The Republic of Uganda

Ministry of Information and Communications Technology

ICT Sector Strategic and Investment Plan (2015/16 – 2019/20)

ConnectedUgand@2020

Acronyms

Acronym	Description
BFP	Budget Framework Paper
BN	Billion
BTS	Base Transmitter Station
CDMA	Code Division Multiple Access
CERT	Computer Emergency Response Team
CNDPF	Comprehensive National Development Planning Framework
Devt	Development
EACO	East African Communications Organisation
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FY	Financial Year
GCIC	Government Citizen Interaction Centre
GDP	Gross Domestic Product
GoU	Government of Uganda
ICT	Information and Communications Technology
ICT-SIP	Information and Communications Technology Sector Strategic and Investment Plan
IT	Information Technology
ITES	Information Technology Enabled Services
ITU	International Telecommunications Union
LGDP	Local Government Development Plan
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MEMD	Ministry of Energy and Mineral Development
MoFA	Ministry of Foreign Affairs
MoFPED	Ministry of Finance, Planning and Economic Development
MoGLSD	Ministry of Gender, Labour and Social Development
MoH	Ministry of Health
MoIA	Ministry of Internal Affairs
MoICT	Ministry of Information and Communications Technology
MoING	Ministry of Information and National Guidance
MoJCA	Ministry of Justice and Constitutional Affairs
MoLHUD	Ministry of Lands, Housing and Urban Development

Acronym	Description
MoPS	Ministry of Public Service
MoTWH	Ministry of Tourism, Wildlife and Heritage
MoU	Memorandum of Understanding
MoWE	Ministry of Water and Environment
MPS	Ministerial Policy Statement
MTEF	Medium Term Expenditure Framework
NBI	National Backbone Infrastructure
NCHE	National Council for Higher Education
NDP	National Development Plan
NEMA	National Environment Management Authority
NITA-U	National Information Technology Authority Uganda
NTR	Non Tax Revenue
OPM	Office of the Prime Minister
PEST	Political, Economic, Social and Technological
PKI	Public Key Infrastructure
PoP	Point of Presence
PPP	Public Private Partnerships
PWD	Persons With Disabilities
RCDF	Rural Communications Development Fund
RCIP	Regional Communications Infrastructure Project
R&D	Research and Development
SDP	Sector Development Plan
SLA	Service Level Agreement
SME	Small and Medium Enterprise
SWOT	Strengths, Weaknesses, Opportunities and Threats
TMT	Top Management Team
UBOS	Uganda Bureau of Statistics
UCC	Uganda Communications Commission
UGX	Uganda Shillings
UNCST	Uganda National Council for Science and Technology
URA	Uganda Revenue Authority
USD	United States Dollars
WHO	World Health Organisation
WSIS	World Summit on the Information Society

Glossary

Term / Word	Description
Analogue	A description of a continuously variable signal or a circuit or device designed to handle such signals.
Applications	A computer program with an interface, enabling people to use the computer as a tool to accomplish a specific task. Word processing, spreadsheet, and communications software are all examples of applications.
Broadband	A high bandwidth connection to the Internet. It is easier and faster to use than the traditional telephone and modem as information can be sent and downloaded much quicker. It can be provided over your phone line, via cable or via satellite. It also involves large volumes of information being carried at high speeds to your PC. This allows websites, text, graphics, music and videos to be experienced in real time.
Computer Emergency Response Team	A team that focuses on security breaches, denial-of-service incidents, providing alerts, incident-handling and avoidance guidelines. The team also conducts ongoing awareness campaign and engages in research aimed at improving security systems.
Cloud	Internet-based computing in which large groups of remote servers are networked so as to allow sharing of data-processing tasks, centralized data storage, and online access to computer services or resources.
e	The prefix "e" stands for “electronic” and refers to information technologies, business, and almost anything connected to or transmitted over the Internet. Some examples of its use include e-Commerce, e-Education, e-Government, e-Payments, e-Tourism, etc.
Gross Domestic Product	The broadest quantitative measure of a nation's total economic activity. More specifically, it represents the monetary value of all goods and services produced within a nation's geographic borders over a specified period of time.
ICT Incubation Centre	A centrethat helps the ICT entrepreneurs to start their own businesses by providing them with the infrastructure, intellectual support, administrative assistance, financial advice, and development opportunities in order to achieve success.
ICT protocols	A system of digital rules for data exchange within or between computers.
Information Access Centre	This is a centre designed specifically for storing, processing, and retrieving information for dissemination at regular intervals, on demand or selectively, according to express needs of users
Information Security	The processes and methodologies which are designed and implemented to protect print, electronic, or any other form of confidential, private and sensitive information or data from unauthorized access, use, misuse, disclosure, destruction, modification, or disruption.
Internet Service Provider	An organization that provides services for accessing, using, or participating in the Internet. Internet service providers may be organized in various forms, such as commercial, community-owned, non-profit, or otherwise privately owned.
Last mile connectivity	The last mile or last kilometre is a phrase used by the telecommunications, cable television and internet industries to refer to the final leg of the telecommunications networks delivering communications connectivity to retail customers, the part that actually reaches the customer.
m	The prefix "m-" indicates the use of mobile-communications technology for example m-Finance.

Term / Word	Description
Mobile Device	A mobile device (also known as a handheld computer or simply handheld) is a small, handheld computing device, typically having a display screen with touch
Mobile Telephony	The provision of telephone services to phones which may move around freely rather than stay fixed in one location.
Portal	A website that functions as an entry point to the Internet, as by providing useful content and linking to various sites and features on the World Wide Web.
Repository	A central place or location where an aggregation of data is stored and maintained in an organized manner.
Spam	Disruptive messages, especially commercial messages posted on a computer network or sent as e-mail.
Special Interest Groups	A group of people within the society or community who have specific needs or demands e.g. people with disabilities, elderly people, etc.
Spectrum	A technique by which a signal to be transmitted is modulated onto a pseudorandom, noise-like, wideband carrier signal, producing a transmission with a much larger bandwidth than that of the data modulation.

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Foreword

The year 2015 marks almost 2 decades since the introduction of reforms in the Information and Communications Technology (ICT) Sector as part of the Government's macroeconomic reforms. Over the years, Uganda has seen tremendous growth in the sector thanks to the enabling environment which allowed the Private Sector to flourish. Consequently, a lot has been achieved in the sector. For example, currently, more than 22.4 million people are connected to the mobile phone, more than 1.3 million people are employed in the sector, over 229 radio stations and 62 TV stations are operating in various parts of the country.

In spite of the achievements made so far, a number of challenges need to be addressed to enable ICT play its important role in the country's socio-economic transformation and development. For instance, a big number of the population across the country does not have access to ICTs. Hence the digital divide continues to manifest especially between the urban and rural communities.

There is no doubt that access to information is crucial to economic growth. Access to information is also vital for Government to effectively and efficiently deliver services that are responsive to citizens' needs. ICTs also empower citizens to access services, participate in governance and democratic processes.

It is against this background that the Ministry, in collaboration with stakeholders in the Public and Private Sector, has developed the five year ICT Strategic and Investment Plan (ICT-SIP) to guide planning, budgeting and investment in the sector. In addition, the Plan will strengthen mechanisms for quality, effective and efficient service delivery. The Plan is in conformity with the National Planning framework including the National Development Plan II, and the National Vision 2040.

When the interventions in the ICT-SIP are implemented, the following outcomes will be achieved by the year 2020, among others:

(i) Increased access and usage of ICT equipment and devices;

(ii) Achieve an average ICT GDP growth annually to 20%;

(iii) Improved access to high speed broadband services to facilitate communications, economic activities and service delivery; and .

(iv) Overall improvement of Uganda's ranking on global ICT indices.

To enable the sector achieve the above, it will require a public investment amounting to UGX 225 billion per year for over the implementation period of 5 years. This will be supplemented by funding from other sources including Development Partners and the Private Sector.

I thank all stakeholders that have made contributions towards the preparation of the ICT-SIP. I equally thank the multi-institutional task team that worked tirelessly to make this dream a reality.

Finally, I call for support, participation and dedication of all the stakeholders in the implementation of the programs, projects and measures outlined in the ICT-SIP to enable us achieve our desired vision of a knowledge-based Uganda enabled by a vibrant ICT sector.

John M. Nasasira

Minister of Information and Communications Technology

Acknowledgement

The Technical Team of the Ministry of Information and Communications Technology (ICT), hereby expresses its gratitude and acknowledgement to all persons and institutions that have contributed to the production of the ICT Sector Strategic and Investment Plan (ICT-SIP). Special mention is made of the following:

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The Agencies and Institutions in the sector (Uganda Communications Commission, National Information Technology Authority Uganda, Uganda Institute of Information and Communications Technology, and Uganda Post Limited) for their technical input and provision of data and information required.

Other Ministries, Departments and Agencies and Local Governments for their views especially on how ICT should be utilized to benefit the local communities

Deloitte (Uganda) Limited, the consultancy firm for facilitating the overall process.

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Finally, we are grateful to the Uganda Communications Commission for providing logistical and financial support during the development of the ICT-SIP.

Dr. Jimmy Pat Saamanya

PERMANENT SECRETARY

Executive Summary

Introduction

The Government of Uganda (GoU) aspires to increase access and use of Information and Communications Technology (ICT) across the entire population. This will serve as a way of improving service delivery, employment and social transformation through utilization of quality as well as affordable ICT services in all spheres of life.

The growth of ICT in Uganda is faced with challenges of inadequate infrastructure, insufficient human resource capital and capacity, insufficient funding and weak partnerships, limited public awareness and knowledge, low adoption levels of e-Services, limited investment in research and development, untapped local content, and a weak institutional framework.

The Information and Communications Technology Sector Strategic and Investment Plan (ICT-SIP) will enable strategic positioning of the ICT Sector, promoting ICT as an industry and ensuring the use of ICT as a tool for transforming Uganda into a knowledge-based economy. The Plan will also consolidate the achievements so far and address the challenges as well as bottlenecks that have been identified over the years.

The ICT-SIP will also consolidate the achievements attained in the National Development Plan (NDP I) and operationalize ICT priority interventions for NDP II. Attempts have been made to identify and enhance the fundamentals that have supported the ICT Sector over the years, with a view to further consolidating them; identify other priority interventions for ensuring a more conducive ecosystem as well as an institutional arrangement that is appropriate to deliver the goals of the ICT-SIP.

ICT Sector Overview

The ICT sector is composed of four sub-sectors namely: Telecommunications, Postal, Information Technology and Broadcasting. It is organized along three functional levels. These are: Policy, Regulatory and Services Provision. The Ministry's Agencies responsible for implementing the ICT programmes are:

i. National Information Technology Authority- Uganda (NITA-U);
ii. Uganda Communications Commission (UCC);
iii. Uganda Post Limited (UPL); and
iv. Uganda Institute of Information and Communications Technology (UICT)

In conformity with Vision 2040 and NDP II, the Ministry in collaboration with its agencies and other stakeholders has developed a five-year ICT-SIP for the financial years 2015/16-2019/20. The Plan sets out the National ICT priorities and also consolidates and harmonizes the existing policy frameworks and various sub-sector strategies into one coherent plan for holistic development of the sector. It is expected that this SIP will enable the sector attract and mobilize the necessary resources for the growth of the sector.

Situational Analysis

A situation analysis of the ICT sector in the country was carried out aimed at identifying strengths, weaknesses, threats and opportunities so as to come up with appropriate strategic interventions. This covered key and critical areas for ICT sector growth and development such as: ICT Governance; Infrastructure Development and Access; ICT Human Capital Development; Information Security; ICT Health, Safety and Environment; Research and Innovation; e-Services; Local Content creation; Awareness and Promotion; and Regional and International Cooperation.

ICT Sector Achievements

Over the last 5 years, the ICT Sector has been growing at an average rate of 19.7% per annum resulting in an average contribution to GDP of 2.5%. At macro level, the sector contributes 449 billion shillings annually in tax revenue (June, 2015) and employs over 1.3 million people. The use of ICT especially electronic services has significantly contributed to the efficiency and effectiveness of service delivery in both public and private sector institutions. Examples include: Integrated Financial Management System (IFMS)-Ministry of Finance, Planning and Economic Development; Integrated Personnel and Pension System (IPPS) - Ministry of Public Service; Land Information Management System- Ministry of Lands and Urban Development; and E- Tax of Uganda Revenue Authority.

Specifically, the sector has registered the following achievements:

i. Telephone subscriptions stand at 22.4 million active subscribers (Tele-density of 63.9%) as of June 2015 compared to 16.2 million (Tele-density of 51.3) in June 2013.

ii. The number of active internet subscribers rose to 6.2 million by June 2015 compared to 4.3 million in June 2014.

iii. The internet users grew to 12.9 million as of June 2015 compared to 8.5 million in June 2014.

iv. The number of licensed TV stations is 67 with 62 operational.

v. There are 229 licensed FM radio stations, out of which 208 are operational.

vi. The number of registered Mobile money subscribers grew to 19.5 million by June 2015 compared to 17.64 million in June 2014

vii. The value of mobile money transactions was over UGX 18 trillion compared to 13.8 trillion in 2013

viii. The volume of mails has reduced from 3 million in 2010 to 2 million in 2015.

ix. Revenue collection (VAT, PAYE and exercise duty) from telecom companies amounted to UGX484.4Bn in 2015, a rise from UGX. 416.7Bn in December 2014

ICT Sector Constraints

Despite these achievements, the sector has not grown to the desired levels to enable it play a pivotal role in the country's development agenda due to two major constraints as illustrated below.

Inadequate public funding

The notion that ICT is Private Sector-led and, therefore, should predominantly be funded by the Private Sector is erroneous. There are some strategic interventions that require direct Government interventions such as Infrastructure, Information Security, e-Government and extension of services to areas that are not attractive to private sector investors. Unfortunately, for the last five years, the sector has been consistently underfunded. For example, the budget for Financial Year 2013/14 for the MoICT (Votes 020 and 126) was UGX 32.17 billion representing only 0.01% of the national budget excluding UCC budget. Increased investment in ICT is justified, as demonstrated by findings in various studies. For example, World Bank studies indicate that an increase in internet penetration in low income economies by 10% results into a 1.12% increase in GDP, and a 10% increase in broadband connectivity correlates to a 1.38% increase in GDP.

Inappropriate institutional framework

The current institutional framework was developed based on distinct ICT sub-sectors (Information Technology, Broadcasting, Telecommunications and Postal), and the prevailing technologies then. Overtime, the dynamism of ICT has led to convergence of technologies and services. In a converged technology environment, there is no clear distinction between sub-sectors with regard to infrastructure platforms and services. This, therefore, renders the current institutional framework inappropriate to meet the evolving needs of the sector.

Consequently, the above mentioned constraints have resulted into:

i. Inadequate ICT Infrastructure.
ii. High Cost of ICT services relative to other countries in the region.
iii. Limited local and relevant content.
iv. Inadequate human resource.
v. Low levels of awareness.
vi. Inadequate ICT related research, innovation and development.

Process for developing the ICT-SIP

The ICT-SIP has been developed through a consultative process within the sector and with various stakeholders outside the sector. A comprehensive literature review has also been undertaken as well as benchmarking for best practices from selected countries that have leveraged on ICTs to transform their societies.

Rationale for ICT-SIP

Significant achievements have been made in the ICT sector over the years, especially with regard to the Sector's contribution to growth in terms of GDP, employment and facilitation of service delivery in other sectors (e-Government, e-justice e-Commerce, e-Education, e-Health etc.).

Despite these achievements, the sector has not grown to the desired levels to enable it play a pivotal role in the country's development agenda due to several constraints and resultant consequences.

Subsequently, Uganda's global ranking based on the ICT development indices such as access to ICT infrastructure, affordability and usage of ICT services is low. Indeed, Uganda is ranked 156th out of 193 countries with regard to the e-Government development index (UN e-Participation public administration country studies 2014), 130th out of 157 countries on the ICT development index (ITU 2012), 115th out of 148 countries on the network readiness index (World Economic Forum 2013), and 227th out of 1000 points on the broadband development index (Ovum 2014).

Based on the above, it is clear that a lot is yet to be done to not only sustain the achievements made so far but also grow the sector as a transformative tool to a knowledge based country and catch up with the rest of the world with regard to ICT. In addition, if these constraints are not addressed, the country risks losing its competitiveness and capacity to attract investments. The world over, processes and procedures have been made more effective and efficient using ICT.

The ICT sector presents enormous opportunities for transforming this country. These include income generation, job creation, improvement of service delivery and reduction of the cost of doing business, thereby increasing the country's competitiveness. This, therefore, calls for increased public and private investment in the sector.

It is against this background that the ICT - SIP 2015/16 – 2019/20 has been developed. It is based on four strategic themes namely; foundational support for ICT development; enabling environment to spur ICT growth; ICT for governance and service delivery; and ICT as an engine of growth.

Strategic Direction

Mandate: ''To provide strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT sector for sustainable, effective and efficient development, as well as harnessing and utilization of ICT in all spheres of life to enable the country achieve its development goals''.

Vision:''A knowledge-based Uganda enabled by a vibrant ICT sector''

*Mission:*To provide leadership and enabling environment for promotion of ICT as an industry and enabler for Uganda's socio-economic development.

To achieve this, a tagline "ConnectedUgand@2020" has been developed to rally all stakeholders in the ICT Sector. The ICT-SIP is based on three themes namely:

- Foundational Support for ICT Development;
- Enabling Environment to spur ICT growth and utilization;
- ICT for Service Delivery.

The Action Areas for this ICT-SIP are as follows:

Policy, Legal and Regulatory Framework

There is need for a favourable policy, legal and regulatory environment that is responsive to the dynamic ICT Sector. This will attract investment, ensure optimal use of communications resources and provide a diversity of quality communication services. It will also ensure consistent support for the planned activities and be responsive to technological demands. The proposed strategy is to review the policy, legal and regulatory framework to align it with international norms and practices while taking into consideration national peculiarities.

Institutional Framework

The role of ICT as a tool and enabler of other sectors' performance calls for an institutional arrangement and coordination mechanism that ensures coherence in the development and implementation of programs and projects in the sector. The institutional arrangement shall also take into consideration convergence of technologies and global trends. The proposed strategic interventions are aimed at reviewing, establishing and strengthening the ICT institutional framework that will be able to drive the national agenda. It is expected that this will support the implementation of the SIP and lead to the growth of the sector and integration of ICT into other sectors.

ICT Infrastructure

A functioning ICT infrastructure is a prerequisite for adoption of e-government services which would in turn lead to efficient delivery of services. The proposed strategic interventions will ensure efficiency in coordination, planning, investment, deployment and utilization of end-to-end ICT infrastructure, ensure the ubiquity of communications services, protection of investment and a robust network that will provide international connectivity for Uganda. The strategic interventions are also aimed at reducing the cost of ICT devices and services.

Human Capital Development and Planning

There are a number of universities and other tertiary institutions that offer training in ICT related subjects. However, the system of accreditation and standardization needs to be strengthened. There is need for a collaborative mechanism for rationalization, standardization and accreditation of the ICT syllabus at all levels so as to develop and nurture a competitive domestic ICT human resource base that will keep abreast with global trends. The strategic interventions are aimed at developing a critical mass of ICT skilled Ugandans, institutionalizing and building capacity of ICT cadres in MDAs, transforming Uganda Institute of Information and Communications Technology (UICT) into a centre of excellence and reviewing the ICT school curriculum in collaboration with the Ministry of Education, Science, Technology and Sports.

Information Security

In an increasingly knowledge driven and networked world, information security is of paramount importance. Information Security is critical if the country is to reap the benefits of e-services such as e-commerce. There is, therefore, need to create awareness about cyber-security, build capacity for handling cybercrime and put in place the necessary legal and regulatory framework. The strategy is to build a secure, reliable and resilient information

security system with national capacity to respond to cyber security threats and build confidence. The interventions are to implement the National Information Security Strategy, create awareness, build the capacity of the key institutions like the Legislature, Judiciary and other law enforcement agencies, put in place mechanisms like Public Key Infrastructure (PKI) and ensure protection of consumers of ICT services.

Research, Innovation and Development

ICT research in this country has not been given the attention it deserves. In an inherently dynamic and globalised ICT Sector, the marketplace is becoming increasingly competitive. More players are coming on the scene and exploring new ways of working to increase their productivity levels. This will enable them to keep abreast with technology advancements, business needs and discover virgin areas in which to operate as a way of maintaining their competitive advantage. The proposed strategic intervention is to promote Research, Development and Innovation of ICT and relevant ICT-enabled services. This will entail creating an enabling environment to support Research and Development, establish an ICT research Fund, support programs to facilitate establishment of incubation centres, establish IT parks and establish collaboration mechanisms with industry leaders.

Health, Safety and Environment

The production, operation and use of ICTs comes with health, safety and environmental issues. These call for interventions to ensure the wellbeing of the users and protection of the environment. ICTs can, on the other hand, improve the environmental sustainability of other sectors hence the need to increase the diffusion of Green ICTs in all sectors. The proposed interventions are: to promote the use of green ICTs; create awareness about green ICTs; promote the use of ICT-enabled solutions for climate change mitigation and adaptation; implement efficient management and disposal mechanisms of e-waste in line with the e-waste policy; and establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environmental sustainability to safeguard the well-being of ICT consumers.

Promotion and Coordination of ICT in other Sectors

ICT has the capacity to make public services more efficient, grow businesses, strengthen and expand social networks. It is important, therefore, that ICT is promoted in all sectors so as to improve efficiency and productivity. Strategic interventions that have been proposed will enable the sector to empower non ICT-sectors to improve efficiency. Specifically, the sector will collaborate with MDAs, LGs and the private sector in major projects that can be improved with the use of ICTs; and provide support to other sectors to integrate ICTs in their respective core activities.

Promotion of e-Services and Local Content

e-Applications have been embraced by both small, medium and large enterprises. However, more can be done with positive impact on efficiency, productivity and overall economic benefits including jobs creation. The sector will endeavour to incentivize and promote the development of ICT enabled and value added services.

Adoption of the use of local content in ICTs, on the other hand, has been very low. It is important that the media adopts the use of locally generated content which is relevant to the communities. The relevant agencies of the sector will develop a framework, policies and strategies for facilitating the development and access to a wide range of local content for the various communications media.

e-Government

The application of ICTs to Government functions and procedures for efficiency, transparency and citizen participation is very crucial. With the laying of the National backbone Infrastructure (NBI) country wide, it is expected that e-government will be expanded to all government institutions in the country.

To further enhance the integration and automation of e-government services, the sector will carry out a number of interventions including securing of e-government cloud; establishing regional information access centres; implementing the government Citizen Interaction Centre; and strengthening the institutional framework for implementation of e-government.

ICT Industry Promotion in Target Markets

Increasing the level of ICT awareness domestically and promotion of Ugandan ICT initiatives, products and solutions in target markets globally is crucial for strategic and economic reasons. The sector intends to promote Uganda as an ICT hub and in that regard will work with other countries in the region and abroad on a mutually beneficial basis for all–round development of the sector.

Expected Outcomes

Implementation of the ICT-SIP is expected to achieve the following outcomes, among others:

i. Increased access and usage of ICT equipment and devices for example increased tele-density (number of telephone lines per 100 people) from 63.7 to 90.
ii. Increased employment in the ICT sector from 1.3million to 3million people.
iii. Increased annual ICT growth to 20%.
iv. Overall improvement of Uganda's ranking on global ICT indices.
v. Improved access to high speed broadband services to facilitate communications, economic activities and service delivery. The target is to improve broadband access from 512Kbps to 5Mbps and 30Mbps for rural and urban households respectively.

Cross-cutting Areas

There are cross-cutting issues that will be addressed in the use of ICTs. They include Gender, Persons with Disabilities, Youth, Environment, HIV/AIDS and Poverty.

Implementation Mechanism

The ICT-SIP will be implemented by various agencies, institutions and stakeholders in the Public and Private sector. The success of implementation will greatly be enhanced by Political support, clear delineation of roles and responsibilities, adequate human and financial resources, proper monitoring and evaluation as well as intra and inter-sectoral collaboration in the context of sector-wide approach.

Institutional Framework

The convergence of technologies has rendered the clear cut traditional subsectors of ICT outdated. One of the proposed strategic interventions in the ICT-SIP is to review the current institutional framework with a view of aligning it to the current trends. Currently, the institutional framework is as elaborated in section 5.0 of the ICT-SIP document. The section also highlights the roles of other stakeholders in both the public and private sectors.

Monitoring and Evaluation

An elaborate monitoring and evaluation framework has been proposed taking into consideration section 108 (a) of the Constitution of the Republic of Uganda. The framework is to improve accuracy, frequency and timeliness of reporting on achievements of the ICT sector based on the core and agreed upon indicators. It is also in line with other accountability frameworks such as the performance monitoring by the Ministry of Finance, Planning and economic Development, Government Annual Performance Reviews by Office of the Prime Minister and NDP II evaluation processes. Consideration has also been given to the international ICT reporting platforms such as the ICT development index by the International Telecommunications Union (ITU), the Global networking index, e-government development index and ICT price basket. The plan will be subjected to quarterly and annual performance assessments, a mid-term review and an impact and end of period evaluation.

Investment Plan

Funding constitutes one of the key resources required for the successful implementation of the SIP and the overall development of the sector. Major financial investments are necessary to create the country's capacity with regard to formulation of policies, laws and regulations, ICT human resource capital, infrastructure development, delivery of e-services (including e-Government), information security, ICT safety, development of local content, and research and innovation among others.

Financial Resource

The major sources of funding to the sector have been the Government, Private Sector and Development Partners. The Public Sector funding for the development budget for ICT (including UCC)has been at an average of UGX 109 Billion annually both from the treasury and non-tax revenues collected by Agencies. The resources required for executing this ICT-SIP on the other hand will be UGX 1,122.67 billion over the next 5 years which translates into UGX 225 billion annually.

To raise the required funds, it will entail various sources and financing models. These will include:

a) Government financing through budgetary provision;

b) Public Private Partnerships (PPPs);

c) Foreign Direct Investment (FDI); and

d) Support from Development Partners.

Conclusion

The ICT-SIP provides a coherent set of strategies, interventions, actions and attendant resource requirements to enable ICT play a pivotal role in the country's socio-economic transformation and development as envisaged in the NDP II and Vision 2040. It also spells out the outcome and output level targets that will be achieved over the next five years. To realize tangible success, it's imperative that all stakeholders in both public and private sectors, be mobilized to actively participate in the implementation including funding, execution of activities, monitoring and evaluation. This will enable the country achieve the overall desired goal of a ConnectedUganda@2020.

1 Introduction

1.0 Background

Over the last 25 years, the Government of Uganda (GoU) has undertaken a number of initiatives aimed at socio-economic transformation of the country. This has been through a number of policy reforms which include privatization, liberalization, decentralization, democratization and good governance. These have been implemented through programmes such as the Structural Adjustment Programme and the Poverty Eradication Action Plan. In 2007, Government adopted a Comprehensive National Development Planning Framework (CNDPF) which provides for the development of a 30-year Vision to be implemented through 5-year National Development Plans (NDPs), Sector Development Plans (SDPs), Local Government Development Plans (LGDPs), Annual work plans and Budgets.

Under CNDPF and in conformity with the National Vision 2040, Information and Communications Technology (ICT) has been identified as one of the key priority thematic areas in the development process. Individual agencies in the sector have overtime developed their own strategic and corporate investment plans to guide their business strategies and investment decisions, which they are currently implementing. In order to enable alignment of institutional strategic and corporate investment plans towards a common sector goal and enhance collaboration and synergies among the sector players, the sector has developed an Information and Communications Technology Sector Strategic and Investment Plan (ICT-SIP) which sets the National ICT priorities for a 5 year period covering 2015/16 to 2019/20. The ICT-SIP will consolidate and harmonize all the existing parallel policy frameworks in the ICT Sector into one coherent plan. The plan is also aimed at improving service delivery, creating employment and wealth to fast track social economic transformation through utilization of quality as well as affordable ICT services in all spheres of life.

1.1 Historical Perspective

Fundamental changes in the Ugandan ICT Sector commenced in 1993. Prior to this, there was a Government Monopoly (Uganda Posts and Telecommunications Corporation) which was established by an Act of Parliament in 1983 to provide telecommunications and postal services. In 1987, the Government embarked on economic reform programmes and among others recognized the need to reform the Telecommunications sub-sector. A multi-sectorial inter-ministerial committee was set up to make recommendations on investment in the Telecommunications sector. The committee identified liberalisation as one way of attracting private participation in the sector and this was in line with the macro-economic reforms which the Uganda Government had embarked on.

As a result of liberalisation, the first mobile operator was licensed in 1993. The broadcasting sub-sector was also liberalised and several FM radio stations were licensed in 1994. This was closely followed by the licencing of Wavah Broadcasting Services (WBS) station as the first private television broadcaster. In 1995, more liberalisation ensued and this saw the introduction of the following services:

- Paging services;
- Satellite Services including V-Sat; Mobile Trunked Radio services to offer Telephony;
- Customer Premises block wiring; and
- Internet access services.

The fruits of liberalisation were evident. However the Government recognised that in order to attract more investment in the Telecommunications sector, it was necessary to open up to allow more players in the sector.

In 1996, a Ministerial Policy Statement was issued for the Telecommunications and Broadcasting sub-sectors. This provided for the enactment of the Uganda Communications Act of 1997 and the Electronic Media Act. The Uganda Communications Act1997 provided for the following:

- The establishment of the Uganda Communications Commission in 1998;
- Un-bundling of the Uganda Posts and Telecommunications Corporation (UP&TC) and creating Uganda Telecom Limited and Uganda Post Limited among others, as the First National Operator in 1998; and
- The Licensing of MTN Uganda as the second National Operator in 1998.

In 2000, Uganda Telecom was privatized with the Government retaining 49% shares and this marked the commencement of the 5 year exclusivity (duopoly) period as provided for in Uganda Communications Act. Borrowing from best practice and realizing that private operators would not cover the country evenly, Government developed the Rural Communications Development policy which saw the establishment of the Rural Communications Development Fund (RCDF) to facilitate Universal Access in un-served and underserved areas.

In May 2005, the exclusivity period ended paving the way for full liberalisation of the telecom services. In June 2006, the MoICT was established and the Telecommunications Infrastructure market was thereafter fully liberalised following the issuance of Ministerial Policy Guidelines in October 2006.

In 2013,The Uganda Communications Act and the Electronic Media Act were merged resulting into the establishment of the Uganda Communications Act of 2013.Regulations for operationalization of the Act have been drafted and due for submission to Parliament.

1.2 Institutional Setup

The ICT Sector is composed of the Ministry of Information and Communications Technology (MoICT) and two regulatory bodies the Uganda Communications Commission (UCC) and National Information Technology Authority Uganda (NITA-U), and Uganda Post Limited as a service provider. The ICT Sector is also composed of telecommunications, postal, information technology (IT), and broadcasting sub sectors. The set-up of the ICT Sector has 2 main dimensions – the Public and the Private Sector dimensions. It is further organised along 3 functional levels namely Policy, Regulatory, and Service Provision levels.

The Mandate of the MoICT is ‘’to provide strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT Sector for sustainable, effective and efficient development; harnessing and utilization of ICT in all spheres of life to enable the country achieve its development goals’’. The Ministry is also responsible for developing and/or reviewing policies, laws, regulations and standards to ensure a conducive environment for sustainable growth and development of the ICT Sector.

The Uganda Communications Commission’s mandate is to regulate communications including the film industry (the stage play and public entertainments act, theatres for public entertainment), broadcasting infrastructure and postal services in the country. UCC in addition manages the Uganda Institute of Information and Communications Technology (UICT), which is the only Government institution specializing in training ICT middle-level technicians. In line with provisions of the Rural Communication Development Fund (RCDF) policy, UCC also manages the Rural Communications Development Fund (RCDF) that was established under the Uganda Communications Act 1997 revised in the Uganda Communications Act 2013, to cater for under-served and un-served areas of the country.

NITA-U’s mandate is to coordinate, promote and monitor the development of Information Technology (IT), e-Government implementation and information security in Uganda. NITA-U coordinates the implementation of the

National Backbone Infrastructure/E-Government Infrastructure (NBI-EGI) project, and Business Process Outsourcing (BPO).

Uganda Post Limited is the only operator of postal services expected to deliver Universal service. It operates the whole range of postal services (mail and parcel delivery, financial services, addressing, agency services, real estate as well as passenger services).

The service provision function is delivered by both Private and Public Sector players. The Private Sector players are broadly categorized under Telecom Operators, Broadcasters, Internet Service Providers (ISPs), IT companies and ICT industry (software and hardware). In addition to the traditional ICT services, there are other emerging areas which are enabled by ICT such as the creative industry and e-Applications in various sectors. The Public Sector interventions are mainly restricted to implementing programmes and projects, which are strategic in nature such as those aimed at attaining universal access, bridging the digital divide between urban and rural areas, stimulating and catalysing private sector investment in areas such as Business Process Outsourcing (BPO), as well as provision of high-level technical support to government.

1.3 Rationale for ICT-SIP

Significant achievements have been registered in the ICT Sector over the years, especially with regard to the Sector's contribution to the country's socio-economic transformation and growth in terms of GDP, contribution to employment and facilitation of service delivery in other sectors (e-Government, e-Commerce, e-Education, e-Health, etc) as detailed in chapter two.

Despite these achievements, the sector has not grown to the desired levels to enable it play a pivotal role in the country's development agenda due to the following key constraints:

Inadequate public funding: The notion that ICT is Private Sector-led, and therefore, should predominantly be funded by the Private Sector is erroneous. There are some strategic interventions that require direct Government intervention such as Public Key Infrastructure, Information Security and extension of services to areas that are not attractive to private investments among others. There is need for Government to increase budgetary allocation for investment in strategic interventions in the sector, such as ICT Infrastructure, e-Government, Information Security, Human Resource development and Research, Innovation and Development. For the last five years, the sector has been consistently underfunded. For example the approved budget for Financial Year 2013/14 for the MoICT (Votes 020 and 126) was UGX 32.17 billion representing only 0.01% of the national budget. Increased investment in ICT is justified, as demonstrated by findings in various studies. For example, according to the ITU Publication on the impact of broadband on the economy (2012), a 10% increase in broadband penetration yields an additional 1.38% increase in GDP growth for developing countries.

Inappropriate institutional framework: The current institutional framework was developed based on distinct ICT sub-sectors (Information Technology, Broadcasting, Telecommunications and Postal). Overtime, the dynamism of ICT has led to convergence of technologies and services. In a converged technology environment, there is no clear distinction between sub-sectors with regard to infrastructure platforms and services. This, therefore, renders the current institutional framework inappropriate to meet the evolving needs of the sector.

The manifestations of the above challenges are illustrated by:

1. **Inadequate ICT Infrastructure:** For example the National Backbone Infrastructure (by both Government and private sector) consists of only 5000 kilometres of Optic fibre, and does not cover some key areas of the country such as West Nile and Karamoja regions. This is further exacerbated by high levels of vandalism and theft of the installed infrastructure;

2. **High Cost of ICT services relative to other countries in the region:** For example, the cost of bandwidth in Uganda ranges between USD 300 to 600 for 1Mbps per month compared to USD 80 to 150 1Mbps per month in neighbouring countries. This affects affordability and, consequently, usage of services such as Internet;

3. **Limited Local and Relevant Content:** The content available on ICT media such as TV and Internet is mostly foreign and does not meet the needs and aspirations of the majority of, the would-be, consumers. This has negatively affected the uptake of e-Services. There is need to deliberately promote and support development of local content, in local languages and tailored to the needs of the population. There is over-reliance on imported software solutions which is costly and the local software development industry is still under-developed;

4. **Inadequate Human Resource:** Although there has been an increase in the number of training Institutions for ICT professionals, there has not been a coordinated approach with regard to standards at various levels, specialised training to meet specific industry needs in terms of quantity and quality. In addition, the Government Institutions are not adequately staffed and there is high turnover of ICT professionals. For example, only 30% of the posts for ICT professionals in the MoICT are filled. This has adversely affected performance and delivery of services in the sector. The main constraint has been poor remuneration and motivation;

5. **Low levels of awareness:** A big section of the population, including MDAs and Local Governments, are not fully aware of the potential of ICT in socio-economic transformation of their lives and the country. This has affected the uptake of ICT in various categories of society and the country as a whole. Consequently, using the 2014 United Nations ICT usage sub index, Uganda is ranked 125th out of 148 countries surveyed; and

6. **Inadequate ICT related research, innovation and development:** Whereas in Uganda, the National Council of Science and Technology is mandated to coordinate and promote research in science and technology, research in the ICT sector is not fully coordinated. This is attributed partly due to lack of a well-defined policy and institutional framework for coordination of ICT research and its integration in the overall national research agenda. Although there has been an increase in the number of innovators in various areas of ICT such as software development and applications, they have been haphazard, not coordinated and not linked to the industry. Yet, this area has high potential for job and wealth creation.

Subsequently, Uganda's ranking globally is low based on the ICT development indices such as access to ICT infrastructure, affordability and usage of ICT services. Indeed, Uganda is ranked 156th out of 193 countries with regard to the e-Government development index (UN e-Participation public administration country studies 2014), 130th out of 157 countries on the ICT development index (ITU 2012), 115th out of 148 countries on the network readiness index (World Economic Forum 2013), and 227th out of 1000 points on the broadband development index (Ovum 2014).

Based on the constraints highlighted above, it is clear that a lot is yet to be done to not only sustain the achievements made but also grow the sector as a transformative tool for socio-economic development of the country as well as catch up with the rest of the world as far as ICT is concerned. In addition, if these constraints are not addressed, the country risks losing its competitiveness and capacity to attract investments since the world over processes and procedures have been made effective and efficient using ICTs.

It is evident from the situational analysis that the ICT sector presents enormous opportunities for transforming this country. These include income generation, job creation, improved delivery of services and increased country's competitiveness, among others. This calls for increased public and private investment in the sector. For example according to Byoung Nam Lee (2005), one of the key success factor for Korea as an ICT driven economy was heavy investment on the development of core technology and ICT professionals. S. Korea Government's

investment of 150 billion translated into generation of revenue worth 7 trillion won between 1989 and 2002, investment of 400 billion translated into 108 trillion revenue generation between 1991 and 2002. While the investment of 100 billion won in Code Division Multiple Access (CDMA) translated into a total revenue of 54 trillion between 1996 and 2003. This was supported by Government investment into Human Resource to meet market demands and inform the people.

Only 6.2m people out of 37 million were connected to internet in Uganda in 2012 representing internet penetration of 8.2% of the population. Most countries are keen to stimulate economic growth and job creation as a means to transform their economy. According to McKinsey of October, 2012 as countries go on line, they realize efficiencies in the delivery of public services and the operations of both large and small business alike. ICT also creates tremendous value for consumers. Online prices are on average around 10 % lower than offline prices as a result of the transparency provided by search tools, generating tens of billions of dollars of consumer's surplus in nations with the widest internet use. ICT also enables people to keep in contact with friends, relatives and customers; access public information and services; manage their health; and advance their education. With more connection, millions will tap into information and opportunities that were once beyond their reach. Attainment of the ICT-SIP objectives is dependent upon the ability to mobilize resources for the implementation of the plan. Investments are required in all the action areas of the ICT-SIP throughout the period of the Plan.

It is against this background that the ICT Sector Strategic and Investment Plan 2015/16 – 2019/20 has been developed.

The need for an ICT-SIP has further been necessitated by the need to implement Vision 2040 and the revised National Development Plan (NDP). The strategy consolidates the achievements attained in NDP 1 and operationalizes ICT priority interventions for NDP 2. The ICT-SIP will also identify and enhance the fundamentals that have supported the ICT Sector, and undertake priority interventions for ensuring a more conducive ecosystem as well as institutional arrangements that are appropriate to technological and industry needs.

In addition, the ICT-SIP seeks to exploit Uganda's potential such as the demographic characteristics (youthful population), educated workforce (high literacy rates), diverse local content, a fluent English speaking population, and increasing demand for ICT-enabled services in all sectors of the economy. Furthermore, ICT being cross-cutting, it has many players from both the Public and Private sectors involved in the development and implementation of ICT services. Their initiatives have not been harmonized hence the need to rally the various players towards a common strategic direction.

The forces of globalization and technological advancement make it incumbent upon Uganda to leverage ICT for all-round growth and development of ICTs is inevitably drawing people towards it as they realise the value that ICT can add to their lives. The need for an ICT-SIP therefore cannot be overemphasized.

1.4 Process for developing the ICT-SIP

A multi-institutional and multi-disciplinary task team assisted by a team of consultants was constituted to develop the plan. The process was consultative and involved all the relevant stakeholders. A comprehensive literature review was undertaken, followed by a benchmarking exercise to draw lessons from countries that have achieved significant success in the growth and utilisation of ICT. An analysis of the current ICT situation was undertaken to provide information on the current level of ICT development based on desk review and primary data collection exercise (baseline survey). The information collected was analysed to establish the critical areas that would propel the adoption of ICTs in the different sectors leading to sustainable economic growth. To define the strategic direction, the approach detailed below was adopted.

Approach for ICT-SIP

The Approach for ICT-SIP was based on the Strategic Architecture, which illustrates how the strategy is structured in terms of not only conceptualization but also spelling out the implementation modalities. The architectural framework will operate in 3 key tracks namely:

1. Strategic Elements – these are the different strategic items that constitute the whole strategy (Vision → Strategic Theme → Action Areas→ Strategic Interventions→ Work plan);
2. Strategic Attributes – these are the ways in which the strategic elements are defined or described; and
3. Measurement Parameters – this entails the indicators which will be used to confirm if a certain element denoted by pre-defined attributes has been accomplished or not.

The following was noted:

- The Vision will be realised through interventions in several themes each of which is associated with a Goal. The Vision itself is associated with targets;
- Every theme will be realised through strategic interventions in one or more Action Areas to achieve Goals of the theme. Each such Action Area is associated with one or more Strategic Objectives and Strategies. The programme is the vehicle of implementation for a group of strategic interventions;
- Every strategic intervention is associated with tangible outputs. Generally speaking a programme is a long-range intervention to be implemented through strategic interventions which are short-term measures; and
- Whereas Vision, Themes and Strategies are all design constructs, Programmes, Projects and Work plans are implementation constructs. Therefore, while the first 3 represent the effectiveness of planning, the last 3 represent the efficiency of implementation.

Figure 1 represents the strategic approach graphically.

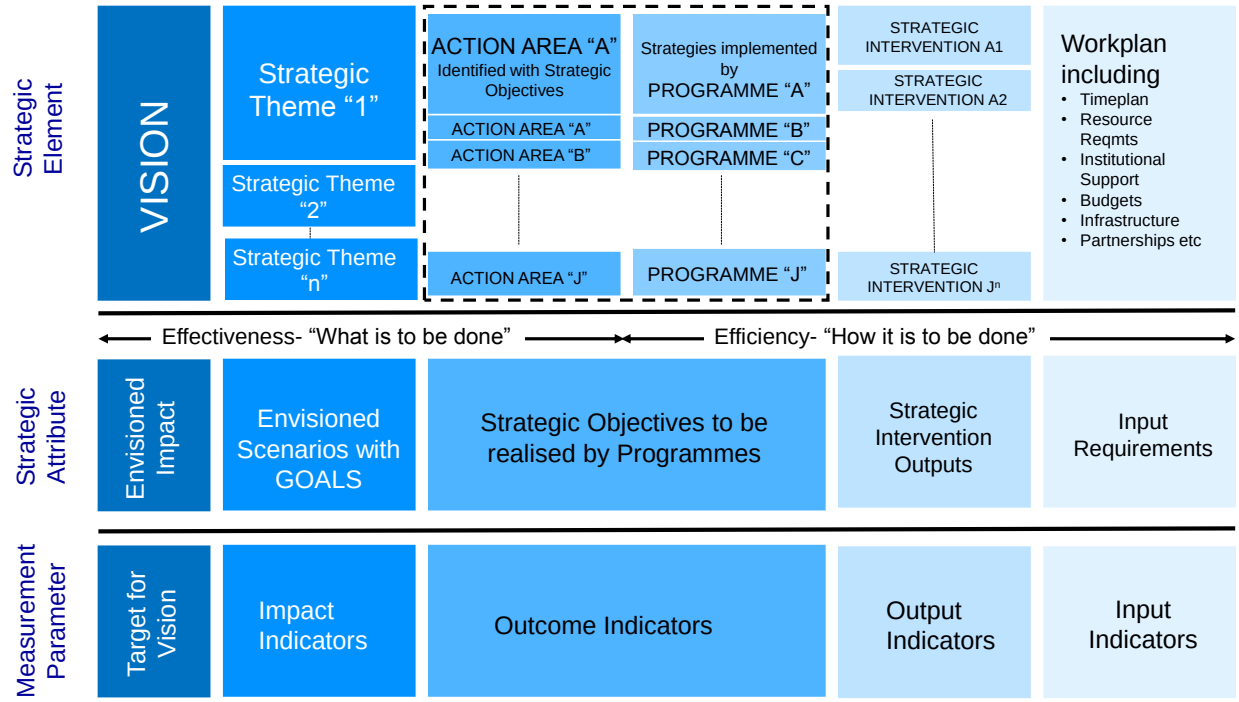


Figure 1: Strategic Architecture for Uganda's ICT-SIP

1.5 Layout of the ICT-SIP

The ICT Sector Strategic and Investment Plan (ICT-SIP) is divided into 6 chapters as follows:

- Chapter 1: Introduction covering the background of the ICT Sector, institutional setup within the sector, rationale and process for development of the plan;
- Chapter 2: Sector Achievements highlighting how far the sector has come and its achievements;
- Chapter 3: Situational Analysis providing an assessment of the current situation of the ICT Sector and the challenges or gaps faced;
- Chapter 4: Strategic Direction pointing out the Strategic Direction for the ICT Sector namely the Vision, Mission, Strategic Themes, Strategies and Strategic Interventions for the next 5 years;
- Chapter 5: Implementation Mechanism indicating how the ICT-SIP will be implemented through the monitoring and evaluation framework, and communication strategy; and
- Chapter 6: Investment Plan highlighting the funding framework and cost of the ICT-SIP.

2 Sector Achievements

2.0 Enabling Environment

Over the years, Government through the ICT Sector has put in place policy, legal and regulatory frameworks aiming at providing a conducive environment for Private Sector participation and investment. At the cornerstone of this policy was liberalisation and privatisation to attract investment, bring competition and consequently spur growth and efficiency in the sector.

Among the policies developed, is the ICT Policy Framework 2003 that has provided overall policy direction to the sector in the past 10 years. The policy has now been reviewed to incorporate new developments in the sector and global technological trends. The emerging policy areas include enabling environment for the internet and new technologies including convergence, diffusion of ICT in all spheres of life (such as e-Government, e-Commerce, e-Employment, ICT in education, ICT in health, ICT in science and ICT in agriculture), and cultural diversity and local content.

Other policies that have been formulated to guide the development of specific subsectors include the National Telecommunications Policy 1996, National Broadcasting Policy 2006, National IT Policy 2011, National e-Government Policy Framework 2011, National Postal Policy 2011, Migration from Analogue to Digital Terrestrial TV broadcasting policy 2011, E-waste Management Policy 2012, Country Code Top Level Domain (.ugccTLD) Policy 2013, and National ICT Policy 2014.

Currently, the sector is in the process of reviewing some policies to align them with emerging global, regional and national developments in ICT. They include the National Information Management Services (IMS) Policy, the National Telecommunications Policy, the National Broadband Policy, and the National Broadcasting Policy.

The sector has also put in place various laws and regulations to operationalize provisions of the different policies, and protect the sector players and users. The key laws enacted include the Electronic Signatures Act 2011, the Electronic Transactions Act 2011, and the Computer Misuse Act 2011. Other legislations such as the NITA-U Act 2009 and the Uganda Communications Act 2013 were enacted to create and empower new institutions to deliver specific mandates in the sector. Other laws are being developed to address critical areas including Data Protection and Privacy, Analogue to Digital Migration, and Post Code and Addressing System.

In order to ensure harmonised and rationalised delivery of ICT in both the Private and Public Sectors, a number of strategies have also been developed. The key ones are the Strategy for Rationalization of IT initiatives in Government 2012, Uganda Broadband Infrastructure Strategy 2008 (currently under review), National e-Government Master Plan 2012, National Information Security Strategy2011, Business Process outsourcing Strategy (2008, revised 2012), and Transition from Internet Protocol version 4 to Internet Protocol version 6.

2.1 Infrastructure Development and Access to Communication Services

Growth in the sector has been reflected in the increased deployment of infrastructure for Communication services. The number of Base Transmitter Stations (BTS) countrywide currently (March 2013) stands at 3,524 sites country wide.

Optic fibre deployment in the country stands at 5,110.65 kilometres of optic fibre laid by both the Government and Private Sector with connectivity to the Northern Border with South Sudan at Nimule, to the Southern border with Tanzania at Mutukula and to the Eastern border with Kenya at Busia. This has further enabled border to border connectivity from the East (Busia and Mutukula) to the West (Mpondwe). This is illustrated in the map below:

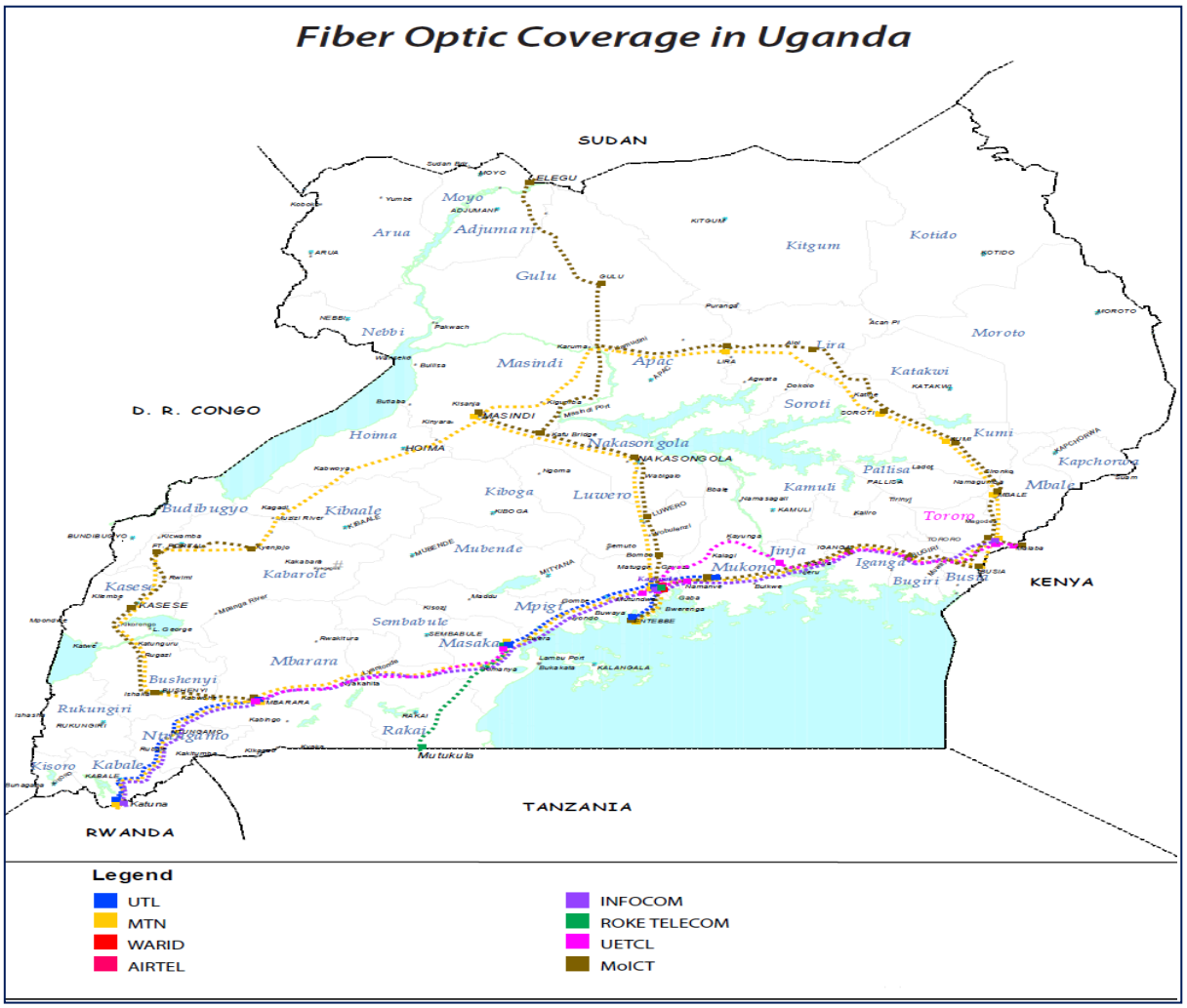


Figure 2: Map of Optic Fibre in Uganda

As a result of investment in infrastructure and voice coverage of telecommunication services in Uganda at sub county level stands at 85%. Data Coverage on the other hand is at 45% largely accessed through mobile technologies i.e. GPRS, 3G+ (HSPA, HSDPA), Wi-Fi and 4G (LTE).

The country has attained 100% analogue radio broadcasting signal coverage. Analogue Television signals exist in over 45% of the country. In conformity with the GE06decisions of International Telecommunications Union (ITU), all countries are expected to complete migration from analogue to digital television broadcasting by June 2015. Consequently, Uganda using a multi-stakeholder approach is implementing a program to ensure that the ITUdeadline of June 2015 is met. To date, the installation of digital signal transmission infrastructure for greater Kampala has been completed. The coverage includes; Jinja, Mukono, Masaka, Mpigi, Mityana, Bombo, and Nakasongola.

Postal access points exist in 58% of the 112 districts with over 20 post offices offering ICT facilities such as basic office applications like printing, scanning and photocopying, and internet access. This is complemented by private courier operators.

In order to increase access of ICT facilities, infrastructure has been set up countrywide under the Rural Communication Development Fund (RCDF). This includes computer laboratories in 1,027 secondary schools, 46 tertiary institutions, 5 universities, 126 telemedicine ICT facilities in health centres and hospitals, 2 digital terrestrial television broadcasting sites, and 11 district business information centres.

2.2 Human Capital

Skilled and competent manpower is critical for the growth and development of the local ICT industry to take root on a large scale in Uganda. The ICT industry needs a large pool of skilled manpower to meet both local and export needs. In Uganda, many people have undergone professional ICT training in areas such as ICT infrastructure, networking, information security and applications. However more is required to organise and comprehensively develop ICT human capital.

Currently, there are many training institutions offering ICT related courses in Uganda. In terms of numbers, there are 32 universities most of which offer different ICT related diploma and degree programs up to doctorate level. There are also other tertiary institutions (public and private) offering certificates and diplomas in ICT related courses. The Master Plan for the Uganda Institute of Information and Communications Technology (UICT) is being finalized by UCC and hopefully its implementation will go a long way in improving as well as increasing the ICT human capital. There is need however to put in place standards and measures to ensure quality as well as consistency.

Government has recognised the importance of ICT in the education system, and to this end, the National Curriculum for Higher school of Education has been reviewed to include ICT as a compulsory discipline. In addition, computer as a subject is examinable at secondary school level. More needs to be done in schools starting with pre-primary education, primary level all the way to tertiary institutions in order to consolidate this.

In its effort to promote ICTs in the rural areas, Government through the UCC (the Rural Communications Development Fund) has conducted over 160 community training programs countrywide and implemented a teacher re-tooling program for those teaching ICT in schools. This programme is however limited to Government institutions, the computers provided are fewer compared to the students, and most schools lack teachers to teach ICT as a subject. The programme should be reviewed and strengthened to consolidate the gains so far.

The MoICT is working with the Ministry of Public Service to bring ICT cadres in Government under one home so as to ensure their growth and development. This should be pursued and concluded.

2.3 Information Security

The Government over the years has implemented various ICT solutions to ensure confidentiality, integrity, and availability of information which are essential to maintaining reputation and trust in the use of ICT enabled services. The uptime and availability of networks and systems is however often increasingly threatened by widespread cyber incidents of both national and international nature.

In an effort to provide an appropriate legal framework to deal with cybercrime and provide for secure electronic transactions, Government developed and enacted a suite of cyber laws which include the Computer Misuse Act 2011, the Electronic signatures Act 2011 and the Electronic Transactions Act 2011. There is also the National Information Security Strategy (NISS) 2011, the National Information Security Framework (NISF) and the Communications Sector Computer Emergency Response Team (CERT).

There have been information security incidents in both the Public and Private Sectors that have been addressed using the existing cyber laws; however the capacity to handle these incidents is still weak. There is need to build national and sectorial capacity to investigate and prosecute cyber related crimes.

The increased uptake of information systems in both the Public and Private Sectors that deal with citizens' personal information has necessitated the need for a Data Protection and Privacy law to safeguard this data. To address this challenge, the MoICT is currently developing the Data Protection and Privacy Act.

2.4 Research, Innovation and Development

ICT research is of paramount importance to the development of products and solutions to enhance competitiveness of Uganda's economy. Currently ICT research is being undertaken by individuals, academia and industry. However, greater emphasis has been on basic research and little attention to foresight and applied research in ICT solutions and product development. Research in product development is still in her infancy and largely an initiative of private players. Currently Uganda is majorly a net importer of ICT products and services. That notwithstanding Uganda boasts of a few home-grown ICT products such as Matatu, Ffene, Matibabu and WinSenga. Furthermore, the industry has developed a number of value added services responsive to local needs such as financial transactions over the mobile network.

The research and innovation ecosystem in Uganda is guided by among others the National Science Technology and Innovation (STI) Policy. A regional STI framework has also been developed under the Common Market for Eastern and Southern Africa (COMESA). A STI council to guide member states on spurring innovation and research initiatives has also been put in place. Specifically for the ICT Sector, the National ICT Policy 2014 highlights innovations in ICT and ICT driven innovations as a key policy priority area. Regional initiatives under the East African Communications Organisation (EACO) have also established a regional working group to focus on innovations in the ICT Sector.

2.5 Usage of Communication Services

2.5.1 e-Services and Local Content

Electronic Services (e-Services) refers to the application of ICTs in different areas to deliver services in a more efficient and effective manner. e-Services can be categorised into e- business and e-Government. Currently e-business is to a large extent being driven by the Private Sector offering services like, e-banking, e-billing, e-payments e-commerce among others to improve their business processes. There is also a growing number of Private Sector driven social media and health care information services.

On the other hand, Local Content is the development of local skills, technology transfer, use of local manpower and locally owned and adapted knowledge. In the current setting local content is defined as locally owned and adapted knowledge. It mainly covers broadcast content and e-content in terms of applications and solutions.

The Private Sector provides services like e-banking, mobile money access, e-commerce and e-learning. Mobile Money has been adopted as a value added service and has grown to not only provide a fast, secure, affordable and convenient way to send money through mobile phones anywhere in Uganda but also provide services like payment for utilities, insurance and taxes. Some banks have also rolled out e-Banking as a quick and convenient way to access financial services without physically visiting the banking halls.

Despite the availability of e-Services, there is low adoption among Small and Medium Enterprises (SMEs) due to limited awareness, ICT illiteracy and high cost of ICT services. To address this challenge, there is a drive to integrate local content into e-services so as to make it more relevant and attractive to intended beneficiaries.

The incubation spaces support young technology (tech) entrepreneurs in creation and development of technology-oriented companies involved in developing, realizing and selling new services that end up being commercially viable and competitive, hence generating youth employment. Some applications that have come up are in Table 1:

Table 1: Common applications developed in Incubation Spaces

Application	Service
Remit	Remittance transfer service that offers real-time debit / credit card to mobile-money transfers from all over the world to registered mobile-money users in Uganda.
WASH Reporter	Online crisis reporting for persons living in rural areas facing challenges in water, sanitation and health.
Inforex	Easy access to currency information in Uganda (bridge the gap between forex bureaus, financial institutions & public).
Tech4farmers	Accessing market prices of agricultural products and other agriculture-related information in real-time.
Ensibuuko agri-solution	Utilizing the power of a mobile and web technologies to help small-holder rural farmers in Uganda acquire and pay loans to (non) microfinance institutions easily, quickly and in an accessible way.
ClinicMaster	Healthcare information management and medical billing.
Plotus	Mobile-based receipting that eliminates paper, monitors and tracks expenses and stock for SME.

2.5.2 e-Government

e-Government (short for electronic government) is the comprehensive implementation of ICT in Government MDAs and Local Governments. It is also defined as the use of information and communication technologies to deliver public services in a convenient, efficient customer-oriented and cost-effective way. The primary delivery models of e-Government can be divided into Government-to-Government (G2G); Government-to-Citizen or Government-to-Consumer (G2C); Government-to-Business (G2B); and Government-to-Employees (G2E).

The Government has invested in the National Backbone Infrastructure/E-Government Infrastructure (NBI / EGI) that is expected to connect all Government Ministries, Departments, Agencies and Local Governments. The infrastructure will provide the foundation on which the e-Services can be delivered.

The GoU has harnessed the potential of e-Government to transform service provision to citizens, businesses and interagency cooperation through the e-Government network, improving collaboration as well as communication. The video conferencing and video over internet protocol (VoIP) applications were deployed to facilitate this service provision. Furthermore, bulk purchase of bandwidth has been initiated to ensure affordable, efficient and reliable access.

The GoU has utilized ICT as an enabler to ensure efficiency and effectiveness in different aspects of financial management, tax related services, and land administration, among others. The following applications and initiatives are in place:

1. Integrated Financial Management System (IFMS) – an IT-based budgeting and accounting system that assists MDAs and LGs to initiate, spend and monitor their budgets, initiate and process their payments, manage and report on their financial activities;

2. Integrated Personnel and Payroll System (IPPS) – a fully integrated web-based human resource information management and payroll system designed exclusively for MDAs and Local Governments (LGs);

3. e-Tax – an application that supports electronic mode of registration, filing and payments related to tax for improvement of service delivery and boosting revenue collections;

4. Land Information System (LIS) – a decision-making tool that creates, visualizes, analyses, reports and published land-based data such as parcel information, zoning, land use, ownership and general property information. Government has undertaken efforts and initiatives to modernize land administration and develop institutional transformation through the deployment of the LIS;

5. Local Government Information Coordination System (LoGICS) – an application implemented by the Government to improve efficiency and effectiveness of managing service delivery by Local Governments;

6. AskYourGov – an electronic platform implemented by Government that citizens can utilize when making online requests for information from MDAs;

7. Court Case Administration System (CCAS) – an electronic system used by the Ugandan High Court for managing cases and case records;

8. Registration and Exam Results Short Messaging System – a platform implemented by the Uganda National Examinations Board (UNEB) to improve the dissemination and access to exam results on the tenets of efficiency and effectiveness;

9. eStatements – an online feature implemented by the National Social Security Fund (NSSF) as an initiative to serve NSSF members better on a more user-friendly, quicker and easier digital platform. The National Utility companies (such as umeme and national water & sewerage corporation) have also improved their customer service provision through use of enhanced eStatement features (eBilling and account status) as well as various faster payment options;

10. Tele-Medicine – access to expert health care consultations and continued medical education has been provided under the Tele-Medicine initiative at Mulago national referral hospital; and

11. Tele-Education – access to educational content from Indian universities has been provided through the Tele-Education initiative at Makerere University (so far 460 students have graduated in various disciplines at both Bachelors' and Masters' level.

The Government web portal (www.gov.ug) has been put in place to act as a one stop centre and gateway for citizens to access all e-Government services. It links Government to Government, Government to Business and Government to Citizen. Government has also installed e-Government intercom infrastructure in several MDAs such as voice over internet protocol (VoIP) phones and video conferencing facilities. Once fully operational, it will improve efficiency, allow easy information sharing and reduce the cost of doing business.

The East African Community regional e-Government programme has identified the following priority areas as flagship e-Government projects: e-commerce, e-procurement, e-parliament, e-Health, e-Tourism, e-banking and customs and immigration. The Government of Uganda has developed an e-Government Master Plan with a roadmap that focuses on 3 major components namely building infrastructure, creating an enabling environment and delivering interoperable services.

2.6 Regional and International Cooperation

Uganda is a member of several international and regional fora where decisions and commitments for the promotion of ICT are made. These fora include; the International Telecommunications Union (ITU), Universal Postal Union (UPU), World Conference on International Telecommunication (WCIT), Commonwealth Telecommunications Organization (CTO) and World Summit on the Information Society (WSIS) at international level. At the Continental level, commitments have been made with the Pan African Postal Union (PAPU), Africa Telecommunications Union (ATU), Association for Regional Regulators of Information and Communications for

Eastern and Southern Africa (ARIECA), African Universal Service and Access Fund Association (AUSAFA) and African Advanced Level Telecommunications Institute (AFRALTI).

In implementing these decisions, Uganda's ICT Sector has made several strides towards achieving growth and meeting the set targets. Several of these commitments have been integrated in the various legal policy and regulatory interventions to ensure improved service delivery.

Uganda is implementing the Doha Postal Strategy as an avenue for increasing access and usage of postal services. Uganda further continues to progress towards achievement of analogue to digital migration in line with the ITU guidelines to meet the deadline of June 2015. In that regard, the relevant regulatory framework is being put in place, establishment of infrastructure to facilitate access to digital terrestrial television broadcasting services and coordination with neighbouring states on frequency planning and allocation to ensure access to services for communities along the border is on-going. Significant progress has also been made in achieving the World Summit on the Information Society (WSIS) targets especially the target aimed at ensuring access to and use of ICT services for the underserved/un-served areas.

Within the East African region, the East African Communications Organization (EACO) brings together regulators and operators to harmonize policy and regulatory frameworks that facilitate development of ICT services within the region. In addition, as a means of fast tracking the implementation and application of ICTs to attain socioeconomic transformation, Uganda, partnered with member states along the Northern Corridor, to fast track in a harmonized manner the implementation of ICT initiatives in the region. This is among other things to ensure implementation of internationally agreed resolutions aimed at ensuring ubiquity in access and delivery of quality ICT services; ensure cross border connectivity, harmonize standards, and taxes with respect to broadband in the region and ensure affordability of broadband services.

The benefits that accrue to Uganda as a result of strengthened participation in regional and international initiatives are enormous. Opportunities that exist at infrastructure level include shared costs of building critical infrastructure leading to linkage to the rest of the world. Other opportunities lie in the broad market for Ugandan ICT services and products, harmonization in the use of common resources leading to diversity and affordability of ICT services. There will also be knowledge transfer and capacity building in the course and as a result of adopting internationally accepted practices.

2.7 ICT Awareness and Promotion

Considerable awareness creation and promotion efforts coupled with increasing availability, access and affordability have been undertaken. At national level, Government with the support from development partners has established a number of initiatives/projects to promote ICT awareness creation and usage in key sectors such as agriculture, education and health. For example, in Education, the projects include World Bank/World links for Development School Net project, and NEPAD e-schools initiatives.

These Government efforts are supplemented by activities of a number of international and domestic NGOs involved in promoting awareness and usage of ICTs among communities. The common approach is to deploy and publicize ICT applications and solutions that help to meet communities' day-to-day needs such as market information, health information, disease prevalence and education information. They include UNICEF, Text2change, Wougnet, I-network, and Uganda Chartered Healthnet among others.

Community level ICT awareness and promotional activities have also been established both by Government and the civil society. Through the Rural Communications Development Fund (RCDF), Government has carried out community ICT awareness and training countrywide through over 500 awareness sessions in the past 5 years. Further, Government has established Community information centres in different parts of the country to enable communities have hands-on experiences with ICT devices thereby promoting ICT usage among remote and rural

communities. These initiatives have taken different forms such as tele-centres, district business centres (DBICS) and Internet Point of Presence (PoPs) to offer communities a variety of services to choose from.

All ministries and district local governments have websites/web portals to provide information to the public. Government has also undertaken preliminary activities towards establishment of the Government Citizen Interaction Centre (GCIC) and Information Access Centre (IAC). These two initiatives will provide additional space and/or platform for citizen interaction and engagement with ICTs.

A number of initiatives have been taken at institutional, community and national levels to promote ICT adoption and usage through awareness creation. There has been a growing trend of ICT access and use in most higher education institutions especially universities. The 2012 computer to student ratio in higher education was averaged at 1 to 15. A number of institutions have created ICT implementation and support units, and designated them with the responsibility of creating awareness and promoting usage of ICTs for example, Makerere University's Directorate of ICT Support (DICTS). For others, this responsibility vests in their IT departments

Professional bodies and networks exist right from schools where ICT clubs have been introduced to enable students associate with ICTs and share their aspirations and ambitions in this fast growing field. These include; i-network, Wougnet, Outbox, LAN-ICTAU and Mobile Monday.

The mass media both print and electronic media play a substantial role in sensitizing Ugandans about the ICTs and their applications. Most print media issue regular ICT pull outs, and columnists writing on ICT. However, a lot remains to be done to increase public awareness about the use and potential of ICT for increased demand of ICT services and growth. It is only the mobile phones whose increased availability resulted in spontaneous adoption and use, without the need for formal sensitization of users.

2.8 ICT Contribution to the Economy

ICT has proved very critical in facilitating individuals and organisations to reduce costs, improve business processes, boost innovation, and increase productivity. ICT has also proved to be a key tool for efficiency and effectiveness in delivery of services to the Public. Consequently ICT has made major contributions in the following areas:

2.8.1 Gross Domestic Product

At the macro level, the posts and telecommunications subsector has been one of the fastest growing sectors in the economy with an average growth rate of 19.7% over the last 5 years. This has resulted in an average contribution to Gross Domestic Product (GDP) of 2% over the same period. The contribution of the posts and telecommunications subsectors to GDP and growth rates over the years is illustrated in the table below:

Table 2**:** Contribution of posts and telecom sectors

Financial Year	Percentage Growth rate	Percentage contribution
2008/09	19.8%	3.1%
2009/10	23.7%	3.3%
2010/11	21.2%	2.1%
2011/12	18.9%	1.7%
2012/13	14.8%	1.9%

Source: UBOS 2013, statistical abstract

2.8.2 Tax Contribution

The growth in the sector has also been reflected in its tax contribution which grew from UGX155 billion in 2008/09 to UGX449 billion in 2014/15. Figure 3shows the telecommunications sector contribution to tax revenue over the years:

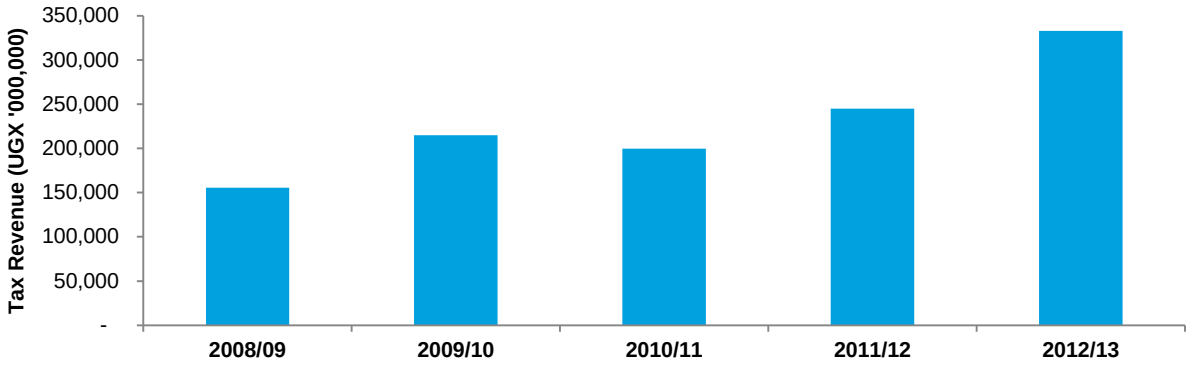


Figure 3: Contribution of telecom sector

2.8.3 Employment

While the actual number of directly employed staff in the sector has gone down due to increasingly higher productivity driven by competition, there has been high growth in the number of jobs in the sector. The growth is a result of the overall expansion of the sector combined with the outsourcing policies of the operators (MTN for example currently out sources to more than 3,000 people), the liberalisation of the provision of access services through internet cafes and telephone kiosks, the growth of the support services for the sector (including law, accounting, marketing etc), and user equipment sales, installation and maintenance. The education sector has also generated a large number of jobs related to developing the human resource required to service the sector at all levels. This ranges from small scale institutions providing end user skills to large institutions providing university level education. It is estimated that the total number of jobs currently stands at1,300,000 as per the Ministerial Policy Statement 2014/15.

2.8.4 Investment

One of the key challenges Uganda faced prior to the reforms was securing sufficient investment to revamp a dilapidated telecommunication network and expand it to extend services to the entire country. Investment especially by the Private Sector has shown a steady increase over the years but a lot more remains to be done.

2.8.5 ICT Exports

In terms of the ICT share in export and import revenue, Uganda's ICT service exports stood at USD 74.9 million in 2011. According to a World Bank report published in 2012, Uganda's ICT service exports included computer and communications services (telecommunications, postal and courier services) and information services (computer data and news-related service transactions). However given that there is no manufacturing or assembly known to be currently taking place, these must have been re-exports. Even with this scenario, Uganda is still a net importer of ICT services. The comparative data captured in the World Bank Report 2012 indicates that ICT goods imports were at 7.4% in 2010, while ICT exports were at 5.7% of the total exports in the same period. The ICT goods exports covered in the report included telecommunications, audio and video, computer and related equipment, electronic components, and other ICT goods but excluded software.

There is need for Government to put in place specific measures and strategies for boosting production of ICT goods and services from within both for local consumption and export, if it is to meet the country's vision 2040 aspirations.

3 Situational Analysis

Two techniques were deployed in analysis of the Current State of the ICT Sector namely Strengths Weaknesses Opportunities and Threats (SWOT), and Political Economic Social Technological (PEST) Analysis. The SWOT Analysis was applied to 8 thematic areas namely ICT Governance (enabling environment and institutional setup); Infrastructure Development and Access; ICT Human Capital development; Information Security; ICT health, safety and environment; Research and Innovation, e-Services and local content development; and ICT Promotion and Awareness Creation. On the other hand, the PEST Analysis focused on the identification of major signals and trends that are likely to influence the national ICT landscape.

3.0 SWOT Analysis

3.0.1 Strengths

The key strengths of the ICT Sector across all the major thematic areas were identified as follows:

A conducive ICT governance environment in place: It comprises both a well elaborate ICT institutional set up with a fairly clear articulation of the roles and responsibilities of key actors, as well as a favourable policy, legal and regulatory environment for private sector participation and investment in the sector.

Interagency working groups, platforms and forums in place: These have been established to coordinate specific activities of the sector although these require institutional strengthening. In line with the overall policy guidance regarding sector-wide approach, the ICT Sector constituted the ICT Sector Working Group (ICT-SWG) for the purpose of collective planning, budgeting, resource allocation and performance review. The SWG draws representation beyond the key public players in the sector to include Development Partners, the Private Sector and Academia. In addition, the sector has a Top Management Team (TMT), which assists in arriving at collective policy decisions within the sector. It is chaired by the Minister and comprises the chief executives of the agencies in the sector, the Permanent Secretary, the 2 Directors in the MoICT, and the Under Secretary.

The Private Sector has also put in place various fora and platforms that promote different interests. They include consumer associations, ICT professional bodies and Internet Service Providers (ISPs). The emerging professional bodies include the ICT Association of Uganda (ICTAU), the Uganda Technicians and Information Technology Association (UTITA) and the Uganda Business Process Outsourcing Association (UBPOA). The success of these associations and professional bodies will be measured not only on how best they advocate for the needs of the special interests groups they serve but also how closely they work with government to develop Uganda's ICT industry.

3.0.2 Weaknesses

Traditional hierarchical set up: The ICT Sector has been organised along traditional sub-sectors, which makes the sector segmented along individual mandates. The dynamic nature of the ICT Sector however, demands for an institutional arrangement that takes into account the dynamic nature of ICT and convergence of technology. Such an institutional framework may not be appropriate given that thisICT-SIP is structured along a number of pillars that were not considered at the time the Ministry structure was put in place.

Weak Sector Working Group (SWG): Going by best practices in other sectors, the ICT-SWG needs to be strengthened in order to provide stewardship for implementation of the ICT-SIP. The SWG has been lacking a common vision and purpose, clear definition of membership terms and conditions, roles and responsibilities of members, as well as articulation of a working calendar. A strong ICT-SWG is a prerequisite for a concerted advocacy and lobby for the rightful share of the sector from the national coffers as well as building strong networking with development partners.

Lack of an interagency coordination arrangement at technical level: Besides TMT, there is no other structure that brings together the key actors in the sector to brainstorm on topical issues that influence ICT development.

Inadequate staffing in the sector: None of the agencies in the sector has had their approved established structures fully operationalized. The overall staffing level for the sector is about 40%, and this acute shortage of human resource negatively affects sector performance.

Low capacity to attract and retain highly performing ICT professionals: World over, ICT personnel are highly marketable and attract higher remuneration. Due to non-competitive remuneration especially at the Ministry, the sector continues to grapple with the challenge of attracting and retaining quality staff. Despite continuous placement of advertisement, the Ministry has failed to attract and recruit a certain cadre of public officials. The problem is compounded by high attrition rate of staff leaving the sector for greener pastures elsewhere. There is need to boldly realign the remuneration of the Ministry staff with that of the ICT industry so as to attract, maintain and retain motivated and skilled manpower in the Ministry.

Existence of best practices in remuneration of ICT public employees: Countries such as Kenya pay a discretionary remuneration to Government ICT employees, which is over and above the normal civil service salary. The Uganda public service salary scale for Judges and other categories of staff in the Judiciary is also over and above the normal civil service salary. In addition, under the support to Scientists scheme, scientists including ICT personnel are provided a salary top-up but this has not solved the problem. Drawing from such initiatives, an optimal remuneration for MoICT staff could be adopted.

Low ICT promotion and public awareness: Whereas the policies, laws regulations and standards have been put in place, in most cases, public awareness about them is hardly done due to inadequate resources. Research has indicated that by making ICT available (through supply side interventions) only does not automatically lead to their adoption and usage. Therefore a concerted ICT promotion and awareness creation effort to create demand would go a long way to improve the situation.

3.0.3 Opportunities

Existing business cases and models in favour of a central domicile of ICT personnel: Best practices from some of the countries that were benchmarked showed that domiciling ICT personnel in a single agency facilitates faster implementation of ICT policies in government. The ICT personnel serve as focal points (such as Government Chief Information Officers – GCIOs) and capacity building and professional development of ICT personnel becomes better coordinated.

ICT being an examinable subject at various levels of education: Government has recognised the importance of ICT in the education system, and to this end, the National Curriculum for Higher school of Education has been reviewed to include ICT as a compulsory discipline. In addition, computer as a subject is examinable at ordinary level (senior 4). However there is gross inadequacy of ICT equipment, ICT infrastructure and teachers for the subject.

There are also challenges of power especially in rural areas. Funding for the ICT Sector should be increased to enable it address these issues. The sector should take this opportunity and use the ICT-SIP to raise funds including enhancement from the consolidated fund.

Increased private sector activity in the sector: There is increased Private Sector participation in the ICT industry that has been brought about by the liberalised economy. This has boosted ICTs adoption with increased uptake utilization of foreign content and applications. Like the developed economies, there is need to develop and implement guidelines to encourage knowledge transfer and participation of the local population.

High Turnover of ICT graduates: This avails potential human resource for deployment in tandem with the dynamic growth of the sector, to build sustainable capacity in ICT development, management and innovation.

3.0.4 Threats

Inter-sectorial coordination mechanism: ICT is cross-cutting and there are several ICT initiatives that happen outside the ICT Sector. However, the ICT Sector currently lacks a mechanism to coordinate, monitor and evaluate ICT developments for the benefit of the entire economy.

ICT personnel working in other sectors: The ministry currently lacks a mechanism for supervising and developing capacities of the numerous ICT personnel working in the Public Sector (both at central and LG). The proposal to institutionalize ICT professionals in the Government is yet to be approved into a policy that would enable common recruitment and deployment of ICT Personnel by the MoICT. Uganda already has experience of common cadre personnel such as administrators, economists and accountants to name but a few whose recruitment and deployed is undertaken centrally with tremendous success.

Impact of digital convergence on the current regulatory framework: As stated earlier, regulatory roles are spread in different agencies within the sector. For example, UCC regulates the Communications sub-sector encompassing telecommunications, broadcasting infrastructure and postal services while NITA-U sets and enforces standards for the IT sub-sector. While this was justifiable in the past and seems to work in the present, it is likely that the sweeping wave for digital convergence (convergence of technologies and industries) will necessitate regulatory functions to be brought under a single roof and therefore restructuring of the existing institutional framework for ICT regulation and bringing on board the Broadcasting sub-sector.

Absence of a national broadband strategy and ICT structure plan: This is responsible for duplication and sometimes overprovision especially in the urban areas, leaving the rural communities un/underserved. The traditional licensing framework that requires voice and data service providers to deploy their own infrastructure is a barrier to entry for new players into the ICT market. In addition, weak enforcement of infrastructure sharing has led to high costs of network expansion and has limited innovative approaches to expansion.

Vandalism and theft of ICT infrastructure and installations: this is largely due to weak enforcement of laws and regulations, and to some extent a weak governing infrastructure.

Appendix G has more details on the SWOT Analysis.

3.1 PEST Analysis

In the PEST analysis, key ICT aspects and trends that impact the sector alongside their anticipated influence on Uganda's ICT development landscape were assessed. These are as elaborated below:

3.1.1 Political Aspects

Strong political will to support ICT development: This is enshrined in the overall Uganda Vision 2040 and the NDP, which recognise ICT as a pinnacle for socio-economic transformation and development as well as a channel for improving efficiency and effectiveness in service delivery.

The requisite policy, legal and regulatory framework is in place to facilitate private sector activity and investment. The Government recognizes the value of research and innovation in the development ecosystem. To this end, a National Science and Technology Innovation (STI) Policy was developed to guide the STI agenda. There is however no mechanism for coordinating research and innovation initiatives both at national and sector level. The lack of a national research agenda, disconnect between the academia and industry in promoting research initiatives as well as inadequate protection of intellectual property rights are critical policy areas that require urgent attention.

Development of the policy legal and regulatory framework to support convergence has been embarked on with the establishment of technology and service neutral licensing regimes. In addition, creation of a partial converged regulator was achieved with the merger of the Uganda Communications Commission (UCC) and the then Broadcasting Council (BC) into one Regulatory body for the communications industry under the Uganda Communications Act 2013. There is need to further consolidate this in view of convergence.

Despite efforts to put in place conducive regulatory environment for sector players to operate, there still exist some gaps that need to be addressed. The gaps in the current policy, legal and regulatory framework include absence of a data protection and privacy law, encryption and identification systems, e-government regulations, and regulations to protect consumers from ICT spam. ICT is dynamic and requires regular policy reviews.

The process of harmonizing policies, laws and regulations with international norms and practice has been slow. There is also delayed ratification of international and regional agreements and lack of clear distinction in the role of public and private sector stakeholders in the implementation of these resolutions. It has been noted that there is limited coordination in the development of country positions on ICTs for presentation during international fora, which puts Uganda at a disadvantage.

Due to the absence of the National Data Standards for data sharing and interoperability, Uganda has witnessed uncoordinated development and deployment of public infrastructure/utilities. This is responsible for duplication of efforts and wastage of public resources. Currently the agencies responsible for roads development, water reticulation, and electricity transmission implement their plans independently. The ICT infrastructure suffers from cable cuts caused by occasional construction and repair of road networks.

3.1.2 Economic Aspects

There is no doubt the liberalisation of the ICT Sector allowed competition, which in turn brought about efficiency in the sector and increased service availability. That notwithstanding, there are some other economic considerations from both the Public and Private Sector mentioned below, that influence future growth and productivity in the sector as well as full realization of the benefits of the information age.

From the Private Sector perspective, these include high taxes on the ICT Sector, lack of incentives to attract new investments, and unreliability of supporting facilities such as power which ultimately raises the cost of doing business.

From the Public Sector domain, the key economic issues affecting the sector include:

Inadequate budgetary allocations to the sector: Whereas Government recognises the pivotal role of ICT in enabling Uganda's economic growth and socio-economic transformation, the sector allocation from the consolidated fund is only about 0.01% of the budget. If this sector was to be adequately resourced to fully execute its mandate, there would be strong macro-economic impact in terms of improving efficiency and effectiveness in service delivery by government, job creation, and generation of revenue.

High cost of ICT devices: The cost of ICT devices / gadgets is high and not affordable to many Ugandans. This has hindered penetration of SMART gadgets and subsequently use of SMART applications.

High cost of Internet Bandwidth: The cost of internet bandwidth in Uganda (average USD 600 per 1Mbps) is the second highest in the region after Burundi. Part of the reasons for this is the fact that Uganda has no direct access to the international submarine cables. It obtains international connectivity through private networks transiting through Kenya and Tanzania thereby paying huge hauling costs. The high cost and less reliable internet connectivity is a key factor that negatively impacts the country's competitiveness in strategic ICT enabled businesses such as Business Process Outsourcing (BPO).

3.1.3 Social Aspects

Local Content development: The country is endowed with a diverse culture and youthful tech savvy population with an interest in ICT entrepreneurship. This young population is a great resource for ICT innovation and content development. Current interventions by Government and Development Partners (Civil Society) in form of ICT hubs, ICT contests and innovation awards have helped to nurture and grow a few starter-ups, and there are some local brands of ICT applications on the market. However, the supportive frameworks such as intellectual property and copyright laws are still in the development stages.

Universal service and universal access: ICT infrastructure development has mainly been driven by the Private Sector that is mainly profit-driven and as such investment in areas that are commercially viable to them. As a result, some areas in the country have remained un/underserved. To mitigate this imbalance, Government established the Rural Communications Development Fund (RCDF) managed by UCC whose broad objective is to promote universal access to communications services through specific intervention in those communities that are not ordinarily covered by the operators and other service providers. RCDF has made significant achievements with regard to establishment of ICT infrastructure in targeted areas. Examples include internet cafes, health centre facilities, and internet points of presence, ICT laboratories in schools and tertiary institutions and broadcasting infrastructure. An active Monitoring and Evaluation (M&E) component is required to gauge the impact of these ICT establishments in rural areas and a baseline survey to evaluate the status of national ICT development should include such initiatives.

ICT Promotion and Awareness Creation: Community level ICT awareness and promotional activities have been established both by the Government and Civil Society. Through the Rural Communications Development Fund (RCDF), Government has carried out community ICT awareness and training countrywide through over 500 awareness sessions in the past 5 years. Furthermore, Government has established community information centres in different parts of the country to enable communities have hands-on experiences with ICT devices thereby minimizing stigma and promoting ICT usage among remote and rural communities. These initiatives have taken

different forms such as tele-centres, district business centres (DBICS) and Internet Points of Presence (PoPs) to offer communities a variety of services to choose from. All ministries and 80 district local governments have websites/web portals to provide information to the public. Government has undertaken preliminary activities towards establishment of the Government Citizen Interaction Centre (GCIC) and Information Access Centre (IAC). These two initiatives will provide additional space and/or platform for citizen interaction and engagement with ICTs. More sensitization and awareness creation among the general public is still required to encourage them to demand for as well as use ICT or ICT-related services.

ICT professional associations and networking: Social media and professional associations are key conduits for enhancing ICT awareness in the country. There is an increasing number of Ugandans subscribing to and actually using social media such as facebook, twitter, whatsapp and linkedIn to name but a few. Higher Education Institutions have increasingly adopted social media platforms for quick and timely delivery of information to students and stakeholders. Though there are some locally opened individual blogs with some reasonable number of 'likes' and 'followers', no local social media has been established with such relative degree of success compared to other developing countries like Nigeria. Professional bodies and networks exist right from schools where ICT clubs have been introduced to enable students associate with ICTs and share their aspirations and ambitions in this fast growing field. In the work environment, professional associations and loose networks such as i-network, Wougnet, Outbox, LAN-ICTAU and Mobile Monday bring ICT enthusiasts and professionals together to strategize for the future of ICT in the country and create awareness about emerging issues in ICT.

ICT education and human capital development: ICT training is offered by several universities and other tertiary institutions. In addition, the Uganda Institute for Information and Communications Technology (UICT) is run as an ICT training institution for middle cadres (diplomas and certificates). However, the Uganda e-Readiness Assessment Survey report 2012 indicates that institutions of learning lack a standardized curriculum and are not in touch with the industry demands. The academia has remained isolated from the industry or communities within which they exist hence the graduates from these institutions do not meet the expectations of the industry.

3.1.4 Technological Aspects

Broadly speaking the ICT Sector is a dynamic sector with fast technological and economic developments with associated opportunities and risks that have far reaching implications for society. The key technological issues influencing Uganda's ICT Sector include but are not limited to the following:

Digital Convergence: Convergence of communications platforms has resulted in the merger of previously separate subsectors like telecommunications, broadcasting and, information technology and media. Both the Broadcasting and Telecom infrastructure have merged into a seamless digital data enabling the transmission of broadcasting content over telecommunication networks. A common infrastructure platform is now usable for transmission of voice, data, and video and this has resulted in the emergence of operators exclusively providing infrastructure services.

Analogue to digital Migration for TV broadcasting: In conformity with the decisions of ITU, which requires all countries to complete migration from analogue to digital television broadcasting by June 2015, Uganda using a multi-stakeholder approach is implementing the program to ensure that the deadline is met. To-date, the installation of digital signal transmission infrastructure for greater Kampala has been completed. The coverage includes Jinja, Mukono, Masaka, Mpigi, Mityana, Bombo, and Nakasongola. The rollout plans to cover the whole country have also been drawn. However, the key constraint is the lack of funds to complete the task. Consequently, Uganda is lagging behind other countries in the region and needs to expedite some processes if it is to meet the June 2015 deadline. The delay in migration to the digital broadcasting platform might hold back the country from realising the digital

dividend, and subsequently a whole new line of business opportunities, jobs, spectrum resource and socio-economic transformation.

Information security readiness: There have been information security incidents in both the Public and Private Sector that have been addressed using the existing cyber laws; however the capacity to handle these incidents is still weak. According to the Uganda Police force, a total of 36 typical cybercrime cases were reported in 2013 ranging from electronic fraud, phishing, email hacking, pornography/defamation, offensive communication, mobile money, ATM/VISA fraud among others. The increased uptake of information systems in both the public and private sectors that process citizen's personal information on the other hand has brought about the need for a Data Protection and Privacy law to safeguard this data. There are still challenges in the Justice and Law Sector (JLOS) ranging fromlack of proper cyber-crime investigation, electronic evidence handling to litigation etc.

3.2 Crosscutting Issues

In addition to the areas above, there are a number of cross-cutting issues that must be addressed to enable the ICT-SIP adopt a holistic approach covering all stakeholders. These include gender, youth, environment and persons with disabilities.

3.2.1 Gender

Information has been observed as a pre-requisite for empowerment (World Bank 2002). Informed citizens are better equipped to take advantage of opportunities, access services, exercise their rights and hold those responsible accountable. If gender issues are not articulated in ICT policies and strategies, it is unlikely that girls and women will reap the benefits of the information age. The majority of women live in rural areas and are disadvantaged as far as education opportunities are concerned. They are mostly affected by poverty and therefore least likely to benefit from ICTs in the absence of specific intervention tailored to their needs. This is particularly so because ICT infrastructure is concentrated in the urban areas. Where it exists in the rural areas, it is located in places that culturally disadvantage access by women, such as entertainment centres. In addition, the ICT platforms are expensive and not readily afforded by women. The women are further disadvantaged by their relative low levels of education; hence they cannot cope up with some media of communication which use foreign languages such as English and French. Girls are also generally discouraged from taking science subjects. The result is that there are fewer women in ICT related professions like Computer Science and Engineering.

The strategies in the ICT-SIP will mainstream gender in all programmes and projects to ensure equity and equality, in collaboration with Ministry of Gender, Labour and Social Development (MoGLSD). Such programmes will include appropriate infrastructure and network deployment, technology choice and affordability, regulatory frameworks, universal access, research and development and training opportunities for learning. Where necessary affirmative action will be applied to encourage and promote the participation of women. Collection of gender disaggregated statistics will be promoted in the sector to keep track of progress on gender mainstreaming.

3.2.2 Persons With Disabilities (PWDs)

More than a billion people live with some form of disability with 80% of them living in developing countries. Disability is both a cause and a consequence of poverty: poor people are more likely to become disabled, and people with disabilities are among the poorest and most vulnerable groups of the global population. Regrettably, disability was not included in the Millennium Development Goals (MDGs) or in their operationalizing targets and indicators. As a result, disability has largely been invisible in their implementation, and is rarely included in national policies, programmes, or

in monitoring and evaluation efforts related to the MDGs. This has perpetuated a situation in which environmental barriers are still preventing persons with disabilities from accessing, participating and being fully-included in social, economic and political activities.

Accessible ICTs have the potential to provide PWDs unprecedented levels of access to education, skills training and employment, as well as the opportunity to participate in the economic, cultural and social life of their communities. As of April 2013 and considering that 15% of the world's population, one billion people, has a disability that affects their access to modern communications, there is a dire need to improve the access to ICTs for persons with disabilities. Government plans to liaise with stakeholders in developing technologies that can facilitate the disabled to use ICTs such as computers and telephones. All ICT Sector policies, programmes and projects will prioritize and mainstream issues related to PWDs.

3.2.3 Youth

Youth account for the biggest percentage of the country's population. According to the census report of 2002, the number of people below 30 years constitutes 76% of the population. The ICT-SIP, therefore, will undertake interventions that address the needs of the youth in collaboration with other stakeholders. Special focus will be on job creation, income generation, entrepreneurship, education, skills development and entertainment.

The youth will play a leading role in the implementation of the following interventions, among others:

- Information Technology Enabled Services (ITES) such as Business Process Outsourcing (BPO) and software development in collaboration with the Ministry of Finance, Planning and Economic Development (MoFPED), Uganda Investment Authority and Private Sector;
- Promoting use of ICT in schools and tertiary institutions (e-learning, tele-education) in collaboration with Ministry of Education and Sports and civil society;
- Enhancing the film industry through skills training as well as production and marketing of local content (e.g. "Ugawood"); and
- Mobilization of resources to implement strategic interventions e.g. the Youth Fund in Ministry of Gender, Labour and Social Development, production of bankable proposals for funding by finance institutions and development partners.

3.2.4 Environment

As ICTs develop the impact on human society and the environment increases, new challenges like e-waste and effects of radiation, among others have to be boldly dealt with. Human health and environment would be drastically endangered if concerted actions are not taken for efficient management of effects ICTs on the environment.

Energy use is the single largest contributor to the carbon footprint of the ICT Sector. The ICT industry relies on the increasing use of electricity for manufacturing, distributing, running equipment, applications, and services. According to the World Summit on the Information Society (WSIS), electricity demand by the ICT Sector for industrialised countries is between 5% and 10% of total electricity demand. An important amount of the electricity used by ICT is consumed when equipment is switched off or is not performing its main function. Today, these standby losses are of the order of 50% of the electricity used by ICT – representing a huge opportunity for change and improvement.

Still, greenhouse gas emissions from the ICT sector are small relative to the sector's share of the world economy. A recent independent analysis by Gartner Consulting estimates the ICT sector is responsible for an estimated 2% of

global carbon dioxide emissions. Despite tremendous efficiency improvements in electronic components, demands for new services are increasing, and so is the amount of total electricity consumed by ICT.

Government formulated the e-Waste Management Policy (2012) and attendant Strategy to deal with the threat of e-Waste. Studies will also be carried out on the effects of radiation emitted from ICT infrastructure and equipment on humans, animals and plants, in collaboration with regional and international Agencies such as ITU, World Health Organisation (WHO) and Food and Agricultural Organisation (FAO). A legal framework to regulate all facets of adverse effects of ICTs on the environment shall be developed in collaboration with Ministry of Water and Environment and National Environment Management Authority (NEMA)

ICTs, such as satellites, mobile phones or the Internet, play a key role in addressing the major challenges related to climate change and sustainable development. ICTs are fundamental for monitoring climate change, mitigating and adapting to its effects and assisting in the transition towards a green economy. Government plans to raise awareness of the role of ICTs in curbing climate change.

3.2.5 HIV/AIDS

HIV/AIDS continues to be major challenge in people's lives, affecting productivity of labour as well as the cost of its prevention and treatment. ICT will play an important role in implementation of HIV/AIDS Policy and programmes by providing platforms for information collection, analysis, storage and dissemination. In addition various ICT media such as radio, television, Internet, telephony and social media will be utilized for awareness creation. All these will be undertaken in collaboration with Ministry of Health, Uganda AIDS Commission, Civil society and the Private Sector.

4 Strategic Direction

4.0 Mandate

To provide strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT Sector for sustainable, effective and efficient development, as well as harnessing and utilization of ICT in all spheres of life to enable the country achieve its development goals.

4.1 Vision

A knowledge-based Uganda enabled by a vibrant ICT Sector.

4.2 Mission

To provide leadership and enabling environment for promotion of ICT as an industry and enabler for the transformation of Uganda to a knowledge-based country.

4.3 Goal

The overall goal of the ICT-SIP is to increase access and usage of ICT in the country so as to transform the economy and improve service delivery.

4.4 Strategic Themes and Action Areas

A collaborative exercise was conducted with stakeholders and the following Strategic Themes were identified as the basic fundamental clusters of influence leading to the realisation of the Vision:

1. Foundational Support for ICT Development – includes all components that render foundational support to the initiatives of the sector i.e. policy, legal, infrastructure, manpower resources and information security;
2. Enabling Environment to spur ICT growth and utilisation – includes components in which initiatives will inspire trust and confidence in the use of ICTs and thereby bring about growth in ICT and its utilisation; and
3. ICT for Service Delivery – includes all interventions aimed at harnessing the potential of ICTs as an enabler of growth and service delivery.

Each of the Strategic Themes mentioned above has been further conceptualised into Action Areas. In each of them, strategic objectives to be realised through strategic interventions have been proposed. Table 3 brings out the different Action Areas associated with the Strategic Themes discussed above.

Table 3**:** Strategic Themes and Action Areas

Strategic Themes	Action Areas
Foundational Support for ICT Development	A. ICT Governance B. Human Capital Development and Planning C. ICT Infrastructure D. Information Security

Strategic Themes	Action Areas
Enabling Environment to spur ICT growth and utilization	E. Research, Innovation and Development F. ICT Health, Safety and Environment G. ICT in other Sectors
ICT for Service Delivery	H. Promoting e-Services and Local Content I. e-Government J. ICT Industry Promotion in Target Markets

FOUNDATIONAL SUPPORT FOR ICT DEVELOPMENT

A. ICT Governance

Policy, Legal and Regulatory Framework

A favourable policy, legal and regulatory framework ensures consistent support of the planned initiatives and ensures responsiveness to the technological as well as business environment.

The proposed objectives, strategies and interventions are as below.

Objective 1: To ensure a conducive policy, legal and regulatory framework that is responsive to industry demands.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Review the policy, legal and regulatory framework to align it with international norms and practices, while taking into consideration national peculiarities.

Strategic Interventions:

1.1 Review National ICT Policies to address requirements in the priority areas of research and development, ICT convergence, human capital development, and ICT exports

1.2 Develop, regularly review and enforce regulations and standards

1.3 Strengthen the enforcement mechanism of laws, regulations and standards

1.4 Review Spectrum Management Framework to facilitate realisation of the broadband goals

1.5 Develop and implement a policy and legal framework for multi-sectorial infrastructure deployment and sharing

1.6 Finalise the development and implementation of the Data Protection and Privacy Bill, and develop Information Security legal framework

1.7 Finalize the development of the National Broadband Policy and Strategy as well as its implementation framework

1.8 Review and implement the policy for the postal sector to encompass opportunities offered by e-Government and e-Commerce

1.9 Develop and implement a cross-cutting M&E framework for the ICT Sector

1.10 Develop a Strategy for increasing access of ICT devices & services to Special Interest Groups

1.11 Develop and implement an Open Source policy and strategy for Uganda.

Institutional Framework

The strategic role of ICT as a tool and enabler of other sectors' performance calls for an institutional arrangement and coordination mechanism that ensures coherence in the development and implementation of policies, laws, programs and projects in the sector. The proposed objectives, strategies and interventions are as below.

Objective 2: To strengthen the ICT institutional framework to drive the national ICT agenda.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Establish a multi-institutional collaborative framework to drive the national ICT agenda.

Strategic Interventions:

2.1 Review and align the existing institutional framework to drive the national ICT agenda by clearly articulating and harmonising the roles of various institutions, and ensuring synergies and collaboration

2.2 Build institutional capacities to ensure development, implementation and enforcement of policies, laws and regulations

2.3 Strengthen the ICT Sector Working Group that is premised on collaboration among stakeholders, so as to take advantage of vast knowledge, experience and other resources from the various stakeholders in developing the sector

2.4 Strengthen platforms and forums for stakeholder engagement in the sector.

B. Human Capital Development and Planning

The ICT Sector being very dynamic requires skilled human capital that is abreast with global trends and technological developments. Strategic and collaborative interventions between academia and industry are required to ensure that the right numbers of human capital with the required competencies are timely and available. The proposed objectives, strategies and interventions are as below.

Objective 3: To develop and nurture a competitive domestic human resource base.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Develop critical mass of ICT skilled Ugandans and industry ready workforce.

Strategic Interventions:

3.1 Establish the current stock and quality of ICT competencies in the country

3.2 Institutionalize and build capacity of ICT cadres in Government

3.3 Implement the Master Plan to transform UICT into a Centre of Excellence

3.4 Establish a sustainable ICT training program for Citizens

3.5 Implement the certification and accreditation for ICT professionals, trainers / training entities, products and services

3.6 Partner with Ministry of Education and training institutions to review, develop and implement ICT training curriculum at all levels of the education system

3.7 Develop and implement a mechanism for joint planning and ICT internship between academia and the industry

3.8 Develop and implement targeted capacity building for teachers to incorporate ICT in pedagogy.

Objective 4: To create mass awareness about ICTs and their relevance in people's day-to-day lives.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Build an ICT-aware society.

Strategic Interventions:

4.1 Collaborate with development partners including civil society to scale up and implement community ICT awareness creation initiatives

4.2 Develop a coherent strategy on the use of social media for ICT awareness

4.3 Intensify the use of print and electronic media as a tool for mass sensitization and awareness about ICTs

4.4 Coordinate the formation of ICT associations and professional bodies as a mechanism to create ICT awareness.

Strategy 2: Enhance access to public information.

Strategic Interventions:

4.5 Develop and implement a mechanism that will ensure mass sensitization and awareness about ICT policies, programmes and projects

4.6 Collaborate with the Ministry of Information and National Guidance to publicize the Access to Information Act in relation to online platforms

4.7 Provide technical support including standards for operationalization and update of the Government Web Portal, websites and social media

4.8 Develop Open Data for Government.

C. ICT Infrastructure

The establishment of a robust and well-functioning ICT infrastructure is a prerequisite for the efficient delivery of services. The proposed objectives, strategies and interventions are as below.

Objective5: To ensure efficiency in coordination, planning, investment, implementation and utilization of end-to-end ICT infrastructure.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1:Ensure coordinated and collaborative planning as well as development of ICT infrastructure.

Strategic Interventions:

5.1 Establish and implement a mechanism for planning, development, deployment and management of ICT infrastructure

5.2 Develop and implement National ICT Infrastructure Structural Plan

5.3 Establish a mechanism for collaborative monitoring and evaluation of ICT infrastructure deployment in line with the Plan and developed standards

5.4 Embrace convergence of ICT technologies through common infrastructure deployment and sharing

5.5 Develop and implement a National Postal and Courier Services Master Plan to exploit opportunities in e-Government and e-Commerce

5.6 Participate in National Coordination Mechanism for synchronized planning and delivery of Utilities infrastructure.

Strategy 2:Ensure availability and reliability of ubiquitous broadband network with interconnection to regional networks.

Strategic Interventions:

5.7 Monitor the implementation of ICT infrastructure in line with National Broadband Strategy

5.8 Extend NBI to cover the NDPII priority areas and ensure interconnectivity with regional backbone infrastructure

5.9 Implement innovative spectrum management practices to ensure optimal utilization of the national resource

5.10 Promote the development and use of Internet Exchange Points

5.11 Develop a mechanism for national backbone connectivity to international sub-marine cables.

Strategy 3: Ensure accessibility and affordability of ICT devices as well as services.

Strategic Interventions:

5.12 Implement last mile connectivity countrywide in partnership with the Private Sector

5.13 Promote production and use of low-cost locally assembled devices in collaboration with the Private Sector

5.14 Implement interventions that will ensure affordability of ICT devices and services.

D. Information Security

In an increasingly knowledge-driven and networked world, activities that breach lawful online conduct lead to erosion of trust and confidence. While it is important to combat these threats, measures must be taken to create awareness of what are desirable and building capacities for the same. On the other hand, the measures must be supported by an enforcement and compliance regime. The proposed objectives, strategies and interventions are as below.

Objective6: To develop a secure, reliable and resilient information security system with national capacity to respond to cyber security threats.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Implement the National Information Security Strategy (NISS).

Strategic Interventions:

6.1 Implement the National Information Security Framework (NISF) including

operationalization of the National Information Security Advisory Group

6.2 Establish the National CERT, and ensure development and integration of sectorial CERTs.

Strategy 2: Ensure protection of consumers of ICT services.

Strategic Interventions:

6.3 Build capacity of key institutions across the board (legislature, judiciary, law enforcement agencies etc)

6.4 Mount concerted ICT security awareness campaigns

6.5 Develop national authentication mechanisms like PKI

6.6 Implement website regulation and social media for Government

6.7 Establish and maintain partnership agreements with regional and international players on information security with partner states.

ENABLING ENVIRONMENT TO SPUR ICT GROWTH AND UTILIZATION

E. Research, Innovation and Development

In the inherently dynamic and globalised ICT Sector, the marketplace is becoming increasingly competitive with more players climbing onto the bandwagon and exploring ever newer ways of working to increase their productivity levels in order to keep abreast with technology advancements, business needs and discovering virgin areas in which to operate as a way to maintain their competitive advantage. Research is envisaged as a critical enabler for both of these developments. The proposed objectives, strategies and interventions are as below.

Objective7: To promote Research, Innovation and Development of ICT and Relevant ICT enabled services.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Create an enabling environment to support Research, Innovation and Development.

Strategic Interventions:

7.1 Develop an ICT Research, Innovation and Development Strategy for Uganda including assistance to entities in obtaining patents

7.2 Establish a sector-wide coordination mechanism for ICT research, innovation and development

7.3 Establish an ICT Research, Innovation and Development Fund

7.4 Establish ICT laboratories in institutions of higher learning

7.5 Develop support programmes to facilitate development of ICT incubation facilities and activities

7.6 Establish ICT Parks and special economic zone

7.7 Develop and implement a programme to attract leading companies in the industry and development partners to establish ICT research, innovation and development facilities.

Strategy 2: Enhance participation of academia in Research, Innovation and Development for ICT based solutions to local and regional needs.

Strategic Interventions:

7.8 Develop a framework for collaboration between research institutions, academia and industry to generate the relevant and applicable solutions.

F. ICT Health, Safety and Environment

The production, operation and use of ICTs necessitate interventions to ensure the well-being of the populace and integrity of mother earth. ICTs have also been identified as a critical enabler in improving the environmental sustainability of other sectors. The proposed objectives, strategies and interventions are as below.

Objective8: To increase the diffusion of Green ICTs in the ICT Sector as well as other sectors.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Promote the use of Green ICTs.

Strategic Interventions:

8.1 Create awareness about Green ICTs

8.2 Promote the use of ICT-enabled solutions for climate change mitigation and adaptation

8.3 Implement efficient management and disposal mechanisms of e-waste in line with e-waste policy

8.4 Establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environmental sustainability.

Objective 9: To safeguard the well-being of ICT consumers and the public.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Promote the development of and conformity to health and safety standards related to the deployment and use of ICTs.

Strategic Interventions:

9.1 Localize / adopt relevant international standards and guidelines for human safety with respect to ICT products

9.2 Champion the development of requisite ICT standards

9.3 Review the national conformity regime and enhance the associated processes and facilities.

Strategy 2: Empower consumers to make informed decisions.

Strategic Interventions:

9.4 Establish mechanisms to increase awareness of consumers and their ease in establishing conformity of ICTs products.

G. Promoting and Coordinating ICT in other Sectors

ICT has the power to make public services more efficient, grow businesses, strengthen and expand social networks. It can also act as a very useful enabler for non-ICT Sectors. The proposed objectives, strategies and interventions are as below.

Objective10: To increase efficiency and productivity of non-ICT Sectors.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Promote the application and usage of ICT in other sectors.

Strategic Interventions:

10.1 Collaborate with the respective MDAs in other sectors on major ICT projects (e.g. Integrated Justice Information Management System, Land Information System, Integrated Personnel and Payroll System, e-Parliament including e-Cabinet, e-Voting, e-Tax, e-Immigration, etc)

10.2 Provide Support for other sectors in integrating ICTs within their respective core

activities (such as exploitation of oil fields, eLearning, health research, teleworking, agricultural information dissemination, and scientific knowledge sharing).

ICT FOR SERVICE DELIVERY

H. Promoting e-Services and Local Content

e-Services

The impact of ICTs ranges from how operations are performed in our daily lives, to the way Small and Medium Enterprises (SMEs) function, to how governments and large multi-national corporations provide services to citizens. The use of ICT in business is considered key not only to business administration but also its growth. The proposed objectives, strategies and interventions are as below.

Objective11: To promote the development of ICT enabled services among citizens.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Develop and promote the use of e-Services.

Strategic Interventions:

11.1 Encourage the use of ICT tools for trade, service delivery and exchange of information

11.2 Promote the development and use of ICT value-added services

11.3 Incentivize the adoption of ICT in SMEs.

Local Content

Local Content is an expression and communication of a community's locally generated, owned and adapted knowledge and experience that is relevant to the community's situation. The proportion of local content in ICT is low in Uganda and its proliferation is considered by many as a major pull-factor in lifting the currently lagging ICT adoption among communities in Uganda. The proposed objectives, strategies and interventions are as below.

Objective 12: To develop a framework for facilitating the development and access to a wide range of relevant content for the various communication mediums.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Enhance capacity for local content development and usage in the various ICT services.

Strategic Interventions:

12.1 Develop and implement a strategy for promoting the development and use of local content for ICT services

12.2 Develop and implement policies as well as guidelines for local quotas in the employment and adoption of local content in ICT services.

Strategy 2: Promote use of locally developed solutions and applications.

Strategic Interventions:

12.3 Develop and implement a strategy for promotion and use of local ICT products by Government and Private Sector through a comprehensive incentive scheme for entities adopting and using locally developed ICT solutions, products and applications

12.4 Promote accessibility to archived digital information and multimedia content in digital repositories

12.5 Collect, package and preserve in digital form all information regarding cultural heritage of Uganda.

I. e-Government

e-Government is considered as the application of ICTs to and in Government functions and procedures with the purpose of increasing efficiency, transparency, and citizen participation. The proposed objectives, strategies and interventions are as below.

Objective 13: To ensure effective and efficient e-Government services.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Enhance integration and automation of e-Government services.

Strategic Interventions:

13.1 Ensure automation and integration of priority sectors and services i.e. National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice

13.2 Implement an electronic document management and workflow system for Government

13.3 Execute digital archiving and digitalization of Government records

13.4 Establish a national data centre, disaster recovery centre, secure Government cloud

(UG-Cloud) and national databank

13.5 Monitor the implementation of the e-Government enterprise architecture and interoperability framework

13.6 Strengthen the institutional framework for implementing e-Government

13.7 Support the implementation of the National Financial Information System

13.8 Establish One Stop Shop Centres for e-Government service delivery through the postal network.

Strategy 2: Enhance development and uptake of e-Government services.

Strategic Interventions:

13.9 Establish regional information access centres

13.10 Operationalize the IT Project Management Methodology

13.11 Implement the Government Citizen Interaction Centre (GCIC)

13.12 Promote utilization of Open Source software and mobile apps

13.13 Develop and implement a change management strategy for adoption of e-Government services

13.14 Build capacity for e-Government adoption.

J. ICT Industry Promotion in Target Markets

As a country, the need to market our ICT goods and services both locally and globally represents a major area of interest in revenue terms. It also has the potential of being a major engine of growth for the ICT Sector in Uganda. The proposed objectives, strategies and interventions are as below.

Objective 14: To promote Uganda as an ICT Hub.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Work with other countries of the region on a mutually beneficial basis for all-round development of the ICT Sector.

Strategic Interventions:

14.1 Undertake joint interventions with neighbouring countries to explore areas of competitive strengths and interest

14.2 Support the establishment of a secure, competitive and sustainable internet

bandwidth market in Uganda.

Objective 15: To promote Ugandan ICT goods and services internationally.

Under the above objective, the following strategies and accompanying strategic interventions are proposed:

Strategy 1: Position Uganda competitively in the Global ICT market.

Strategic Interventions:

15.1 Develop and implement a strategy to promote Uganda as an attractive ICT-enabled services centre of the world

15.2 Undertake market intelligence to identify target markets and services

15.3 Incentivize and reward companies that invest in promoting Uganda's ICT goods and services abroad

15.4 Empower Ugandan Missions abroad to promote the country

15.5 Prioritize participation in international ICT initiatives

15.6 Ensure ratification of signed ICT protocols.

Delivery of the Strategy: Strategic Interventions by Action Area

In order for the agreed goals to be achieved, strategic interventions have been identified and aligned to the strategic objectives. From these, action areas or programs have been developed as the vehicles for delivery of the strategy. Appendix E highlights this relationship.

5 Implementation Mechanism

For a smooth implementation of the ICT-SIP, the following critical factors will be put in place:

- Political support and strong leadership at all levels;
- Clear delineation of implementation roles, responsibilities and accountability structures;
- Adequate human resource capacity with appropriate ICT skills across all institutions in both the Public and the Private Sector;
- Intra and inter-sectorial collaboration to ensure synergies and effective coordination;
- Adequate financial resources to implement the identified initiatives; and
- Proper monitoring and evaluation mechanisms to facilitate regular stock-taking of the progress achieved during implementation.

5.0 Institutional Framework

The primary responsibility for ICT-SIP implementation rests on the MoICT and its agencies. The ministry will ensure coordination and harmonisation of the implementation process, monitoring, inspection and compliance audit of programmes and projects as well as evaluation of the overall effect of the plan. Actual implementation of the priority programmes and projects will be the responsibility of relevant agencies of the ministry such as NITA-U, UCC, Uganda Post Limited (UPL) and Uganda Institute for Information and Communications Technology (UICT). The specific roles and responsibilities of the MoICT and its agencies in implementation of ICT-SIP are elaborated in Appendix B. These have been assigned based on the institutional mandates and functions. In practice, implementation of the strategic interventions will in most cases cut across more than one institution.

In order to exploit synergies and leverage on the cross-cutting nature of ICT, the ministry and its agencies undertakes to implement the ICT-SIP following a multi-sectorial approach that harnesses experiences and competences of all key stakeholders in the Public and Private Sector as well as Development Partners (Donors) and Civil Society. The key actors in each of the above categories are broadly specified below:

The Public Sector: actors include MDAs and LGs that execute ICT-enabled projects (henceforth referred to as the 'Non-ICT sector actors'). This category will be frontline service delivery agencies for ICT-SIP programmes and projects, and therefore major implementation partners to the MoICT and its agencies.

In this regard, the Ministry of Information and Communications Technology in collaboration with the Ministry of Public Service will finalize and implement the strategy to institutionalize the ICT functions in MDAs and LGs. This will entail re-organising the current staffing structures in these organisations to cater for ICT professionals, under the overall guidance and coordination of the MoICT. MDAs and LGs will be equipped with the necessary skills, tools and equipment.

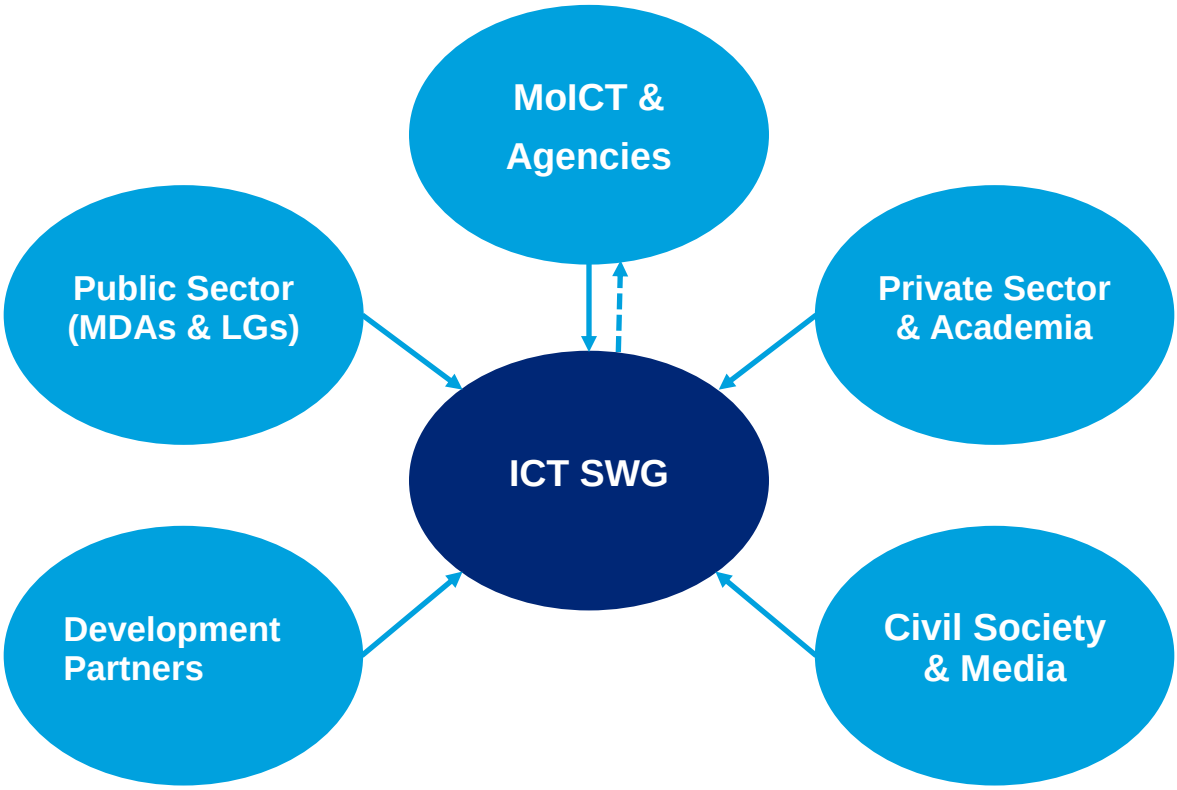
The Private Sector: actors include ICT service providers in telecommunication, broadcasting, postal and internet services as well as professional and consumer associations such as the Information Communication Technology Association of Uganda (ICTAU). Others include academia (private institutions) and special ICT interest groups such as the Presidential Investors Round Table (PIRT) – ICT committee. The Private Sector actors will be key implementing agencies for the projects to be implemented under the Private Public Partnership arrangement.

Development Partners: this group entails for partners that provide finances and technical support to the sector. It caters for both multilateral and bilateral donors supporting programmes and projects in ICT Sector. The Development Partners will be primarily responsible for financing of the priority ICT programmes and projects, as well as providing technical support towards and building capacity for effective implementation of the ICT-SIP.

The Civil Society: entails all individuals and institutions that are primarily involved in creating demand for the ICT products and services to be delivered by the ICT-SIP. This category include ICT advocacy and lobby groups at different levels including Parliament (Parliamentary Sessional Committee on ICT), the press (media) as well as NGOs promoting use of ICT in public service delivery.

To be able to bring the above actors together and ensure their interaction and proper coordination, the ICT sector working group (SWG) will be re-constituted and strengthened. The Sector Working Group shall be main platform for joint planning and review of ICT-SIP implementation. It will draw representation from the Private Sector, MDAs, Development Partners, Academia and Civil Society Organisations (CSOs). The implementation framework described above, is being illustrated in the figure below:

Figure 4: Institutional Framework for implementing the ICT-SIP



Composition of the Sector Working Group

The SWG will be chaired by the Permanent Secretary MoICT and the member will be the Directors in MoICT, Chief Executives of the agencies in MoICT, Permanent Secretaries / Directors of selected sector implementing ICT-enabled projects and representatives of Development Partners, Private Sector, Civil Society and the Academia. The committee will meet on a quarterly basis to plan and provide guidance to the sector as well as review progress on implementation of progammes and projects. The TMT of the sector will play the over-sight role to the SWG.

Roles and Activities of the Sector Working Group

The terms of reference for the ICT Sector Working Group (SWG) will be refined at the point of operationalization. However, in general the SWG will be responsible for:

i. Coordination and harmonization of the ICT-SIP implementation to ensure that it is in line with the NDP goals and objectives;

ii. Ensure ICT-SIP investment programmes are aligned with sector priorities;

iii. Pursue solutions to structural, institutional and other constraints for effective ICT-SIP implementation at central and local levels;

iv. Review mechanisms for enhancing stakeholder participation in implementing the ICT-SIP;

v. Review the ICT Budget Framework Paper (BFP) as a basis on which the annual budget for the sector is compiled;

vi. Provide the main forum for the sector-wide approach to planning and budgeting for the ICT-SIP;

vii. Identify on the basis for sector expenditure and investment plans and the BFP, policy issues for consideration and action by the TMT;

viii. Provide information for the Joint GoU Reviews;

ix. Monitor budget implementation vis-a-vis the aims and objectives set out in the BFP.

In addition to the above, ICT-SIP will also take into consideration the existing Government of Uganda Policy implementation framework as elaborated below:

Cabinet level – there is a Policy Coordination Committee (PCC) which is a sub-committee of Cabinet chaired by the Prime Minister and it is responsible for implementation as well as coordination of Government programs. The committee meets quarterly to review progress on implementation of programs across Government and also review new as well as obsolete policies and plans to ensure that they are consistent with the Government direction and mechanisms;

Parliament level – there are several committees (standing and sessional) responsible for the implementation aspects of various Government programs including ICT. Examples include the Committee on Finance and Budget, the Committee on National Economy and the Sessional Committee on ICT;

Policy Steering Committee level – there is the Implementation Coordination Steering Committee (ICSC) which is chaired by the Head of Public Service and Secretary to the Cabinet and is comprised of Permanent Secretaries. It meets once in 2 months and is responsible for ensuring effective implementation of decisions made by the Cabinet and PCC; and

Technical Level – there is the Technical Implementation Committee (TICC) composed of Directors and Commissioners from all MDAs as well as representation from NGOs, the Private Sector and Development Partners. It is chaired by the Permanent Secretary, Office of the Prime Minister. It is responsible for coordination of

implementation of actions that come from the ICSC, conducting relevant analyses on key constraints and monitoring the performance of Government.

5.1 Monitoring and Evaluation Framework

The overall purpose of the Monitoring and Evaluation (M&E) framework for the ICT-SIP is to improve accuracy, frequency and timeliness of reporting on achievements of ICT Sector (based on core ICT indicators), to meet the national and international reporting needs. The framework will assist to build consensus on high level indicators and targets, and standardize the reporting mechanisms and processes.

The M&E framework has been designed to rhyme with the established performance assessment, reporting and accountability frameworks of Government such as the budget performance monitoring by Ministry of Finance Planning and Economic Development (MoFPED), Government Annual Performance Review (GAPR) by Office of the Prime Minister, and NDP evaluation processes. The framework has also been designed in such a way that it feeds into international ICT reporting platforms such as global ICT development index by ITU, global networking index, e-Government development and ICT price basket (affordability index).

The M&E framework is illustrated in Figure 5 below and outlines the monitoring and evaluation of the ICT-SIP based on 3 levels of impact, outcomes and process implementation levels.

Impact Level: this constitutes a set of indicators and targets that will measure the overall achievement of the ICT-SIP in relation to growth and transformation of the ICT Sector as well as its contribution to the economy. In other words the translation of the vision aspirations and overall goal of the ICT-SIP into tangible changes to the lives of the target population.

Outcome Level: indicators are derived from the strategic themes of the ICT-SIP and these assist to measure the extent of attainment of SIP objectives.

Process Implementation Level: this will entail all key performance indicators and targets measuring implementation of the ICT-SIP in the process in which inputs will translate into activities and activities into outputs.

Based on the above monitoring and evaluation levels, 4 major M&E activities will be carried out periodically. These are impact assessment, end of period evaluation, mid-term review and periodic performance assessments and review (Quarterly and Annual).

- Impact assessment and terminal evaluation will be carried out by an independent evaluator towards the end of the ICT-SIP implementation to assess its contribution to the economy and inform future ICT strategic planning processes;
- Midterm review will be done half way into the implementation of the ICT-SIP to establish whether the implementation is on schedule and assist in correcting deviations (if any) and bring the implementation back on course; and
- Process / implementation Monitoring will entail production of quarterly performance monitoring reports and undergoing comprehensive ICT Sector annual reviews. With a strengthened ICT Sector Working Group (SWG), annual reviews will form an important aspect of this M&E framework. During the reviews the sector will take stock of the achievements in the outgoing year and set investment priorities for the new planning period. Annual reviews will also be avenues for allocating budgeting resources within the sector.

The types of reporting expected from this framework will include but not be limited to:

(i) Impact assessment report;

(ii) End of period evaluation report;

(iii) Mid-term evaluation report;

(iv) Quarterly performance; and

(v) Annual review reports.

High Level M&E Framework

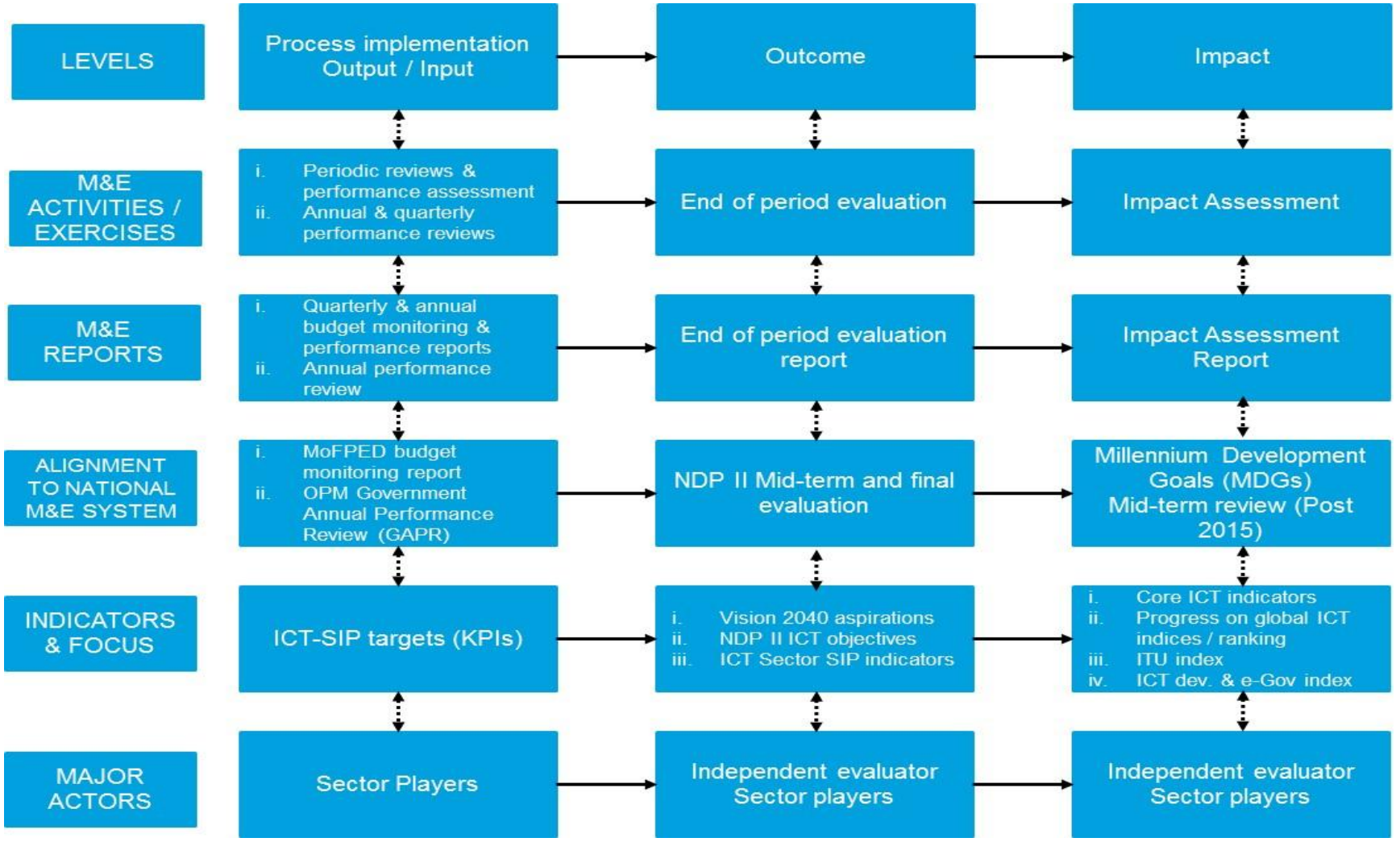


Figure 5: High Level M&E Framework

Operationalization of M&E Framework

Different sets of indicators and targets have been developed to help measure performance of the ICT-SIP at different target levels. The first set of indicators also termed as high-level indicators aim at measuring achievement of the ICT-SIP Vision and overall goal as well as improvement of Uganda's performance in global ICT indices such as ICT development, e-Government development, Network Readiness and ICT Price basket index. In essence, these are macro level indicators and targets for the ICT-SIP. The targets have been set based on the baseline and projected emerging trends and signals in ICT sector as presented below.

Table 4**:** ICT-SIP Targets &Outcome Indicators

	Outcome Indicators	Current state (2014/15)	Targeted (2019/2020)
1.	**ICT Infrastructure access and utilization**		
	Proportion of households with a mobile telephone	57.9	90
	Proportion of households with a computer	2.0	5.0
	Proportion of households with a TV	11.6%	18%
	Proportion of households with a radio	58%	70%
	Proportion of businesses using the Internet	4%	10%
2.	**ICT contribution to the economy**		
	Annual Average ICT GDP Growth	19.8%	20%
	Share of ICT to total employment (direct)	1.3million	3million
3.	**e-Readiness**		
	Proportion of persons employed in central government organizations routinely using computers	51%	90%
	Proportion of persons employed in central government organizations routinely using the Internet	38%	80%
	Proportion of central government organizations with a Local Area Network (LAN)	76%	95%
	Proportion of central government organizations with a web presence	96%	100%
	Proportion of Local governments (Districts and Municipalities) with a web presence	50%	80%
	Proportion of central government organizations with Internet access, by type of access (Fibre Cable)	51%	95%
4.	**e-Services and e-Government development**		
	e-Government development index Index/score Position/ ranking	 0.2593 156	 0.5142 100

	Outcome Indicators	Current state (2014/15)	Targeted (2019/2020)
	e-Participation index		
	Index / score	0.137	0.297
	Position / ranking	152	100
	Network readiness index		
	Index / score	3.25	3.65
	Position / ranking	115	90
	ICT affordability		
	ICT price basket	30.2	10.1
	Percentage change in ICT price basket		(66.6%)
	ICT price basket ranking	135	100
5.	**Broadband**		
	Ovum's broadband development index	227	350
	Broadband per household (urban)	512 kbps	30 mbps
	Broadband per household (rural)	512 kbps	5 mbps

Source: e-Government development index 2014, Network readiness index 2014, ITU's ICT Price Basket 2014, and Ovum's broadband development index

5.2 Communication Strategy

This Communication Strategy articulates how the ICT Sector will interact with the stakeholders in the execution of the ICT-SIP. It will promote effective communication of the initiatives in a strategic and effective way that engages the targeted stakeholders.

The strategy sets the communication objectives, identifies the critical target audiences for communication and the channels through which the messages will be relayed. It further justifies why specific channels should be used for the target audiences in order to arouse the desired objective.

The strategy therefore sets a roadmap that will guide MoICT, NITA-U, UCC and related stakeholders in communicating and enhancing public awareness that will eventually result into adoption of ICTs in Uganda.

Communication Objectives

The objectives of this strategy and the key results area for each of the objectives are as below:

Objective 1: Increase awareness of the existing and planned ICT policies, programmes and projects amongst the general public, internal and external stakeholders.

Key Activity Areas

Internal stakeholders

(i) Launch the ICT SIP internally;

(ii) Constitute a strong sector working group that will meet on a regular basis to review performance and give necessary guidance;

(iii) Conduct sector annual meetings to review performance and re-strategize;

(iv) Undertake sector retreats to create cohesion amongst the institutions; and

(v) Develop and disseminate joint internal quarterly e-newsletters/ annual reports.

External stakeholders

(i) Develop and implement a comprehensive framework to communicate the projects to the local governments and district officers;

(ii) Introduce permanent communication channels where information flow can be sustained.(e.g. e-mail);

(iii) Develop a framework to leverage on the existing ICT programmes;

(iv) Develop and implement a social media strategy to keep the stakeholders aware of what is going on;

(v) Develop and publish quarterly e-newsletters;

(vi) Develop promotional give-aways that can be distributed at events;

(vii) Exploit all media channels to promote ICT awareness; and

(viii) Utilise the quotas secured from the media houses to inform the public about on-going initiatives and benefits of ICTs.

Objective 2: Promote usage and adoption of ICTs amongst the publics.

Key Activity Areas

(i) Increase and maintain stakeholder participation forums such as ICT Awards, launches etc;

(ii) Participate in trade fair exhibitions in collaboration with other MDAs such as UIA, Ministry of Tourism and Ministry of Internal Affairs among others;

(iii) Effectively communicate the available incentives for ICT research and innovation; and

(iv) Develop and implement a comprehensive launch plan (including media for publicity).

Objective 3: Encourage development partners and potential investors to invest in Uganda's ICT industry.

Key Activity Areas

(i) Active participation in international and regional ICT conferences and initiatives across the different thematic areas (innovation, e-learning, content, Infrastructure etc);

(ii) Design a strategy to train and equip Uganda's foreign missions abroad as champions for ICT investment in Uganda; and

(iii) Utilize social media and other communication platforms to keep the stakeholders informed of what is going on.

In order to achieve the above objectives, the targeted audiences together with the relevant communication channels to reach the audiences were identified.

Communication Audience

To yield the desired results, the stakeholders have been grouped into broad homogeneous segments based on their interest. This approach makes it easy to tailor specific communication messages and use the efficient channel to deliver it.

(i) Internal Audience – The internal audience is directly involved in the development and implementation of the ICT-SIP. The stakeholders include; Ministry of ICT (MoICT), National Information Technology Authority (NITA), Uganda Communications Commission (UCC), Uganda Post Limited, Uganda Information and Communications Technology Institute (UICTI) and the ICT-Sector working Group(SWG);

(ii) External Audience – The external audience is mostly composed of several key stakeholders that the internal stakeholders will work with to realise the overall vision of the SIP. Strong working relationships and collaborations between the internal and external stakeholders are required if the "ConnectedUgand@2020" tag line is to be achieved.

These audiences include:

(i) Ministries Departments and Agencies (MDAs) – such as Ministry of Finance Planning and Economic Development(MoFPED), Ministry of Internal Affairs (MIA), Ministry of Foreign affairs (MoFA), Uganda Investment Authority(UIA), Export Promotions Boards (EPB), Ministry of Education and Sports (MoES), and Ministry of Energy and Mineral Development (MEMD);

(ii) Parliament – this is a key partner with the ICT sector. Communication to this audience will among other things focus on the benefits of ICT in promoting good governance. The Parliamentary committee on ICT on the other hand will be targeted with updated on performance in regard to operationalizing the ICT-SIP; and

(iii) Local Government and Urban Authorities nationwide – they are the key drivers in the implementation of government programmes. Effective communication and constant engagements of this target audience with regard to ICT initiatives will improve the adoption of ICTs country wide.

Other key external stakeholders include the Academia and Research institutions, Presidential Investors Round Table (PIRT), Civil Society Organisations and Development Partners such as the World Bank, and UNIDO among others.

5.3 Implementation Risks

During the process of implementing this ICT-SIP, the following risks are likely to be encountered:

- Lack of consistent political and executive support;
- Non availability of funds;
- Delay in implementation could arise due to a number of reasons for example non-availability of stakeholders, slow approvals, prolonged formulation of requisite institutional structures, among others;
- Inadequate collaboration among stakeholders leading to delayed inputs; and
- Leadership changes that can interrupt continuity and hence progress of activities in the plan.

The impact and mitigation measures for the risks above can be found in Appendix D.

5.4 Critical Success Factors

The following are identified as some of the key Critical Success Factors that would influence the implementation of this strategy:

1. Collaborative Partnerships particularly between different agencies of Government and members from the ICT industry

   Being a national level strategic plan, it covers the whole ICT Sector. Should the involvement be less than envisaged the benefits emanating out of this exercise will be less than expected. This may even set an unwelcome precedent. It is necessary, therefore, to have the involvement of all concerned stakeholders in this exercise in a win-win spirit.

2. Continued Budgetary Support

   Since this plan spans across five years it is important that there be sustained commitment and budgetary support required for the Action Plan all through its course. In fact, there must not only be continued political and executive commitment which is a pre-requisite for a successful implementation of this plan, but also a commensurate participation and ownership from members of the ICT industry and academia.

3. Institution Alignment

   Clear roles and responsibilities and defined reporting mechanisms to ensure easy implementation and accountability of results.

6 Investment Plan

ICT has a high potential for increasing its contribution to the National GDP, creating employment, contribution to revenue collection and as an enabler of other sectors. The World Bank research 2009 indicated that a 10% point rise in broadband penetration adds 1.38% point rise in economic growth for low and middle income countries.

This section highlights the critical investments that the sector intends to take to ensure realization of the Plan's goals and objectives. It further takes cognizance of existing projects/finances to ensure sustainability of gains so far achieved. The detailed estimates are provided in Appendix B.

Objectives of the Investment Plan

The overall objective of the Investment Plan is to identify and mobilize the required resources for implementation of the ICT-SIP in line with the implementation plan.

The specific objectives of the Investment Plan include:

- Mobilize funds for the implementation of initiatives under the ICT-SIP;
- Encourage multi-sectorial and multi-stakeholder participation in the implementation of strategies under the ICT-SIP;
- Provide a roadmap for public sector investments in the ICT-SIP;
- Ensure accountability for investments made under the ICT-SIP; and
- Explore possible sources of investment for initiatives under the ICT-SIP.

Investment will be guided by the following principles:

- **Equity:** This is to ensure all services provided avoid exclusion and social disparities. Investments are defined to ensure access to services is equitable, irrespective of persons with disability, gender, age, geographical location and income level;
- **People-centred:** To ensure that ICT, and ICT interventions are organized around people's legitimate needs and expectations. Interventions prioritizing community involvement and participation should be prioritized;
- **Participation:** Interventions involving different actors should also be prioritized, as they allow more scope for financing, and attainment;
- **Multi-sectorial approach:** This is based on the recognition that ICT cannot be improved by interventions relating to ICT services alone, with a focus of 'ICT in all sectors' required. Interventions implemented by ICT related sectors are also prioritized, as their attainment does not only require significant ICT investments, but can also lead to high ICT outcomes;
- **Efficiency:** To maximize the use of existing resources. Interventions that show high levels of cost efficiency are prioritized, as the potential benefits from these are high; and
- **Social accountability:** To improve on the public perception of ICT services, interventions that involve performance reporting, public awareness, transparency and public participations in decision making on ICT related matters are prioritized.

6.0 Current Investment Framework

Funding constitutes one of the key resources required for the development of the sector. Major financial investments are necessary to create the country's capacity with regard to ICT human resource capital, infrastructure, and delivery of services (including e-Government), information security and development of local content among others.

The major sources of funding to the sector have been Government, Development Partners and the Private Sector. The Public Sector funding for the development budget for ICT has been at an average of UGX 70 billion annually both from the treasury and non-tax revenues collected by agencies.

ICT has been identified as one of the key priority sectors to spur socio-economic development of the country as stated in the NDP and Vision 2040. Despite this pronouncement, the funding from Government has been on average UGX 17 billion annually, representing only 0.1% of the national budget. This has been greatly inadequate public investment. Inevitably, critical programs and projects have been delayed or not implemented hence the slow development of the sector and consequently a very low ICT development index for the country.

The funding by Development Partners has equally been low. Notable among them is funding from the People's Republic of China amounting to USD 106 million for the implementation of the National Backbone Infrastructure and E-Government (NBI/EGI) project and the World Bank funding for the Rural Communications Development Fund (RCDF).

The biggest portion of funding in the sector has been the Private Sector. Quite a number of multi-lateral and local companies have invested in the sector especially in the telecommunications and broadcasting industry. This has been in form of putting up the required ICT infrastructure (such as optic fibre, base stations and towers, transmission sites, radio and TV stations). In addition, these companies have been contributing a levy of 2% of their gross annual revenue to the RCDF managed by UCC. The said fund has played a big role in enhancing universal access to and usage of ICT countrywide.

Table 5: ICT Sector Resource Allocation

Item	FY 2009/10 (UGX BN)	FY 2010/11 (UGX BN)	FY 2011/12 (UGX BN)	FY 2012/13 (UGX BN)	FY 2013/14 (UGX BN)	FY 2014/15 (UGX BN)
MoICT (GoU MTEF)	9.53	13.36	16.76	15.63	4.96	6.18
MoICT (Devt)	7.26	10.30	11.89	7.25	2.49	0.97
NITA-U (GoU MTEF)*	-	-	-	-	10.47	10.80
NITA-U (Devt)*	-	-	-	-	1.83	1.83
Total Devt (MoICT & NITA-U)	7.26	10.30	11.89	7.25	4.32	2.80
NITA-U (NTR)	-	-	-	-	-	10.40
UCC (Devt)	11.48	19.26	13.32	42.69	29.10	63.89
TOTAL (Devt + NTR)	**18.74**	**29.55**	**25.21**	**49.94**	**33.42**	**77.09**

Source: Approved Budgets for the respective institutions

Note:

(i) The above figures are derived from the Approved Budgets for the respective institutions; and

(ii) Prior to FY 2013/14, the budget for NITA-U was under the MoICT.

6.1 Priority Areas for Investment

The Priority areas identified in the investment plan include those areas that are directly linked to the growth and development of the ICT Sector, those that are cross cutting in nature (appeal to different sectors) and those whose benefits extend beyond the ICT Sector. Prioritization for investment has not been restricted to the thematic areas due to the need to embark on all the action areas almost simultaneously and consolidate the gains made under current and previous investments.

All initiatives identified have been costed and the resource requirement for executing this ICT-SIP has been estimated at UGX 1,122.67 billion over the next 5 years. This amount translates into UGX 224.53 billion on average annually.

Table 6: Resource Requirements for Implementing the ICT-SIP

Strategic Themes	Action Areas	Estimated Cost (UGX BN)
Foundational Support for ICT Development	A. ICT Governance	60.58
	B. Manpower Development and Planning	93.05
	C. ICT Infrastructure	202.555
	D. Information Security	58.58
	Sub-total	***414.765***
Enabling Environment to spur ICT growth and utilization	E. Research, Innovation and Development	118.1
	F. ICT Health, Safety and Environment	10.54
	G. ICT in other Sectors	22.27
	Sub-total	***150.91***
ICT for Service Delivery	H. Promoting e-Services and Local Content	19.325
	I. e-Government	333.3
	J. ICT Industry Awareness and Promotion in Target Markets	204.37
	Sub-total	***556.995***
	Total	**1,122.67**

The graph below illustrates the costs for each of the three (3) strategic themes:

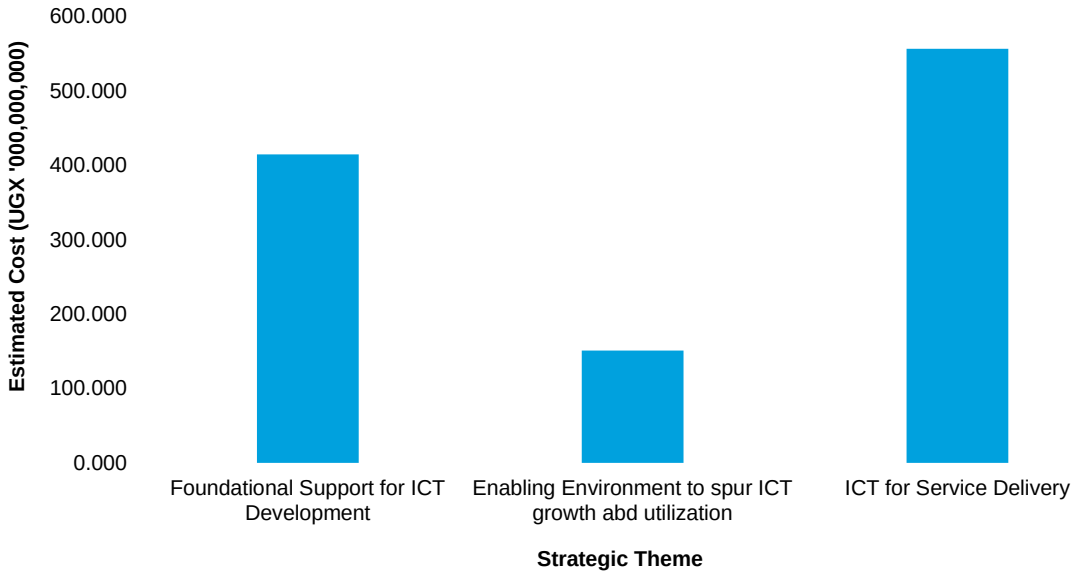


Figure 6: Theme-wise split of the ICT-SIP budgetary requirements

Please refer to Appendix B for a detailed costing.

6.2 Funding Options

In order for the ICT-SIP to realize its vision, mission, objectives and targets, it will require appropriate and adequate resources. To this end, the financing of the ICT Sector will be within the broad financing structure and strategy for the Vision 2040 and NDP II, in addition to other innovative investment options. To raise the required funds, it will entail various sources and financing models. These include among others:

1. Government financing through budgetary provision including Non Tax Revenues (NTRs);
2. Public Private Partnerships (PPPs);
3. Foreign Direct Investment (FDI); and
4. Support from Development Partners.

The main driver for the financing strategy for the ICT Sector will be the National Treasury. By Government spearheading the financing strategy for ICT-SIP, it will be a demonstration of the pivotal role of ICT in the socio-economic transformation of the country. The Government of Uganda is expected to spear head investments in areas that are public in nature as well as those for improving the delivery of government services. The table below provides some highlights:

The Private Sector has been an engine of growth for the country's economy in general and the ICT Sector in particular. Accordingly, PPPs will continue to play a key role in implementation of the SIP. The key areas of focus will be in those areas under the ICT-SIP where public private collaboration can result in great benefits.

The Private Sector will also be a major source of Investment. This will be facilitated by an enabling environment created by appropriate policies, laws and taxation regimes. The Private sector will also bring in the much needed technical and technological expertise for the development of the sector.

The support from the Development Partners will be critical for the successful implementation of ICT-SIP. Investment will particularly be in form of direct budget support as well as technical and financial support to specific programmes and projects. In addition, the implementation of ICT-SIP will leverage on the vast experience of Development Partners in implementation of regional and international programmes and projects.

Table 7: Funding for ICT-SIP 2015/16 – 2019/20

Item	FY 2015/16 (UGX BN)	FY 2016/17 (UGX BN)	FY 2017/18 (UGX BN)	FY 2018/19 (UGX BN)	FY 2019/20 (UGX BN)
FUNDING REQUIREMENT (ANNUALLY)	**194.86**	**283.63**	**252.83**	**199.48**	**191.88**
FUNDS AVAILABLE					
GoU (MTEF Projections)	17.01	18.26	19.56	21.52	23.67
Devt Partners	0	0	0	0	0
NTR (Projections)	39.21	41.12	43.17	45.33	47.60
Total funds available	56.22	59.38	62.73	66.85	71.27
FUNDING GAP	**138.64**	**224.25**	**190.09**	**132.63**	**120.61**
PROPOSED FINANCING OF THE FUNDING GAP					
Increased GoU MTEF allocation	80.23	165.84	131.68	74.21	62.20
Devt Partners(Loans / Grants)	15.14	15.14	15.14	15.14	15.13
Public Private Partnerships	43.27	43.27	43.27	43.28	43.28

Note:

(i) GoU (MTEF Projections) are based on Ministry of Finance MTEF projections(2015/16- 2017/18). An increment of 10% p.a has been factored in for the proceeding years; and

(ii) NTR projections are based on the expected collections from Commercialisation of NBI (NITA-U) and collections from the 1% levy (UCC).

7 Conclusion

The ICT-SIP provides a coherent set of strategies, interventions, actions and attendant resource requirements to enable ICT play a pivotal role in the country's socio-economic transformation and development as envisaged in the NDP II and Vision 2040. It also spells out the outcome and output level targets that will be achieved over the next five years. To realize tangible success, it's imperative that all stakeholders in both public and private sectors, be mobilized to actively participate in the implementation including funding, execution of activities, monitoring and evaluation. This will enable the country achieve the overall desired goal of a ConnectedUganda@2020.

8 Action Plan

The Action Plan will serve as the roadmap for harmonization as well as alignment of the various institutional strategic plans with the ICT SIP.

Table 8: Action Plan for Implementation

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A. ICT Governance																				
1.1. Review National ICT Policies to address requirements in the priority areas of research and development, ICT convergence, human capital development, open source and ICT exports																				
1.2. Develop, regularly review and enforce regulations and standards																				
1.3. Strengthen the enforcement mechanism of laws, regulations and standards																				
1.4. Review Spectrum Management Framework to facilitate realisation of the broadband goals																				
1.5. Develop and implement a policy and legal framework for multi-sectorial infrastructure deployment and sharing																				
1.6. Finalise the development and implementation of the Data Protection and Privacy Bill, and develop Information Security legal framework																				
1.7. Finalize the development of the National Broadband Policy and Strategy as well as its implementation framework																				
1.8. Review and implement the policy for the postal sector to encompass opportunities offered by e-Government and e-Commerce																				
1.9. Develop and implement a cross-cutting M&E framework for the ICT Sector																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.10. Develop a Strategy for increasing access of ICT devices & services to Special Interest Groups																				
1.11. Develop and implement an Open Source policy and strategy for Uganda																				
2.1. Review and align the existing institutional framework to drive the national ICT agenda by clearly articulating and harmonising the roles of various institutions, and ensuring synergies and collaboration																				
2.2. Build institutional capacities to ensure development, implementation and enforcement of policies, laws and regulations																				
2.3. Strengthen the ICT Sector Working Group that is premised on collaboration among stakeholders, so as to take advantage of vast knowledge, experience and other resources from the various stakeholders in developing the sector																				
2.4. Strengthen platforms and forums for stakeholder engagement in the sector																				
B. Human Capital Development and Planning																				
3.1. Establish the current stock and quality of ICT competencies in the country																				
3.2. Institutionalize and build capacity of ICT cadres in Government																				
3.3. Implement the Master Plan to transform UICT into a Centre of Excellence																				
3.4. Establish a sustainable ICT training program for Citizens																				
3.5. Implement the certification and accreditation for ICT professionals, trainers / training entities, products and services																				
3.6. Partner with Ministry of Education and training institutions to review, develop and implement ICT training curriculum																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
at all levels of the education system																				
3.7. Develop and implement a mechanism for joint planning and ICT internship between academia and the industry																				
3.8. Develop and implement targeted capacity building for teachers to incorporate ICT in pedagogy																				
4.1. Collaborate with development partners including civil society to scale up and implement community ICT awareness creation initiatives																				
4.2. Develop a coherent strategy on the use of social media for ICT awareness																				
4.3. Intensify the use of print and electronic media as a tool for mass sensitization and awareness about ICTs																				
4.4. Coordinate the formation of ICT associations and professional bodies as a mechanism to create ICT awareness																				
4.5. Develop and implement a mechanism that will ensure mass sensitization and awareness about ICT policies, programmes and projects																				
4.6. Collaborate with the Ministry of Information and National Guidance to publicize the Access to Information Act in relation to online platforms																				
4.7. Provide technical support including standards for operationalization and update of the Government Web Portal, websites and social media																				
4.8. Develop Open Data for Government																				
C. ICT Infrastructure																				
5.1. Establish and implement a mechanism for planning, development, deployment and management of ICT infrastructure																				
5.2. Develop and implement National ICT Infrastructure Structural Plan																				
5.3. Establish a mechanism for collaborative monitoring and evaluation of ICT																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
infrastructure deployment in line with the Plan and developed standards																				
5.4. Embrace convergence of ICT technologies through common infrastructure deployment and sharing																				
5.5. Develop and implement a National Postal and Courier Services Master Plan to exploit opportunities in e-Government and e-Commerce																				
5.6. Participate in National Coordination Mechanism for synchronized planning and delivery of Utilities infrastructure																				
5.7. Monitor the implementation of ICT infrastructure in line with National Broadband Strategy																				
5.8. Extend NBI to cover the NDPII priority areas and ensure interconnectivity with regional backbone infrastructure																				
5.9. Implement innovative spectrum management practices to ensure optimal utilization of the national resource																				
5.10. Promote the development and use of Internet Exchange Points																				
5.11. Develop a mechanism for national backbone connectivity to international sub-marine cables																				
5.12. Implement last mile connectivity countrywide in partnership with the Private Sector																				
5.13. Promote production and use of low-cost locally assembled devices in collaboration with the Private Sector																				
5.14. Implement interventions that will ensure affordability of ICT devices and services																				
D. Information Security																				
6.1. Operationalize a multi-sectorial collaborative framework on Information Security e.g. National Information																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Security Advisory Group																				
6.2. Establish the National CERT, and ensure development and integration of sectorial CERTs																				
6.3. Build capacity of key institutions across the board (legislature, judiciary, law enforcement agencies etc)																				
6.4. Mount concerted ICT security awareness campaigns																				
6.5. Develop national authentication mechanisms like PKI																				
6.6. Implement website regulation and social media for Government																				
6.7. Establish and maintain partnership agreements with regional and international players on information security with partner states																				
E. Research, Innovation and Development																				
7.1. Develop an ICT Research, Innovation and Development Strategy for Uganda including assistance to entities in obtaining patents																				
7.2. Establish a sector-wide coordination mechanism for ICT research, innovation and development																				
7.3. Establish an ICT Research, Innovation and Development Fund																				
7.4. Establish ICT laboratories in institutions of higher learning																				
7.5. Develop support programmes to facilitate development of ICT incubation facilities and activities																				
7.6. Establish ICT Parks and special economic zone																				
7.7. Develop and implement a programme to attract leading companies in the industry and development partners to establish ICT research, innovation and development facilities																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
7.8. Develop a framework for collaboration between research institutions, academia and industry to generate the relevant and applicable solutions																				
F. ICT Health, Safety and Environment																				
8.1. Create awareness about Green ICTs																				
8.2. Promote the use of ICT-enabled solutions for climate change mitigation and adaptation																				
8.3. Implement efficient management and disposal of e-waste in line with e-waste policy																				
8.4. Establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environmental sustainability																				
9.1. Localise / adopt relevant international standards and guidelines for human safety with respect to ICT products																				
9.2. Champion the development of requisite ICT standards																				
9.3. Review the national conformity regime with respect to standards and enhance the associated processes and facilities																				
9.4. Establish mechanisms to increase awareness of consumers and their ease in establishing conformity of ICT products																				
G. ICT in other Sectors																				
10.1. Collaborate with the respective MDAs in other sectors on major ICT projects (e.g. Integrated Justice Information Management System, Land Information System, Integrated Personnel and Payroll System, e-Parliament including e-Cabinet, e-Voting, e-Tax, e-Immigration, etc)																				
10.2. Provide Support for other sectors in integrating ICTs within their respective core activities (such as exploitation of oil																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
fields, eLearning, health research, teleworking, agricultural information dissemination, and scientific knowledge sharing)																				
H. Promoting e-Services and Local Content																				
11.1. Encourage the use of ICT tools for trade, service delivery and exchange of information																				
11.2. Promote the development and use of ICT value-added services																				
11.3. Incentivize the adoption of ICT in SMEs																				
12.1. Develop and implement a strategy for promoting the development and use of local content for ICT services																				
12.2. Develop and implement policies as well as guidelines for local quotas in the employment and adoption of local content in ICT services																				
12.3. Develop and implement a strategy for promotion and use of local ICT products by Government and Private Sector through a comprehensive incentive scheme for entities adopting and using locally developed ICT solutions, products and applications																				
12.4. Promote accessibility to archived digital information and multimedia content in digital repositories																				
12.5. Collect, package and preserve in digital form all information regarding the cultural heritage of Uganda																				
I. e-Government																				
13.1. Ensure automation and integration of priority sectors and services i.e. National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice																				
13.2. Implement an electronic document management and workflow system for																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Government																				
13.3. Execute digital archiving and digitalization of Government records																				
13.4. Create a national data centre, disaster recovery centre, secure Government cloud (UG-Cloud) and national databank																				
13.5. Monitor the implementation of the e-Government enterprise architecture and interoperability framework																				
13.6. Strengthen the institutional framework for implementing e-Government																				
13.7. Support the implementation of the National Financial Information System																				
13.8. Establish One Stop Shop Centres for e-Government service delivery through the postal network																				
13.9. Establish regional information access centres																				
13.10. Operationalize the IT Project Management Methodology																				
13.11. Implement the Government Citizen Interaction Centre (GCIC)																				
13.12. Promote utilization of Open Source software and mobile apps																				
13.13. Develop and implement a change management strategy for adoption of e-Government services																				
13.14. Build capacity for e-Government adoption																				
J. ICT Industry Promotion in Target Markets																				
14.1. Undertake joint interventions with neighbouring countries to explore areas of competitive strengths and interest																				
14.2. Support the establishment of a secure, competitive and sustainable international bandwidth market in Uganda																				

Action Areas and Strategic Interventions	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
15.1. Develop and implement a strategy to promote Uganda as an attractive ICT-enabled services centre of the world																				
15.2. Undertake market intelligence to identify target markets and services																				
15.3. Incentivize and reward companies that invest in promoting Uganda's ICT goods and services abroad																				
15.4. Empower Ugandan Missions abroad to promote the country																				
15.5. Prioritize participation in international ICT initiatives																				
15.6. Ensure ratification of signed ICT protocols																				

9 Appendices

Appendix A

The table describes the interests of the key target audience and the key message themes on which the communication will be hinged. The channels of delivery have also been provided. The target audiences are categorised into internal and external stakeholders. A stakeholder analysis was conducted for the key groupings in each of the segments.

Table 9: Detailed Communication Strategy

Audience	Motivation/Interests	Key messages themes	Channels
Primary Audiences			
Internal Stakeholders MoICT NITA-U UCC POSTA UICT	(i) Realise the overall vision to promote ICT as a transformative tool for Socio-economic Growth and Good Governance; (ii) Improve Uganda's ICT index on the UN e-Government and Network Readiness Indices; (iii) Operationalise the ICT-SIP; (iv) Promote, coordinate and regulate the industry in the development and implementation of ICT projects; (v) Create an enabling environment to spur growth of the ICT sector; and (vi) Obtain funding for the priority unfunded projects.	The government should promote and support ICT as a transformative tool for development. The need to increase awareness and adoption of ICTs across all stakeholders. The internal stakeholders to ensure that the ICT-SIP is effectively implemented. Create awareness amongst the private sector of the ICT direction.	Regular engagements/ meetings with MDAs. e-mails Training / Awareness creation Sessions. News letters ICT –SIP internal launch event, Performance Retreats. Workshops Annual ICT Conferences
Sector Working Group	(i) Improve coordination and harmonisation of ICT projects; (ii) Offer expert support to the sector; and (iii) Make inputs and provide feedback on the on-going projects to inform the strategic direction.	Steer the sector for effective development. The sector working group will need to have project progress reports highlighting challenges if any.	Sector working group meetings. e-Mail Communication News letters Seminars Quarterly reports. Meetings
External Stakeholders			
Parliament	(i) Desire to use ICTs to transform their constituencies; and (ii) The ICT Parliamentary committee	Members of Parliament should support the ICT-SIP implementation and funding.	Meetings/ Engagements with relevant committees of Parliament Workshops

Audience	Motivation/Interests	Key messages themes	Channels
	would want to see full operationalization of the ICT-SIP.	Members of Parliament should champion the awareness and usage of ICTs The sector officials should be available attend to any questions raised by the Members of Parliament on the status, progress and challenges / measures. They should provide guidance they will benefit the country.	Letters News letters Brochures Website information Radio programmes TV programmes
Relevant Ministries and Agencies of Government	(i) Share a responsibility to promote the use of ICTs to promote efficiency in Government; (ii) Desire to see development of the different sectors through the use of ICTs; and (iii) Desire to see free flow of information within Government.	The MoICT champion the relevant ministries and Agencies in the implementation of the identified projects. The MoICT, NITA-U and UCC to support other ministries and agencies in educating the public on the value of the ICTs.	Working meetings. Workshops Letters Emails Seminars Workshops Telephone
The mass media	(i) Ease of access to ICT officials to comment on emerging issues, success stories; (ii) Proactive Public Relations where the ICT sector initiates contact and engage the media on an on-going basis; and (iii) Desire to be furnished with information on implementation of ICT projects.	A readily available communications team to answer issues raised by the media on a regular basis. Support of ICT initiatives to develop the country through promotion and use of ICT across the different sectors.	Training workshops Media Kits Press conferences conducted on a quarterly basis Guided media tours (e.g. infrastructural projects) Weekly Press releases Bi-annual breakfast meetings for editors and programme producers Seminars E-mail Website Factsheets
Presidential Investment Round Table (PIRT)	(i) Possible partnerships with government in the delivery of services; and (ii) Desire to see government to create an appropriate environment for investment.	Focus on the investment plan's proposed alternative funding strategies that include PPPs Update on progress of the policies, laws, guidelines, standards and regulations.	Meetings Sector working group e-mails Workshops
Local Governments	(i) Interested in the development and transformation of their communities; (ii) They mostly want to be re-elected in their positions, will leverage on the government programs to gain popularity; and (iii) Their performance is measured	There is great interest in improving service delivery to the citizens. District and lower local governments support ICT awareness and adoption campaigns.	Posters Letters E-mail Telephone Newsletters Meetings Seminars

Audience	Motivation/Interests	Key messages themes	Channels
	through the implementation of government programs.		Training workshops
Civil Society / ICT Associations	(i) Champion the rights of the consumers; (ii) Advocate for effective implementation of ICT projects; and (iii) Desire to be informed of the plans, design and progress of ICT projects.	Promote competiveness of the sector internationally through improved quality of ICT products and services. The sector's communication plan to cater for the involvement stakeholders.	Workshops Social Media e-Mails Participation in events Newsletter
Private Sector (e.g. Telecommunication Companies	(i) Work with government to attain their business objectives; (ii) Offer services to government citizens for profit; and (iii) Supportive environment for investment.	The ICT-SIP proposes the use of Public Private Partnerships (PPPs) as one of the funding strategies.	Participation in the Sector Working group. News letters e-mail Seminars
Academia / Institutions of learning	(i) The stakeholders interested in institutions and programs that are certified and accredited; (ii) Relevant and appropriate ICT programmes incorporated in the curriculum; and (iii) To be involved in the ICT promotion events (innovation, security etc).	The ICT Sector to streamline the quality of ICT Training institutions and professionals. The Sector to work with educational institutions to design a suitable curriculum with input from the employers. The ICT Sector appreciates the efforts of educational academia in the field of ICT.	Training Seminars Participation in events Web sites Social media e-mail
General public	(i) They desire efficient government service delivery. Reduced waiting time for government services; (ii) The ICT products and services should address specific needs; (iii) High quality and affordable ICT products and services; and (iv) Increased employment opportunities for the ordinary citizens.	The ICT initiatives should communicate long term benefits of implementing the ICT-SIP. Local production of ICTs through innovations should be promoted. Aggressive communication of the benefits of the existing and new ICT benefits	Posters Telephone Newsletters Meetings Seminars Training workshops Newspaper articles and supplements Website information Radio and TV programmes Reports Billboards ICT Buses & Road shows.
Development Partners / Investors	(i) Desire to offer support to countries that already have an ICT strategic direction;	The ICT strategy communicates the 5 year vision, strategies that will be undertaken to realise the set objectives.	Meetings Websites Conferences

Audience	Motivation/Interests	Key messages themes	Channels
	(ii) Invest in areas of tangible returns; and (iii) Invest in areas that will create a tangible outcome with in the communities.	Clear communication of the projects and their desired impact within the period of implementation. Focus also to be given to the Monitoring and Evaluation framework that clearly articulates the outcome indicators.	Copies of the ICT-SIP Abridged version.
Ugandan Foreign Missions	They desire to represent countries with good indicators of economic development.	Effectively communicate the existing enabling environment for ICT investment in Uganda. Clear communication of the priority but unfunded projects	Meetings Websites Conferences Copies of the ICT-SIP Abridged version.
Global ICT reporting bodies	Fairly undertake the global ranking based on the communicated parameters.	Strong alignment of performance indicators to the international ones.	Performance Reports, Defined reporting framework.

Communication Channels

In order to attain the stated objectives, the most appropriate /effective communication channels were identified. They include workshops, trainings, social media, website information etc. Attention must be drawn to the communication channels in order to promote the two-way communication flow.

Below-the-line

Meetings / Engagements

These are important avenues to relay message and get feedback. These media channels benefit the communicator through the two-step flow theory of communication in which messages are delivered to a few but influential members. Through meetings / engagements the influential members obtain a clearer understanding of the projects and as a result will percolate to the other members. For key stakeholders, meetings, seminars and workshops should be organized, such include:

(i) Members of Parliament;

(ii) Development Partners;

(iii) Chief Administrative Officers;

(iv) Private sector; and

(v) Academia and Civil Society.

Other media channels e.g. e-mail and web site should be used to complement the interaction.

Above-the-line (ATL)

(i) Newspapers, Radio and TV

The above media channels target a wide spectrum of stakeholders. The medium can be used to communicate the sectors achievements, project progress and events targeting the public.

Newspaper supplements, Publishing feature articles, News stories obtained through regular periodical press briefings or when need arises.

The radio talk shows, documentaries and regional programmes can be used to promote any of the ICT projects and services for adoption.

Television programmes / talk shows focusing on ICTs should be planned and executed. The programmes can be executed in partnership with the private sector.

(ii) Newsletters / Flyers

The external and internal newsletters will be published on a quarterly basis. These can be distributed to stake holders to inform them about the sector performance and ICT products and services.

Flyers can be used to communicate events and other engagements that target the mass market / public.

(iii) Website

This resource will be capitalized to reach both the internal and external stakeholders. The websites shall contain all the relevant information that allows the stakeholders to interact with the Ministry and its agencies.

(iv) Media

Engagement with the media will take different forms that include; Trainings / Meetings, media tours, press conferences, social media, Media contact list among other avenues. ICT terminologies and acronyms may not be so clear; therefore, training the journalists is critical in order to minimize misreporting.

Key Guidelines for Implementation

A designated team will be constituted to guide the implementation of the communication strategy. The team will be composed of the communication personnel and other representatives from the key stakeholders. The group will work closely to implement this strategy. The strategy will guide the action plans / tasks for the duration of the ICT-SIP.

Independent surveys will be undertaken to establish the impact of the communication strategy.

In order to ensure effective communication to the targeted segments, this strategy will be supported by the following guidelines:

(i) Clear roles, responsibilities and expectations at all levels should be established;

(ii) The communication messages sent out for specific ICT initiatives should be uniform;

(iii) Clear and consistent internal communication, sharing, exchange and coordination within the sector players should be adhered to;

(iv) Timely and effective feedback management is key at every opportunity of interacting with the external stakeholders; and

(v) There should be proper documentation and dissemination of knowledge.

Feedback Mechanism

The regular and comprehensive feedback received from the stakeholders will be attended to accordingly. The various institutions communication and Public Relations' personnel will align their communication implementations plan to the ICT-SIP Communications Strategy.

Designated teams will be placed position to attend to the reactions of stakeholders as raised through different avenues that include; Website (MoICT, UCC and NITA-U), Social Media, Media Interactive Sessions (Radio, TVs and Print media), Question and answer sessions during meetings among others.

HIV/AIDS continues to be major challenge in people's lives, affecting productivity of labour as well as the cost of its prevention and treatment. ICT will play an important role in implementation of HIV/AIDS Policy and programmes by providing platforms for Information collection, analysis, storage and dissemination. In addition various ICT media such as radio, television, Internet, telephony and social media will be utilized for awareness creation. All these will be undertaken in collaboration with Ministry of Health, Uganda AIDS Commission, Civil Society and the Private Sector.

Appendix B

Table 10: Detailed Costing and Budget

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
Foundational Support for ICT Development	**ICT Governance** Objective 1: To ensure a conducive policy, legal and regulatory framework that is responsive to industry demands	Strategy 1: Review the policy, legal and regulatory framework to align it with international norms and best practices, while taking into consideration national peculiarities	1.1. Review National ICT Policies so as to cater for requirements in the priority areas of research and development, ICT convergence, human capital development and ICT exports	MoICT	None	No	Policy Framework including papers, guidelines, and strategies	4.49	3.00	3.00	3.00	4.00	**17.49**
			1.2. Develop, regularly review and enforce regulations and standards	MoICT	NITA-U & UCC	No	Regulations and Standards updated	0.60	0.60	0.60	0.60	0.60	**3.00**
			1.3. Strengthen the enforcement mechanism of laws, regulations and standards	MoICT	NITA-U & UCC	No	Enforcement Mechanism	0.40	0.40	0.40	0.40	0.40	**2.00**
			1.4. Review Spectrum Management Framework to facilitate the realisation of the broadband goals	UCC	Development Partners	No	Policy Framework including papers, guidelines, and strategies	0.35	0.51	0.00	0.00	0.00	**0.86**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			1.5. Develop and implement a policy and legal framework for multi-sectorial infrastructure deployment and sharing	MoICT	None	No	Policy Framework including papers, guidelines, and strategies	0.45	0.51	0.00	0.00	0.00	**0.96**
			1.6. Finalise the development and implementation of the Data Protection and Privacy Bill, and develop Information Security legal framework	MoICT	NITA-U &Private Sector players	No	Data Protection legislation; and Compliance & Adjudication Reports	0.30	0.00	0.00	0.00	0.00	**0.30**
			1.7. Finalize the development of the National Broadband Policy and Strategy as well as its implementation framework	MoICT	Development Partners	No	National Broadband Policy including papers, guidelines, and strategies	0.50	0.00	0.00	0.00	0.00	**0.50**
			1.8. Review and implement policy for the postal sector to ensure it encompasses opportunities offered by e-Government and e-Commerce	MoICT	UCC, UPL &Development Partners	No	Policy reforms including papers, guidelines, and strategies	0.46	0.90	0.00	0.00	0.00	**1.36**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			1.9. Develop and implement a cross-cutting M&E framework for the ICT Sector	MoICT	Private Sector players	No	M&E framework	0.25	0.13	0.11	0.10	0.09	**0.68**
			1.10. Develop a Strategy for increasing access of ICT devices to Special Interest Groups	MoICT	MoGLSD & Development Partners	No	Strategy and Incentive Guidelines	0.00	1.70	0.00	0.00	0.00	**1.70**
			1.11. Develop and implement an Open Source policy and strategy for Uganda	MoICT	NITA-U & UCC	Yes	Open Source policy and strategy	0.70	5.00	5.00	0.00	0.00	**10.70**
	Institutional Framework Objective 2: To strengthen the ICT institutional framework to drive the national ICT agenda	Strategy 1: Establish a multi-institutional collaborative framework to drive the national ICT agenda	2.1. Review and align the existing institutional framework to drive the national ICT agenda by clearly articulating and harmonizing the roles of various institutions, and ensuring synergies and collaboration	MoICT	None	Yes	Refined Institutional Framework	1.00	0.50	0.00	0.00	0.00	**1.50**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			2.2. Building institutional capacities to ensure development, implementation and enforcement of policies, laws and regulations	MoICT	NITA-U, UCC &Respective MDAs & LGs	No	Improved Skillset for Institutions	4.83	6.44	1.00	1.00	1.00	**14.27**
			2.3. Strengthen the ICT Sector Working Group that is premised on collaboration among stakeholders, so as to take advantage of the vast knowledge, experience and other resources from the various stakeholders in developing the sector	MoICT	NITA-U, UCC &Respective MDAs & LGs	No	Active ICT Sector Working Group	0.30	0.30	0.30	0.30	0.30	**1.50**
			2.4. Strengthen platforms and forums for stakeholder engagement in the sector	MoICT	NITA-U, UCC &Respective MDAs & LGs	No	Platforms and Forums	0.30	1.08	0.92	0.79	0.67	**3.76**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
	Human Capital Development and Planning Objective 3: To develop and nurture a competitive domestic human resource base	Strategy 1: Develop critical mass of ICT skilled Ugandans and industry ready workforce	3.1. Establish the current stock and quality of ICT competencies in the country	MoICT	Private Sector players	No	ICT Human Resource survey; and ICT State of Nation publication	0.50	0.00	0.00	0.00	0.00	**0.50**
			3.2. Institutionalize and build capacity of ICT cadres in Government	MoICT	NITA-U	No	Skilled ICT cadres in Government	8.10	5.00	4.00	4.00	4.00	**25.10**
			3.3. Implement the Master Plan to transform UICT into a Centre of Excellence	UCC	UICT	Yes (RCDF)	UICT Master Plan	0.00	2.00	2.20	2.42	2.66	**9.28**
			3.4. Establish a sustainable ICT training program for Citizens	UCC	None	Yes (RCDF)	Citizen training program	1.30	1.43	1.57	1.73	1.90	**7.93**
			3.5. Implement the certification and accreditation for ICT professionals, trainers / training entities, products and services	NITA-U	Respective MDAs, Academic and Private Sector players	No	Database of Service Providers and Training Institutions; and Compliance Audits	0.00	0.40	0.79	0.79	0.79	**2.77**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			3.6. Partner with Ministry of Education and training institutions to review, develop and implement ICT training curriculum at all levels of the education system	MoICT	NITA-U, UCC &Ministry of Education & Academia	No	Reviewed ICT Curriculum	1.00	3.12	1.00	1.00	1.00	**7.12**
			3.7. Develop and implement a mechanism for joint planning and ICT internship between academia and the industry	MoICT	NITA-U, UCC &Academia & Private Sector players	No	Mechanism	0.00	1.53	0.50	0.50	0.50	**3.03**
			3.8. Develop and implement targeted capacity building for teachers to incorporate ICT in pedagogy	UCC	Academia	No	ICT Teacher re-tooled	0.00	2.00	2.00	2.00	2.00	**8.00**
	Objective 4: To create mass awareness about ICTs and their relevance in people's day-to-day lives	Strategy 1: Build an ICT-aware society	4.1. Collaborate with development partners including civil society to scale up and implement community ICT awareness creation initiatives	MoICT	NITA-U, UCC &Development Partners	No	Collaborations with development partners	0.60	0.66	0.73	0.80	0.88	**3.67**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			4.2. Develop a coherent strategy on the use of social media for ICT awareness	MoICT	NITA-U & UCC	No	Strategy for the use of social media for ICT awareness	0.40	0.10	0.10	0.10	0.00	**0.70**
			4.3. Intensify the use of print and electronic media as a tool for mass sensitization and awareness about ICTs	MoICT	NITA-U & UCC	No	Number of print and electronic media utilized	0.30	0.18	0.19	0.21	0.23	**1.11**
			4.4. Coordinate the formation of ICT associations and professional bodies as a mechanism to create ICT awareness	MoICT	NITA-U, UCC &ICT Associations	No	Collaborations with ICT associations and professional bodies	0.30	0.50	0.50	0.50	0.30	**2.10**
		Strategy 2: Enhance access to public information	4.5. Develop and implement a mechanism that will ensure mass sensitization and awareness about ICT policies, programmes and projects	MoICT	NITA-U & UCC	No	Mechanism for mass sensitization and awareness on ICT policies, programmes and projects	0.80	0.88	0.97	1.06	1.17	**4.88**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			4.6. Collaborate with Ministry of Information and National Guidance to publicize the Access to Information Act in relation to online platforms	MoICT	NITA-U, UCC &MoING	No	Access to Information Act collaboration / agreement	0.00	3.66	2.00	0.00	0.00	**5.66**
			4.7. Provide Technical Support including standards for operationalization and update of the Government Web Portal, websites and social media	NITA-U	None	No	Technical Support	1.00	2.41	1.64	1.44	0.68	**7.17**
			4.8. Develop Open Data for Government	NITA-U	Development Partners	Yes	Open Data for Government	1.02	2.02	0.96	0.03	0.00	**4.03**
	ICT Infrastructure Objective 4: To ensure efficiency in	Strategy 1: Ensure coordinated and collaborative planning as well as	5.1. Establish and implement a mechanism for planning, development, deployment and management of ICT infrastructure	MoICT	NITA-U, UCC &Private Sector players	No	Affordable, reliable & quality broadband infrastructure	0.00	4.00	4.00	7.47	5.62	**21.09**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
	coordination, planning, investment, implementation and utilization of end-to-end ICT infrastructure	development of ICT infrastructure	5.2. Develop and implement a National ICT Infrastructure Structural Plan	MoICT	NITA-U, UCC &Private Sector players	Yes	National ICT Infrastructure Structural Plan	1.20	1.00	1.00	1.00	1.00	**5.20**
			5.3. Establish a mechanism for collaborative monitoring and evaluation of ICT infrastructure deployment in line with the Plan and developed standards	MoICT	NITA-U & UCC	No	M&E mechanism for ICT infrastructure	0.21	0.20	0.20	0.20	0.20	**1.01**
			5.4. Embrace convergence of ICT technologies through common infrastructure deployment and sharing	MoICT	NITA-U, UCC &Private Sector players	No	Common infrastructure deployed and shared	2.50	0.40	0.405	0.41	0.41	**4.125**
			5.5. Develop and implement a National Postal & Courier Services Master Plan to exploit opportunities in e-Government and e-Commerce	UCC	UPL	No	National Master Plan for postal and courier services	0.00	0.66	1.20	0.66	0.00	**2.52**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			5.6. Participate in National Coordination Mechanism for synchronised planning and delivery of Utilities infrastructure	MoICT	NITA-U, UCC &Private Sector players	No	National Coordination Mechanism	0.00	2.50	3.75	3.75	4.60	**14.60**
		Strategy 2: Ensure availability and reliability of ubiquitous broadband network with interconnection to regional networks	5.7. Monitor the implementation of ICT infrastructure in line with the National Broadband Strategy	MoICT	None	No	Interoperable ICT Infrastructure	0.00	0.30	0.90	0.30	0.00	**1.50**
			5.8. Extend NBI to cover the NDPII priority areas and ensure interconnectivity with regional backbone infrastructure	NITA-U	None	Yes (RCIP)	Extended NBI	0.00	15.00	20.00	20.00	20.00	**75.00**
			5.9. Implement innovative spectrum management practices to ensure optimal utilization of the national resource	UCC	None	No	Spectrum management practices	0.00	3.35	3.52	1.38	1.30	**9.55**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			5.10. Promote the development and use of Internet Exchange Points	MoICT	NITA-U & UCC	No	Reduced Internet charges / costs	0.00	6.70	7.04	2.75	2.60	**19.09**
			5.11. Develop a mechanism for National Backbone connectivity to international sub-marine cables	MoICT	NITA-U, UCC &Development Partners	No	National Backbone Connectivity mechanism	0.00	6.00	4.80	0.00	0.00	**10.80**
		Strategy 3: Ensure accessibility and affordability of ICT devices as well as services	5.12. Implement last mile connectivity countrywide in partnership with the Private Sector	NITA-U	Private Sector players	Yes (RCIP)	Interoperable ICT Infrastructure (Connectivity of end-users)	8.10	8.10	8.10	5.40	2.70	**32.40**
			5.13. Promote production and use of low-cost locally assembled devices in collaboration with the Private Sector	MoICT	NITA-U, UCC &Private Sector players	No	Increased availability of low cost locally devices	0.80	0.35	0.35	0.30	0.20	**2.00**
			5.14. Implement interventions that will ensure affordability of ICT devices and services	MoICT	NITA-U, UCC &Private Sector players	No	Interventions for affordable ICT devices and services	0.60	0.66	0.73	0.80	0.88	**3.67**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
	Information Security Objective 6: To develop a secure, reliable and resilient information security system with national capacity to respond to cyber security threats	Strategy 1: Implement the National Information Security Strategy (NISS)	6.1. Implement the National Information Security Framework (NISF) including operationalization of the National Information Security Advisory Group	NITA-U & UCC	None	No	National Information Security Framework (NISF)	2.75	3.13	3.92	3.85	3.30	**16.95**
			6.2. Establish the National CERT, and ensure development and integration of sectorial CERTs	MoICT	NITA-U, UCC &Development Partners	No	National CERT and Sectorial CERTs	2.50	3.36	4.00	2.90	2.50	**15.26**
		Strategy 2: Ensure protection of consumers of ICT services	6.3. Build capacity of key institutions across the board (legislature, judiciary, law enforcement agencies etc)	MoICT	NITA-U, UCC &Respective MDAs	No	Empowered key institutions	1.20	2.00	2.65	1.00	1.00	**7.85**
			6.4. Mount concerted ICT security awareness campaigns	MoICT	NITA-U & UCC	No	ICT security awareness campaigns	0.50	0.18	0.08	0.08	0.08	**0.92**
			6.5. Develop national authentication mechanisms like PKI	NITA-U	MoICT	No	National Authentication Mechanisms like PKI	3.50	4.28	3.00	0.00	0.00	**10.78**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			6.6. Implement website regulation and social media for Government	MoICT	NITA-U	No	Social Media Guidelines implemented	0.30	0.15	0.15	0.15	0.15	**0.90**
			6.7. Establish and maintain partnership agreements with regional and international players on information security with partner states	MoICT	NITA-U & UCC	No	Partnerships, Agreements & MoUs	0.00	1.07	1.49	1.61	1.75	**5.92**
Enabling Environment to spur ICT growth and utilization	**Research, Innovation and Development** Objective 7: To promote Research, Innovation and Development of ICT and Relevant ICT enabled services	Strategy 1: Create an enabling environment to support Research, Innovation and Development	7.1. Develop an ICT Research, Innovation and Development Strategy for Uganda including assistance to entities in obtaining patents	MoICT	NITA-U, UCC &Development Partners	Yes	ICT Research & Innovation Strategy	0.50	0.00	0.00	0.00	0.00	**0.50**
			7.2. Establish a sector-wide mechanism for ICT research, innovation and development	MoICT	NITA-U, UCC, Academia & Private Sector players	Yes	Research & Innovation Mechanism	0.60	0.66	0.73	0.80	0.88	**3.67**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			7.3. Establish an ICT Research, Innovation and Development Fund	MoICT	None	No	ICT Research, Innovation and Development Fund	5.00	15.00	10.00	10.00	10.00	**50.00**
			7.4. Establish ICT laboratories in institutions of higher learning	NITA-U & UCC	Academia & Private Sector players	No	ICT laboratories	0.00	5.53	10.00	10.00	10.00	**35.53**
			7.5. Develop support programmes to facilitate development of ICT incubation facilities and activities	NITA-U & UCC	Private Sector players	No	ICT Incubation initiatives	2.07	2.08	0.00	0.00	0.00	**4.15**
			7.6. Establish ICT Parks and special economic zone	MoICT	NITA-U &Private Sector players	No	ICT Parks	0.00	3.20	5.13	4.13	1.00	**13.46**
			7.7. Develop and implement a programme to attract leading companies in the industry and development partners to establish ICT research, innovation and development facilities	MoICT	NITA-U, UCC, Academia & Private Sector players	No	Research & Innovation programme for attracting leading companies	0.00	2.00	2.00	2.00	2.00	**8.00**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
		Strategy 2: Enhance participation of academia in Research, Innovation and Development for ICT based solutions to local and regional needs	7.8. Develop a framework for collaboration with research/academia for creating industry required solutions	MoICT	NITA-U, UCC, Academia, Private Sector players, UNCST & NCHE	No	Framework for collaboration with research/academia	0.00	0.60	0.66	0.73	0.80	**2.79**
	ICT Safety and Environment Objective 8: To increase the diffusion of Green ICTs in the ICT Sector as well as other sectors	Strategy 1: Promote the use of Green ICTs	8.1. Create awareness about Green ICTs	MoICT	NITA-U & UCC	No	Green ICT awareness	0.60	0.66	0.73	0.80	0.88	**3.67**
			8.2. Promote the use of ICT-enabled solutions for climate change mitigation and adaptation	MoICT	NITA-U, UCC & MoWE	No	Climate-friendly ICT solutions	0.40	0.40	0.40	0.40	0.40	**2.00**
			8.3. Implement efficient management and disposal mechanisms of e-waste in line with the e-waste policy	MoICT	NITA-U, UCC & UNCST	No	E-waste management and disposal mechanisms	0.30	0.15	0.15	0.15	0.15	**0.90**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			8.4. Establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environment sustainability	MoICT	NITA-U, UCC & MoWE	No	Mechanism for stakeholder collaboration and involvement	0.00	0.66	0.73	0.80	0.88	**3.07**
	Objective 9: To safeguard the well-being of ICT consumers and the public	Strategy 1: Promote the development of and conformity to health and safety standards related to deployment and use of ICTs	9.1. Localise / adopt relevant international standards and guidelines for human safety with respect to ICT products	MoICT	NITA-U & UCC	No	Local standards and guidelines for human safety with respect to ICT products	0.00	0.075	0.075	0.00	0.00	**0.15**
			9.2. Champion the development of requisite ICT standards	MoICT	NITA-U & UCC	No	Requisite ICT standards	0.00	0.075	0.075	0.00	0.00	**0.15**
			9.3. Review the national conformity regime with respect to standards and enhance the associated processes and facilities	MoICT	NITA-U & UCC	No	Appropriate national conformity regime	0.00	0.075	0.075	0.075	0.075	**0.30**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
		Strategy 2: Empower consumers to make informed decisions	9.4. Establish mechanisms to increase awareness of consumers and their ease in establishing conformity of ICT products	MoICT	NITA-U & UCC	No	Mechanisms for increasing awareness	0.00	0.075	0.075	0.075	0.075	**0.30**
	ICT in other Sectors Objective 10: To increase efficiency for non-ICT Sectors	Strategy 1: Promote the application and usage of ICT in other sectors	10.1. Collaborate with the respective MDAs in other sectors on major ICT projects (e.g. Integrated Justice Information Management System, Land Information System, Integrated Personnel and Payroll System, e-Parliament including e-Cabinet, e-Voting, e-Tax, e-Immigration, etc)	MoICT	NITA-U, UCC, MoJCA, MoLHUD, MoPS, MoIA & other respective MDAs	No	ICT projects supported in other sectors	1.97	1.97	2.17	2.18	2.63	**10.92**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			10.2. Provide Support for other sectors in integrating ICTs within their respective core activities (such as exploitation of oil fields, eLearning, health research, teleworking, agricultural information dissemination, and scientific knowledge sharing)	MoICT	NITA-U, UCC & Respective MDAs	No	ICT solutions supported in other sectors	0.83	2.63	2.63	2.63	2.63	**11.35**
ICT for Service Delivery	**Promoting e-Services and Local Content** Objective 11: To promote the development of ICT enabled services among citizens	Strategy 1: Develop and promote the use of e-Services	11.1. Encourage the use of ICT tools for trade, service delivery and exchange of information	MoICT	NITA-U & UCC	No	ICT tools, Service Delivery and Exchange of Information in place	0.80	0.20	0.00	0.00	0.00	**1.00**
			11.2. Promote the development and use of ICT value-added services	MoICT	NITA-U, UCC & Development Partners	No	Value-added services uptake increased	0.79	0.19	0.19	0.19	0.19	**1.55**
			11.3. Incentivize the adoption of ICT in SMEs	MoICT	NITA-U, UCC & Development Partners	No	SMEs adopting ICT	0.80	0.81	0.00	0.00	0.00	**1.61**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
	Objective 12: To develop a framework for facilitating the development and access to a wide range of relevant content for the various communication mediums	Strategy 1: Enhance capacity for local content development and usage in the various ICT services	12.1. Develop and implement a strategy for promoting the development and use of local content for ICT services	MoICT	NITA-U, UCC & Development Partners	No	Strategy for promoting the development and use of local content	0.44	0.44	0.00	0.00	0.00	**0.88**
			12.2. Develop and implement policies and guidelines for local quotas in the employment as well as adoption of local content in ICT services	MoICT	NITA-U, UCC & UNCST	No	Policies and guidelines for local quotas	0.72	0.79	0.87	0.96	1.05	**4.39**
		Strategy 2: Promote use of locally developed solutions and applications	12.3. Develop and implement a strategy for promotion and use of local ICT products by Government and Private Sector through a comprehensive incentive scheme for entities adopting and using locally developed ICT solutions, products and applications	MoICT	NITA-U & UCC	No	Incentive Scheme in place	1.80	2.60	1.00	0.775	0.00	**6.175**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			12.4. Promote accessibility to archived digital information and multimedia content in digital repositories	MoICT	NITA-U & UCC	No	Accessible digital information and multimedia	0.00	0.40	0.44	0.49	0.53	**1.86**
			12.5. Collect, package and preserve in digital form all information regarding the cultural heritage of Uganda	MoICT	NITA-U, UCC, MoTWH & Respective MDAs	No	Digital cultural heritage package	0.00	0.40	0.44	0.49	0.53	**1.86**
	e-Government Objective 13: Ensure effective and efficient e-Government services	Strategy 1: Enhance integration and automation of e-Government services	13.1. Ensure automation and integration of priority sectors and services i.e. National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice	NITA-U	MAAIF, MoTWH, MoES, MEMD, MoH, MoJCA, & other respective MDAs	No	National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice)	5.50	5.50	5.50	5.00	5.00	**26.50**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			13.2. Establish an electronic document management and workflow system for Government	NITA-U	None	No	Electronic document management and workflow system	4.50	4.50	4.50	4.00	4.00	**21.50**
			13.3. Spearhead digital archiving and digitalization of Government records	NITA-U	None	No	Electronic Government Records	0.00	4.15	5.55	5.55	6.68	**21.93**
			13.4. Establish a national data centre, disaster recovery centre, secure Government Cloud (UG-Cloud) and national databank	MoICT	NITA-U	Yes	National data center, disaster recovery centre and UG Cloud	30.00	35.10	21.60	8.00	8.00	**102.70**
			13.5. Monitor the implementation of the e-Government enterprise architecture and interoperability framework	MoICT	NITA-U & Development Partners	No	Interoperability Framework; and Government Architectural Blueprint	3.40	3.93	3.00	1.00	1.00	**12.33**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			13.6. Develop institutional framework for implementation of e-Government	MoICT	NITA-U	No	Institutional Framework; and e-Government regulations	2.00	6.50	3.71	0.00	0.00	**12.21**
			13.7. Support the implementation of National Financial Information System	NITA-U	None	No	National Financial Information System	15.88	8.00	8.00	8.00	8.00	**47.88**
			13.8. Establish One Stop Shop Centres for e-Government service delivery through the postal network	MoICT	NITA-U, UCC & UPL	Yes	One Stop Shop Centres	6.13	5.25	3.50	1.31	1.31	**17.50**
		Strategy 2: Enhance development and uptake of e-Government services	13.9. Establish regional information access centres	MoICT	NITA-U	No	Information Access Centre	13.70	13.46	8.00	8.00	3.00	**46.16**
			13.10. Operationalize the IT Project Management methodology	NITA-U	None	No	Number of MDAs utilizing the IT project management methodology	15.88	0.00	0.00	0.00	0.00	**15.88**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			13.11. Implement the Government Citizen Interaction Centre (GCIC)	MoICT	NITA-U, OPM & respective MDAs	No	Online Citizen Participation portal; Government Citizen Interaction Centre (GCIC); and Interactive Access Centre (IAC)	3.94	3.89	2.00	2.00	2.00	**13.83**
			13.12. Promote utilization of Open Source software and mobile apps	MoICT	NITA-U & Development Partners	No	Replicable open source & mobile apps for e-Government	0.00	4.14	3.89	2.00	2.00	**12.03**
			13.13. Develop and implement a change management strategy for adoption of e-Government services	MoICT	NITA-U	No	Change Management Strategy; and Awareness Program	1.20	1.20	1.20	1.20	1.20	**6.00**
			13.14. Build capacity for e-Government adoption	MoICT	NITA-U & Respective MDAs	No	Increased adoption of e-Government	5.05	4.31	3.67	3.14	2.68	**18.85**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
	ICT Industry Awareness and Promotion in Target Markets Objective 14: To promote Uganda as an ICT Hub	Strategy 1: Work with other countries of the region on a mutually beneficial basis for all-round development of the ICT Sector	14.1. Undertake joint interventions with neighbouring countries to explore areas of competitive strengths and interests	MoICT	NITA-U, UCC & Private Sector players	No	Joint Interventions	8.00	8.00	8.00	8.00	8.00	**40.00**
			14.2. Support the establishment of a secure, competitive and sustainable internet bandwidth market in Uganda	MoICT	NITA-U, UCC & Private Sector players	No	Secure, competitive & sustainable international bandwidth market	0.00	7.60	8.36	9.20	10.12	**35.28**
	Objective 15: To promote Ugandan ICT goods and services internationally	Strategy 1: Position Uganda competitively in the Global ICT market	15.1. Develop and implement a strategy to promote Uganda as an attractive ICT-enabled services centre of the world	MoICT	NITA-U, UCC & Private Sector players	No	Strategy promoting Uganda	0.00	4.45	8.49	5.00	5.00	**22.94**
			15.2. Undertake market intelligence to identify target markets and services	MoICT	NITA-U, UCC & Private Sector players	No	Market Intelligence Report; and Market Surveys	0.65	0.72	0.79	0.87	0.95	**3.98**

Strategic Themes	Action Area & Objectives	Strategies	Interventions	Lead Agency	Other Agency	Proj.	Output(s)	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost (Billion Shillings)
			15.3. Incentivize and reward companies that invest in promoting Uganda's ICT goods and services abroad	MoICT	NITA-U, UCC & Private Sector players	No	Incentives and Awards / Rewards	0.00	5.51	5.23	5.25	5.28	**21.27**
			15.4. Empower Uganda Missions abroad to promote the country	MoICT	NITA-U, UCC & MoFA	No	Capacity Building	5.00	5.00	5.00	5.00	5.00	**20.0**
			15.5. Prioritize participation in international ICT initiatives	MoICT	NITA-U & UCC	No	MoUs; and Partnerships	3.00	3.00	3.00	3.00	3.00	**15.00**
			15.6. Ensure ratification of signed ICT protocols	MoICT	NITA-U & UCC	No	MoUs; and Partnerships	1.00	1.00	1.00	1.00	1.00	**5.00**
							TOTAL	**194.86**	**283.63**	**252.825**	**199.475**	**191.88**	**1,122.67**

Table 11:Summary of Investment Plan

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
1.1. Review ICT Policies so as to cater for requirements in the priority areas of research and development, ICT convergence, human capital development and ICT exports	17.49	17.49	0	0
1.2. Develop, regularly review and enforce regulations and standards	3.00	3.00	0	0
1.3. Strengthen the enforcement mechanism of laws, regulations and standards	2.00	2.00	0	0
1.4. Review Spectrum Management Framework to facilitate the realisation of the broadband goals	0.86	0	0.86	0
1.5. Develop and implement a policy and legal framework for multi-sectorial infrastructure deployment and sharing	0.96	0.96	0	0
1.6. Finalise the development and implementation of the Data Protection and Privacy Bill, and develop Information Security legal framework	0.30	0.15	0	0.15
1.7. Finalize the development of the National Broadband Policy and Strategy as well as its implementation framework	0.50	0	0.50	0
1.8. Review and implement policy for the postal sector to ensure it encompasses opportunities offered by e-Government and e-Commerce	1.36	0	1.36	0
1.9. Develop and implement a cross-cutting M&E framework for the ICT Sector	0.68	0.34	0	0.34
1.10. Develop a Strategy for increasing access of ICT devices to Special Interest Groups	1.70	0	1.70	0
1.11. Develop and implement an Open Source policy and strategy for Uganda	10.70	5.35	0	5.35
2.1. Review and align the existing institutional framework to drive the national ICT agenda by clearly articulating and harmonizing the roles of various institutions, and ensuring synergies and collaboration	1.50	1.50	0	0
2.2. Building institutional capacities to ensure development, implementation and enforcement of policies, laws and regulations	14.27	14.27	0	0

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
2.3. Strengthen the ICT Sector Working Group that is premised on collaboration among stakeholders, so as to take advantage of the vast knowledge, experience and other resources from the various stakeholders in developing the sector	1.50	1.50	0	0
2.4. Strengthen platforms and forums for stakeholder engagement in the sector	3.76	3.76	0	0
3.1. Establish the current stock and quality of ICT competencies in the country	0.50	0.125	0	0.375
3.2. Institutionalize and build capacity of ICT cadres in Government	25.10	25.10	0	0
3.3. Implement the Master Plan to transform UICT into a Centre of Excellence	9.28	9.28	0	0
3.4. Establish a sustainable ICT training program for Citizens	7.93	7.93	0	0
3.5. Implement the certification and accreditation for ICT professionals, trainers / training entities, products and services	2.77	0.693	0	2.077
3.6. Partner with Ministry of Education and training institutions to review, develop and implement ICT training curriculum at all levels of the education system	7.12	5.34	0.89	0.89
3.7. Develop and implement a mechanism for joint planning and ICT internship between academia and the industry	3.03	0.758	0	2.272
3.8. Develop and implement targeted capacity building for teachers to incorporate ICT in pedagogy	8.00	6.00	0	2.00
4.1. Collaborate with development partners including civil society to scale up and implement community ICT awareness creation initiatives	3.67	0	3.67	0
4.2. Develop a coherent strategy on the use of social media for ICT awareness	0.70	0.70	0	0
4.3. Intensify the use of print and electronic media as a tool for mass sensitization and awareness about ICTs	1.11	1.11	0	0
4.4. Coordinate the formation of ICT associations and professional bodies as a mechanism to create ICT awareness	2.1	1.05	0	1.05
4.5. Develop and implement a mechanism that will ensure mass sensitization and awareness about ICT policies, programmes and projects	4.88	4.88	0	0

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
4.6. Collaborate with Ministry of Information and National Guidance to publicize the Access to Information Act in relation to online platforms	5.66	5.66	0	0
4.7. Provide Technical Support including standards for operationalization and update of the Government Web Portal, websites and social media	7.17	7.17	0	0
4.8. Develop Open Data for Government	4.03	0	4.03	0
5.1. Establish and implement a mechanism for planning, development, deployment and management of ICT infrastructure	21.09	10.545	0	10.545
5.2. Develop and implement a National ICT Infrastructure Structural Plan	5.20	2.60	0	2.60
5.3. Establish a mechanism for collaborative monitoring and evaluation of ICT infrastructure deployment in line with the Plan and developed standards	1.01	1.01	0	0
5.4. Embrace convergence of ICT technologies through common infrastructure deployment and sharing	4.125	2.0625	0	2.0625
5.5. Develop and implement a National Postal & Courier Services Master Plan to exploit opportunities in e-Government and e-Commerce	2.52	2.52	0	0
5.6. Participate in National Coordination Mechanism for synchronised planning and delivery of Utilities infrastructure	14.60	2.92	0	11.68
5.7. Monitor the implementation of ICT infrastructure in line with the National Broadband Strategy	1.50	1.50	0	0
5.8. Extend NBI to cover the NDPII priority areas and ensure interconnectivity with regional backbone infrastructure	75.00	37.50	0	37.50
5.9. Implement innovative spectrum management practices to ensure optimal utilization of the national resource	9.55	9.55	0	0
5.10. Promote the development and use of Internet Exchange Points	19.09	19.09	0	0
5.11. Develop a mechanism for National Backbone connectivity to international sub-marine cables	10.80	0	10.80	0
5.12. Implement last mile connectivity countrywide in partnership with the Private Sector	32.40	8.10	0	24.30
5.13. Promote production and use of low-cost locally assembled devices in collaboration with the Private Sector	2.00	1.00	0	1.00

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
5.14. Implement interventions that will ensure affordability of ICT devices and services	3.67	1.835	0	1.835
6.1. Implement the National Information Security Framework (NISF) including operationalization of the National Information Security Advisory Group	16.95	16.95	0	0
6.2. Establish the National CERT and ensure development and integration of sectorial CERTs	15.26	0	15.26	0
6.3. Build capacity of key institutions across the board (legislature, judiciary, law enforcement agencies etc)	7.85	7.85	0	0
6.4. Mount concerted ICT security awareness campaigns	0.92	0.92	0	0
6.5. Develop national authentication mechanisms like PKI	10.78	10.78	0	0
6.6. Implement website regulation and social media for Government	0.90	0.90	0	0
6.7. Establish and maintain partnership agreements with regional and international players on information security with partner states	5.92	5.92	0	0
7.1. Develop an ICT Research, Innovation and Development Strategy for Uganda including assistance to entities in obtaining patents	0.50	0	0.50	0
7.2. Establish a sector-wide mechanism for ICT research, innovation and development	3.67	1.835	0	1.835
7.3. Establish an ICT Research, Innovation and Development Fund	50.00	50.00	0	0
7.4. Establish ICT laboratories in institutions of higher learning	35.53	7.106	0	28.424
7.5. Develop support programmes to facilitate development of ICT incubation facilities and activities	4.15	0.83	0	3.32
7.6. Establish ICT Parks and special economic zone	13.46	6.73	0	6.73
7.7. Develop and implement a programme to attract leading companies in the industry and development partners to establish ICT research, innovation and development facilities	8.00	1.60	0	6.40
7.8. Develop a framework for collaboration with research/academia for creating industry required solutions	2.79	0.558	0	2.232
8.1. Create awareness about Green ICTs	3.67	0	3.67	0

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
8.2. Promote the use of ICT-enabled solutions for climate change mitigation and adaptation	2.00	2.00	0	0
8.3. Implement efficient management and disposal mechanisms of e-waste in line with the e-waste policy	0.90	0.90	0	0
8.4. Establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environment sustainability	3.07	3.07	0	0
9.1. Localise / adopt relevant international standards and guidelines for human safety with respect to ICT products	0.15	0	0	0.15
9.2. Champion the development of requisite ICT standards	0.15	0	0	0.15
9.3. Review the national conformity regime with respect to standards and enhance the associated processes and facilities	0.30	0	0	0.30
9.4. Establish mechanisms to increase awareness of consumers and their ease in establishing conformity of ICT products	0.30	0	0	0.30
10.1. Collaborate with the respective MDAs in other sectors on major ICT projects (e.g. Integrated Justice Information Management System, Land Information System, Integrated Personnel and Payroll System, e-Parliament including e-Cabinet, e-Voting, e-Tax, e-Immigration, etc)	10.92	10.92	0	0
10.2. Provide Support for other sectors in integrating ICTs within their respective core activities (such as exploitation of oil fields, eLearning, health research, teleworking, agricultural information dissemination, and scientific knowledge sharing)	11.35	11.35	0	0
11.1. Encourage the use of ICT tools for trade, service delivery and exchange of information	1.00	1.00	0	0
11.2. Promote the development and use of ICT value-added services	1.55	1.55	0	0
11.3. Incentivize the adoption of ICT in SMEs	1.61	0	1.61	0
12.1. Develop and implement a strategy for promoting the development and use of local content for ICT services	0.88	0	0.88	0
12.2. Develop and implement policies and guidelines for local quotas in the employment as well as adoption of local content in ICT services	4.39	4.39	0	0

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
12.3. Develop and implement a strategy for promotion and use of local ICT products by Government and Private Sector through a comprehensive incentive scheme for entities adopting and using locally developed ICT solutions, products and applications	6.175	6.175	0	0
12.4. Promote accessibility to archived digital information and multimedia content in digital repositories	1.86	1.86	0	0
12.5. Collect, package and preserve in digital form all information regarding the cultural heritage of Uganda	1.86	1.860	0	0
13.1. Ensure automation and integration of priority sectors and services i.e. National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice	26.50	15.90	10.60	0
13.2. Establish an electronic document management and workflow system for Government	21.50	21.50	0	0
13.3. Spearhead digital archiving and digitalization of Government records	21.93	21.93	0	0
13.4. Establish a national data centre, disaster recovery centre, secure Government Cloud (UG-Cloud) and national databank	102.70	102.70	0	0
13.5. Monitor the implementation of the e-Government enterprise architecture and interoperability framework	7.33	0	7.330	0
13.6. Develop institutional framework for implementation of e-Government	12.21	12.21	0	0
13.7. Support the implementation of National Financial Information System	47.88	47.88	0	0
13.8. Establish One Stop Shop Centres for e-Government service delivery through the postal network	17.50	17.50	0	0
13.9. Establish regional information access centres	9.16	9.16	0	0
13.10. Operationalize the IT Project Management methodology	15.88	15.88	0	0
13.11. Implement the Government Citizen Interaction Centre (GCIC)	13.83	13.83	0	0
13.12. Promote utilization of Open Source software and mobile apps	12.03	0	12.03	0
13.13. Develop and implement a change management strategy for adoption of e-Government services	6.00	6.00	0	0

Interventions	Total Cost (BN Shillings)	Government	Development Partners	Public Private Partnerships
13.14. Build capacity for e-Government adoption	18.85	18.85	0	0
14.1. Undertake joint interventions with neighbouring countries to explore areas of competitive strengths and interests	40.00	20.00	0	20.00
14.2. Support the establishment of a secure, competitive and sustainable internet bandwidth market in Uganda	35.28	17.64	0	17.64
15.1. Develop and implement a strategy to promote Uganda as an attractive ICT-enabled services centre of the world	22.94	11.47	0	11.47
15.2. Undertake market intelligence to identify target markets and services	3.98	0	0	3.98
15.3. Incentivize and reward companies that invest in promoting Uganda's ICT goods and services abroad	9.27	1.854	0	7.416
15.4. Empower Uganda Missions abroad to promote the country	2.90	2.90	0	0
15.5. Prioritize participation in international ICT initiatives	45.00	45.00	0	0
15.6. Ensure ratification of signed ICT protocols	45.00	45.00	0	0
TOTAL	**1,122.67**	**830.61**	**75.69**	**216.37**

Appendix C

Table 12:M&E Indicators Matrix

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
Objective 1: To ensure a conducive policy, legal and regulatory framework that is responsive to industry demands					
Strategy 1: Review the policy, legal and regulatory framework to align it with international norms and best practices, while taking into consideration national peculiarities	1.1. Review National ICT Policies so as to cater for requirements in the priority areas of research and development, ICT convergence, human capital development and ICT exports 1.2. Develop, regularly review and enforce regulations and standards 1.3. Strengthen the enforcement mechanism of laws, regulations and standards 1.4. Review Spectrum Management Framework to facilitate the realisation of the broadband goals 1.5. Develop and implement a policy and legal framework for multi-sectorial infrastructure deployment and sharing 1.6. Finalise the development and implementation of the Data Protection and Privacy Bill, and develop Information Security legal framework 1.7. Finalize the development of the National Broadband Policy and Strategy as well	• At least 5 policies, strategies developed and/or reviewed; • At least 5 laws and regulations enacted; and • At least 2 regulations / standards reviewed.	• Open source policy and strategy; • Revised postal services delivery policy in place; • Digital Convergence law in place; • Data protection and Privacy Bill passed and operational; • Revised Spectrum Management Framework in place and operational; • Multi-sectorial infrastructure	Administrative records	• MoICT & agencies; • Other MDAs; • Private Sector actors; and • Civil Society.

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
	as its implementation framework 1.8. Review and implement policy for the postal sector to ensure it encompasses opportunities offered by e-Government and e-Commerce 1.9. Develop and implement a cross-cutting M&E framework for the ICT Sector 1.10. Develop a Strategy for increasing access of ICT devices & services to Special Interest Groups 1.11. Develop and implement an Open Source policy and strategy for Uganda		deployment law in place; • National Broadband Policy and Strategy operational; • Multi-sectorial ICT M&E system in place and operational; and • Strategy for increasing access to ICT by Special Interest Groups in place.		
Objective 2: To strengthen the ICT institutional framework to drive the national ICT agenda					
Strategy 1: Establish a multi-institutional collaborative framework to drive the national ICT agenda	2.1. Review and align the existing institutional framework to drive the national ICT agenda by clearly articulating and harmonizing the roles of various institutions, and ensuring synergies and collaboration 2.2. Building institutional capacities to ensure development, implementation	• An aligned and harmonised institutional framework put in place and operationalized; • ICT Sector institutions adequately staffed and	• Aligned and harmonized institutional framework; and • Sector working group in place and operational.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from	MoICT & agencies

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
	and enforcement of policies, laws and regulations 2.3. Strengthen the ICT Sector Working Group that is premised on collaboration among stakeholders, so as to take advantage of the vast knowledge, experience and other resources from the various stakeholders in developing the sector 2.4. Strengthen platforms and forums for stakeholder engagement in the sector	re-tooled; • A vibrant ICT Sector working group will all its structures fully functional; and • Regular forum for stakeholder engagement.		implementation teams duly verified.	
Objective 3: To develop and nurture a competitive domestic human resource base					
Strategy 1: Develop critical mass of ICT skilled Ugandans and industry ready workforce	3.1. Establish the current stock and quality of ICT competencies in the country 3.2. Institutionalize and build capacity of ICT cadres in Government 3.3. Implement the Master Plan to transform UICT into a Centre of Excellence 3.4. Establish a sustainable ICT training program for Citizens 3.5. Implement the certification and accreditation for ICT professionals 3.6. Partner with Ministry of Education and	• Human Capital survey conducted and report produced; • Institutionalization Strategy approved; • At least 50% of MDAs with centrally deployed ICT cadre; • At least 100 of ICT officials trained in relevant fields; and	• Human Capital survey report; • ICT cadre in government centrally deployed; • Capacity of ICT cadre in government strengthened; and • Master Plan to	Surveys and Administrative records	• MoICT & agencies; • Other MDAs; • Private Sector actors; • Civil Society; and • Academia.

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
	training institutions to review, develop and implement ICT training curriculum tailored to industry needs 3.7. Develop and implement a mechanism for joint planning and ICT internship between academia and the industry 3.8. Develop and implement targeted capacity building for teachers to incorporate ICT in pedagogy	• Master Plan to transform UICT into a Centre of Excellence implemented.	transform UICT into a Centre of Excellence implemented.		
Objective 4: To create mass awareness about ICTs and their relevance in people's day-to-day lives					
Strategy 1: Build an ICT-aware society	4.1. Collaborate with development partners including civil society to scale up and implement community ICT awareness creation initiatives 4.2. Develop a coherent strategy on the use of social media for ICT awareness 4.3. Intensify the use of print and electronic media as a tool for mass sensitization and awareness about ICTs 4.4. Coordinate the formation of ICT associations and professional bodies as a mechanism to create ICT awareness	• At least 20 national ICT awareness initiatives undertaken; and • At least 70% growth in social media coverage.	• Mass ICT Awareness Campaign mounted and sustained; • Social media strategy and guidelines developed and enforced; • Strong ICT professional body in place and functional;	Administrative records, Technical Reports, and Feedback from events.	• MoICT & agencies; • Other MDAs; • Private Sector actors; • Civil Society; • Academia; and • Media.

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
			and • ICT industry associations created and used as conduit for ICT promotion and mass sensitisation.		
Strategy 2: Enhance access to public information	4.5. Develop and implement a mechanism that will ensure mass sensitization and awareness about ICT policies, programmes and projects 4.6. Collaborate with Ministry of Information and National Guidance to publicize the Access to Information Act in relation to online platforms 4.7. Provide Technical Support including standards for operationalization and update of the Government Web Portal, websites and social media 4.8. Develop Open Data for Government	• At least 100 sensitization sessions campaigned; and • At least 60% of online platforms complying with the guidelines.	• Government Open data in place and operational; and • Government web portal operational.	Administrative records, Technical Reports, and Feedback from events.	• MoICT & agencies; • Other MDAs; • Private Sector actors; and • Civil Society.
Objective 5: To ensure efficiency in coordination, planning, investment, implementation and utilization of end-to-end ICT infrastructure					

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
Strategy 1: Ensure coordinated and collaborative planning as well as development of ICT infrastructure	5.1. Establish and implement a mechanism for planning, development, deployment and management of ICT infrastructure 5.2. Develop and implement a National ICT Infrastructure Structural Plan 5.3. Establish a mechanism for collaborative monitoring and evaluation of ICT infrastructure deployment in line with the Plan and developed standards 5.4. Embrace convergence of ICT technologies through common infrastructure deployment and sharing 5.5. Develop and implement a National Postal & Courier Services Master Plan to exploit opportunities in e-Government and e-Commerce 5.6. Participate in National Coordination Mechanism for synchronised planning and delivery of Utilities infrastructure	• A mechanism for planning, development and deployment of ICT infrastructure established; • A mechanism for collaborative monitoring and evaluation of ICT infrastructure deployment in place; • National ICT Infrastructure Structural Plan; and • National Postal & Courier Services Master Plan.	• National ICT Infrastructure Structural Plan; and • National Postal & Courier Services Master Plan.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private sector actors; and • Civil Society.
Strategy 2: Ensure availability and reliability of ubiquitous broadband network with	5.7. Monitor the implementation of ICT infrastructure in line with the National Broadband Strategy 5.8. Extend NBI to cover the NDPII priority areas and ensure interconnectivity with	• At least 2750 kilometres of fibre laid; and • At least 80% of targeted strategic	• Use of Internet Exchange Points promoted; and • Last mile connectivity to	Administrative records, Technical Reports, and Monitoring Reports and	MoICT & agencies

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
interconnection to regional networks	regional backbone infrastructure 5.9. Implement innovative spectrum management practices to ensure optimal utilization of the national resource 5.10. Promote the development and use of Internet Exchange Points 5.11. Develop a mechanism for national backbone connectivity to international sub-marine cables	areas (boarder points, NDPII priority areas connected etc).	key target user groups.	Status Reports from implementation teams duly verified.	
Strategy 3: Ensure accessibility and affordability of ICT devices as well as services	5.12. Implement last mile connectivity countrywide in partnership with the Private Sector 5.13. Promote production and use of low-cost locally assembled devices in collaboration with the Private Sector 5.14. Implement interventions that will ensure affordability of ICT devices and services	• At least 80% of public schools connected to NBI; • At least 30% public universities connected to NBI; and • At least 80% of public health facilities connected to NBI.	Public schools, public universities, research institutions and public health facilities connected.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private Sector actors; and • Civil Society.
Objective 6: To develop a secure, reliable and resilient information security system with national capacity to respond to cyber security threats					

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
Strategy 1: Implement the National Information Security Strategy (NISS)	6.1. Implement the National Information Security Framework (NISF) including operationalization of the National Information Security Advisory Group 6.2. Establish the National CERT, and ensure development and integration of sectorial CERTs	• At least 70% of cyber security incidents detected; and • At least 85% of cyber security incidents resolved.	• National CERT in place; and • Sector CERT operational and integrated into the national CERT.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	MoICT & agencies
Strategy 2: Ensure protection of consumers of ICT services	6.3. Build capacity of key institutions across the board (legislature, judiciary, law enforcement agencies etc) 6.4. Mount concerted ICT security awareness campaigns 6.5. Develop national authentication mechanisms like PKI 6.6. Implement website regulation and social media for Government 6.7. Establish and maintain partnership agreements with regional and international players on information security with partner states	• At least Level 2 of the COBIT maturity model attained; • At least 25% growth in public awareness on information security; and • Collaborative networks for information security created and sustained.	• Information Security awareness created; • PKI in place and operationalized; and • Website regulations enforced.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private sector actors; and • Civil Society.

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
Objective 7: To promote Research, Innovation and Development of ICT and relevant ICT enabled services					
Strategy 1: Create an enabling environment to support Research, Innovation and Development	7.1. Establish a sector-wide mechanism for ICT research, innovation and development 7.2. Establish an ICT Research, Innovation and Development Fund 7.3. Establish ICT laboratories in institutions of higher learning 7.4. Develop support programmes to facilitate development of ICT incubation facilities and activities 7.5. Establish ICT Parks and special economic zone 7.6. Develop and implement a programme to attract leading companies in the industry and development partners to establish ICT research, innovation and development facilities	• At least 1000 ICT laboratories established in schools; • At least 100 ICT firms incubated per annum through public ICT innovation hubs; • At least one national and two regional ICT parks established; and • Memorandum of Understanding (MoU) signed with at least 3 multinational companies to foster research.	• ICT research and Innovation Fund; • ICT laboratories established in schools; and • At least 5 ICT innovation hubs established or supported by Government.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private Sector actors; • Academia; and • Civil Society.
Strategy 2: Enhance participation of academia in Research, Innovation and	7.7. Develop a framework for collaboration with research/academia for creating industry required solutions	• Memorandums of Understanding (MoUs) established and operationalized with at least 10 research institutions and	Memorandum of understanding developed with academia	Administrative records, Technical Reports, and Monitoring Reports and	• MoICT & agencies; • Other MDAs; • Private

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
Development for ICT based solutions to local and regional needs		academia; and • At least 10 collaborative ICT research & innovation activities championed.		Status Reports from implementation teams duly verified.	Sector actors; and • Academia.
Objective 8: To increase the diffusion of Green ICTs in the ICT Sector as well as other sectors					
Strategy 1: Promote the use of Green ICTs	8.1. Create awareness about Green ICTs 8.2. Promote the use of ICT-enabled solutions for climate change mitigation and adaptation 8.3. Implement efficient management and disposal mechanisms of e-waste in line with e-waste policy 8.4. Establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environmental sustainability	At least 5 ICT solutions utilized for mitigating negative effects of climate change.	• Mechanism for spreading awareness about Green ICT; • E-waste management policy implemented; and • A mechanism for stakeholder collaboration and involvement in ICT for environmentalsustainability.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private Sector actors; • Civil Society; and • Media.
Objective 9: To safeguard the well-being of ICT consumers and the public					

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
Strategy 1: Promote the development of and conformity to health and safety standards related to the deployment and use of ICTs	9.1. Localize / adopt relevant international standards and guidelines for human safety with respect to ICT products 9.2. Champion the development of requisite ICT standards 9.3. Review the national conformity regime and enhance the associated processes and facilities	At least 20 requisite ICT standards developed and enforced.	• ICT standards and guidelines developed; and • ICT standards and guidelines enforced.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private Sector actors; • Civil Society; and • Media.
Strategy 2: Empower consumers to make informed decisions	9.4. Establish mechanisms to increase awareness of consumers and their ease in establishing conformity of ICT products				
Objective 10: To increase efficiency and productivity of non-ICT Sectors					
Strategy 1: Promote the application and usage of ICT in other sectors	10.1. Collaborate with the respective MDAs in other sectors on major ICT projects (e.g. Integrated Justice Information Management System, Land Information System, Integrated Personnel and Payroll System, e-Parliament including e-Cabinet, e-Voting, e-Tax, e-Immigration, etc) 10.2. Provide Support for other sectors in integrating ICTs within their respective core activities (such as exploitation of oil	• At least 60% of ICT projects implemented in accordance with guidelines provided by the sector; and • At least 5 ICT-enabled projects supported.	Priority ICT-enabled projects in other sectors supported.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; and • Private Sector actors.

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
	fields, eLearning, health research, teleworking, agricultural information dissemination, and scientific knowledge sharing)				
Objective 11: To promote the development of ICT enabled services among citizens					
Strategy 1: Develop and promote the use of e-Services	11.1. Encourage the use of ICT tools for trade, service delivery and exchange of information 11.2. Promote the development and use of ICT value-added services 11.3. Incentivize the adoption of ICT in SMEs	• At least 60% of on line e-trade activities utilized; and • Use of ICT promoted in at least 25% of SMEs.	Priority ICT exports identified and promoted.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; and • Private sector actors.
Objective 12: To develop a framework for facilitating the development and access to a wide range of relevant content for the various communication mediums					
Strategy 1: Enhance capacity for local content development and usage in the various ICT services	12.1. Develop and implement a strategy for promoting the development and use of local content for ICT services 12.2. Develop and implement policies and guidelines for local quotas in the employment as well as adoption of local content in ICT services	At 3 policies and 3 guidelines for local quotas.	Strategy for promoting the development and use of local content for ICT services.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from	• MoICT & agencies; • Other MDAs; • Private Sector actors;

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
				implementation teams duly verified.	• Civil Society; and • Media.
Strategy 2: Promote use of locally developed solutions and applications	12.3. Develop and implement incentive scheme for SMEs adopting and using locally developed ICT solutions, products and applications 12.4. Promote accessibility to archived digital information and multimedia content in digital repositories 12.5. Collect, package and preserve in digital form all information regarding the cultural heritage of Uganda	• At least 60% of locally developed ICT solutions utilized; and • Electronic Knowledge management system developed.	• Incentive schemes for SMEs adopting and using locally developed ICT solutions, products and applications developed; and • Cultural heritage information converted to digital form.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	• MoICT & agencies; • Other MDAs; • Private sector actors; • Civil Society; and • Media.
Objective 13: To ensure effective and efficient e-Government services					
Strategy 1: Enhance integration and automation of e-Government services	13.1. Ensure automation and integration of priority sectors and services i.e. National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice 13.2. Establish an electronic document management and workflow system for	• At least 30% of MDAs at transactional level of e-government development; and • Implementation of the e-Government enterprise architecture and interoperability	• Electronic document management system; • National databank established;	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from	• MoICT & agencies; • Other MDAs; • Private Sector actors;

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
	Government 13.3. Execute digital archiving and digitalization of Government records 13.4. Establish a national data centre, disaster recovery centre, secure Government Cloud (UG-Cloud) and national databank 13.5. Monitor the implementation of the e-Government enterprise architecture and interoperability framework 13.6. Strengthen the institutional framework for implementing e-Government 13.7. Support the implementation of National Financial Information System 13.8. Establish One Stop Shop Centres for e-Government service delivery through the postal network	framework monitored.	• UG-Cloud established; and • National Financial Information System supported.	implementation teams duly verified.	• Civil Society; • Academia; and • Media.
Strategy 2: Enhance development and uptake of e-Government services	13.9. Establish regional information access centres 13.10. Operationalize the IT Project Management methodology 13.11. Implement the Government Citizen Interaction Centre (GCIC)	• At least 70% of the population of population with information access centres that are within 5 kilometres radius; • At least 60% of the	• IT Project Management methodology rolled out; • Government Citizen Interaction	Administrative records, Technical Reports, and Monitoring Reports and Status Reports	Public Sector actors

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
	13.12. Promote utilization of Open Source software and mobile apps 13.13. Develop and implement a change management strategy for adoption of e-Government services 13.14. Build capacity for e-Government adoption	country's key stakeholders utilizing e-Government services; and • At least 25% increase in utilization of Open Source software and mobile apps.	Centre (GCIC) implemented; and • A change management strategy for adoption of e-Government services implemented.	from implementation teams duly verified.	
Objective 14: To promote Uganda as an ICT Hub					
Strategy 1: Work with other countries of the region on a mutually beneficial basis for all-round development of the ICT Sector	14.1. Undertake joint interventions with neighbouring countries to explore areas of competitive strengths and interest 14.2. Support the establishment of a secure, competitive and sustainable internet bandwidth market in Uganda	At least 90% of key regional initiatives participated in.	Effective participation running regional projects such as the Northern Corridor Infrastructure Project.	Administrative records, Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	Public and Private Sector actors
Objective 15: To promote Ugandan ICT goods and services internationally					
Strategy 1: Position Uganda	15.1. Develop and implement a strategy to promote Uganda as an attractive ICT-	• ICT investments in Uganda sourced from	• Signed ICT protocols ratified;	Administrative records,	• MoICT &

Strategies	Interventions	KPI Target	Targeted Milestones	Means of Verification	Key Actors
competitively in the Global ICT market	enabled services centre of the world 15.2. Undertake market intelligence to identify target markets and services 15.3. Incentivize and reward companies that invest in promoting Uganda's ICT goods and services abroad 15.4. Empower Uganda Missions abroad to promote the country 15.5. Prioritize participation in international ICT initiatives 15.6. Ensure ratification of signed ICT protocols	at least 40% of developed countries; and • At least 90% of key ICT global meetings attended.	and • ICT-enabled market intelligent services undertaken.	Technical Reports, and Monitoring Reports and Status Reports from implementation teams duly verified.	agencies; • Other MDAs; • Private Sector actors; • Civil Society; • Media; and • Academia.

Appendix D

The table below presents each of these risks and analyses possible mitigation measures for each of them.

Table 13: Implementation Risks and their Mitigation Measures

Risk	Description	Impact, if risks materialize	Mitigation Measure(s)
Lack of Consistent and Continued political and executive support	Both political and executive support is important here, since even as the former lends direction, the latter is the part that would ensure execution as envisaged. It is also important that the support not just be consistent with strategies that constitute the plan but also be continued without any major lapses.	Implementation will suffer, on account of the following reasons: • If political leadership is not matched by executive commitment, the implementation will languish as actual achievements will fall short of requirements of strategic directions; and • On the other hand, if excellence in execution is not supported by political leadership's support, many activities may get delayed beyond the executive's control, thus cutting into their envisaged benefits.	Mitigation measures considered during the formulation of the plan include, inter alia, the following: • The process of assessment and analysis has involved and taken into consideration views from all stakeholders who participated in the planning process, thus ensuring that not only are their views taken on board but also that they have a role and hence sense of ownership for the plan itself; and • Further initiatives during the plan implementation must keep these considerations paramount to minimise impact of this risk.
Non-availability of funds	Measures recommended as part of the plan must be supported with a continued supply of adequate funding as required	Inadequate availability of funds would have the following impact: • Being not in a position to implement everything, the decision markets would then choose between different projects and programmes. The holistic focus of the plan would then be impaired; • Stakeholders who are not involved would lose interest; • There is a chance of interdependencies not being considered completely while picking and choosing from among projects and programmes; and • Many activities where a comprehensive	The formulation of strategies and programmes has taken up mitigation measures to address this risk in the following ways: • Making programmes as loosely coupled as possible ensures that partial implementation risks are minimized; • Sequencing within a programme among the projects ensures that the ones accorded highest priority are taken up on board first to deliver quick results; • This action plan itself takes into account pre-requisites for the implementation of the projects; • It is also recommended that wherever a

Risk	Description	Impact, if risks materialize	Mitigation Measure(s)
		planning is required either done internally or through external consultancies, would head immaturely into the implementation without the support of the planning.	planning exercise is recommended to be taken up, it is actually done so. The pruning of the costs could be done through undertaking a comprehensive internal planning exercise in lieu of external consultants; and • During the implementation of the plan, the above need to be borne in mind.
Expecting results too soon	There is a chance that in the over-eagerness to implement the plan, too much is attempted to be delivered and too soon without considering how realistic that would be.	The implementation may turn out to be unplanned and ad-hoc. Delivery in all programmes may not be properly tested and hence may be susceptible to errors, thus eroding the stakeholders' interest in the initiatives.	• As far as possible the implementation plan recommended as part of this report must be followed; • Any course corrections or changes to the same must be deliberated well among the stakeholders before coming to a solution; • Standard timeframes assumed as part of the implementation are comfortable; and • Interdependencies ensure that for any activity to be taken up, the pre-requisites are taken on board first.
Delay in implementation	Delay in implementation could arise owing to many reasons for example, non-availability of stakeholders, delay in necessary approvals, delay in the formation of the requisite institutional structures for implementation and the like.	Delay in the implementation would result in stakeholders losing interest. Also, an inordinate delay may also result in key stakeholders not being available at all, for example owing to transfers and the like.	This issue has been addressed through the following means: • The action plan gives sufficient time for such activities as the formation of institutional structures that would look into the plan implementation; • Where recommendations are made for effecting significant changes in the institutional arrangements, interim measures have been recommended which would make for a smooth transition; and • All stakeholders are involved right from the early stages so that their continued

Risk	Description	Impact, if risks materialize	Mitigation Measure(s)
			involvement is ensured.
Going by the book	Projects in the plan are based mainly on findings as of 2014; however, technology being a fast-evolving field realities are prone to changes. Going by the book may not always deliver the required results. What is required is find out measures that need to be taken in the light of emerging realities	Whereas the issues to be addressed may remain largely the same, strategies and measures required to address them may well change with time keeping in mind emerging realities. Impact of going by the book may be undertaking interventions that are not in sync with emerging realities and thus would make for underachievement of the results. Synergies across programmes and projects would also suffer.	• It is recommended, therefore that every exercise be preceded by a planning with a wide stakeholder participation so as to bring on board emerging issues; • Such cross-stakeholder meetings are envisaged at three tiers, the project, the programme and finally the steering committee level; • To get abreast with emerging requirements, an exclusive research unit has been recommended that has been tasked with research and analysis activities; and • The State of the ICT Report will become a compendium of activities in the sector and continue to inform stakeholders of the latest developments.
Inadequate collaboration between stakeholders	Inadequate collaboration would not make for timely inputs from the different stakeholder groups as to what is required to be done in light of emerging realities.	• The implementation would suffer since if there is inadequate participation from the stakeholders; • Advisory and functional inputs from across different areas of involvement would not come in timely; • The execution support and facilitation from the different groups would languish too; and • Implementation would get delayed thus delaying all activities which have this delayed activity as a pre-requisite.	• Collaborative requirements of the plan have been kept in mind by involving stakeholders across different areas of activity by giving ownership initiatives to stakeholders for many programmes and projects and leaving it completely to them as to how they would like to execute the institutional and collaborative aspects of the implementation; and • This would make for high buy-in, involvement and ownership from the stakeholders.
Change at the helm of affairs	Delays would also result in all activities where the delayed activity is a pre-	Replacements may not associate themselves as closely as did their predecessors. Also, it would take some	• At the executive level at the top a group rather than individuals have been associated in discussions; it is unlikely that all of them

Risk	Description	Impact, if risks materialize	Mitigation Measure(s)
	requisite.	time for them to learn the nuances emerging from the planning exercise. It is likely that the implementation would get delayed thus affecting a whole list of interventions.	would be deployed elsewhere; and • Political leadership and direction though has been assumed and is critical for a smooth implementation of the plan.
Irregular monitoring	Change at the top level whether executive or political can hinder the progress of activities of the plan	• The project or the programme execution wing would be bereft of any timely advisory inputs for their efforts; • Stakeholder interests may also wane as a result; and • A ready stock take of the status of the implementation will likely elude the top level planners.	• Mitigation measures include the recommendation of a Secretariat to be constituted which would be tasked exclusively with monitoring the implementation of the programmes on a timely basis; and • At the programme level, too, monitoring frequency have been recommended, based on indicators and milestones.

Appendix E

Table 14: List of Action Areas, Objectives, Strategies and Strategic Interventions

Action Areas	Objectives	Strategies	Strategic Interventions
ICT Governance	Objective 1: To ensure a conducive policy, legal and regulatory framework that is responsive to industry demands	Strategy 1: Review the policy, legal and regulatory framework to align it with international norms and best practices, while taking into consideration national peculiarities	1.1. Review National ICT Policies to address requirements in the priority areas of research and development, ICT convergence, human capital development, and ICT exports 1.2. Develop, regularly review and enforce regulations and standards 1.3. Strengthen the enforcement mechanism of laws, regulations and standards 1.4. Review and implement a comprehensive Spectrum Policy and Management Framework based on principles of technology & service neutrality 1.5. Develop and implement a policy and legal framework for multi-sectorial infrastructure deployment and sharing 1.6. Finalise the development and implementation of the Data Protection and Privacy Bill, and develop Information Security legal framework 1.7. Finalize the development of the National Broadband Policy and Strategy as well as its implementation framework 1.8. Review and implement the policy for the postal sector to encompass opportunities offered by e-Government and e-Commerce 1.9. Develop and implement a cross-cutting M&E framework for the ICT Sector 1.10. Develop a Strategy for increasing access of ICT devices & services to Special Interest Groups 1.11. Develop and implement an Open Source policy and strategy for Uganda
	Objective 2: To strengthen the ICT institutional framework to drive the national ICT agenda	Strategy 1: Establish a multi-institutional collaborative framework to drive the national ICT agenda	2.1. Review and align the existing institutional framework to drive the national ICT agenda by clearly articulating and harmonizing the roles of various institutions, and ensuring synergies and collaboration 2.2. Build institutional capacities to ensure development, implementation and enforcement of policies, laws and regulations 2.3. Strengthen the ICT Sector Working Group that is premised on

Action Areas	Objectives	Strategies	Strategic Interventions
			collaboration among stakeholders, so as to take advantage of the vast knowledge, experience and other resources from the various stakeholders in developing the sector 2.4. Strengthen platforms and forums for stakeholder engagement in the sector
Human Capital Development and Planning	Objective 3: To develop and nurture a competitive domestic human resource base	Strategy 1: Develop critical mass of ICT skilled Ugandans and industry ready workforce	3.1. Establish the current stock and quality of ICT competencies in the country 3.2. Institutionalize and build capacity of ICT cadres in Government 3.3. Implement the Master Plan to transform UICT into a Centre of Excellence 3.4. Establish a sustainable ICT training program for Citizens 3.5. Implement the certification and accreditation for ICT professionals, trainers / training entities, products and services 3.6. Partner with Ministry of Education and training institutions to review, develop and implement ICT training curriculum at all levels of the education system 3.7. Develop and implement a mechanism for joint planning and ICT internship between academia and the industry 3.8. Develop and implement targeted capacity building for teachers to incorporate ICT in pedagogy
	Objective 4: To create mass awareness about ICTs and their relevance in people's day-to-day lives	Strategy 1: Build an ICT-aware society	4.1. Collaborate with development partners including civil society to scale up and implement community ICT awareness creation initiatives 4.2. Develop a coherent strategy on the use of social media for ICT awareness 4.3. Intensify the use of print and electronic media as a tool for mass sensitization and awareness about ICTs 4.4. Coordinate the formation of ICT associations and professional bodies as a mechanism to create ICT awareness
		Strategy 2: Enhance access to public information	4.5. Develop and implement a mechanism that will ensure mass sensitization and awareness about ICT policies, programmes and projects 4.6. Collaborate with the Ministry of Information and National Guidance to

Action Areas	Objectives	Strategies	Strategic Interventions
			publicize the Access to Information Act in relation to online platforms 4.7. Provide technical support including standards for operationalization and update of the Government Web Portal, websites and social media 4.8. Develop Open Data for Government
ICT Infrastructure	Objective 5: To ensure efficiency in coordination, planning, investment, implementation and utilization of end-to-end ICT infrastructure	Strategy 1: Ensure coordinated and collaborative planning as well as development of ICT infrastructure	5.1. Establish and implement a mechanism for planning, development, deployment and management of ICT infrastructure 5.2. Develop and implement National ICT Infrastructure Structural Plan 5.3. Establish a mechanism for collaborative monitoring and evaluation of ICT infrastructure deployment in line with the Plan and developed standards 5.4. Embrace convergence of ICT technologies through common infrastructure deployment and sharing 5.5. Develop and implement a National Postal and Courier Services Master Plan to exploit opportunities in e-Government and e-Commerce 5.6. Participate in National Coordination Mechanism for synchronized planning and delivery of Utilities infrastructure
		Strategy 2: Ensure availability and reliability of ubiquitous broadband network with interconnection to regional networks	5.7. Monitor the implementation of ICT infrastructure in line with National Broadband Strategy 5.8. Extend NBI to cover the NDPII priority areas and ensure interconnectivity with regional backbone infrastructure 5.9. Implement innovative spectrum management practices to ensure optimal utilization of the national resource 5.10. Promote the development and use of Internet Exchange Points 5.11. Develop a mechanism for national backbone connectivity to international sub-marine cables
		Strategy 3: Ensure accessibility and affordability of ICT devices as well as services	5.12. Implement last mile connectivity countrywide in partnership with the Private Sector 5.13. Promote production and use of low-cost locally assembled devices in collaboration with the Private Sector 5.14. Implement interventions that will ensure affordability of ICT devices and services
Information Security	Objective 6:	Strategy 1:	6.1. Implement the National Information Security Framework (NISF)

Action Areas	Objectives	Strategies	Strategic Interventions
	To develop a secure, reliable and resilient information security system with national capacity to respond to cyber security threats	Implement the National Information Security Strategy (NISS)	including operationalization of the National Information Security Advisory Group 6.2. Establish the National CERT, and ensure development and integration of sectorial CERTs
		Strategy 2: Ensure protection of consumers of ICT services	6.3. Build capacity of key institutions across the board (legislature, judiciary, law enforcement agencies etc) 6.4. Mount concerted ICT security awareness campaigns 6.5. Develop national authentication mechanisms like PKI 6.6. Implement website regulation and social media for Government 6.7. Establish and maintain partnership agreements with regional and international players on information security with partner states
Research, Innovation and Development	Objective 7: To promote Research, Innovation and Development of ICT and relevant ICT enabled services	Strategy 1: Create an enabling environment to support Research, Innovation and Development	7.1. Develop an ICT Research, Innovation and Development Strategy for Uganda including assistance to entities in obtaining patents 7.2. Establish a sector-wide coordination mechanism for ICT research, innovation and development 7.3. Establish an ICT Research, Innovation and Development Fund 7.4. Establish ICT laboratories in institutions of higher learning 7.5. Develop support programmes to facilitate development of ICT incubation facilities and activities 7.6. Establish ICT Parks and special economic zone 7.7. Develop and implement a programme to attract leading companies in the industry and development partners to establish ICT research, innovation and development facilities
		Strategy 2: Enhance participation of academia in Research, Innovation and Development for ICT based solutions to local and regional needs	7.8. Develop a framework for collaboration between research institutions, academia and industry to generate the relevant and applicable solutions
7.9. ICT Health,	Objective 8:	Strategy 1:	8.1. Create awareness about Green ICTs

Action Areas	Objectives	Strategies	Strategic Interventions
Safety and Environment	To increase the diffusion of Green ICTs in the ICT Sector as well as other sectors	Promote the use of Green ICTs	8.2. Promote the use of ICT-enabled solutions for climate change mitigation and adoption 8.3. Implement efficient management and disposal mechanisms of e-waste in line with e-waste policy 8.4. Establish and implement mechanisms for stakeholder collaboration and involvement in ICT for environmental sustainability
	Objective 9: To safeguard the well-being of ICT consumers and the public	Strategy 1: Promote the development of and conformity to health and safety standards related to deployment and use of ICTs	9.1. Localize / adopt relevant international standards and guidelines for human safety with respect to ICT products 9.2. Champion the development of requisite ICT standards 9.3. Review the national conformity regime and enhance the associated processes and facilities
		Strategy 2: Empower consumers to make informed decisions	9.4. Establish mechanisms to increase awareness of consumers and their ease in establishing conformity to ICT products
ICT in other Sectors	Objective 10: To increase efficiency for non-ICT Sectors	Strategy 1: Promote the application and usage of ICT in other sectors	10.1. Collaborate with the respective MDAs in other sectors on major ICT projects (e.g. Integrated Justice Information Management System, Land Information System, Integrated Personnel and Payroll System, e-Parliament including e-Cabinet, e-Voting, e-Tax, e-Immigration, etc) 10.2. Provide Support for other sectors in integrating ICTs within their respective core activities (such as exploitation of oil fields, eLearning, health research, teleworking, agricultural information dissemination, and scientific knowledge sharing)
Promoting e-Services and Local Content	Objective 11: To promote the development of ICT enabled services among citizens	Strategy 1: Develop and promote the use of e-Services	11.1. Encourage the use of ICT tools for trade, service delivery and exchange of information 11.2. Promote the development and use of ICT value-added services 11.3. Incentivize the adoption of ICT in SMEs
	Objective 12: To develop a framework for facilitating the	Strategy 1: Enhance capacity for local content development and usage in the various ICT	12.1. Develop and implement a strategy for promoting the development and use of local content for ICT services 12.2. Develop and implement policies as well as guidelines for local quotas in the employment and adoption of local content in ICT services

Action Areas	Objectives	Strategies	Strategic Interventions
	development and access to a wide range of relevant content for the various communication mediums	services	
		Strategy 2: Promote use of locally developed solutions and applications	12.3. Develop and implement a strategy for promotion and use of local ICT products by Government and Private Sector through a comprehensive incentive scheme for entities adopting and using locally developed ICT solutions, products and applications 12.4. Promote accessibility to archived digital information and multimedia content in digital repositories 12.5. Collect, package and preserve in digital form all information regarding the cultural heritage of Uganda
e-Government	Objective 13: Ensure effective and efficient e-Government services	Strategy 1: Enhance integration and automation of e-Government services	13.1. Ensure automation and integration of priority sectors and services i.e. National ID, e-Procurement, Single Window for Government, e-Agriculture, e-Tourism, e-Education, e-Energy, e-Health, and e-Justice 13.2. Implement an electronic document management and workflow system for Government 13.3. Execute digital archiving and digitalization of Government records 13.4. Create a national data centre, disaster recovery centre, secure Government cloud (UG-Cloud) and national databank 13.5. Monitor the implementation of the e-Government enterprise architecture and interoperability framework 13.6. Strengthen the institutional framework for implementing e-Government 13.7. Support the implementation of the National Financial Information System 13.8. Establish One Stop Shop Centres for e-Government service delivery through the postal network
		Strategy 2: Enhance development and uptake of e-Government services	13.9. Establish regional information access centres 13.10. Operationalize the IT Project Management Methodology 13.11. Implement the Government Citizen Interaction Centre (GCIC) 13.12. Promote utilization of Open Source software and mobile apps 13.13. Develop and implement a change management strategy for adoption of e-Government services 13.14. Build capacity for e-Government adoption
ICT Industry	Objective 14:	Strategy 1:	14.1. Undertake joint interventions with neighbouring countries to explore

Action Areas	Objectives	Strategies	Strategic Interventions
Awareness and Promotion in Target Markets	To promote Uganda as an ICT Hub	Work with other countries of the region on a mutually beneficial basis for all-round development of the ICT Sector	areas of competitive strengths and interest 14.2. Support the establishment of a secure, competitive and sustainable internet bandwidth market in Uganda
	Objective 15: To promote Ugandan ICT goods and services internationally	Strategy 1: Position Uganda competitively in the Global ICT market	15.1. Develop and implement a strategy to promote Uganda as an attractive ICT-enabled services centre of the world 15.2. Undertake market intelligence to identify target markets and services 15.3. Incentivize and reward companies that invest in promoting Uganda's ICT goods and services abroad 15.4. Empower Ugandan Missions abroad to promote the country 15.5. Prioritize participation in international ICT initiatives 15.6. Ensure ratification of signed ICT protocols

Appendix F

Table 15:List of Policies, Laws, Regulations and Strategies

Approved Policies	Enacted Laws	Approved Strategies	Policies, Laws, Regulations & Strategies being developed / reviewed
1. National ICT Policy 2014 2. Country Code Top Level Domain (.ugccTLD) Policy 2013 3. E-waste Management Policy 2012 4. National e-Government Policy Framework 2011 5. National Postal Policy 2011 6. Migration from Analogue to Digital Terrestrial TV broadcasting policy 2011 7. National Information Technology (IT) Policy 2011 8. National Broadcasting Policy 2006 9. National Information and Communications	1. Uganda Communications Act 2013 2. Electronic signatures Act 2011 3. Electronic transactions Act 2011 4. Computer Misuse Act 2011 5. National Information Technology Authority-Uganda (NITA-U) Act 2009	1. Strategy for Rationalization of IT initiatives in Government 2012 2. National e-Government Master plan 2012 3. National Information Security Strategy (NISS) 2011 4. Transition from Internet Protocol version 4 to Internet Protocol version 6 address space Strategy 2011	1. National Information Management Services (IMS) Policy (Submitted to Cabinet for approval) 2. National Telecommunications Policy (Certificate of Financial implications obtained, Draft Policy be submitted to Cabinet) 3. National Broadband Policy (second draft produced) 4. National Broadcasting Policy (first draft has been produced) 5. National Data Protection and Privacy Bill (1st draft ready) 6. E-Transactions regulations (finalized and submitted to the Minister for approval/signature) 7. E-Signatures regulations (finalized and submitted to the Minister for approval/signature) 8. NITA- U Act regulations (being finalized) 9. National ICT strategy and Investment Plan (A multi institutional Task team constituted to develop the SIP, procurement for a consultant to work with the team is in progress) 10. Institutionalization of ICTs in MDAs and LGs strategy (Submitted to Ministry of Public Service for further action) 11. BPO Strategy and Model for Uganda 12. National IT Research, Development and Innovation Strategy 13. National IT data collection analysis and dissemination framework 14. National IT Project Management Methodology

Approved Policies	Enacted Laws	Approved Strategies	Policies, Laws, Regulations & Strategies being developed / reviewed
Policy 2003 10. National Telecommunications Policy 1996			15. Certification and Accreditation framework for IT products and services

Appendix G

Table 16: Details of SWOT Analysis for the ICT Sector

Strengths	Weaknesses
1. Recognition of the ICT Sector as a priority sector under the Vision 2040 and NDP; 2. Existence of a mature and experienced regulator (UCC) for the communications sector; 3. Private-sector involvement in the implementation of ICT programmes; 4. A policy, legal and regulatory environment geared towards attracting investment is in ICT; 5. Existence of basic ICT infrastructure; 6. Strong partnership with the Ministry of Education and Sports leading to inclusion of ICT in the primary school curriculum; 7. Cyber Laws developed and frameworks to operationalize them in place; 8. International Recognition of Ugandan ICT initiatives e.g. innovations, RCDF program; 9. Existence of industry associations to address common challenges; and 10. High level political support for use of ICT in service delivery.	1. Weak institutional framework to drive the national ICT agenda; 2. Inadequacy of policies, laws, regulations ,guidelines and strategies coupled with limited capacity to enforce and monitor compliance to policy laws and regulations; 3. Regulatory role split between two bodies UCC and NITA-U amidst convergence of technologies; 4. Poor quality of communication services; 5. High cost of communication services; 6. Slow pace of review of policies, laws, regulations, guidelines and standards; 7. Limited network resilience as a result of Low level of interoperability within existing infrastructure; 8. Limited awareness on information security coupled with Law enforcement and Litigation challenges as regards information security; 9. Insufficient linkage between academia and industry to ensure relevance of research done; 10. Low levels of ICT awareness and implementation in key functional areas such as health, banking, procurement, education, commerce among others; 11. Limited scalability, roll out and sustainability of ICT promotion and awareness creation initiatives; and 12. Inadequate power supply and other support infrastructure.
Opportunities	**Threats**
1. Dynamic technology; 2. Globalizations and the linkage of ICT markets; 3. International fora on ICT such as ITU, PAPU, EACO, etc) with opportunity for participation; 4. Innovation on infrastructure deployment and services;	1. Inadequate funding including poor remuneration of staff leading to unmotivated staff/attrition of staff; 2. High taxes on the ICT Sector; 3. Lack of incentives to attract new investments; 4. Unreliability of supporting facilities e.g. power; 5. Unpredictable Settlement patterns;

5. Youthful population that is responsive to change and appreciates ICT; 6. Market demand for ICT personnel; 7. e-Services and e-Government in critical sectors such as governance, JLOS, Education, Health, Mineral Development and Agriculture; 8. Collaborative incident response and prosecution with Judiciary and law enforcement; 9. International collaborations on information security; 10. Regional and international initiatives on research and innovation, information security, e-Government, spectrum management as well as ICT promotion among others; 11. Green ICT; 12. Training and education in advanced/applied research; and 13. Increasing civil society participation in promotion and adoption of ICTs.	6. High cost of broadband; 7. Destruction to infrastructure and vandalism and theft; and 8. Brain drain of ICT Professionals.

Appendix H

Table 17: ICT Sector Institutions and their Mandates

Organisation	Vision, Mission and Functions
MoICT	Mandate "To provide strategic and technical leadership, overall coordination, support and advocacy on all matters of policy, laws, regulations and strategy for the ICT Sector for sustainable, effective and efficient development; harnessing and utilization of ICT in all spheres of life to enable the country achieve its development goals". Vision "A knowledge based Uganda where national development and good governance are sustainably enhanced and accelerated by timely and secure access to information and efficient application of ICT". Mission "To promote the development of Information and Communications Technology infrastructure and services throughout the country".
UCC	Vision "Sustainable development through nationwide access to modern communication services". Mission "To realise superior communication services through excellence in our regulation". The functions of the Commission are to: 1. License, standardise and monitor communication services; 2. Facilitate the ubiquitous access to a diversity of quality and innovative communications services; 3. Manage the use of scarce communications resources; 4. Promote competition within the communications sub-sector; 5. Protect consumers with respect to quality of services, equipment and content; 6. Promote research in the communications sub-sector; 7. Provide advice to Government with regards to the communications sub-sector; 8. Promote development of requisite human resources in the communications sub-sector including the management and operation of Uganda Institute of Information and Communications Technology (UICT); and 9. Coordinating the participation of Uganda in international fora in the communications sub-sector.
NITA-U	Vision "A globally competitive Uganda through Information Technology (IT)". Mission "To transform Uganda into a knowledge-based society by leveraging IT as a strategic resource to enhance government services, enrich businesses and empower citizens". The main objectives to which the Authority was created include but not limited to the

Organisation	Vision, Mission and Functions
	following: 1. Provide high quality IT services to Government; 2. Promote standardization in the planning, acquisition, implementation, delivery, support and maintenance of information technology equipment and services to ensure uniformity in quality, adequacy and reliability of IT usage throughout Uganda; 3. Provide guidance and other assistance as may be required to other users and providers of IT; 4. Promote cooperation, coordination and rationalization among users and providers of IT at national and local levels so as to avoid duplication of efforts and ensure optimal utilization of scarce resources; 5. Promote and be the focal point of cooperation for IT users and provider at regional and international levels; and 6. To promote access to and utilization of IT by the special interest groups.
UPL	Vision “To be a World Class Service Provider”. Mission “To provide customer focused communications, financial and logistics solutions in a sustainable manner”. UPL offers a wide range of postal, communications and logistical services to domestic and international customers and clients. The services offered include: 1. Private (written) communications; 2. Business communications (business mails, bank statements, invoices and advertisements); 3. Courier services (EMS); 4. Counter services (traditional counter and agency services); 5. Financial services (money orders); and 6. Logistics (passenger and parcel transport services).

Appendix I

Table 18: List of Task Team Members

	Name	Title	Designation	Institution
01	Ethel Kamba	Under Secretary	Chairperson	MoICT
02	Sam Bikangaga	Assistant Commissioner Policy and Planning	Member	MoICT
03	James Kasigwa	Commissioner Broadcasting Infrastructure	Member	MoICT
04	Robert Bataringaya	Principal Policy Analyst	Member	MoICT
05	Michael Ocero	Principal Information Technology Officer	Member	MoICT
06	Emmanuel Mugabi	Systems Analyst	Member	MoICT
07	Ali Jazilah	Broadcasting Engineer	Member	MoICT
08	Morris Seddy Ekwang	Senior Policy Analyst	Member/ Secretary	MoICT
09	Irene Kaggwa Sewankambo	Head Research and Development	Member	UCC
10	Andrew Otim	Strategic and Business Planning Specialist	Member	UCC
11	John B. Kavuma	Manager Planning	Member	NITA-U
12	Viola M. Othieno	Manager Strategy and Performance Monitoring	Member	NITA-U