CONSULTANCY SERVICES TO CONDUCT INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) SKILLS AND TRAINING NEEDS ASSESSMENT (STNA) AND DEVELOP ICT SKILLS AND TRAINING ACTION PLAN (STAP). PROC. REF. No. NITA-U/RCIP/CONS/18-19/00119

ICT SKILLS AND TRAINING ACTION PLAN FOR RCIP IMPLEMENTING AGENCIES AND TARGET SECTORS

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ACRONYMS

CCNA	Cisco Certified Network Associate
CPD	Continuing Professional Development
DPP	Directorate of Public Prosecutions
DSC	District Service Commission
DUV	Digital Uganda Vision
EMIS	Educational Management Information System
ERP	Enterprise Resource Planning
ESC	Electronic Switching Center
4IR	Fourth Industrial Revolution
HMIS	Health Management Information System
HSC	Health Service Commission
ICDL	International Computer Driving License
ICT	Information Communications Technology
IFMS	Integrated Financial Management System
IPPS	Integrated Personnel and Payroll System
ISD	Institutional Strengthening and Development
JLOS	Justice Law and Order Sector
JSC	Judicial Service Commission
LGs	Local Governments
MDAs	Ministries, Departments and Agencies
ME&L	Monitoring Evaluation and Learning
MoFPED	Ministry of Finance Planning and Economic Development
MoGLSD	Ministry of Gender Labour and Social Development
MoICT & NG	Ministry of ICT and National Guidance
MoPS	Ministry of Public Service
NBI	National Backbone Infrastructure
NCDC	National Curriculum Development Centre
NCHE	National Council of Higher Education
NITA-U	National Information Technology and Information, Uganda
NDPIII	Third National Development Plan
NPR	Number Plate Recognition System
PPDA	Public Procurement and Disposal of Public Assets Authority
PSC	Public Service Commission

RCIP	Regional Communications Infrastructure Program
STAP	Skills and Training Action Plan
STNA	Skills and Training Needs Assessment
UCC	Uganda Communications Commission
UICT	Uganda Institute of Information and Communications Technology

FOREWORD

The Uganda Vision 2040 identifies Information and Communications Technology (ICT) among the key fundamentals pillars to spur Uganda's transformation into a modern and prosperous country. Third National Development Plan (NDP III, 2020/21-2024/25) also identifies ICT as a fulcrum of development; an accelerator, amplifier, and augmenter of change; and a sector with a huge potential to improve national productivity by making Government and business enterprises more efficient, effective and globally competitive. The National Resistance Movement (NRM) Manifesto 2021-2026 also defines ICT as strategic pillar for social and economic transformation of Uganda into a middle-income country.

Given the rapid development of the ICT sector and advancements in technologies, the Government of Uganda has taken deliberate steps to keep up with the pace of change in the sector through development and adoption of new strategies that can be leveraged to realize the country's digital agenda. In this regard, the Government has prioritized Digital Transformation Programme in NDP III, among other objectives, *"to increase the ICT human resource capital"* by developing a well-grounded ICT professional workforce; developing an ICT professional's quality assurance framework; providing digital literacy training to all government employees with emphasis on e-governance; developing ICT centers of excellence, Innovation hubs , Community Knowledge and Information Centre; reviewing and implementing ICT training curriculum at all levels of education system in line with the emerging technologies; integrating digital literacy and e-governance in civic education and implementing targeted capacity building initiatives for teachers and lecturers to incorporate ICT in pedagogy to acquire the relevant skills.

As part of the efforts to accelerate digital transformation, Ministry of ICT and National Guidance (MoICT &NG), with support from the World Bank, is implementing the Regional Communications Infrastructure Program (RCIP). Specifically, implementation of Institutional Strengthening and Development (ISD) sub-component of the RCIP Uganda Project is aimed at supporting capacity building activities in beneficiary agencies and target sectors by stimulating mindset change among public officers to utilize ICT and provide government services effectively and efficiently.

In this regard, my Ministry, has developed this flagship ICT Skills and Training Action Plan (STAP) to sustainably address the ICT gaps in the target sectors of ICT, Agriculture, JLOS, Health and Education, with possible future extension to all other MDAs and LGs in the long term. This ICT STAP is a dependable reference and guide to all key implementing institutions, having been preceded by an ICT Skills and Training Needs Assessment (ICT STNA) exercise which was conducted with active involvement of my ministry and all the other key stakeholders (Demand and Supply side of ICT skills).

Amidst the fast changing and ever advancing ICT landscape, this ICT STAP has in addition addressed the issue of positioning our country to competitively meet the 21st Century work place and the Fourth Industrial Revolution (4IR) requirements.

I therefore urge all the identified actors to internalize this ICT STAP report and diligently implement the actions thereof.

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FOR GOD AND MY COUNTRY

EXECUTIVE SUMMARY

This ICT STAP has been developed basing on the key recommendations from the ICT Skills Training and Needs Assessment that was conducted in from October 2020 to April 2021. The ICT STAP designed to address: unharmonised and disjointed deployment of ICT staff in MDAs and LGs, absence of professional and common ICT leadership guidelines/standards in MDAs and LGs, the need to update and/or develop public service human resource policies and regulations to cover ICT cadre, misalignment between ICT education programmes offered by the Academia and ICT skills needs of the industry and mindset change among public officers.

The key objectives of ICT STAP are to:

i) Sustainably address the identified skills and training gaps through implementation of tailored actions for RCIP beneficiary agencies and target sectors; and

ii) Define priority ICT training programs and other capacity building interventions for the target agencies and sectors.

In developing this ICT STAP, the Consultant employed the six step Queensland Government's ICT Workforce Capability and Planning Framework. The six steps include:

i) Workforce profiling/analysis, ii) Forecast future needs, iii) Analyze gaps, iv) develop strategies, v) Implement strategies and vi) monitor and evaluate.

The gaps identified were anchored on the six (6) strategic objectives drawn from four (4) chapters in the NDPIII [i.e., Chapter 14, Chapter 16, Chapter 18 and Chapter 20]. Each gap was then manifested by the appropriate findings and linked to the relevant sections and figures in the ICT STNA report.

Furthermore, in order to address the identified gaps in ICT skills and training needs for the RCIP MDAs and overall government, the key drivers of change in the ICT sector were identified along with associated strategic actions; all linked to the strategic objectives. These Actions were costed to a tune of **UGX 81.24 billion** which will be a combined effort of all RCIP implementing agencies and target sectors over the period of 5 years. Implementation of these actions will take place over the next five years with periodic monitoring, evaluation and learning to ensure achievement of the intended outcomes and positively impact on the evidence-based decision-making process.

1.0 CONTEXT TO ICT SKILLS TRAINING AND ACTION PLAN

The Government of Uganda recognises ICTs as critical to the delivery of its national Vision 2040. Digital Uganda Vision (DUV) provides government's integrated policy and strategic framework of how ICT shall support the delivery of the national Vision 2040 by striving to empower citizens and achieving the goals of universal inclusion, sustainable development, economic progress and poverty eradication through digital innovation.

Information Communication Technology (ICT) and ICT-enabled services have been identified by the Government of Uganda (GoU) as being crucial to transforming its economy and people's lives through job creation, accelerated economic growth and increased productivity. The Uganda Vision 2040 clearly stipulates that there is potential to improve the availability of digital content and e-products; to provide automated government processes and inter-agency connectivity; to bridge the gap between industry and academia; and to enhance the commercialisation of research and development.

In a bid to improve ICT skills, digital literacy and knowledge, the Government of Uganda has committed to develop, improve and retool its ICT knowledge base; build robust ultra-high-speed, pervasive, and intelligent ICT infrastructure all over the country, in line with changing technologies; foster and support Business Process Outsourcing (BPO) business activities; and encourage innovation to harness the full potential of the digital economy and technological innovation.

Specifically, through the harnessing of knowledge and ICT, the Government commits itself to develop, improve and retool its ICT talent-building mechanism by adopting globally benchmarked, industry-rated skills assessment as well as training and certification standards.

Thus, in pursuit of the digital transformation agenda, Ministry of ICT and National Guidance (MoICT &NG), with support from the World Bank, is implementing the Regional Communications Infrastructure Program (RCIP) through National Information Technology Authority-Uganda (NITA-U). The RCIP Uganda Project is complementing existing ICT and e-government Infrastructure initiatives by bridging the financing and technical gaps that are not covered by other initiatives. The RCIP Uganda Project targets the following agencies and target sectors:

i) MoICT & NG;

ii) NITA-U;

iii) Public Procurement and Disposal of Public Assets Authority (PPDA);

iv) Ministry of Health and its agencies which, include National Drug Authority, National Medical Stores, Uganda National Research Organization, Uganda Aids Commission,

Health Service Commission, Uganda Blood Bank Transfusion Services, Uganda Virus Research Institute and Natural Chemotherapeutics Laboratory;

v) Justice Law and Order Sector (JLOS), which include Judiciary, Uganda Prisons Service, Directorate of Public Prosecutions (DPP) and Uganda Police Force;

vi) Agriculture Sector which includes Ministry of Agriculture, Animal Industry and Fisheries and its agencies, notably National Agricultural Research Organization, National Agricultural Advisory Services, Coordinating Office for Control of Trypanosomiasis in Uganda, National Animal Genetic Resources Centre and Databank, Uganda Coffee Development Authority and Cotton Development Organization; and

vii) Education sector which includes Ministry of Education and Sports and its agencies, notably National Council for Higher Education, National Curriculum Development Centre, Directorate of Education Standards, and Education Service Commission.

1.1 Justification for development of ICT Skills and Training Action Plan

Implementation of the Institutional Strengthening and Development (ISD) sub-component of the RCIP Uganda Project is aimed at supporting capacity building of RCIP beneficiary agencies and target sectors by stimulating mindset change among public officers to utilize ICT and provide government services efficiently and effectively.

In this regard, the Consultancy to conduct ICT Skills and Training Needs Assessment (STNA) and develop ICT Skills and Training Needs Action (STAP) was prioritized to address to the following key underlying factors.

i) *Unharmonised and disjointed deployment of ICT staff in MDAs and LGs*: At present, recruitments, supervision and management of ICT staff in Ministries, Departments and Agencies (MDAs) and Local Governments (LGs) is not aligned to the institutional and structural set up of the Line Ministry-Ministry of ICT and National Guidance (MoICT & NG). Hence, the efficient and effective utilization of this cadre of public officers especially in relation to furthering the role of ICT in enhancing public service delivery is not well managed.

ii) *Absence of professional and common ICT leadership guidelines/standards in MDAs and LGs*: Due to lack of alignment between institutional and staffing structures in MoICT & NG and ICT functions in MDAs and LGs, there is lack of standardization of the quality of ICT staff in MDAs and LGs. Hence, the quality of ICT leadership and service in some MDAs and LGs is wanting. For instance, some MDAs do not have substantive ICT staff.

iii) *Need to update and/or develop public service human resource policies and regulations to cover ICT cadre*: To fully integrate and support the ICT workforce in government,

government needs to regularize and integrate ICT positions into its public service staffing structure.

iv) *Misalignment between ICT education programmes offered by the Academia and ICT skills needs of the industry*: Although the education sector churns out several graduates annually, most graduates do not have the technical, market-oriented expertise required by public and private sectors. In addition, local education institutions are not yet offering certain programmes especially those targeting emerging fields in information technology such as artificial intelligence, block chain technologies, among others. This could be caused by lack of adequate staffing, financing or both.

v) *Mindset change among public officers:* Even where government has procured ICT infrastructure and instituted ICT capacity building programmes to enhance efficiency in service delivery, full uptake and utilisation of such programmes (e.g. IPPS) have not been achieved. Some pockets of public officers still prefer to use analogue (paper based) approaches.

It was highly anticipated that successful implementation of ICT STAP for RCIP implementing agencies and target sectors mentioned above would contribute to the following key outcomes, among others:

i) Improvement in the quality and quantity of ICT services in RCIP implementing agencies and target sectors;

ii) Development of strategies for addressing current and future skills gaps;

iii) Support to career planning and succession planning;

iv) Alignment of skill development to business goals and needs of various MDAs;

v) Higher chances of greater return on learning and development investment on capacity building of the ICT work force;

vi) Identification of future ICT skills needed by various categories of civil servants in selected MDAs over the next 3 to 5 years; and

vii) Development of strategies to address the systematic skills gaps and enhance uptake and utilization of ICT.

viii) Improved and streamlined remuneration of the ICT workforce in Regional Communications Infrastructure Program (RCIP) implementing agencies and target sectors.

1.2 Objectives of ICT STAP

This ICT STAP has been developed to meet the following objectives:

Figure 1: Objectives of the ICT STAP

1.2 Scope of work for ICT STAP

In order to achieve holistic and integrated benefits from the assignment, the ICT STAP was conducted at; organizational, occupational, and individual employee levels. Consistent with the Terms of Reference for conducting ICT Skills and Training Needs Assessment and development of ICT Skills and Training Action Plan, the assignment scope entailed the following key activities as highlighted in **Figure 2** below.

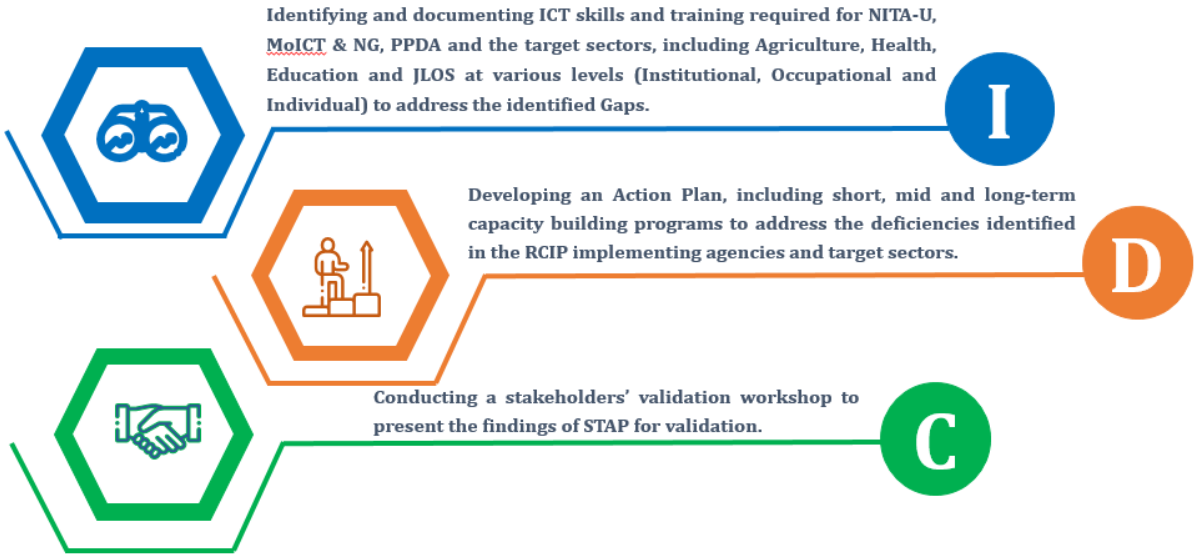

Figure 2: Scope of the ICT STAP

1.4 Approach and Methodology for developing ICT STAP

1.4.1 Approach for ICT STAP Development

An ICT Skills and Training Action Plan (STAP) enables organizations to achieve sustained performance and accountability for the ICT function through identification of the strategies/actions to develop a capable ICT workforce. It also enables an organization's

leadership to make informed ICT staffing decisions in line with their mission, strategic plan and budgetary resources.

To develop the ICT STAP for RCIP implementing agencies and target sectors, the Consultant employed Queensland Government's ICT Workforce Capability and Planning Cycle, which recommends six steps for this purpose, as the overall design framework. The basis for this choice is its focus on ICT workforce planning and simplicity. The six steps include:

i) Workforce profiling/analysis
ii) Forecast future needs
iii) Analyze gaps
iv) Develop strategies
v) Implement strategies
vi) Monitor and evaluate

The above steps are illustrated in **Figure 3** below:

Figure 3: Six steps for ICT workforce capability and planning cycle
(***Source:*** Queensland Government's ICT Workforce Capability and Planning Cycle)

In the context of the assignment, application of each of the six steps is described in the section below:

1.4.2 Methodology for ICT STAP Development

The following techniques were used to develop an ICT STAP/Strategy for RCIP implementing agencies and target sectors in Uganda.

a) Workforce Profiling/Analysis

i) ***SWOT Analysis:*** The Strength, Weaknesses, Opportunities and Threats analysis was used to evaluation the internal and external environments of target MDA's in terms of strengths, weaknesses (internal to the MDA), and opportunities and threats (external to the MDAs). Under this technique, the Consultant undertook analysis of internal and external environments of the current ICT workforce in the RCIP implementing agencies and target sectors using SWOT analysis. The purpose of the analysis was to establish the key drivers and hindrances to having a highly skilled and knowledgeable ICT workforce in the RCIP implementing agencies and target sectors.

The SWOT analysis was first applied on the results of the desk review, stakeholder analysis and international benchmarking reports. Then, the results of this initial review, formed the basis for a stakeholder-based SWOT analysis to validate, refine and enhance initial results. The SWOT analysis process was guided by the eight (8) questions that the ***Queensland Government's Workforce Capability and Planning Cycle*** recommends when reviewing an organisation's internal and external environments in relation to its workforce namely:

- What are the organisation's current and future business, work functions and activities?
- What is the required workforce composition and competencies?
- What are the anticipated changes over the planning period?
- How is technology expected to change and how will these changes influence the type and number of jobs available, and the skills and education needed for these jobs?
- What is the impact of current or future government regulations such as the Uganda Data Privacy and Protection Act 2019?
- How is the economy performing?
- What are the sources of competition for attracting people (salary, benefit packages, training and education opportunities, etc.)?
- What other trends may impact the organization such as trends towards outsourcing or restructuring?

ii) ***PESTLE (Political, Economic, Social, Technological, Legal and Ecological) Analysis****:* PESTLE analysis describes a framework of macro-environmental factors used in the environmental scanning component of strategic management. This technique was used alongside SWOT analysis in the study of internal and external environment of the current ICT workforce in the RCIP implementing agencies and target sectors. The purpose of PESTLE is to identify all the various external political, economic, social, technological, legal and environmental factors that might affect an organization/

business for the leadership to assess the risks that the identified factors pose and use that knowledge to develop appropriate strategies.

b) Forecasting future ICT Workforce needs for RCIP implementing agencies and target sectors

Forecasting the future of ICT in the current era of rapidly changing technological advancement world over, is not an easy task. The following trustworthy techniques were heavily employed to achieve the desired ICT forecast.

i) ***Literature review*** was conducted to enhance the Consultant's situation analysis of RCIP beneficiary agencies and target sectors. Guided by the Literature Review Framework, the Consultant reviewed relevant national, regional and international official documents (such as Policies, Laws and Regulations, Strategic Plans and Reports) and scholarly publications (*see 7. References*) to document the current ICT workforce and forecast future ICT workforce needs of the institutions under study.

ii) ***Key Informant Interviews*** were conducted to aid the establishment of the current (AS-IS) and the desired (TO-BE) state of ICT knowledge, skills and behaviours in the areas of awareness of e-Government Systems and status of the enabling environment; current state of ICT skills and training needs for RCIP implementing agencies and target sectors; and the ICT skills demand and supply patterns. From each RCIP implementing agency and target sector, responses were obtained from Accounting Officers, senior government officials delegated by their Accounting Officers and Board members.

iii) Focus Group Discussion (FGD) was used for highly specialized and multi-disciplinary fields like health informatics, eLearning and cyber security within the ICT workforce of the RCIP implementing agencies and target sectors to gain information quickly. The designed FDGs tools were specifically applied on the ICT User professionals, comprising top and middle level professionals from the RCIP implementing agencies and target sectors.

iv) Scenario planning was used to generate narrative statements of the possible future for the ICT workforce in RCIP implementing agencies and target sectors. In undertaking scenario planning, the Consultant considered the following parameters:

- Key ICT workforce segments critical to achieving the visions and missions of RCIP implementing agencies and target sectors;
- The behaviours and skill characteristics required by these ICT workforce segments;
- Assumptions about future demand for services; and
- The key segments of the ICT workforce that would be the most costly to lose or would be difficult to find.

c) Gap analysis

Following the future ICT workforce needs forecast exercise, the Consultant undertook an analysis of the gap between the current state of capacity of ICT workforce in RCIP implementing agencies and target sectors, and the desired state using the four steps for conducting a gap analysis as recommended by clear Point Strategy[1]. The four steps (customized for this assignment) include:

i) Identifying the current state of the capacity of ICT workforce in RCIP implementing agencies and target sectors;

ii) Identifying the desired state for the capacity of ICT workforce in RCIP implementing agencies and target sectors;

iii) Identifying the gaps in the capacity of ICT workforce in RCIP implementing agencies and target sectors; and

iv) Devising improvements to close the gaps in the capacity of ICT workforce in RCIP implementing agencies and target sectors.

d) Developing the ICT Skills and Training Action Plan (STAP) Strategy

Given the strategic importance of, and the need for ICT STAP in enhancing the uptake and operationalization of e-governance among the RCIP implementing agencies and target sectors, the Consultant employed the following effective techniques in coming up with a comprehensive and responsive ICT STAP.

i) ***Visioning and Strategizing****:* To develop the strategies to address the current gap(s), the Consultant engaged the key institutional and individual actors/stakeholders from RCIP implementing agencies, target sectors, other relevant MDAs, academia and ICT Association of Uganda, to collaboratively formulate the vision and mission for achieving the desired capacity of the ICT workforce and the strategy (ies) for achieving the same in target RCIP implementing agencies and target sectors. The information in the gap analysis report was used to prepare and facilitate the visioning and strategy workshop.

ii) ***Drafting the ICT Skills and Training Action Plan (STAP):*** The Consultant utilized a combination of data from the Situation Analysis, Stakeholder Analysis, International Best Practices, Workforce Profile, future ICT workforce needs forecast, Gap Analysis and the visioning and strategy workshop Reports to provide detailed information that informed the development of the first draft of STAP. The draft covered a brief background/motivation, vision statement, mission statement, core values, situation analysis, goals, activities and deliverables. To facilitate easy implementation as well as monitoring and evaluation of STAP, the Consultant developed and included an

[1] Conducting a Gap Analysis: A Four-Step Template

implementation plan in the STAP. The implementation plan provided a tabulated summary of the STAP covering strategic goals, activities, methods, deliverables, lead organization, timeline, cost and performance indicators to support the implementation as well as monitoring and performance measurement of STAP.

e) Implementation strategies: Under this step, the Consultant developed an implementation strategy for the gaps in the current and future workforce needs covering Execution of the strategies;

Execution of strategies covered specifying what is needed to put into action the developed ICT workforce skill improvement and development strategies based on fundamentals of good HR and project management practices. Examples of such practices included but were not be limited to:

i) Ensuring organisational buy-in and support is obtained as executive level support for the workforce strategies is vital;

ii) Clarifying roles and responsibilities in implementing strategies and actions. This includes identifying who is involved in implementing what; and where coordination among different parts of the agency or with different agencies is needed;

iii) Developing project plans for the implementation of each workforce strategy. This also involves establishing budget and resource requirements, timelines and milestones for key deliverables and stages;

iv) Allocating the necessary resources and teams required to implement the workforce strategies;

v) Determining performance measures, success indicators and reporting systems; and

vi) Developing communication plan to inform all employees of the strategies to be implemented; what has been done, why and how it was developed, how and when it will be applied and how it will affect staff.

f) Monitor and evaluate: Successful workforce planning/development and implementation of an action plan is an active, ongoing and dynamic process that must be monitored and adjusted in the course of the implementation process. Hence, the Consultant developed a monitoring and evaluation plan to support regular monitoring and review of the developed workforce development plans/strategies in order to:

i) To track any internal or external developments and make essential changes when environmental factors change;

ii) Regularly monitor demand and supply data to track progress towards achieving workforce planning goals like age profile of the workforce, the turnover rate, gender profile of applicants, quality of applicants, etc;

iii) Review performance measurement information;

iv) Assess what is working and not working; and

v) Identify and address new workforce and organizational issues that might occur.

1.5 Organisation of ICT STAP

This ICT STAP has been organized into six sections:

i) Preliminary section includes table of contents, Acronyms, Foreword and Executive Summary.

ii) Section one presents context to ICT Skills and Training Action Plan

iii) Section two presents high level ICT Skills and Training Needs Assessment Findings

iv) Section three presents ICT STAP

v) Section four presents ICT STAP Implementation

vi) Section five presents Monitoring, Evaluation and Learning Framework for ICT STAP Implementation

2.0 ICT SKILLS AND TRAINING NEEDS ASSESSMENT FINDINGS

This section presents a summary of the current state of ICT Skills and Training Needs from the view of point of ICT sector general environment to observations and conclusions derived from ICT skills and training needs assessment of RCIP MDAs. The future ICT skills and training needs scenarios are stimulated in terms of future work characteristics, future workforce profile and skills gaps analysis.

2.1 Enabling Policy, Legal and Regulatory Framework for ICT Skills and Training

The development of any sector is largely anchored on the state of the policy, legal and regulatory environment. This section provides a systematic assessment of the three pillars of the enabling environment, their findings, manifestation and linkage to ICT STNA Report, as illustrated in **Table 1** below:

Scope	Finding (s)	Manifestation	Linkage to ICT STNA Report
Policy	Inadequacy of key ICT professionals to match the emergence of the 21st Century digital world and 4th Industrial Revolution (4IR)	Most training institutions do not have the capacity to meet the high investments associated with training certain professionals due to low funding	(STNA Report 2.5.1 (a), 2.4.8 and 4.1 (ii)
	Digital divide	Uganda has a huge urban–rural gap and disadvantaged genders (e.g. PWDs) in Internet access and use. This disparity directly affects the envisaged growth and uptake of ICTs and e-government services	STNA Report section 2.3.1 (g)
	ICT structures and staffing not harmonised across MDAs and LGs	Some key government agencies do not have ICT Units.	(STNA Report, section 2.2.2 and 4.1 (i)
		Generic structures for ICT staffing have been created and filled with staff without considering the unique industry requirements of each institution and the skillsets expected of employees therein	STNA Report section 2.3.4
	Reduced funding to the sector dedicated to training, coupled with annual budget cuts	Reduced funding and budget cuts, may lead to insufficiency of budget lines for ICT skills development in MDAs	STNA Report section 2.2.1 (b)
	Poor resourced ICT training	Most ICT skills training service providers do not have the capacity	STNA Report section 4.1 (xii) & (xx)

Scope	Finding (s)	Manifestation	Linkage to ICT STNA Report
	institutions (inadequately skilled labour force)	to deliver top end competencies ideal for the4IR given the high capacity investments of the ICT labs required for training such professionals Inadequate ICT resourcing (equipment)and inferior technologies in training institutions -	
Legal	Tax on internet and ICT affordability	Effective 1st July 2021, a 12% internet tax on data packages was imposed by government, bringing total tax on internet use to 30% after factoring in the existing 18% Value Added Tax (VAT.) This tax has potential to further enlarge the internet affordability gap.	(STNA Report sections 2.3.1 (g) (Table 16)
Regulatory	Overlapping mandates of NITA-U and UCC	The institutional redesign of the sector to accommodate the increasingly important role of IT and the Internet in the economy, and particularly the public sector via the establishment a decade ago of NITA-U, while rationalising and harmonising government services, appears to have caused some jurisdictional overlaps between NITA-U and UCC, as well as some potentially anti-competitive effects in the telecommunications sector.	STNA Report, sections 2.3.1(g)
	Inconsistent mandate of NITA-U with the principle of checks and balances	NITA-U sets standards for ICT skills and training and implements the same standards	
	Weak enforcement of the required Continuous Professional Development (CPD)practices in MDAs	Some institutions had no CPD plans	(STNA Report section 2.5.4)
	Corrupt tendencies among staff in MDAs amidst well documented laws and regulations	Corruption has corroded all sectors of the economy, ICT inclusive	STNA Report section 2.3.1, g (iii)

Scope	Finding (s)	Manifestation	Linkage to ICT STNA Report
	Inadequacy of Cyber Security Experts in the face of Sophisticating global cyber insecurity	Fueled by more sophisticated adversaries, modern threats are more pervasive. Government institutions alike, are vulnerable to these vices.	(STNA Report sections 2.5.2 and 4.1

Table 1: Assessment of Policy, Legal and Regulatory Framework for ICT Skills and Training

2.2 ICT Skills Demand and Supply patterns

In order to develop a pragmatic ICT STAP for the RCIP implementing agencies and target sectors, an assessment of the ICT skills demand and supply patterns is critical. The ICT STNA Report by MoICT & NG (July 2021) is a key reference resource for this section.

Through key informant interviews, focus group discussions, scenario planning and literature review, the demand side focused on drivers of ICT skills demand in RCIP MDAs, ICT professionals in short supply, in-service ICT skills capacity building in MDAs, target MDA staff willingness to invest in ICT skills development and associated incentives. The supply side assessment, on the other hand, focused on evaluation of curriculum development practices, estimated number of ICT graduates at bachelor and postgraduate levels annually, type of programmes offered, models of programme delivery, staff calibre, and level of stakeholder engagement in programme design and delivery modes.

2.2.1 Demand side patterns

Issue	Description	Linkage to ICT STNA Report
Key ICT Skills in demand for both ICT and Non-ICT professionals	Generally, ICT professionals are expected to possess advanced skills in; office productivity systems like MS Office, internet and email application, e-government systems aligned to their sector and areas of deployment, cyber security and digital forensics, cloud computing and virtualization, wireless computing technologies, institutional specific customer software's and excellent skills in report writing and system incident management. Non-ICT professionals on the other hand are expected to have proficiency in; office applications, web and e-mail applications, functional enterprise systems and associated e-government systems, data management and security, presentation and collaboration, among others.	STNA Report section 2.3.2 (a)
ICT professionals in short supply on target MDAs	The key ICT professionals in shortly supply include; cyber security experts, data scientists, multi-media content authors especially animators, enterprise systems developers, embedded systems developers, software architects and business process engineers	STNA Report section 2.4.8 and 2.2.3 (b)

Issue	Description	Linkage to ICT STNA Report
Drivers for ICT skills demand in MDAs	The key drivers for ICT skills demand in MDA are; government policy on digitalization and e-government, rapidly expanding ICT sector and internet penetration, increased access to ICT devices like smartphones and laptops, global geo-political forces which are promoting nationalism over globalization, forcing countries to develop local capacity to service their citizens.	STNA Report section 2.3.1, g
In-service ICT skills development on MDAs	To remain relevant and competitive, institutions have a number of ICT continuous professional development options available and key among them include: • Coaching: In-house hands-on support (skilling) to individual staff by senior internal ICT technocrats • Mentoring: Continuous guidance by senior ICT Technocrats • Job shadowing • Job rotation • Online-based self-paced training • Peer to peer support • Workshops facilitated by external experts • Formalized refresher Courses/ Short courses The assessment of the state of Continuous Professional Development (CPD) reveal that about 70% of the organizations sampled had not provided any specific ICT skills training to both ICT and non-ICT professionals as a means of building their ICT competences in the last 12 month or more. This is contrary to the principle of Professionalism, which requires all public sector institutions to plan, monitor and evaluate trainings, as espoused in the Uganda Public Service Training Policy (2006)	STNA Report section 2.5.4
CPD incentives and MDA staff willingness to invest in ICT skill development	Majority of the RICP agencies offer appraisal points, staff recognition, sponsorship of the training activities, salary increment, study leave and promotion to encourage staff acquire relevant knowledge and skills. In terms of staff willingness to acquire ICT skills, majority of staff in MDA's (both ICT and non-ICT) indicated readiness to invest in ICT skills development if they are sponsored or given time off, but less willing if they are required to sponsor themselves. There is limited access to CPD as over 70% of the organizations sampled had not provided any specific ICT skills training to both ICT and non-ICT professionals as a means of building their ICT competences in the last 12 month, beside nearly 80% of the staff had not attended any CPD in the less 12 months.	STNA Report sections 2.2.1(d) and 2.3.2 (d)
Business downtime due to COVID-19	Due to COVID-19 Lock downs, business, both in the public and private sectors have experienced slow down effect. This has drastic effect on uptake of ICTS and e-government services.	Current prevailing reality

Issue	Description	Linkage to ICT STNA Report
Low Per capital income (National)	Uganda's Per capital income stood at 860.00 USD by November 2020 with annual economic growth rate of 6.3%. This is still low (below 1 USD). The citizens may not have enough money to sustainably meet the costs of ICT in the household. The 2018 RIA After Access Survey confirmed that affordability of devices and Services were the main constraint on uptake and use.	(STNA Report sections 2.3.1 (g).
Weak integration of E-government Service Platforms	A number of e-services have been rolled out including; e-procurement portal, e-passport system, e-receipting, IFMS, IPP. Some still work in silos (not integrated).	(STNA Report sections 2.3.1 (g).

Table 2: ICT Skills Demand Side Patterns

2.2.2 Supply side patterns

The following were the key patterns in the ICT skills supply side observed during this assessment;

a) The ICT skills supply side is dominated by providers of basic digital literacy with very few providers of top-notch training opportunities in areas of; data science, cyber security, 4IR and block chain, cloud computing and virtualisation, among others.

b) It is currently estimated that Uganda's higher education system is producing about 7,000 ICT professionals annually at various levels of; post graduate degrees, bachelor's degree, diploma and certificates, majority of which are at certificate levels. Makerere University is still the leading producer of ICT professionals in the country, through the college of Computing and Information Sciences (COCIS) and College of Engineering, Design, Art and Technology (CEDAT)

c) The key suppliers of ICT skills are a mixture of licensed higher education institutions like Universities (over 80), private ICT services providers and consulting firms (over 600), innovation and incubation hubs (about 30), international firms with global accreditation such as ICDL, CCNA among others, online service training service providers. For basic to intermediate level ICT skills, the country has adequate suppliers, but challenges of skills supply are largely for more advanced ICT specialisations which require heavy investment such as robotics, big data analysis among others.

d) ICT curriculum development at higher educational institutions largely involves stakeholder consultations, industry needs assessment, consideration of institutional vision, and availability institutional resources to support the delivery of the proposed curriculum. This might explain the limited availability of high-end courses like data science, robotics and artificial intelligence, cloud computing, embedded systems, computer systems engineering and digital forensics as they are resource intensive and have fewer practical careers in the current structure of the ICT ecosystem and economy which is characterised by use of off-shelve applications as opposed to development of technologies.

e) Teaching and training of ICT professionals in most ICT training institutions is largely theoretical and uses summative academic progression examination as opposed to problem based practical assessment which in theory should promote critical thinking skills and innovation development.

f) Locally developed online learning solutions are rapidly grounding inspired in part by COVID-19 pandemic challenges and the need to continue providing educational services.

g) ICT training infrastructure and facilities in most ICT training institutions are inadequate to enable the development of appropriate ICT skills, especially for high end skills like robotics, artificial intelligence, and embedded system development, among others.

2.3 ICT Skills and Training Gaps

The gaps identified in this section are anchored on the six (6) strategic objectives drawn from four (4) chapters in the NDPIII [i.e., Chapter 14, Chapter 16, Chapter 18 and Chapter 20]. Each gap is manifested by the appropriate findings and linked to the relevant sections and figures in the ICT STNA report as illustrated in **Table 3** below:

Strategic Objective	Gap	ICT STNA findings driving the Gap	Linkage to ICT STNA Report
SO 1: Enhance usage of ICT in national development and service delivery	Mismatch between ICT skills possessed and the ICT skills demanded by MDAs and emerging industry	Heads of ICT and technical ICT staff lack significant skills for the emerging 21st Century digital world	STNA Report, Section 2.5.2
	Inadequacy of ICT enabling infrastructure	Only 60.2% of the RCIP target sectors have enabling ICT infrastructure.	STNA Report section 2.2.3 (d)
	Poor mind-set change amongst public officers	Full uptake and utilization of e-services is curtailed by some pockets of public officers who still prefer to use analogue approaches	STNA Report, Section 4.1(xiii)
	Inadequate ICT training given to employees in MDAs	Non-ICT staff did not receive any training. The ICT professionals trained in basic computing skills and other fields	STNA Report 2.2.1, section C (figures 9 &10)
	Digital divide	Uganda's internet penetration rate of between 37-49%, is still low to facilitate enhanced usage of ICTs	STNA Report section 2.3.1 (g)
SO 2: Promote ICT research and innovations	Insufficiency of budget lines for ICT skills development in MDAs:	Most MDAs assessed did not have a dedicated budget for ICT Skills development	STNA Report section 2.2.1 (b)
		Funding for ICT is largely from donations through projects	STNA Report section 2.3.1, g (iv)

Strategic Objective	Gap	ICT STNA findings driving the Gap	Linkage to ICT STNA Report
		which usually expire after their life cycle.	
	Limited motivational incentives	Incentives with a higher motivational and retention attributes are minimally used	STNA Report sections 2.2.1 (d) & 2.3.2 (b)
	Weak ICT strategic leadership in MDAs	Most leaders and managers of MDAs possessed weak **"strategic eagerness"** to embrace and promote ICT & e-government	STNA Report, sections 2.3.1, g (i) & 4.1 (xiii)
	Low awareness of ICT and e-Government framework among accounting officers in MDAs	50% of accounting officers in MDAs are not aware or not sure of e-Government framework	STNA Report, sections 4.1 (xiii) and 2.2.3 (c)
	Existing ICT professions that are difficult to fill	Most ICT skills training service providers don't have capacity to deliver top end competencies ideal for 4IR given the high capacity investments of these labs required for training such professionals	STNA Report section 4.1 (xx)
		Both Heads of ICT and Technical ICT staff lack significant skills for the emerging 21st Century digital world and the 4IR	STNA Report section 2.5.2
SO 3: Increase quality and quantity of the ICT human resource capital	Low ICT Staffing Levels	ICT Professionals staffing Capacity in most MDAs falls below average of the established and desired positions	STNA Report sections 2.2.2 & 2.5.1(a)
	Low technical capacity of ICT Professionals	Most ICT employees in MDAs are holders of Bachelor's degrees, which implies they're at entry levels of their careers	STNA Report Figure 12
		Most employees in MDAS (Non-ICT and ICT professionals) are not upto date proficient in key computer applications as required for their levels	STNA Report sections 2.2.3 sections f & e (Figures 17 & 18)
	Weak participation in ICT curriculum development and delivery by MDAs	Collaboration in ICT curriculum development between private sector, MDAs and academia is very low.	STNA Report sections 2.3.1 (g). 2.3.5 and 2.4.6
	In appropriate Recruitment and Management of ICT professionals	Most MDAs use traditional recruitment approach which is subjective and heavily paper-based.	STNA Report section 2.5.3
		Most MDAs are not following the proposed ICT Cadre Schemes of Service as updated by Ministry of ICT & NG	STNA Report sections 2.3.4, 2.5.3 and 4.1 (i)

Strategic Objective	Gap	ICT STNA findings driving the Gap	Linkage to ICT STNA Report
		There is lack of harmony in the current management of ICT professionals in MDAs	STNA Report section 4.1 (x)
SO 4: Strengthen the policy, legal and regulatory framework	Poor ICT work place behavioural practices (Vulnerability to Cyber Scam)	Both ICT and non-ICT staff in target MDAs lack required significant ICT behaviours	STNA Report sections 2.2.3 (g), 2.3.3 and 2.5.1 (b)
	Weak Policy support to facilitate development of significant ICT skills to match the emerging 21st Century digital world and 4th Industrial Revolution	From international best practices, production of significant ICT skills to match the emerging 21st Century digital world and 4th Industrial Revolution need to be adopted and practiced in Ugandan academic institutions	STNA Report section 2.5.2
SO 5: Produce appropriate knowledgeable, skilled and ethical labour force	Inadequacy of in-service ICT skill development opportunities in MDAs	Low ICT skill capacity among employees in MDAs.	STNA Report, section 2.2.1 and (Figure 7)
		Most non-ICT professionals possess only basic computing skills	STNA Report (2.2.3 (a)
		There is inadquacy of emerging industry skills to meet the requirement for the 21st Century and the Fourth Industrial Revolution (4IR)	STNA Report Section 2.2.3 (a)
		Inadequate Knowledge on key ICT concepts and key computer applications to match their required levels by staff in RCIP MDAs	STNA Report, section 2.2.3, sections f & e (Figures 17 & 18)
SO 6: Streamline Government structures and systems for efficient and effective service delivery	Unharmonised and disjointed Structures and deployment of ICT staff in MDAs and LGs	Some key government agencies and departments with large and strategic mandates still depend on the inadequately staffed ICT Units of their parent ministries/agency	STNA Report, section 2.2.2
		Generic structures for ICT staffing have been created and filled with staff without considering the unique industry requirements of each institution and the skillsets expected of employees therein.	STNA Report section 2.3.4
	Weak Continuous Professional Development Practices (CPD)	Some institutions had no CPD plans. Each institution used the available means within their reach to provide CPD	STNA Report section 2.5.4

Table 3: Linkage of Gaps to Strategic Objectives that have been drawn from the Uganda NDPIII

2.4 Future Government Workforce Profiling/ Analysis

This section presents key findings on characteristics of future work requirements in government, emerging ICT workforce segments which are key for the attainment of the digital transformation programme in government, key ICT skills and behaviours desired for works in government and ICT professionals which are difficult to find or are costly to lose.

2.4.1 Future work requirements

Forecasting future workforce needs in any sector or organization such as RCIP agencies and sectors, require understanding of future work characteristics, which informs the kind of skills, knowledge and behaviours expected to be possessed by the workforce. From the stakeholder consultations, international best practices on 21st century work characteristics, and in recognition of the National Development Plan Three (NDP III); (Chapter 14 Digital Transformation, Chapter 16 Human Capital Development and Chapter 20 Public Sector Transformation). It is envisioned that, future work (positions of responsibilities at various level) in all sectors and agencies of government will be characterized by;

i) Data capture and records management,
ii) Data analysis and visualization,
iii) Collaboration and networking,
iv) Decision making,
v) Reporting and communication,
vi) Data security and privacy management,
vii) Use of e-government systems,
viii) Use of office productivity applications like Microsoft Office
ix) Understanding and application of relevant laws and regulations,
x) Public accountability,
xi) Service provisioning, and
xii) Future needs forecasting at position and organizational level.

The above work characteristics are also aligned with the; e-governance agenda, updated schemes of service of government employees, and proposed restructuring of government agencies and organizations.

2.4.2 Key ICT workforce segments critical to achieving RCIP Implementing Agencies and Target Sector goals

The synthesis of findings from ICT STNA revealed that three key categories of workforce are and will continue to be critical for RCIP implementing agencies and target sectors in attainment of their set goals. These categories are described by **Figure 4** below:

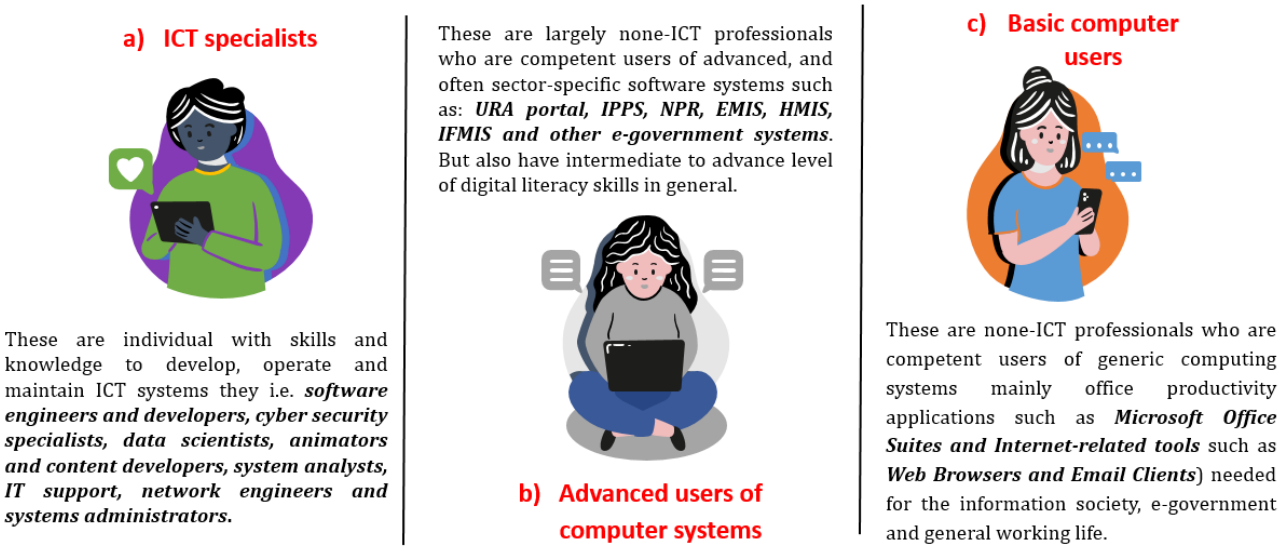

Figure 4: The three key categories of workforce critical for RCIP implementing agencies and target sectors attaining their set goals

It is worth noting that in the digital and information age, ICT specialists (such as system administrators) are increasingly expected to have additional skills, including; communication, project management and leadership, among others, while non-ICT professionals are increasingly required to possess basic ICT knowledge and computing skills for the 21st century work place.

2.4.3 ICT skills and behaviours required by the workforce

The Government of Uganda future work profile needs analysis was conducted using Queensland Government's ICT Workforce Capability and Planning Framework. The desired ICT skills analysis was conducted at four levels of responsibilities in RCIP MDAs. **Tables 4 and 5** below summarize desired ICT skills across various levels of responsibilities in RCIP MDAs.

Staff category	Observable skills	Desired skills
Strategic leaders and senior management team in MDAs	- Basic usage of office packages (word, excel PowerPoint and Access.	- Intermediate skills level in office packages (word, excel PowerPoint and Access.

Staff category	Observable skills	Desired skills
(commissioners, directors, MD, HR manager, etc)	- Basic skills in internet, email and social media applications - Basic skills in e-government services (e-procurement, IPPS, IFMS) - low skills in data security	- Basics In cloud services, and cyber security - Basics of computing system configurations - Intermediate skills in usage of e-government services (e-procurement, IPPS, IFMS) - Strategic IT management,
Non-ICT professional staff (accountant, HR, auditor, doctors, extensions offices, etc)	- Basic usage of office packages (word, excel PowerPoint and Access. - Basic skills in internet, email and social media applications - Basic skills in e-government services (e-procurement, IPPS, IFMS) - low skills in data security	- Advanced use of office packages (word, excel PowerPoint and Access. - Strategic IT management, - Advanced technical skills on use of e-government services aligned to functional units (e-procurement, IPPS, IFMS) - use of functional specific software and system - intermediate level cyber security skills - Intermediate level data analysis and visualization

Table 4: Observable skills and desired skills for each staff category in RCIP MDAs

ICT staff category	Observable skills	Key emerging industry skills
ICT Head/ leaders	- Intermediate digital skills literacy - Systems administration - Network administration - Web portal management - User technical support - E-government systems - Institutional enterprise systems administration - Basic cyber security - Basic IT project management - Basic programming skills	- IT Strategic Management - Advanced Internet and social media tools - Research and report writing - Cloud computing and virtualisation - Leadership and Management - Data analysis and Business process engineering - Mentoring and Capacity building - IT project management - Advanced system security - Mobile and web apps development - Enterprise system development - Collaboration - Wireless networking technologies
ICT Technical staff	- User support - Systems administration - Network administration - Programming - Basic graphics - Database systems - Anti-virus	- Enterprise systems development - Requirement engineering - Business processing engineering - Research and report writing - Cloud computing and virtualisation - Artificial intelligence - Business process engineering

ICT staff category	Observable skills	Key emerging industry skills
	- Basic hardware trouble shooting	- IT project management - Advanced cyber security - Collaboration - Digital forensics - Wireless networking technologies - Adaptation on 4IR technologies to the business environment - TV, Radio and communication - VM Ware, Oracle Database Management, Oracle - E-Business Suite ERP, Mobile/Web Application development using the latest Application Development platforms - Complex Systems Design and their Implementation - Advanced technical trouble shooting skills - Artificial Intelligence and Virtualization - Data integration techniques

Table 5: Observable skills and key emerging industry skills for each ICT staff category in RCIP MDAs

Irrespective of the level of responsibility, there are key behavioral traits that ICT and non-ICT professionals in government are expected to exhibit in the future work environment.

a) **ICT professionals' expected** traits include; flexibility, innovation, communication, research and documentation, privacy enhancing practices, data protection and recovery, self-driven learning, collaboration and networking, client and human relations management.

b) **Non-ICT professionals'** expected traits include; self-driven learning, privacy and data protection, collaboration and communication, flexibility, team work and integrity.

Figure 2 below summarises the overall desired employee traits for effective e-government.

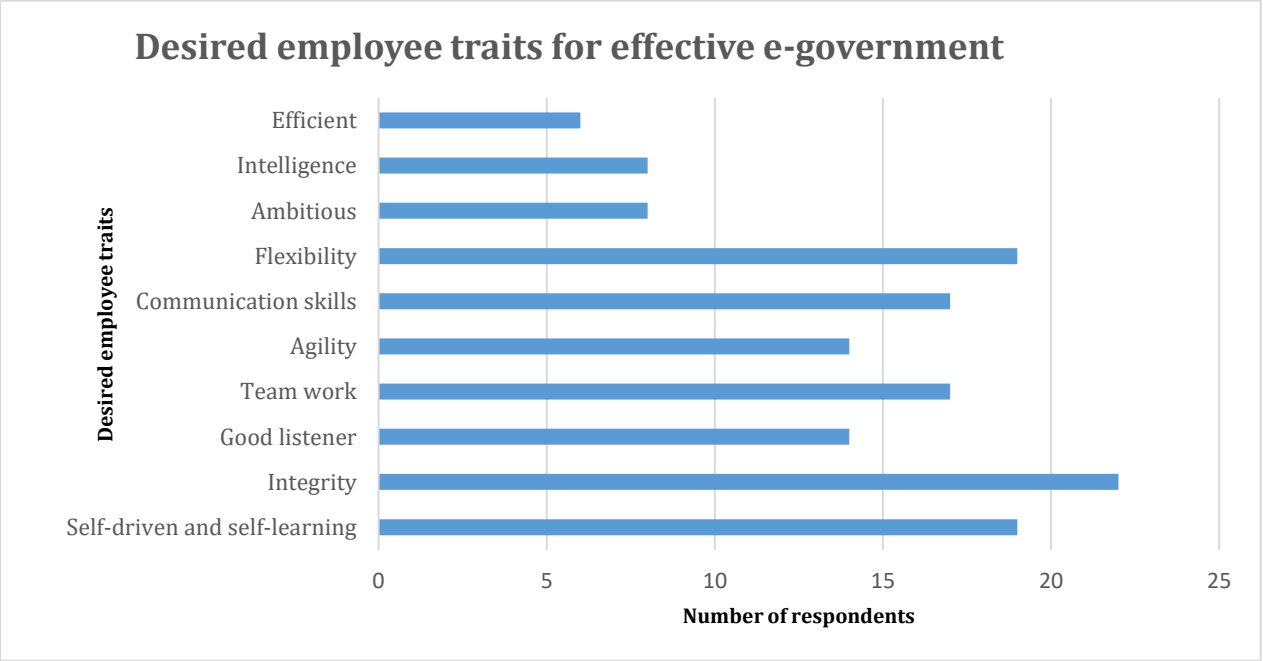

Figure 5: Desired Employee traits for effective e-government

2.4.4 Assumptions about future demand for ICT services and professionals

The synthesis of stakeholder respondents and analysis of national and international trends, revealed that generally the demand for ICT services and ICT professionals is projected to continue growing in Uganda for a foreseeable future, the key fundamental factors driving the demand for ICT professionals and skills are explained below.

a) **Government policy** on digital transformation which is focusing on accelerating ICT integration in business processes in order to leap-frog development stages by taking advantage of ICT.

b) The **rapidly expanding population** hence putting pressures on social services like; healthcare, education, Agriculture, transportation among others. These are motivating both public and private sector services providers to be more creative with the adoption of ICTs in services delivery to achieve the desired effectiveness and efficiency.

c) The **changing global geo-politics** from international actors moving from globalization to nationalism. This philosophy is forcing countries like Uganda to development local capacity to respond to strategic threats associated with technology access, hence creating demand of local ICT specialist, technologies and service providers.

d) Increasing penetration of internet which currently standard at 49% of the population. The availability and accessibility of internet is creating new opportunities for business and ICT service providers, resulting to increasing demand for ICT skills and ICT specialist.

e) The **advances in ICT technologies** providing more services at conveniences of the user. These are accelerating the adoption of ICTs in the country in both public and private sectors of the economy.

f) **Affordability of ICT tools and services**, as the economy grows and the cost of manufacturing ICT tools continues to lower, more and more Uganda's are able to acquire ICTs; and joining the global information highway.

g) Improving **digital literacy** in the country which continue to exact pressure on government e-services and other private sector services.

h) Impact of **COVID-19** pandemic which has accelerated enterprise demand for remote working in all sectors of the economy resulting into increased demand for ICT services and professionals.

2.4.5 Key ICT work force segments that would be costly to lose or difficult to find

From international best practices and ecosystem analysis, including the analysis of the ICT human capacity in RCIP MDAs, the categories of ICT specialists shown in **Figure 6**, would be most costly to lose and are also hard to find and recruit.

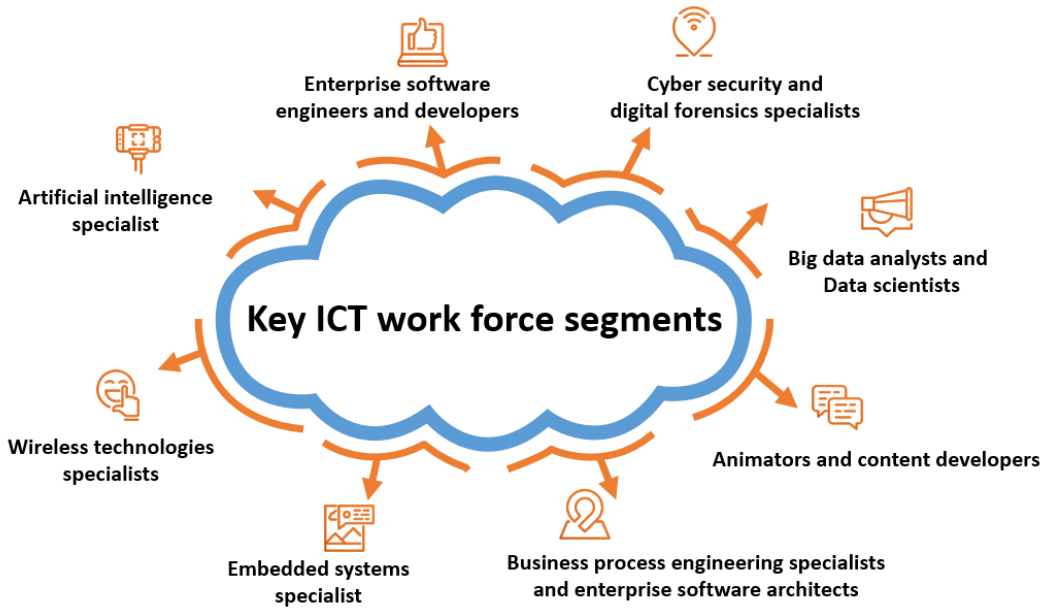

Figure 6: ICT Work Force segments most costly to lose or difficult to find

3.0 ICT SKILLS AND TRAINING ACTION PLAN (STAP)

This section details the key drivers of change serving as the thrust for the development of ICT STAP. It further details the strategic objectives, strategies and the strategic actions that once implemented will significantly address the ICT skills and training gaps identified at; Occupational, Institutional and Individual levels of assessment in Table 3 above.

3.1 Key Drivers of Change

There are many drivers influencing change in the ICT sector. Some of these changes are caused by the increasing and youthful population (with 77% of Uganda's population the majority being under 25 years of age), which will generate a need for better ICT infrastructure and enhanced public services. Other drivers are linked to the availability of better public services and opportunity, created by advances in technology, to transform public services to be more citizen-focused. Collectively, they are making the public sector environment fluid and forcing it to evolve. Some of these key drivers of change are stated below.

a) **Leadership, governance, coordination and partnerships:** the rapid development of the ICT sector is in part attributed to a strong political will by His Excellency the President of Uganda; the champion of ICT usage as an engine for social transformation of the country. Furthermore, the prevailing political stability, governance reforms and the attractive business and investment policy and legal regimes have stimulated the development of local ICT innovations, besides attracting both local and international partners.

b) **Cyber security awareness:** The increasing adoption of ICT services in the country has led to the increasing awareness of threats associated with the deployment and consumption of ICT services. This awareness is driving the demand for skills in ensuring online privacy and protection of critical data and systems.

c) **Internet accessibility and availability of data**: As observed in the 2020 September report, the internet penetration stood at 49% of the population most of which are the professional workforce. Furthermore, the continued expansion of the National Backbone Infrastructure (NBI) by NITA-U is enabling more people access ICT services hence stimulating demand for ICT skills.

d) **Universal Access (bridging digital divide):** the government's policy on universal access is stimulating the growing demand for ICT services and the associated skills.

e) **Human capacity investment**: the liberalization of the economy especially the educational sector has resulted into a rapid expansion of higher education sub-sector resulting into increasing number of graduates, but who are not absorbed by the economy. This has stimulated the advancement of local ICT innovations and

entrepreneurship in ICT sector due to the need to create more jobs and gainful employment.

3.2 Strategic Objectives, Strategies and Actions

Table 6 below links the six (6) strategic objectives of ICT STAP with their respective strategies and strategic actions.

Strategic Objective	Strategies	Strategic Actions
SO 1: Enhance usage of ICT in national development and service delivery	Lower barriers to ICT access	Integrate digital literacy at all levels of formal and civic education
		Waiver taxes on ICT devices and internet purchase by government employees
		Provide the basic enabling ICT facilities especially, computers and internet, to all government employees.
	Universal access to bridge rural-urban divide in access to ICT infrastructure and facilities	Extend broadband ICT infrastructure coverage countrywide in partnership with the private sector and all Government entities and implement last mile connectivity to key areas (Districts, sub-counties, schools, hospitals, post offices, tourism sites, police, LGs etc.)
		Establish and enhance national common core infrastructure such as; Data centres, High power computing centres, and specialized labs among others
		Finance universal access
	Enhancing Electronic security	Develop and implement the Data Protection and Privacy Programme to strengthen Cyber Security in the country
	Enhancing excellent ICT leadership and championship at national level to provide oversight, inspiration and political goodwill	Conduct annual training programmes for leaders in MDAs covering critical areas such as; IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others.
SO 2: Promote ICT research and innovations	Continuous benchmarking and learning	Regularly conduct research about best practices in other countries and apply them in the Ugandan context.
		Establish bilateral collaborations with countries that are internationally recognized as leading in ICT development to benefit from knowledge exchange and learning.
	Mandatory ICT Continuing Professional Development (CPD)	Develop annual ICT skills development work plans

Strategic Objective	Strategies	Strategic Actions
SO 3: Increase quality and quantity of the ICT human resource capital		Establish Professional Development Committees in RCIP Implementing agencies and target sectors
		Integrate e-government in digital literacy circular
		Operationalize online training programmes for various government agencies in areas where capacity gaps have been identified.
		Ring-fence staff training budgets from budgetary cuts since this affects staff productivity.
		Complete a minimum of 40 hours of ICT CPD annually, which must be monitored by a competent authority. i.e. establish an online tracking portal for this CPD on each individual staff.
	Establishing centres of excellence and community-based knowledge and information centres	Partner with academic institutions and other actors to establish centers of excellence in critical areas of ICT development which have higher capacity investment costs like robotics labs, computer systems engineering, artificial intelligence, and digital forensics labs, among others.
		Establish community-based knowledge and information centers to promote ICT skills development for civil servants and general public.
	Enhance the quality of academic staff	Provide academic staff with 10-20 percent time for their industry attachment to enable them acquire critical industrial skills and experience that are key in delivery of ICT training.
		Encourage their staff to acquire industrial professional certification to improve their knowledge and skills of developing and delivering market demanded training content.
	Improve the ICT Curriculum and quality of training	Operationalize the student-centered problem-based learning to promote skills development. In addition promote practical or competence based academic progression assessment as opposed to theoretical examinations.
		Improve management and supervision of student field attachment to ensure meaningful engagement of students in their respective fields of study.
		All training institutions of various ICT programmes have appropriate ICT

Strategic Objective	Strategies	Strategic Actions
		infrastructure such as specialized laboratories to deliver the proposed programmes before approval. All accredited academic programmes MUST have a mandatory curriculum review to ascertain the functionality of the infrastructure to support continued teaching of the approved curriculum, given the fact that most ICT equipment has a 3-year lifespan
		Alignment between the practical skillset needed by the employment industry and the curriculum delivered in institutions of higher learning is very critical.
SO 4: Strengthen the policy, legal and regulatory framework	Develop a National Digital Literacy Skills Framework	Develop a National Digital Literacy Skills Framework which incorporates best practices from the different international frameworks such as ICDL and the National Local Context Policy.
		The ICT curricula at Primary and Secondary levels of education should be reviewed and aligned to the Digital Transformation Programme to ensure that basic digital literacy skill stops at Primary level and advanced computing skills (such as computer programming, networking, gamification, animations among others) are introduced at both Ordinary Level and Advanced Level in an incremental manner.
	Alignment of academic programmes with Digital Transformation Programme and National Development Agenda	All ICT academic programmes developed by universities and other tertiary institutions should be reviewed and approved by MoICT & NG before being accredited by National Council for Higher Education
SO 5: Produce appropriate knowledgeable, skilled and ethical labour force	Establish a functional labour market	a. Establish a functional labour market information system b. Develop and implement an apprenticeship and job placement policy and programme c. Extend internship programme to out-of-school youths d. Conduct regular tracer studies
	Accelerate the acquisition of urgently needed ICT skills in key growth areas of the economy	Recruitment of ICT professionals should adhere to the institutional strategic and annual manpower plans as opposed to the current reactionary approach based on urgent demanding situations.

Strategic Objective	Strategies	Strategic Actions
	Embedding behavioural competencies in ICT recruitment and selection framework	Special emphasis on behavioral competencies such as; emotional maturity, self-awareness, teamwork, ethics and integrity and networking, in addition to the technical ICT competencies must considered in recruitment of staff.
SO 6: Streamline Government structures and systems for efficient and effective service delivery	Streamlining recruitment and management of ICT professionals	ICT Professionals' recruitment should be done through Competency based recruitment approach with offers better outcomes *(as demonstrated by experiences in Australia and Estonia)*
		Update the ICT Cadre Scheme of Service to reflect new skills and person specifications for the different positions in line with the e-government framework.
		Regularize ICT establishments in MDAs in line with the ICT Cadre Schemes of Service
	Nurturing ICT leadership among Accounting Officers and leaders of MDAs	MoICT & NG and her agencies to organize regular annual training programmes for leaders in MDAs covering critical areas such as IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others. Every leader shall be exposed to minimum of 40 hours of ICT training in a year.
	Ensuring basic ICT skills are a pre-condition for government employment	In recruiting ICT professionals, the appointing authorities in the Uganda Public Service *(PSC, ESC, HSC, JSC, DSCs, Police Authority and Prisons Authority)* should consider enriching the current traditional (open competition) recruitment and selection approach with competency-based procedures. Computer-based recruitment and selection and practical (simulated) interviews should be used.
	Operationalising ICT function in every department of government	Every public service entity (unit of government) shall have a fully operational ICT Unit or function.
		Establish a National ICT Professional Development Council at National level which should comprise of all stakeholders for governance, implementation, monitoring and evaluation of the ICT STAP. The council should be housed within the MoICT & NG

Table 6: Strategic Objectives, Strategies and Actions

4.0 ICT SKILLS AND TRAINING ACTION PLAN IMPLEMENTATION

This section expounds on the actions and the time-frame in which they will be implemented. These actions have been tagged to actors within the RCIP Implementing agencies and target sectors. Costs for each of the actions has been considered to allow for efficient budgeting, planning and resource mobilization.

4.1 Implementation of ICT Skills and Training Strategic Actions

The proposed strategic actions of this ICT STAP are designed to be executed within 5 years. The schedule of these actions has been informed by the level of need, the urgency of need to ensure that the strategic gaps in the RCIP implementing agencies and target sectors are fixed.

The activities in this Action Plan have been categorized in terms of short, medium and long term to guide the implementation process:

i) Short term: Actions implementable within 1 year
ii) Medium term: Actions implementable between 1-5 years
iii) Long term: Actions implementable 5 years out

Table 7 below showcases in detail the implementation activities and timelines for these over a period of 5 years.

Strategic Objective	Strategic Actions	Prioritisation			Actors
		S	M	L	
SO 1: Enhance usage of ICT in national development and service delivery	Integrate digital literacy at all levels of formal and civic education			x	MoES, MoICT & NG, All Academic Institutions and CSOs
	Waiver taxes on ICT devices and internet purchase by government employees		x		MoFPED and MoICT & NG
	Provide the basic enabling ICT facilities especially, computers and internet, to all government employees, with special attention to those in JLOS.		x		MoICT & NG and all MDAs
	Extend broadband ICT infrastructure coverage countrywide in partnership with the private sector and all Government entities and implement last mile connectivity to key areas (Districts, sub-counties, schools, hospitals, post offices, tourism sites, police, LGs etc.)		x		MoICT & NG, UCC, Telecom Operators and NITA-U
	Establish and enhance national common core infrastructure (data centres, high power computing centres, specialized labs)		x		MoICT & NG, NITA-U and Telecom Operators
	Finance universal access	x			UCC, MoFPED

Strategic Objective	Strategic Actions	Prioritisation			Actors
	Develop and implement the Data Protection and Privacy Programme to strengthen Cyber Security in the country	x			NITA-U
	Conduct annual training programmes for leaders in MDAs covering critical areas such as IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others.	x			MoICT & NG, UICT, NITA-U
SO 2: Promote ICT research and innovations	Regularly conduct research about best practices in other countries and apply them in the Ugandan context.	x			All MDAs
	Establish bilateral collaborations with countries that are internationally recognized as leading in ICT development to benefit from knowledge exchange and learning.	x			MoICT & NG
SO 3: Increase quality and quantity of the ICT human resource capital	Develop annual ICT skills development work plans	x			All MDAs
	Integrate e-government in digital literacy circular			x	NCDC, NCHE and all Academic training Institutions
	Establish online training programmes for various government agencies in areas where capacity gaps have been identified.	x			MoICT & NG, NITA-U and UICT.
	Ring-fence staff training budgets from budgetary cuts since this affects staff productivity.		x		All MDAs
	Complete a minimum of 40 hours of ICT CPD annually, which must be monitored by a competent authority. i.e. establish an online tracking portal for this CPD on each individual staff.		x		All staff on MDAs, NITA-U and all MDAs
	Establish Professional Development Committees in RCIP Implementing agencies and target sectors		x		All MDAs
	Partner with academic institutions to establish centers of excellence in critical areas of ICT development which have higher capacity investment costs like robotics labs, computer systems engineering, artificial intelligence, and digital forensics labs, among others.		x		MoICT & NG and all Academic Institutions
	Establish community-based knowledge and information centers to promote ICT skills development for civil servants and general public.		x		MoICT & NG, NITA-U, UCC and UICT
	Provide academic staff with 10-20 percent time attachment to industry to enable them acquire critical industrial skills and experience that are key in delivery of ICT training.		x		All Academic Institutions of Higher Learning
	Encourage their staff to acquire industrial certification to improve their knowledge	x			All Academic Institutions of Higher Learning

Strategic Objective	Strategic Actions	Prioritisation			Actors
	and skills of developing and delivering market demanded training content.				
	Operationalize the student-centered problem-based learning to promote skills development. Also, they should promote practical or competence based academic progression assessment as opposed to theoretical examinations.		x		All Academic Institutions of Higher Learning
	Improve management and supervision of student field attachment to ensure meaningful engagement of students in their respective fields of study.	x			All Academic Institutions of Higher Learning
	All training institutions of various ICT programmes to have appropriate ICT infrastructure such as specialized laboratories to deliver the proposed programmes before approval. All accredited academic programmes MUST have a mandatory curriculum review to ascertain the functionality of the infrastructure to support continued teaching of the approved curriculum, given the fact that most ICT equipment has a 3-year lifespan	x			NCHE
	Alignment between the practical skillset needed by the employment industry and the curriculum delivered in institutions of higher learning is very critical.	x			All Academic Institutions of Higher Learning
SO 4: Strengthen the policy, legal and regulatory framework	Develop a National Digital Literacy Skills Framework which incorporates best practices from the different international frameworks such as ICDL and the National Local Context Policy.		x		NITA-U
	The ICT curricula at Primary and Secondary levels of education should be reviewed and aligned to the Digital Transformation Programme to ensure that basic digital literacy skill stops at Primary level and advanced computing skills (such as computer programming, networking, gamification, animations among others) are introduced at both Ordinary Level and Advanced Level in incremental manner.		x		NCDC, MoICT & NG
	All ICT academic programmes developed by universities and other tertiary institutions should be reviewed and approved by MoICT & NG before being accredited by National Council for Higher Education.		x		All Academic Institutions of Higher Learning, NCHE and MoICT & NG
SO 5: Produce appropriate knowledgeable,	Establish a functional labour market information system		x		NITA-U, MoGLSD, MoTIC, MoLG, NCHE

Strategic Objective	Strategic Actions	Prioritisation			Actors
skilled and ethical labour force	Develop and implement an internship, apprenticeship and job placement policies and programmes		**x**		MoGLSD, MoES, MoICT & NG, MoPS
	Conduct regular tracer studies		**x**		All Academic Institutions of Higher Learning, MoICT & NG, MoGLSD and MoES
	Recruitment of ICT professionals should adhere to the institutional strategic and annual manpower plans as opposed to the current reactionary approach based on urgent demanding situations.		**x**		All MDAs and appointing authorities
	Special emphasis on behavioral competencies, such as emotional self-awareness, teamwork, ethics and integrity and networking, in addition to the technical ICT competencies must considered in recruitment of staff.		**x**		All MDAs and appointing authorities
SO 6: Streamline Government structures and systems for efficient and effective service delivery	ICT Professionals' recruitment should be done through Competency based recruitment approach with offers better outcomes *(as demonstrated by experiences in Australia and Estonia)*		**x**		MoPS, MoICT & NG and appointing authorities
	Update the ICT Cadre Scheme of Service to reflect new skills and person specifications for the different positions in line with the e-government framework.	**x**			MoICT & NG and MoPS
	Regularize ICT establishments in MDAs in line with the ICT Cadre Schemes of Service		**x**		MoICT & NG and MoPS
	MoICT & NG and her agencies to organize regular annual training programmes for leaders in MDAs covering critical areas such as IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others. Every leader shall be exposed to minimum of 40 hours of ICT training in a year.	**x**			MoICT & NG, UICT and NITA-U
	In recruiting ICT professionals, the appointing authorities in the Uganda Public Service *(PSC, ESC, HSC, JSC, DSCs, Police Authority and Prisons Authority)* should consider enriching the current traditional (open competition) recruitment and selection approach with competency-based procedures. Computer-based recruitment and selection and practical (simulated) interviews should be used.	**x**			All appointing authorities

Strategic Objective	Strategic Actions	Prioritisation			Actors
	Every public service entity (unit of government) shall have a fully operational ICT Unit or function.		x		MoPS and MoICT & NG
	Establish a National ICT Professional Development Council at National level which should comprise of all stakeholders for governance, implementation, monitoring and evaluation of the ICT STAP. The council should be housed within the MoICT & NG		x		MoICT & NG

Table 7: Implementation Plan for the Strategic Actions over a 5-year timeline

4.2 Financing Plan for ICT STAP

The implementation and roll out of this ICT STAP will follow an accelerated financial plan and a strong resource mobilization strategy for functionalizing of the Uganda ICT function and delivery of a high quality and capable ICT workforce for the RCIP implementing agencies and target sectors.

To achieve this, the MoICT & NG as the overall coordinator of this ICT STAP will need to continually engage with key implementing stakeholders e.g. MDAs, Academia, development partners, and the private sector, to ensure access to appropriate resources.

The sections ahead related to the financial plan for this ICT STAP will:

i) provide an idea of what it will cost to have the Action Plan implemented,

ii) provide an idea of cost drivers, and

iii) shed light on which periods along the life cycle will require more funding for activities within the overall budget.

4.2.1 Budget per Year and Business Objective

The costing and budgeting for this ICT STAP was guided by the objectives of the MoICT & NG as well as the NDPIII and the specific costing was done on the strategic actions. Every Ugandan shilling is tagged and attached to ensure each output is achieved for the proposed strategic actions.

The total budget for the 5 years to fund all the proposed actions amounts to **UGX 81.24 billion** with the bulk of the funding going towards enhanced usage of ICT in national development and service delivery. **Table 8** below indicates how funding will be utilized to achieving this ICT STAP's strategic objectives.

Note: Amounts have been quoted in Uganda shillings in Billions (*Amounts are in Bn UGX)*

Strategic Objective	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
Enhance usage of ICT in national development and service delivery	36.80	6.55	5.95	8.85	**58.15**
Promote ICT research and innovations	0.20	0.30	0.30	0.00	**0.80**
Increase quality and quantity of the ICT human resource capital	2.00	1.95	1.04	0.65	**5.64**
Strengthen the policy, legal and regulatory framework	0.00	1.25	0.00	0.00	**1.25**
Produce appropriate knowledgeable, skilled and ethical labour force	1.25	2.05	1.45	1.70	**6.45**
Streamline Government structures and systems for efficient and effective service delivery	2.15	2.50	2.15	2.15	**8.95**
TOTAL	**42.40**	**14.60**	**10.89**	**13.35**	**81.24**

Table 8: Funding Plan for ICT STAP Implementation

4.2.2 Key Budget Drivers

Table 9 below details the detailed allocation of funds per strategic action. The costs contained herein are estimates and should be validated through the procurement processes with the sector. The key cost drivers of the funds have also been indicated.

Strategic Objective	Strategic Actions	Key Cost Driver	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
SO 1: Enhance usage of ICT in national development and service delivery	Integrate digital literacy at all levels of formal and civic education	*Consultant to conduct a comprehensive Formal Education Curriculum review*	0	0.50	0.50	0.50	**1.50**
		Consultant to develop an Integrated Civic Education Curriculum	0.00	0.30	0.20	0.00	**0.50**
		Stakeholder Engagement, Curriculum Production and dissemination	0.30	0.20	0.20	0.30	**1.00**
	Waiver taxes on ICT devices and internet purchase by government employees as a means of promoting e-government agenda.	*Study on the impact of the Waiver*	0.20	0.00	0.00	0.00	**0.20**
	Provide the basic enabling ICT facilities especially, computers and internet, to all government employees,	*ICT equipment procurement*	15.00	0.00	0.00	0.00	**15.00**

Strategic Objective	Strategic Actions	Key Cost Driver	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
	with special attention to those in JLOS.						
	Extend broadband ICT infrastructure coverage countrywide in partnership with the private sector and all Government entities and implement last mile connectivity to key areas *(Districts, sub-counties, schools, hospitals, post offices, tourism sites, police, LGs etc.)*	*ICT Infrastructure Procurement and installation*	6.00	4.00	4.00	6.00	**20.00**
	Establish and enhance national common core infrastructure *(regional data centres, high power computing centres, specialized labs)*	*Development of a Framework for operationalizing shared infrastructure*	0.300	0.00	0.00	0.00	**0.300**
		Procurement of equipment for 4 regional and 1 national level hubs	1.50	2.00	1.50	2.50	**7.50**
SO 2: Promote ICT research and innovations	Regularly conduct research about best practices in other countries and apply them in the Ugandan context.	*Trainings on Research and Knowledge management and development of a KM&R framework*	0.00	0.30	0.30	0.00	**0.60**
	Establish bilateral collaborations with countries that are internationally recognized as leading in ICT development to benefit from knowledge exchange and learning.	*Bench-marking engagements / trips*	0.20	0.00	0.00	0.00	**0.20**
SO 3: Increase quality and quantity of the ICT human resource capital	Develop annual ICT skills development work plans	*ICT Skills Work Plan development*	0.00	0.30	0.00	0.00	**0.30**
	Integrate e-government in digital literacy circular	*Conduct a comprehensive circular audit (same as in SO 1 above)*	0.00	0.00	0.00	0.00	**0.00**
	Establish online training programmes for various government agencies in areas where capacity gaps have been identified	*Cost of developing and facilitating online courses (including content authoring)*	0.20	0.15	0.30	0.25	**0.90**
	Ring-fence staff training budgets from budgetary cuts since this affects staff productivity.	*In-house activity*	0.00	0.00	0.00	0.00	**0.00**
	Establish Professional Development Committees in RCIP Implementing agencies and target sectors	*In-house activity*	0.00	0.00	0.00	0.00	**0.00**

Strategic Objective	Strategic Actions	Key Cost Driver	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
	Complete a minimum of 40 hours of ICT CPD annually, which must be monitored by a competent authority. I.e. establish an online tracking portal for this CPD on each individual staff.	*Training cost of ICT Professionals*	0.20	0.20	0.24	0.20	**0.84**
		Setup of online tracking portal	0.00	0.20	0.00	0.00	**0.20**
	Partner with academic institutions to establish centers of excellence in critical areas of ICT development which have higher capacity investment costs like robotics labs, computer systems engineering, artificial intelligence, and digital forensics labs, among others.	*Feasibility study for establishment of Centres of Excellence and Community-based Knowledge Information Centres*	0.00	0.40	0.00	0.00	**0.40**
	Establish community-based knowledge and information centers to promote ICT skills development for civil servants and general public.	*Procurement of equipment*	0.50	0.50	0.50	0.00	**1.50**
	Provide academic staff with 10-20 percent time attachment to industry to enable them acquire critical industrial skills and experience that are key in delivery of ICT training.	*Capacity Building Fund*	0.00	0.00	0.00	0.00	**0.00**
	Encourage Academic Institution Staff to acquire industrial certification to improve their knowledge and skills of developing and delivering market demanded training content.	*Capacity Building Fund*	0.10	0.20	0.00	0.20	**0.50**
	Operationalize the student-centered problem-based learning to promote skills development. Also, they should promote practical or competence based academic progression assessment as opposed to theoretical examinations.	*Same Consultant that will conduct a comprehensive Education circular audit*	0.00	0.00	0.00	0.00	**0.00**
	Improve management and supervision of student field attachment to ensure meaningful engagement of students in their respective fields of study.	*In-house planning activity*	0.00	0.00	0.00	0.00	**0.00**

Strategic Objective	Strategic Actions	Key Cost Driver	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
	All training institutions of various ICT programmes to have appropriate ICT infrastructure such as specialized laboratories to deliver the proposed programmes before approval. All accredited academic programmes MUST have a mandatory curriculum review to ascertain the functionality of the infrastructure to support continued teaching of the approved curriculum, given the fact that most ICT equipment has a 3-year lifespan	*ICT Infrastructure development in Higher Institutions of Learning*	1.00	0.00	0.00	0.00	**1.00**
		In-house activity by NCHE	0.00	0.00	0.00	0.00	**0.00**
	Alignment between the practical skillset needed by the employment industry and the curriculum delivered in institutions of higher learning is very critical.	*Same Consultant that will conduct a comprehensive Education circular audit*	0.00	0.00	0.00	0.00	**0.00**
SO 4: Strengthen the policy, legal and regulatory framework	Develop a National Digital Literacy Skills Framework which incorporates best practices from the different international frameworks such as ICDL and the National Local Context Policy.	*Development of National Digital Literacy Skills Framework*	0.00	0.50	0.00	0.00	**0.50**
	The ICT curricula at Primary and Secondary levels of education should be reviewed and aligned to the Digital Transformation Programme to ensure that basic digital literacy skill stops at Primary level and advanced computing skills (such as computer programming, networking, gamification, animations among others) are introduced at both Ordinary Level and Advanced Level in incremental manner.	*Facilitation to NCDC to conduct the Exercise*	0.00	0.50	0.00	0.00	**0.50**
	All ICT academic programmes developed by universities and other	*ICT Professionals Development Policy*	0.0	0.25	0.00	0.00	**0.25**

Strategic Objective	Strategic Actions	Key Cost Driver	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
	tertiary institutions should be reviewed and approved by MoICT & NG before being accredited by National Council for Higher Education.						
SO 5: Produce appropriate knowledgeable, skilled and ethical labour force	Establish a functional labour market information system	*Development of a Labour Market Information System*	0.00	0.00	0.35	0.00	**0.35**
	Develop and implement an internship, apprenticeship and job placement policies	*Development of internship, apprenticeship and job placement policies*	0.00	0.35	0.00	0.00	**0.35**
		Implementation of internship, apprenticeship and job placement policies	1.00	1.50	1.00	1.500	**5.00**
	Conduct regular tracer studies	*Conducting Tracer studies on ICT skilling and Labourforce*	0.25	0.20	0.10	0.20	**0.75**
	Recruitment of ICT professionals should adhere to the institutional strategic and annual manpower plans as opposed to the current reactionary approach based on urgent demanding situations.	*In-house activity*	0.00	0.00	0.00	0.00	**0.00**
	Special emphasis on behavioral competencies, such as emotional self-awareness, teamwork, ethics and integrity and networking, in addition to the technical ICT competencies must considered in recruitment of staff.	*In-house activity*	0.00	0.00	0.00	0.00	**0.00**
SO 6: Streamline Government structures and systems for efficient and effective service delivery	ICT Professionals' recruitment should be done through Competency based recruitment approach with offers better outcomes *(as demonstrated by experiences in Australia and Estonia)*	*Recruitment dynamics catered for by Consultants above (SO5 second line)*	0.00	0.00	0.00	0.00	**0.00**
	Update the ICT Cadre Scheme of Service to reflect new skills and person specifications for the different positions in line	*Review and Update of the ICT Cadre Scheme of Services*	0.00	0.35	0.00	0.00	**0.35**

Strategic Objective	Strategic Actions	Key Cost Driver	Year 1	Year 2 - 3	Year 3 - 4	Year 4 - 5	Total Cost (Bn UGX)
	with the e-government framework.						
	Regularize ICT establishments in MDAs in line with the ICT Cadre Schemes of Service.	*In-house activity*	0.00	0.00	0.00	0.00	**0.00**
	MoICT & NG and her agencies to organize regular annual training programmes for leaders in MDAs covering critical areas such as IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others. Every leader shall be exposed to minimum of 40 hours of ICT training in a year.	*Capacity Building Fund*	0.00	0.00	0.00	0.00	**0.00**
	In recruiting ICT professionals, the appointing authorities in the Uganda Public Service *(PSC, ESC, HSC, JSC, DSCs, Police Authority and Prisons Authority)* should consider enriching the current traditional (open competition) recruitment and selection approach with competency-based procedures. Computer-based recruitment and selection and practical (simulated) interviews should be used.	*In-house activity by recruiting agencies*	0.00	0.00	0.00	0.00	**0.00**
	Every public service entity (unit of government) shall have a fully operational ICT Unit or function	*The Wage Bill*	2.00	2.00	2.00	2.00	**8.00**
	Establish a National ICT Professional Development Council at National level which should comprise of all stakeholders for governance, implementation, monitoring and evaluation of the ICT STAP. The council should be housed within the MoICT & NG	*Facilitation and operational expenses*	0.15	0.15	0.15	0.15	**0.60**
TOTAL COST			**42.40**	**14.60**	**10.89**	**13.35**	**81.24**

Table 9: Detailed Allocation of Funds per Strategic Action over the next 5 years.

5.0 MONITORING EVALUATION AND LEARNING FRAMEWORK FOR ICT STAP IMPLEMENTATION

The push and inclusion of this Monitoring, Evaluation and Learning (ME&L) Framework for this ICT STAP was based on a number of factors, whose ultimate aim is to improve quality, performance, and learning across the RCIP implementing agencies and target sectors. These included:

i) Strengthening the stakeholders' internal and external accountability requirements regarding the operationalization and implementation of this ICT STAP.

ii) Providing a clear framework and system to assess the extent to which activities in this ICT STAP will enable the RCIP implementing agencies and target sectors contribute to the improvement of the ICT function in Uganda.

Operational Definitions:

1. **Monitoring:** This is a continuous activity that MoICT & NG will use to derive indications on the progress of implementation of this ICT STAP against plans and targets. This will engage collection of data based on existing parameters.
2. **Evaluation**: A function whereby MoICT & NG will be systematically and objectively assessing the activities laid out in this ICT STAP to ascertain likelihood of impact. This will effectively be done mid-term and towards the end of the ICT STAP life-cycle.
3. **Learning:** A function that will be utilized by MoICT & NG to capture lessons learned along the ICT STAP implementation process and gain knowledge and understanding from the experience to inform further decision-making.

As indicated throughout the development process of this ICT STAP, there is a clear-cut indication that all stakeholders need to collaboratively participate and contribute resources towards its successful operationalization and implementation. With this collaboration and investment, comes the requirement to demonstrate results and impact growth; hence a robust ME&L structure.

Therefore, a ME&L framework has been put in place to track achievement of results and also to ensure effective learning along the life cycle of this ICT STAP. This overall will ensure achievement of the intended outcomes and positively impact on the evidence-based decision-making process.

The Monitoring, Evaluation and Learning framework for this ICT STAP is demonstrated in **Figure 7** below:

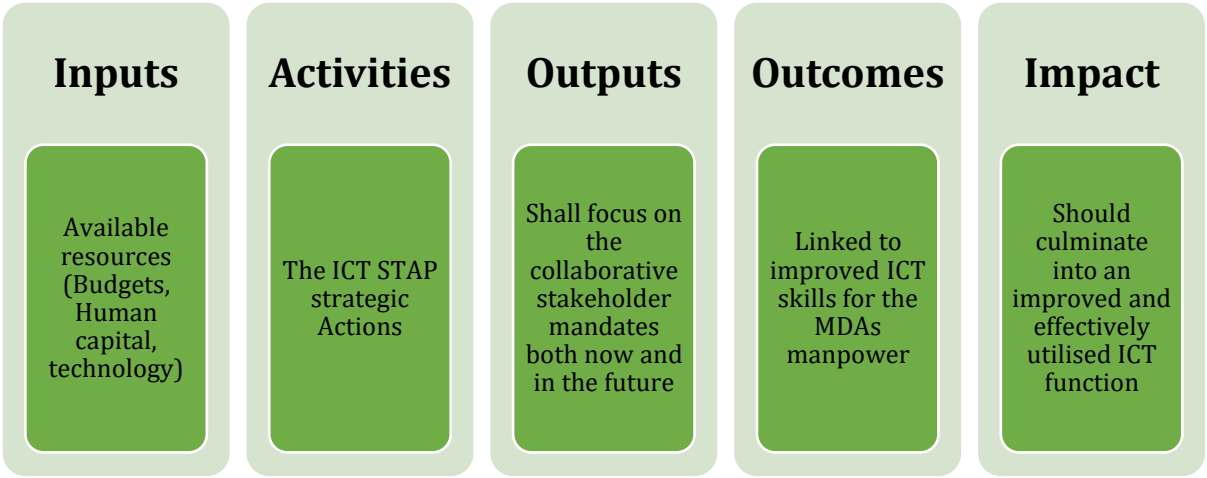

Figure 7: Results Chain for ICT STAP

5.1 Key Principles guiding the ICT STAP ME&L Framework

The following key principles reinforce this ICT STAP's ME&L framework:

a) **Ownership:** For acceptability and sustainable implementation of this ICT STAP, ownership by the key stakeholders is key in developing the strategic actions to be able to achieve the planned results. The key considerations for ownership in this regard have been; the degree to which the stakeholders understand the objectives of this ICT STAP and their deep involvement and understanding of its design.

b) **Engagement of stakeholders:** At all stages of development of this ICT STAP; including the ME&L framework it has been vital to engage the key stakeholders with an aim of ensuring buy-in and commitment and motivate the implementation process. Furthermore, this ME&L gives due clarity to the stakeholders on how the outputs and outcomes will ensure an effective ICT function for Uganda.

c) **Focus on Results:** The ME&L framework has been designed basing on a results-based management approach; focusing on measuring achievement of results to capitalize on learning process all-the-while ensuring accountability for results and overall effectiveness.

d) **Taking a holistic systems perspective on skills development:** The key objective for development of this ICT STAP is to encompass all government of Uganda MDAs and hence should be able to feed into all the planning processes to ensure the ICT function is well established.

e) **Practical and cost-effective processes:** Cost effectiveness will be evidenced by successful outcomes and practical and analytical outputs. This ICT STAP's activities have been planned to be efficiently and effectively resourced all the while ensuring the set objectives are being met.

f) Ensuring evidence-based practices: For this ICT STAP, the importance of standardized and consistent data collection and reporting actions; as well as information and knowledge capture and synthesis, will go a long way in providing validated evidence of achievement.

5.2 ME&L Framework for ICT STAP

This ICT STAP monitoring, evaluation and learning framework has been informed by the ICT STNA findings and the NDP III as highlighted in **Table 10** below:

Strategic Objective	Strategic actions	Key Performance Indicator	Outcome
SO 1: Enhance usage of ICT in national development and service delivery	Integrate digital literacy at all levels of formal and civil education	Digital literacy programmes included in all circular for formal and civil education institutions	Improved digital literacy for ICT and Non-ICT technocrats to be employed in MDAs
	Waiver taxes on ICT devices and internet purchase by government employees as a means of promoting e-government agenda.	Re-negotiated and amended tax rates (drop from 30% VAT inclusive to 10%)	Increase in number of government employees purchasing and utilizing internet and ICT devices
	Provide the basic enabling ICT facilities especially, computers and internet, to all government employees, with special attention to those in JLOS.	Approval and procurement of ICT enabling facilities in all MDAs.	Increase in number of government employees purchasing and utilizing internet and ICT devices
	Extend broadband ICT infrastructure coverage countrywide in partnership with the private sector and all Government entities and implement last mile connectivity to key areas (Districts, sub-counties, schools, hospitals, post offices, tourism sites, police, LGs etc.)	80% procurement and installation of ICT infrastructure in each of the 4 regions in Uganda	Increased ICT penetration
	Establish and enhance national common core infrastructure (data centres, high power computing centres, specialized labs)	Approved procurement and installation of ICT common core infrastructure in each of the 4 regions in Uganda	Improved ICT broadband coverage and access across Uganda
SO 2: Promote ICT research and innovations	Regularly conduct research about best practices in other countries and apply them in the Ugandan context.	Approved budget-line for at least 2-3 implementation and bench-marking research activities each FY.	Improved ICT function evidence-based decision-making and innovating
	Establish bilateral collaborations with countries that are internationally recognized as leading in ICT development to benefit from	1-2 approved and implemented ICT function bi-lateral bench-marking and learning events	Improved ICT function evidence-based decision-making and innovating

Strategic Objective	Strategic actions	Key Performance Indicator	Outcome
	knowledge exchange and learning.		
SO 3: Increase quality and quantity of the ICT human resource capital	Develop annual ICT skills development work plans	Approved costed annual ICT skills development work plans	Improved skills and functionality of ICT and Non-ICT professionals in the MDAs
	Integrate e-government in digital literacy circular	e-Government utilization and usage included in all digital literacy programmes for formal and civil education curricula	Improved e-government service utilization by human resource in all MDAs
	Establish online training programmes for various government agencies in areas where capacity gaps have been identified	Include online training programmes in the formal and civil education systems	Improved digital literacy for ICT and Non-ICT technocrats to be employed in MDAs
	Ring-fence staff training budgets from budgetary cuts since this affects staff productivity.	Approved annual ICT skills development costed work plans	Improved skills and functionality of ICT and Non-ICT professionals in the MDAs
	Establish Professional Development Committees in RCIP Implementing agencies and target sectors	Approved committees	Operational committee
	Complete a minimum of 40 hours of ICT CPD annually, which must be monitored by a competent authority. i.e. establish an online tracking portal for this CPD on each individual staff.	Indication of 4 hours of ICT Capacity Development every quarter by all staff in performance reviews.	Improved skills and functionality of ICT and Non-ICT professionals in the MDAs
	Partner with academic institutions to establish centers of excellence in critical areas of ICT development which have higher capacity investment costs like robotics labs, computer systems engineering, artificial intelligence, and digital forensics labs, among others.	5 ICT centers of excellence instituted and established at each of the 4 regions of Uganda and 1 at national level	Improved skills and functionality of ICT and Non-ICT professionals employed in Uganda
	Provide academic staff with 10-20 percent time attachment to industry to enable them acquire critical industrial skills and experience that are key in delivery of ICT training.	10-20% time allocated annually for industrial training for all ICT academic staff and students	Improved skills and experience for ICT academic staff for delivery of ICT training
	Encourage Academic Institution Staff to acquire industrial certification to improve their knowledge and skills of developing and delivering market demanded training content.	Certification for the 10-20% time allocated annually for industrial training for all ICT academic staff	Improved skills and experience for ICT academic staff for delivery of ICT training

Strategic Objective	Strategic actions	Key Performance Indicator	Outcome
	Operationalize the student-centered problem-based learning to promote skills development. Also, they should promote practical or competence based academic progression assessment as opposed to theoretical examinations.to theoretical examinations.	One academic progression assessment review each FY	Improved digital literacy for ICT and Non-ICT technocrats to be employed in Uganda
	Improve management and supervision of student field attachment to ensure meaningful engagement of students in their respective fields of study.	10-20% time allocated annually for industrial training for all ICT students 100% effectively supervised	Improved digital literacy for ICT and Non-ICT technocrats to be employed in Uganda
	All training institutions of various ICT programmes to have appropriate ICT infrastructure such as specialized laboratories to deliver the proposed programmes before approval. All accredited academic programmes MUST have a mandatory curriculum review to ascertain the functionality of the infrastructure to support continued teaching of the approved curriculum, given the fact that most ICT equipment has a 3-year lifespan	Approved procurement, installation and a 3-year review of appropriate ICT infrastructure in academic institutions	Improved digital literacy for ICT and Non-ICT technocrats to be employed in Uganda
	Alignment between the practical skillset needed by the employment industry and the curriculum delivered in institutions of higher learning is very critical.	3-year stakeholder review of all digital literacy programmes included in all circular for formal and civil education institutions	Improved digital literacy for ICT and Non-ICT technocrats to be employed in Uganda
SO 4: Strengthen the policy, legal and regulatory framework	Develop a National Digital Literacy Skills Framework which incorporates best practices from the different international frameworks such as ICDL and the National Local Context Policy.	1 approved National Digital Literacy Skills Framework	Enabled and improved ICT function evidence-based decision-making and innovating
	The ICT curricula at Primary and Secondary levels of education should be reviewed and aligned to the Digital Transformation Programme to ensure that basic digital literacy skill stops at Primary level and advanced computing skills (such as computer	Digital literacy programmes reviewed and included in all circular for both Ordinary Level and Advanced Levels	Improved digital literacy for ICT and Non-ICT technocrats to be employed in Uganda

Strategic Objective	Strategic actions	Key Performance Indicator	Outcome
	programming, networking, gamification, animations among others) are introduced at both Ordinary Level and Advanced Level in incremental manner.		
	All ICT academic programmes developed by universities and other tertiary institutions should be reviewed and approved by MoICT & NG before being accredited by National Council for Higher Education.	1 annual stakeholder review of all digital literacy programmes included in all circular for formal and civil education institutions	Improved digital literacy for ICT and Non-ICT technocrats to be employed in Uganda
SO 5: Produce appropriate knowledgeable, skilled and ethical labour force	Establish a functional labour market information system	1 Labour Market Information System	Capacity to track skilling across all MDAs
	Develop and implement an internship, apprenticeship and job placement policies and programmes	1 Internship, apprenticeship and job placement policy developed and implemented across all MDAs	An ICT knowledgeable, skilled and ethical labour-force across all MDAs
	Conduct regular tracer studies	1 tracer study every year	Improved and informed decision-making by ICT leadership
	Recruitment of ICT professionals should adhere to the institutional strategic and annual manpower plans as opposed to the current reactionary approach based on urgent demanding situations.	All ICT and Non-ICT professionals' recruitments linked to ICT Cadre Scheme of Service	Standardised recruitment procedures for ICT and non-ICT workforce in Uganda
	Special emphasis on behavioral competencies, such as emotional self-awareness, teamwork, ethics and integrity and networking, in addition to the technical ICT competencies must considered in recruitment of staff.	All ICT and Non-ICT professionals' recruitments linked to ICT Cadre Scheme of Service	Standardised recruitment procedures for ICT and non-ICT workforce in Uganda
SO 6: Streamline Government structures and systems for efficient and effective service delivery	ICT Professionals' recruitment should be done through Competency based recruitment approach with offers better outcomes *(as demonstrated by experiences in Australia and Estonia)*	Reviewed recruitment management process to a competence-based approach	Standardised recruitment procedures for ICT and non-ICT workforce in Uganda
	Update the ICT Cadre Scheme of Service to reflect new skills and person specifications for the different positions in line with the e-government framework.	A 3-year stakeholder review of the ICT cadre system	Improved and functional ICT workforce in Uganda
	Regularize ICT establishments in MDAs in line with the ICT Cadre Schemes of Service.	1 stakeholder review and streamline of ICT establishments to the	Improved and functional ICT workforce in Uganda

Strategic Objective	Strategic actions	Key Performance Indicator	Outcome
		ICT Cadre Scheme of Service for all MDAs	
	MoICT & NG and her agencies to organize regular annual training programmes for leaders in MDAs covering critical areas such as IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others. Every leader shall be exposed to minimum of 40 hours of ICT training in a year.	Indication of 4 hours of ICT Capacity Development every quarter by all staff in performance reviews.	Improved skills, leadership and functionality of ICT and Non-ICT professionals in the MDAs
	In recruiting ICT professionals, the appointing authorities in the Uganda Public Service *(PSC, ESC, HSC, JSC, DSCs, Police Authority and Prisons Authority)* shall consider enriching the current traditional (open competition) recruitment and selection approach with competency-based procedures. Computer-based recruitment and selection and practical (simulated) interviews shall be used.	An operational computer-based recruitment and selection system in all MDAs	Standardised and open recruitment for ICT and non-ICT workforce in Uganda
	Every public service entity (unit of government) shall have a fully operational ICT Unit or function	Approved procurement and installation of e-governance structures in all MDAs	Fully functional ICT units in all MDAs
	Establish a National ICT Professional Development Council at National level which should comprise of all stakeholders for governance, implementation, monitoring and evaluation of the ICT STAP. The council should be housed within the MoICT & NG	Approved National ICT Professional Development Council	Fully operational National ICT Professional Development Council

Table 10: ME&L Framework for ICT STAP

5.3 Reporting and Dissemination Plan for ME&L Products

Table 11 below will provide direction and guidance for data and information collection, analysis and reporting all required to assess implementation progress towards the realization of the objectives of this ICT STAP.

Monitoring and Evaluation Products	Target Recipients/Audience	Period/dates	Strategies for dissemination
Baseline Reports	All MDAs, MoICT &NG Agencies, Academic Institutions, Development and Implementing Partners	Within 6 months from implementation commencement	Results presentations and sharing of final report with stakeholders
Quarterly Progress reports	All MDAs, MoICT &NG Agencies, Academic Institutions, Development and Implementing Partners	Quarterly	Sharing of the final report with stakeholders
Regional Support Supervision and **Monitoring visits reports**	MoICT & NG, MoICT & NG Agencies, Development and Implementing Partners	After every support supervision and monitoring mission visit	Sharing of the final report with stakeholders
Biannual Review and Lessons Learnt Reports	All MDAs, MoICT &NG Agencies, Academic Institutions, Development and Implementing Partners	Biannual	Workshop presentations and report sharing
Knowledge products	MoICT & NG, MoICT & NG Agencies, Development and Implementing Partners	Quarterly	Workshop presentations and sharing of technical notes
Annual Review Reports	All MDAs, MoICT &NG Agencies, Academic Institutions, Development and Implementing Partners	Annual	Sharing of final report with stakeholders
End line Reports	All MDAs, MoICT &NG Agencies, Academic Institutions, Development and Implementing Partners	At review and end of first ICT STAP cycle	Presentation of results and sharing of final report with stakeholders

Table 11: Reporting and Dissemination Plan for ME&L Products

6.0 ANNEXES

The Annexes to ICT STAP are presented below:

Annex I: Recommendations from ICT STNA

No	Issues to address	Action/Recommendation	Actor	Priority
1	Streamlining recruitment and management of ICT professionals in government	ICT professionals in government should be recruited and managed by MoICT & NG. The recruitment should be done through Competency based recruitment approach with offers better outcomes as demonstrated by experiences in Australia and Estonia	Cabinet, MoPS and MoICT & NG	High
2	Outdated ICT Cadre Schemes of Service	MoICT & NG, in collaboration with MoPS, needs to update the ICT Cadre Scheme of Service to reflect new skills and person specifications for the different positions in line with the e-government framework. The Ministry should thereafter conduct 3-year regular review of the Schemes of Service to ensure Uganda's competitiveness internationally.	MoPS and MoICT & NG	High
3	Harmonising ICT structures with ICT Cadre Schemes of Service (updated 2019)	MoICT & NG should regularize ICT establishments in MDAs in line with the ICT Cadre Schemes of Service	MoPS and MoICT & NG	High
4	Annual ICT skills development work plans	In line with the Uganda Public Service Training Policy (2006) and the Digital Transformation Programme in NDP 3, all MDAs should provide an annual training plan with a dedicated budget line for ICT skills development in their annual work plans to MoICT & NG and provide an annual results framework of the same.	MoICT & NG & other MDAs	High
5	Integrating e-government into digital literacy curriculum	As part of improving digital literacy skills and increasing awareness of e-government framework, some of the **e-government systems and concepts should be integrated in National Digital Literacy Skills Framework** at all levels of education and training.	National Council for Higher Education, NITA-U and National Curriculum Development Centre	High
6	Providing free online training programmes to MDAs	MoICT & NG, through its agencies such as NITA-U, and UICT, should set up **online training programmes** for various government agencies in areas where capacity gaps have been identified.	MoICT & NG, UICT and NITA-U	High

No	Issues to address	Action/Recommendation	Actor	Priority
7	Establishing Centers of Excellence	MoICT & NG should partner with academic institutions to **establish centers of excellence** in critical areas of ICT development which have higher capacity investment costs like robotics labs, computer systems engineering, artificial intelligence, digital forensics labs, among others.	MoICT & NG, Academic Institutions	Medium
8	Ring-fencing staff training budgets	MDAs should ringfence staff training budgets from budgetary cuts since this affects staff productivity.	All MDAs	Medium
9	Regular update of MDA websites	MoICT & NG should ensure all communication officers in various MDAs maintain updated websites with all important information like annual reports, budgets, and strategic plans, among others.	MoICT & NG and other MDAs	High
10	Establishing Community-based knowledge and information centers	MoICT & NG, through its agencies such as NITA-U, UCC and UICT, should **establish community-based knowledge and information centers** to promote ICT skills development for civil servants and general public as it is in the case of South Korea.	MoICT & NG	Medium
11	Mandatory ICT Continuing Professional Development (CPD)	All employees of government should complete a minimum of 40 hours of ICT CPD annually. NITA-U should set up an online tracking portal for this CPD on each individual staff.	All MDAs, NITA-U	Lower
12	National Digital Literacy Skills Framework	NITA-U should develop a National Digital Literacy Skills Framework which incorporates best practices from the different international frameworks such as ICDL and the National Local Context Policy.	NITA-U	Medium
13	Outdated Primary, Ordinary and Advanced level ICT Curriculum	The ICT curricula at Primary and Secondary levels of education should be reviewed and aligned to the Digital Transformation Programme to ensure that basic digital literacy skill stops at Primary level and advanced computing skills (such as computer programming, networking, gamification, animations among others) are introduced at both Ordinary Level and Advanced Level in incremental manner.	National Curriculum Development Centre, Ministry of Education and Sports	Medium
14	Alignment of academic programmes with Digital Transformation Programme and National Development Agenda	All ICT academic programmes developed by universities and other tertiary institutions should be reviewed and approved by MoICT & NG before being accredited by National Council for Higher Education. Moreover, the ICT academic programmes should be subjected to a 3 year mandatory review to ensure continued competitiveness and compliance with accreditation requirements.	Academic Institutions, NCHE and MoICT & NG	High

No	Issues to address	Action/Recommendation	Actor	Priority
15	Nurturing ICT leadership among Accounting Officers and leaders of MDAs	MoICT & NG and her agencies should **organize regular annual training programmes** for leaders in MDAs covering critical areas such as IT strategic leadership, change management, IT project management, cyber security and collaborative technologies among others. Every leader should be exposed to minimum of 40 hours of ICT training in a year.	MoICT & NG, NITA-U, UICT	High
16	Continuous benchmarking and learning	ICT Professionals in different sectors of Government should regularly research about best practices in other countries and apply them in the Ugandan context. MoICT & NG should continuously establish bilateral collaborations with countries that are internationally recognized as leading in ICT development to benefit from knowledge exchange and learning.	MoICT & NG	Medium
17	Providing enabling infrastructure	MoICT & NG and all MDAs should provide the basic enabling ICT facilities especially, computers and internet, to all government employees, with special attention to those in JLOS.	MoICT & NG and other MDAs	High
18	Subsidising internet and computers for government employees	The government should waiver **taxes on ICT devices and internet** purchase by government employees as a means of promoting e-government agenda.	MoFPED MoICT & NG	Medium
19	Academic staff field attachment	Academic training institutions should provide **academic staff** with **10-20 percent time** attachment to industry to enable them acquire critical industrial skills and experience that are key in delivery of ICT training	All academic training institutions	High
20	Industrial certification of Academic staff	All academic institutions should encourage their staff to acquire industrial certification to improve their knowledge and skills of developing and delivering market demanded training content.	Academic training institutions	Low
21	Promoting student-centered problem-based learning	Academic training institutions should focus **student centered** problem-based learning to promote skills development. Also, they should promote practical or competence based academic progression assessment as opposed to theorical examinations.	Academic training institutions	High
22	Improvement in management and supervision of field attachment	Academic training institutions should improve management and supervision of student field attachment to ensure meaningful	All academic training institutions	High

No	Issues to address	Action/Recommendation	Actor	Priority
		engagement of students in their respective fields of study.		
23	ICT training quality assurance	National Council for Higher Education (NCHE) should ensure that all training institutions of various ICT programmes have appropriate ICT infrastructure such as specialized laboratories to deliver the proposed programmes before approval. The Council should thereafter subject all training institutions to **a 3-year mandatory curriculum review** to ascertain the functionality of the infrastructure to support continued teaching of the approved curriculum, given the fact that most ICT equipment has a 3-year lifespan.	NCHE	Medium
24	Demand driven curriculum development	Alignment between the practical skillset needed by the employment industry and the curricula delivered in institutions of higher learning is very critical. This may require innovative approaches by academic institutions in involving the industry in curriculum design.	Academic training institutions	High
25	Ensuring basic ICT skills are a pre-condition for government employment	In recruiting ICT professionals, the appointing authorities in the Uganda Public Service (PSC, ESC, HSC, JSC, DSCs, Police Authority and Prisons Authority) should consider enriching the current traditional (open competition) recruitment and selection approach with competency-based procedures which facilitate selection of candidates with high level competencies for the ICT jobs. Such approaches could be computer-based recruitment and selection and practical (simulated) interviews as it is in the case of Australia.	All appointing authorities	High
26	ICT recruitment	Recruitment of ICT professionals should adhere to the institutional strategic and annual manpower plans as opposed to the current reactionary approach based on urgent demanding situations.	All MDAs	Medium
27	Embedding behavioural competencies in ICT recruitment and selection framework	The appointing authorities in various MDAs need to accord special emphasis on behavioral competencies, such as emotional self-awareness, teamwork, ethics and integrity and networking, in addition to the technical ICT competencies. This will inspire mindset change towards performance, accountability and innovation.	All MDAs	Low

No	Issues to address	Action/Recommendation	Actor	Priority
28	Operationalising ICT function in every department of government	Ensure effective operationalization of e-government, every public service entity should have a fully operational ICT Unit.	All MDAs	Medium
29	Expanding this study to provide a holistic picture of the state of ICT skills and training across government	Given the narrow scope of this study, MoICT & NG needs to expand this study beyond 5 sectors of government and 36 respondent organisations to cover the 13 remaining sectors and 147 Local government in order to provide a holistic status of the current ICT skills and training needs across government.	MoICT & NG	Medium
30	ICT skills a mandatory requirement on entry into public service	The appointing authorities in the Uganda Public Service (PSC, ESC, HSC, JSC, DSCs, Police Authority and Prisons Authority) should consider possession of basic ICT skills and competencies as evidenced by recognized certifications such as ICDL as a prerequisite for entry into public service.	All appointing authorities	High
31	Promoting local content in line with Buy Uganda Build Uganda Initiative	With over 600 ICT training service providers, over 50 Universities and over 20 innovation and incubation centers, MDAs should be encouraged to use local solutions and hire local services providers given the capacity the exists in the country. For example, international consultants should only be hired where local capacity does not exist.	MoICT & NG and other MDAs	High

Annex II: List of References

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