING ENVIRONMENT FOR BROADBAND INFRASTRUCTURE INSTALLATIONS.

Telecom operators are exposed to further indirect costs from Local Governments for installation of Broadband Infrastructure.

COLLABORATION WITH PRIVATE SECTOR FOUNDATION UGANDA TO BOOST THE USE OF ICT GOODS AND SERVICES AMONGST SMALL AND MEDIUM ENTERPRISES THAT FORM THE FABRIC OF THE ECONOMY.

Increase in adoption of ICT within daily business practices amongst SMEs will further spur the growth of Uganda's digital economy. In addition, this improves competitiveness, productivity and resilience for SMEs especially given the impact of COVID-19 where digital was the only means of survival. The National IT Survey further identified this gap. An example is one in two businesses (55%) had internet access, and only one in every three businesses had a business website. Ministry of ICT and National Guidance should establish a collaboration to promote the use of ICT goods and services amongst SMEs. This will entail undertaking an assessment to establish the current challenges so as to identify and tailor interventions for improvement. The European Union Digital Intensity Index for SMEs could be used as a benchmark. This will further compliment running interventions such as the online market intelligence platform to facilitate export trade, B2B exchanges and connections between Uganda SMEs and counterparts in other countries as well as tap into opportunities presented through the African Continental Free Trade Area.

04

COLLABORATION WITH BANK OF UGANDA TO ENHANCE THE CURRENT APPROACH FOR DIGITAL PAYMENT INFRASTRUCTURE

This will influence the establishment of the necessary payment switch infrastructure to enhance instant real-time payment necessary for growth of the digital economy.

05

06

Collaboration with the Ministry of Trade, Industry and Cooperatives to review and enhance the Uganda Micro, Small and Medium Enterprise (MSME) Policy to create a conducive and business competitive environment that will allow access to markets especially in public sector related procurements.

Collaboration with Academia, private sector, industry associations and innovators to implement the projects in each pillar.

07

Coordination process for interested partners



3.3 MONITORING AND EVALUATION

The implementation roadmap of the Digital Transformation Roadmap will be monitored through the Monitoring and Evaluation Framework provided for under the Digital Uganda Vision. The framework is aligned to the reporting and accountability frameworks for Government and includes annual as well as mid-term evaluation to report on lessons learned and identification of areas for improvement. In addition, all entities that have lead roles 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 implementation log frame.

3.4 RISK MITIGATION

This roadmap will follow the Risk Mitigation strategies that are laid out in the Digital Uganda Vision. The strategies address risks in these areas; operational, financial, organizational and technological.

Nature of Risk	Anticipated Risk	Mitigation Measures
Operational Risk	<ul style="list-style-type: none"> a) Insufficient resource investment in this sector. b) Various MDAs remain under-resourced with the current ICT investment in most of government being below 32%. c) Gaps in up-take of IT systems making automated work difficult and sustaining bureaucratic procedures and delayed implementation of key functions. d) Multiplicity of un-matching case reporting formats some lacking key flexibilities and agility to align to diverse stakeholder needs. 	<ul style="list-style-type: none"> a) 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. b) Enhancing provision of systems, computers as well as human resource capacity to roll out key aspects of this vision via various networks to various regional offices on which they ought to operate. c) Establish widely agreed-to and agile reporting template to serve reporting needs of various stakeholders. d) Fully implement the human resource structure to ensure stability and predictability of human resource performance to drive the digitalization agenda.
Strategic Risk	<p>There are various policies, laws and regulations law that need to be reviewed to create an enabling environment for the attainment of the DUV. With a legal and institutional framework, there will be challenges in implementing strategic interventions paramount to the attainment of this vision.</p>	<ul style="list-style-type: none"> a) Develop and implement a robust M&E dashboard/system to support reporting, oversight and reform. b) Ensure finalization and passage of strategic policies and Acts of Parliament to clearly stipulate the roles of various actors in the digitalization agenda. c) Strengthen collaborative mechanism between all executing agencies.

Financial Risk

- a) Currently the Digital Transformation Program faces limited resource allocation from the national budget to fully execute the laid out agenda under NDP III.
- b) There is limited clarity on how resources are shared across various MDAs.

- a) 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.
- b) As a DUV process there will be clarity on financing arrangements to increase the integrity of the planning, budgeting and financing and accountability.

Technological Risk

- a) Slow uptake of ICT systems within MDAs and among non-state actors.
- b) The level of infrastructure stock is limited and the use of current stock is passive.
- c) MIS has not yet been fully operationalized and other systems in place are not used as required.
- d) Logistical challenges in terms of tools such as computers /laptops and low internet connectivity.

- a) Government shall ensure full 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.
- b) There will be efforts to link all systems and their interface with other national IT systems.
- c) Government will sustain plans to set up e-Government centers of excellence per region.
- d) Ensure that there is annual subscription to online libraries for offices to access new documented reference cases as well as protection of domains.

Ref: Digital Uganda Vision (variation)



4.0

IMPLEMENTATION PLAN

4.1 FIVE YEAR ROADMAP FOR INITIATIVES

DUV Pillar 1 - Digital Infrastructure and Connectivity						
Roadmap Enablers	Lead Entity	Year 1	Year 2	Year 3	Year 4	Year 5
Rationalization of broadband policies and establish a single policy source	MoICT & NG					
Develop a right of way policy	MoICT & NG					
Finalize the adoption of the Radio Spectrum Management Policy	MoICT & NG					
Develop guiding principles for spectrum allocation	UCC					
Expand the National Backbone Infrastructure (NBI) to reach a minimum additional 73 districts and 20 major towns with last mile connectivity to service at least 3,000 GoU administration units (Schools, MDAs, Local Governments, Hospitals, etc) with appropriate international bandwidth capacity (minimum 20 Gps)	NITA-U					
Expand MYUG to create an additional minimum 800 Wi-Fi hotspots within inclusion for rural and underserved areas	NITA-U					
Enhance Government Cloud by enhancing the hosting capacity as a centralized shared service to match the growth in e-service rollout (to ensure adequate capacity to support the projected 80% services and increased data storage and compute requirements) as well as establishment of two new additional data centers to enhance resilience	NITA-U					
Develop facilities sharing regulations	UCC					
Enforce existing fair competition regulations	UCC					
Enhance capacity (compute and storage) for the Government Cloud	NITA-U					
Design alternative spectrum models to encourage innovation	UCC					
License Low-earth Orbit (LEO) technology	UCC					
Subsidize the expansion of the Radio Access Network	UCC					
Development of a National Public Key Infrastructure (PKI) strategy	NITA-U					

Regulatory interventions to incentivize network operators to peer at the Uganda Internet Exchange Point	UCC					
Regulatory interventions to promote and attract Content Distribution Networks (CDNs) and Cloud Providers	UCC					
Enhance and repurpose use of regional postal outlets as e-service delivery points	UPL					
Develop the Digital Addressing platform	UPL					
Develop National spatial data infrastructure	MoHLUD/ MoICT & NG					
Payments	BoU					
DUV Pillar 2 - Digital Services						
Roadmap Enablers	Lead Entity	Year 1	Year 2	Year 3	Year 4	Year 5
Development of a Citizen E-Service Co-creation strategy	MoICT&NG					
Undertake a comprehensive assessment of e-services in support of establishing digital registries as single sources of truth and promotion of the collect once principle in the following areas: a) Health b) Education c) Public Finance and Administration d) Agriculture e) Lands, Housing and Urban Development f) Trade, Industry and Cooperatives g) Gender and Labour h) Energy and Minerals Development i) Human Capital j) Justice, Law and Order	MoICT&NG					
Implementation of the sector digital registries (following detailed assessment and roadmap)	MoICT&NG					
Establishment of a testing and certification scheme for software	UICT					
Capacity building for ICT cadre in Government	UICT					
Development of a digital mindset change program	MoICT&NG					
Develop a Digital Service Standard	MoICT&NG					
Enhance regulation, education and awareness to support consumer protection	UCC					
Big Data Strategy areas						
Conduct baseline study on the available data in the country	MoICT&NG					
Develop the National Data Infrastructure Reference Model	MoICT&NG					
Implement the National Open Data Portal	NITA-U					

Drive sensitization on the value and opportunities of data in digital transformation	MoICT&NG					
Enhance the Government Integration Platform for scale aligned to the increased usage	NITA-U					
National 4IR Enablers:						
Pilot traceability in Agriculture using blockchain	MAAIF/ MOICT & NG					
Pilot smart credit risk assessments for farmers	MAAIF					
Pilot digital extension services using AI and Natural Language Processing	MAAIF/ MOICT & NG					
Pilot use of AR and VR in education	MoES/ MOICT & NG					
Accredit and recognize micro-credentialing using SFIA	NITA-U					
Pilot use of blockchain in medical supplies management	NMS					
Pilot use of unmanned aerial vehicles for emergency and relief response	OPM/ MOICT & NG					
Pilot use of IoT for proactive response and early warning in disaster prone areas	OPM/ MOICT & NG					
Pilot use of blockchain to enhance security, trust and transparency in land registration	MoLHUD					
Establish the Data and AI Ethics Council	MoICT&NG					
Develop the National AI Strategy	MoICT&NG					
Promote green IT environments and reporting	MoICT&NG					
Develop the National Data Strategy	MoICT&NG					
DUV Pillar 3 - Cybersecurity, data protection and privacy						
Roadmap Enablers	Lead Entity	Year 1	Year 2	Year 3	Year 4	Year 5
Prioritize support for Small and Medium Enterprises	MoTIC					
Expand Cybersecurity Investments	NITA-U					
Promote National Cyber risk assessments	NITA-U					
Enhance national and sectoral incident response and information sharing	NITA-U					
Enhance protection of National Critical Information Infrastructure	NITA-U					
Enhancement on enforcement and compliance with the Personal Data Protection and Privacy Act	PDPO					
Raise public cybersecurity awareness	MoICT&NG					
Enhance knowledge through research and development	UICT					
Increase bi and multi-lateral dialogue at the regional level	MoICT&NG					
DUV Pillar 4 - Digital Skilling						
Roadmap Enablers	Lead Entity	Year 1	Year 2	Year 3	Year 4	Year 5



Establish the digital skills acceleration program governance structure, monitoring and evaluation mechanism based on multi-sectoral implementation	MoES, UICT and MoICT&NG					
Conduct digital skills pre-assessment with the aim of categorizing the various levels and types of skills required	MoES					
Conduct research to develop and monitor digital skilling for people with disabilities and special needs	MoES/ UICT					
Conduct capacity building and skilling of primary and secondary school teachers and administrators to adopt ICT enabled education	MoES/UICT					
Conduct capacity building and skilling of Public Servants and Top Government Officials to adopt ICT enabled services and tools	MoICT&NG/ Ministry of Public Service					
Development of a digital skills curriculum and training manuals for primary and secondary schools	MoES/UICT					
Consolidate funding for the digital skills acceleration program	MoES, MoICT&NG					
Conduct country-wide digital skills awareness	MoES					
Provision of ICT tools and devices to facilitate digital skills training	MoES, MoICT&NG					
Knowledge management and leadership- enforcement of trends, best practices (related to 4IR)	MoICT&NG					
Development of public partnerships to promote access to subsidized low-cost ICT devices including provision of renewable energy such as solar	MoICT&NG					
Development of a centralized E-Learning platform	MoES, MOICT & NG					
Integration of existing education management information systems	MoES, MOICT & NG					
DUV Pillar 5 - Innovation and Entrepreneurship						
Roadmap Enablers	Lead Entity	Year 1	Year 2	Year 3	Year 4	Year 5
Development of the Digital Innovation Program	MoICT&NG					
Develop the E-Commerce Strategic Plan	MoTIC					
Develop collaboration amongst regulators	MoICT&NG					
Activate use of the Skills Framework for the Information Age (SFIA)	NITA-U					
Digital fitness program for public servants- establishment of digital transformation champions	MoICT&NG					
Development of Cohorts to merge innovation consumers and developers (development of a database and platform)	MoICT&NG					
Develop regulatory sandbox environments	MoICT&NG					
Digital Rails for startups (financial platforms)	MoICT&NG					
Systematic Experimentation Projects	MoICT&NG					



ANNEX

ANNEX 1 PROPOSED BUDGET

Short Term – Year 0 to Year 1

#	Name of Project	Pillar	Amount (USD)
1	Consultancy for Rationalization of broadband policies and establish a single policy source	Digital Infrastructure & Connectivity	400,000
2	Development of a National Public Key Infrastructure (PKI) strategy	Digital Infrastructure & Connectivity	300,000
3	Regulatory interventions to promote and attract Content Distribution Networks (CDNs) and Cloud Providers	Digital Infrastructure & Connectivity	400,000
4	Pilot of the Enhancement and repurpose use of regional postal outlets as e-service delivery points in Central and four regional cities	Digital Infrastructure and Connectivity	1,000,000
5	National Payment Switch Enablement	Digital Infrastructure & Connectivity	1,000,000
6	Consultancy for development of a Citizen E-Service Co-creation Strategy	Digital Services	450,000
7	Undertake a comprehensive assessment of e-services in support of establishing digital registries as single sources of truth and promotion of the collect once principle	Digital Services	800,000
8	Development of a digital mindset change program	Digital Services	500,000
9	Review of the existing regulatory, education and awareness initiatives to support consumer protection and monitoring quality of service	Digital Services	200,000
10	Conduct baseline study on the available data sets in the country, develop the open data portal and publish the identified data sets	Digital Services	500,000
11	Conduct digital skills pre-assessment with the aim of categorizing the various levels and types of skills required including for persons with disability	Digital Skilling	800,000
12	Consultancy for development of the Digital Innovation Support Program through the Innovation Hub	Innovation and Entrepreneurship	250,000

Medium Term – Year 2 to Year 3

#	Name of Project	Pillar	Amount (USD)
1	Implementation of the sector digital registries (following detailed assessment and roadmap)	Digital Services	35,000,000
2	Consultancy to fast track the development of a Digital Service Standard	Digital Services	180,000
3	Co-creation through the Innovation Hub to pilot for proof of value for systematic experimentation	Digital Services	500,000
4	Development of a centralized E-Learning platform	Digital Skilling	300,000
5	Implementation of the Digital Innovation Support Program through the Innovation Hub	Innovation and Entrepreneurship	900,000
6	Support for the activation of the Skills Framework for the Information Age (SFIA)	Innovation and Entrepreneurship	100,000
7	Consultancy for the development of digital rails for startups	Innovation and Entrepreneurship	500,000
8	Consultancy for the enhancement of the ugHUB to facilitate integration of the single registries	Digital Services	19,000,000
9	Consultancy for the enhancement of the PKI UgPASS	Digital Infrastructure and Connectivity	5,000,000
10	Develop National spatial data infrastructure	Digital Infrastructure & Connectivity	900,000
11	Rollout of the Enhancement and repurpose use of regional postal outlets as e-service delivery points in across the remaining points in the country	Digital Infrastructure & Connectivity	4,000,000

Long Term – Year 3 to Year 5

#	Name of Project	Pillar	Amount (USD)
	Expand the National Backbone Infrastructure (NBI) to reach a minimum additional 73 districts and 20 major towns with last mile connectivity to service at least 3,000 GoU administration units (MDAs, Local Governments, Hospitals, Schools, etc) with appropriate international bandwidth capacity (minimum 20 Gps)	Digital Infrastructure & Connectivity Digital Infrastructure & Connectivity	49,600,000
	Expand MYUG to create an additional minimum 800 Wi-Fi hotspots within inclusion for rural and underserved areas		



Enhance Government Cloud by enhancing the hosting capacity as a centralized shared service to match the growth in e-service rollout (to ensure adequate capacity to support the projected 80% services and increased data storage and compute requirements) as well as establishment of two new additional data centers to enhance resilience	Digital Infrastructure & Connectivity	15,000,000
Establishment of a testing and certification scheme for software	Digital Services	400,000
Capacity building for ICT cadre and Policy makers in Government	Digital Skilling	1,500,000
Capacity Building on the value and opportunities of big data in digital transformation	Digital Services	500,000
Clinics and drives to promote green IT environments and reporting	Digital Services	200,000
Prioritize support for Small and Medium Enterprises	Cybersecurity, data protection and privacy	500,000
Promote National Cyber risk assessments	Cybersecurity, data protection and privacy	400,000
Enhance national and sectoral incident response and information sharing	Cybersecurity, data protection and privacy	800,000
Enhance protection of National Critical Information Infrastructure	Cybersecurity, data protection and privacy	4,000,000
Enhancement on enforcement and compliance with the Personal Data Protection and Privacy Act	Cybersecurity, data protection and privacy	1,000,000
Raise public cybersecurity awareness	Cybersecurity, data protection and privacy	2,500,000
Conduct capacity building and skilling of primary and secondary school teachers and administrators to adopt ICT enabled education	Digital Skilling	3,000,000
Conduct country-wide digital skills awareness	Digital Skilling	1,500,000
Provision of ICT tools and devices to facilitate digital skills training	Digital Skilling	15,000,000
Development of public partnerships to promote access to subsidized low-cost ICT devices including provision of renewable energy such as solar	Digital Skilling	700,000
Consultancy for the development of the E-Commerce Strategic Plan and supporting its implementation activities	Innovation and Entrepreneurship	600,000



LIST OF ENTITIES THAT CONTRIBUTED TO THE DEVELOPMENT OF THE ROADMAP

Project Implementation Team	
Name	Entity
Shirley Nakyejwe	Ministry of ICT & National Guidance
Paul Kabagambe	Ministry of ICT & National Guidance
Dennis Ssubi	Ministry of ICT & National Guidance
Doreen Bujjingo	Ministry of ICT & National Guidance
Brandy Azeirwe	Ministry of ICT & National Guidance
Rita Kanya	Ministry of ICT & National Guidance
Reagan Matsiko	Ministry of Education and Sports
Sharp Mugabe	Government Citizens Interaction Centre (State House Uganda)
Samuel Wamukota	Centenary Technology Services
Sarah Ategeka	Centenary Technology Services
Nawalh Namudiba	Centenary Technology Services

1	Adjumani S S
2	African Centre of Excellence in Bioinformatics and Data intensive Sciences
3	African Excellence Centre of ICT for Education
4	Agwok Primary School
5	Alliance for Trade in Information Technology and Services (ATIS)
6	Amuria Town Council
7	Angwecibange primary School
8	Apuuton Primary School
9	Asili Fortune
10	Atratraka Primary School - Maracha
11	Awach S.S
12	Blockchain Association of Uganda
13	BPO and Innovation Council Council
14	Bubandi S.S Seed - Bundibugyo
15	Bugema Adventist Secondary School

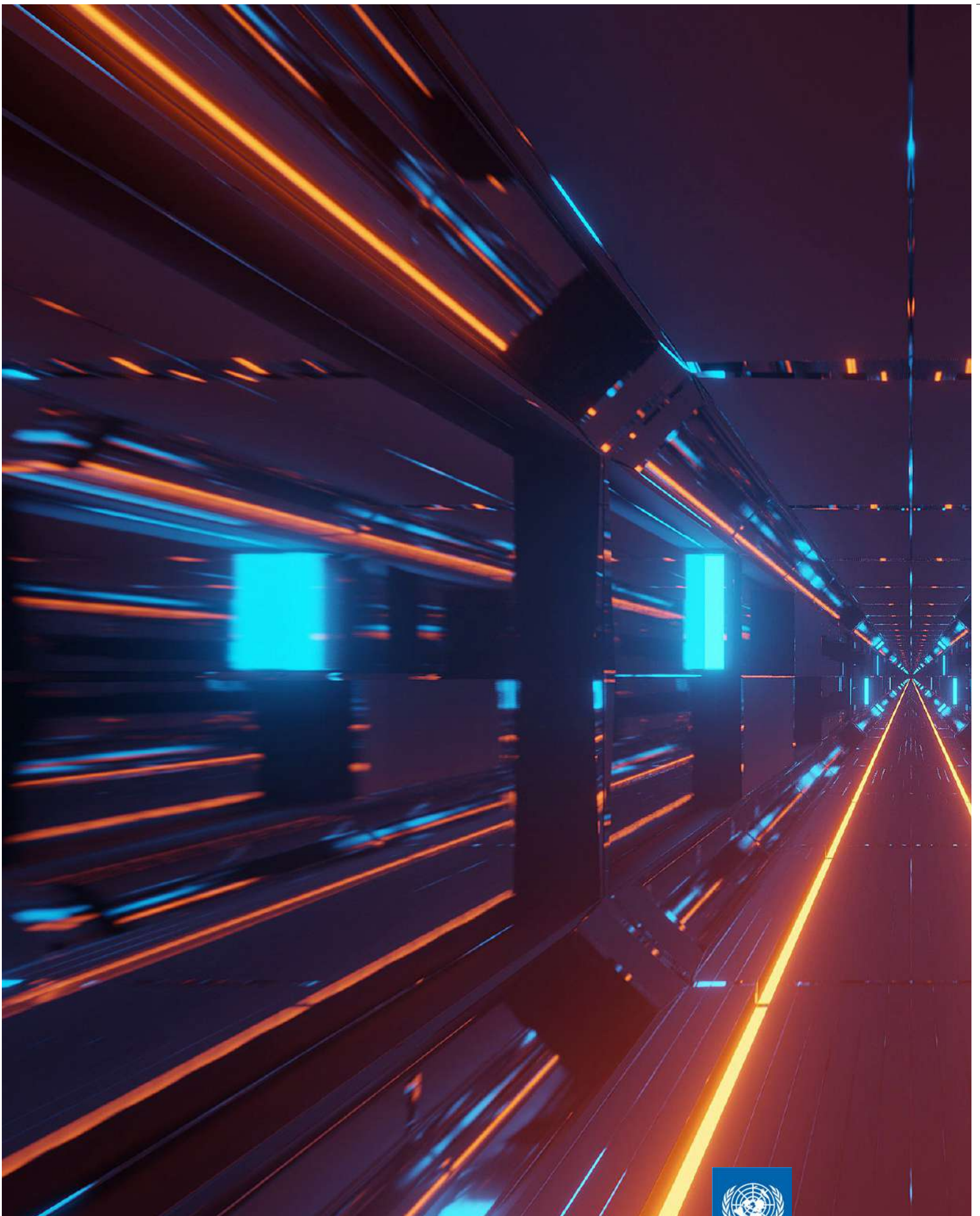
16	Bugembe Muslim primary school - Jinja
17	Buhanda Primary School - Kibaale
18	Buikwe District Local Government
19	Bukhonz Primary School - Namisindwa
20	Bukulula Girls Ss - Kalungu
21	Bunagana Town Council
22	Bunanganda primary school
23	Bunyoro Secondary School - Kagadi
24	Bunyoro Secondary School- Kagadi
25	Bupoto Primary School - Namisindwa
26	Bura Primary School - Maracha
27	Busia Border Seed SS
28	Busia District Local Government
29	Busoga College Mwiri
30	Buwagga Senior Secondary School - Wakiso
31	Buwembe Secondary School - Busia
32	Byabakoora Primary School - Kyegegwa
33	Camp Moses Junior Primary School - Rakai
34	Chemwania S. S - Kween
35	College of Business and Management Sciences, Makerere University
36	Comboni College - Lira City
37	Cwero Primary School - Gulu
38	Destiny Christian High School - Luwero
39	Development Initiatives (DIVINIT)
40	Digital transformation Program working group
41	Directorate of Government Analytical Lab
42	Dokolo District Local Government
43	East African Civil Aviation Academy
44	Education Digital Agenda Committee
45	Education Policy Review Commission
46	Entebbe comprehensive secondary school
47	Entebbe Secondary School – Wakiso
48	Equal Opportunities Commission
49	Ericsson Uganda
50	Erussi SS Nebbi
51	Excel College Pakwach
52	Fairland high school – Mukono
53	Five Star High School - Ntungamo
54	Gayaza Road Triangle SS-Kiwenda
55	Good Times Infant School Kawaala

56	Government Citizen Interaction Centre
57	Gulu City High School
58	Gulu District Local Government
59	Hands of Love Primary and Secondary School - Mayuge
60	Higher Education Students Financing Board (HESFB)
61	Ibanda District Local Government
62	Ibanda S. S
63	ICT Teachers Association of Uganda
64	Iganga District Local Government
65	Iguli Girls Secondary school - Dokolo
66	IJB Junior School
67	Infectious Diseases Institute
68	Internet Society
69	ISACA Uganda
70	Jacarandas Junior School - Wakiso
71	Japan International Cooperation Agency (JICA)
72	Jinja District Local Government
73	Kabaale Sanje SS - Kyotera
74	Kabale Preparatory School - Kanungu
75	Kabingo seed secondary School - Isingiro
76	Kabulasoke Demonstration School - Gomba
77	Kagadi Peoples - Kagadi
78	Kahinju Ss Fort-Portal - Fortportal
79	Kaloi Primary School - Moroto
80	Kampala Capital City Authority
81	Kanyengero Community SS – Nkanga
82	Katakwi District Local Government (DLG)
83	Katakwi Township P/S
84	Katakwi Township Primary School
85	Katalemwa Ss-Matugga
86	Kibaale District local government
87	Kichinjaji Primary School – Soroti City
88	Kihanga public secondary school - Ntungamo
89	Kiira Primary School - Jinja
90	Kiira Primary School – Jinja City
91	Kinyara SS - Masindi
92	Kitamba High School - Kalungu
93	Kochi Secondary School KOBOKO
94	Kyakabadiima Parents Secondary School -Kagadi
95	Kyankwanzi District Local Government

96	Kyenzige Junior Nursery And Primary School - Kagadi
97	Kyotera Central Secondary School - Kyotera
98	Logoba Ss - Moyo
99	Lords Meade Vocational College - Buikwe
100	Lubaale C/U Primary School – Gomba
101	Lubugumu Jamia High School - Wakiso
102	Luwangula Secondary School - Kamuli
103	Makerere AI Lab
104	Makerere University
105	Masinya Secondary School - Busia
106	Mastercard Foundation
107	Ministry of Agriculture, Animal Industry and Fisheries
108	Ministry of Education and Sports (MoES)
109	Ministry of Finance Planning and Economic Development (MoFPED)
110	Ministry of Gender, Labor and Social Development
111	Ministry of Justice and Constitutional Affairs
112	Ministry of Local Government
113	Ministry of Public Service
114	Mountains of the Moon University
115	Moyo District Local Government
116	MUKONO DLG
117	Mungula Secondary School -Adjumani
118	Musese Secondary School - Mbale
119	Nam High School
120	Namasyolo Primary School - Busia
121	National Curriculum Development Centre (NCDC)
122	National Housing Construction Company (NHCC)
123	National ICT Innovation Hub
124	National Information Technology Authority (NITA-U)
125	Ndeija PEAS High School - Ntungamo
126	Ndekye Ss - Ntungamo
127	Nebbi District Local Government
128	Nebbi Town S. S
129	Nemba Secondary School - Namisindwa
130	Nomad primary school - Mayuge
131	Ntungamo District local government
132	Office of the Prime Minister

133	Ojingo Primary School
134	Okwira Primary School - Tororo
135	Omach Primary School
136	Omara Ebek Memorial Primary School - Amolatar
137	Optimus 7 Ltd.
138	Overseas Development Institute (ODI)
139	Pakwach Senior Secondary
140	Panyadoli Self Help Secondary School - Kiryandongo
141	Peak primary school - Kampala
142	Peas High School Kazingo – Fort Portal
143	Pilkington college muguluka
144	Planit Consults
145	Public Sector Foundation Uganda
146	Refractory Limited
147	Rubongi Army Secondary School - Tororo
148	Rugarama Sec School - Ntungamo
149	Ruhinda SSS - Mitooma
150	Rwengiri Primary School - Kiruhura
151	Science, Technology and Innovations Secretariat
152	Sibuse Primary School – Namisindwa
153	Sironko Progressive S.S
154	SNV Netherlands Development Organisation
155	St Joseph’s College Ombaci – Arua City
156	St. Andrews College Ssanda - Wakiso
157	St. Charles Lwanga Ss Bukeerere - Mukono
158	St. Daniel Comboni S. S - Moroto
159	St. John’s SS Nandere
160	St. Joseph Buganda Secondary School - Mityana

161	St. Leonard’s Ss Maddu - Gomba
162	St. Mary Assumpta Girls SS/ Pagirinya Refugee SS - Adjuma
163	St. Peter’s Primary School Nsambya
164	St. Stephens SS, Mukono
165	St. Thomas More SS Minakulu, Omoro
166	St.James S.S Hoima - Hoima
167	St.Kizito S.S
168	Stanbic Uganda
169	SunBird AI
170	Swedish Embassy
171	Taibah International School
172	The Amazima School - Buikwe
173	The Innovation Village
174	The Judiciary
175	The Overseas Development Institute (ODI Global)
176	Uganda Bureau of Statistics
177	Uganda Civil Aviation Authority
178	Uganda Communication Commission (UCC)
179	Uganda Institute of Information and Communications Technology (UICT)
180	Uganda Law Society
181	Uganda Media Centre
182	Uganda National Council for Science and Technology
183	Uganda National Meteorological Authority
184	Uganda Police
185	Uganda Registration Services Bureau (URSB)
186	UN Capital Development Fund (UNCDF)
187	UNDP Chief Digital Office
188	Yumbe District Local Government



With support from the United Nations Development Programme

