

SUMMARY FINDINGS FROM NATIONAL CONSULTATION IN UGANDA



This report summarizes inputs gathered from participants in the EAC Digital Strategy National Consultation meeting that took place in Kampala at Hotel Africana on 26th and 27th of January, 2023. Information is supplemented by additional material obtained online.

The report is organized into sections as follows:

- **Policy and regulatory environment** - highlights existing strategies, policies and laws
- **Key stakeholders** - lists key institutions and their roles with respect ICTs
- **Overview of digital assets and capabilities** - provides a high level narrative of assets and capabilities around digital applications and service architecture, as well as data collection, management, use
- **Detailed inventory of digital assets by sector** - full list of priorities, applications, and tools for developing digital applications
- **Technology and workforce considerations** - describes basic power, connectivity, and workforce considerations that relate to the enabling environment for digital applications

Information gathered through the national consultation will inform the EAC Regional Digital Strategy by allowing identification of existing assets that may contribute to regional digital applications, identification of common needs across countries, shared priorities for future investments, and existing resources to inform feasibility of a regional digital platform. Please review and provide suggested edits or additional information in “Suggesting” mode no later than **March 14, 2023**.

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EAC DIGITAL STRATEGY NATIONAL CONSULTATION:

UGANDA

Summary: Uganda has a growing set of national resources and infrastructure to guide digital transformation across sectors. Its enterprise architecture efforts have primarily focused on interoperability, yet it is now drafting an overarching digital strategy. One highlight of Uganda's growing capabilities for eGovernment services is "UGhub," a platform for sharing relevant data across ministries to support service delivery. Uganda continues to work towards more routine implementation of the protocols and processes it has developed, particularly in the health sector, as well as continued contextualization of enterprise architecture resources for specific sectors.

Policy and Regulatory Environment for ICTs

Uganda has multiple national foundational documents guiding policy and investments in ICT and relevant aspects of the enabling environment.

Digital Policies and Frameworks. Uganda has two high-level policy documents guiding digital transformation. The first, [Uganda's Vision 2040](#), which identifies ICT as one of the key building blocks to spur Uganda's transformation into a modern and prosperous country. The second is the [Third National Development Plan 2020-2025](#) (NDPIII), emphasizes digitalization of Government processes and increased utilization of ICT across the entire economy.

In addition to these broad plans, Uganda developed additional guidance specifically around the development of digital applications and services. These include the **e-Government Interoperability Framework Reference Architecture (GIRA)** and **e-Government Interoperability Framework (eGIF)**. The GIRA is a reference architecture focused on the design of interoperable digital platforms. It proposes the most important Architecture Building Blocks (ABB) needed to promote cross-sectoral information sharing. The e-GIF specifies a set of interoperability principles, technical policies, and specifications for achieving interoperability and IT systems coherence across the government.

The **Digital Government Strategy**, which is still in draft form, represents Uganda's vision for the next five years, focusing on creating a digitally empowered society. It outlines the key areas of focus over the next five years for all Ministries, Departments, and Agencies / Local Governments (MDAs/LG), with cooperation from the private sector and Academia.

Data Protection Policies. Uganda passed the **Data Privacy Act 2019**, which protects the privacy of individual and personal data by regulating the collection and processing of personal information. It also protects the rights of persons whose data is collected and defines the obligations of the data collectors, data processors and data controllers. Uganda subsequently passed the [Data Protection and Privacy Regulations 2021](#), broadly modeled after Europe's General Data Protection Regulation. It establishes the Personal Data protection office. This office, currently residing in the National Information Technology Authority of Uganda (NITA-U), is responsible for registering personal data collectors, processors, and controllers in the public and private sectors. The Act [allows for process and storage of](#)

[personal data outside Uganda](#) as long as the receiving institution has data protection measures equivalent to those in the Act or if the data subject consents to sharing outside Uganda. Thus, regional data sharing is possible so long as there are sufficient protections in place.

Uganda has since 2005 had the **Access to Information Act**, which provides a procedure to be followed to gain access to information held by government MDAs and LGs.

Uganda has several acts governing security and use of electronic transactions and data transfer. These include the **Computer Misuse Act 2011**, which aims to prevent unlawful access, abuse or misuse of information systems, as well as the **Electronic Transactions Act 2011**, which provides for the use, security, facilitation and regulation of electronic communications and transactions to encourage the use of e-Government services. These are further enabled by the [Electronic Signatures Act 2011](#).

Though providing a strong foundation for public sector digital services and protections, Uganda faces several implementation challenges including weak compliance mechanisms, overlaps in regulatory responsibilities, limited investment in change management.

Governance Bodies and Key Stakeholders

There are several stakeholders and governing bodies in Uganda for ICT and the development of digital services within the public sector. Several key agencies that would be involved in the development and implementation of new digital applications and integration with a regional platform include:

- **Ministry of ICT & National Guidance (MoICT & NG):** Provides leadership, coordination, support, and advocacy in formulating policy, laws, regulations, and strategies for the ICT sector in Uganda.
- **National IT Authority, Uganda (NITA-U):** Coordinates, regulates, promotes, and monitors Information Technology (IT) developments within the context of National Social and Economic development. NITA-U is accountable for implementing concrete activities in the MDAs/LGs.
- **Uganda Communications Commission (UCC):** Licenses and regulates communications infrastructure development and the expansion of rural communications services.
- **The Office of the Prime Minister (OPM):** provides the overall coordination for implementation of Uganda's digital transformation efforts.

The NDPIII outlines a multi-layer structure for coordination on digital initiatives and implementation. This includes a high-level Public Policy Management Executive Forum, coordination through the OPM, and several additional structures. The Programme Leadership Committee is led by the MoICT & NG and includes senior members of NITA-U and UCC representatives, among others. These are supported by both technical and programme working groups with similar organizational representation.

OVERVIEW: DIGITAL ASSETS AND READINESS

CONSIDERATIONS

eGovernment Resources and National Digital Strategies. Uganda has an **Enterprise Architecture Framework** to support eGovernment services called the "[e-Government Interoperability Framework Reference Architecture \(GIRA\)](#)." The GIRA is an architecture content metamodel defining the most salient architectural building blocks needed to promote cross-sector interactions between MDA/LGs and build interoperable e-Government platforms. In addition, GIRA provides a common terminology that can be used by people working for public administrations in various architecture and system development tasks. GIRA is formally approved, implemented, and enforced in ICT system procurement, development, and implementation. All government sectors are mandated to develop sector-based architectures based on the GIRA.

Uganda has a national **digital strategy** referred to as [Digital Government Strategy](#), which is still in draft form. The Digital Government Strategy is the follow-up on the development of a Government Enterprise Architecture (GEA) and e-Government Interoperability Framework (eGIF) for Uganda. This is a distinct approach in developing the overarching strategy after developing a GEA and interoperability framework. The Government of Uganda is planning to update the current e-Government Master Plan and align it with the draft Digital Government Strategy which is under review. Implementing the draft Digital Government strategy is ongoing, but there are few robust compliance mechanisms.

Sector-specific digital strategies. The Education, Agriculture/Climate change, and Trade sectors have not developed sector-based digital strategies. However, the health sector developed the [Uganda National e-Health Strategy 2017/2021](#), which has expired but is still being implemented. The 2017/2021 digital strategy for the health sector mainly focused on eHealth Leadership and Governance, eHealth Enterprise Architecture, data management, and technology infrastructure. Other areas include; ethics, human resource capacity building and research, development and innovation. There are plans to develop a new digital strategy for the health sector; a draft strategy is now under review.

Sector-specific enterprise architectures. To date, only the health sector has developed a sector-specific enterprise architecture, the Digital Health Enterprise Architecture Framework (DHEAF) based on the GIRA. However, there are plans for other sectors to develop them with NITA-U's support. The health sector framework was formally reviewed and approved by the Health Information, Innovations, and Research Technical Working Group (HIIRE TWG), and is awaiting approval by the MoH. The framework specifies a set of architecture principles, architecture development process, readiness assessment criteria, monitoring, and evaluation criteria. Additionally, it provides a set of reusable assets, including reference models, data, applications, and security and privacy standards. The Division of Health Information Management (DHIM) is responsible for ensuring that health organizations and implementing partners comply with the DHEAF.

Interoperability. NITA-U has developed the [Uganda e-Government Interoperability Framework\(e-GIF\)](#) for Uganda. The e-GIF specifies a set of interoperability principles, technical policies, and specifications for achieving interoperability and IT systems coherence across the government. In addition, it defines essential prerequisites and guidelines for integrating digital platforms to offer online services to citizens and businesses and to share data across the government. Adherence to the e-GIF standards and guidelines is mandatory. e-GIF largely focuses on sharing of information across government agencies but it does not define sector-specific interoperability guidelines or standards.

No sector has contextualized the e-GIF. However, there are efforts by the health sector to develop a sector-specific interoperability framework aligned with the e-GIF. Contextualizing the e-GIF for the different sectors will help in addressing the sector-specific interoperability requirements. A health specific interoperability framework would provide a specific model for how data from health applications would share data, for example across an ESB. It would define specific standards for APIs that are

appropriate for health data and may not apply to others. The additional step of contextualizing a general framework for the sector creates more specific guidance by reflecting the actual data standards and applications in use in the sector. A health specific interoperability framework would provide a specific model of how health data can be categorized and seamlessly shared.

Data governance. Under the Personal Data Protection and Privacy Law and Regulations, each sector is required to establish a data governance structure. However, Education, Trade, and Agriculture/Climate change have not yet established these structures.

Governance of digital platforms and data within the health sector is the mandate of the Health Information, Innovations, and Research Technical Working Group (HIIRE TWG). There are multiple sub-committees under the HIIRE TWG which make decisions on proposed systems, security around those systems, and data management. The Ministry's Division of Health Information Management (DHIM) works with HIIRE TWG to manage all aspects relating to health information. The Ministry of Health has established specific roles to oversee health data governance, including a data architect, data governance, and security specialist. However, no data governance program has been established and it is mainly the responsibility of the ICT Departments in the sector.

Data Quality and Utilization: Data quality checks are inconsistent across all sectors. Trade conducts some data quality checks at points of the collection as well as periodic data cleaning. This is, however, not consistently done across the sector. In the case of the health sector, some mechanisms and structures have been put in place to ensure data quality, such as guidelines for the multiple Electronic Medical Records systems (EMR), such as UgandaEMR, IHMIS, NSM ERP, mTrac). The sector has also established a sub-committee under the HIIRE TWG to specifically handle health data quality issues. The Education and Agriculture/Climate did not report the use of any routine tools procedures to ensure data quality.

Concerning data utilization for decision-making, dashboards are being encouraged across Government. Some MDAs, including the Uganda Revenue Authority (URA) and National Medical Store (NMS), have established Data Warehouses with a Business Intelligence (BI) layer. NITA-U intends to support MDAs to use more advanced data analytics in the next 5 years.

Data management Strategies (standards, guidelines, and standard operating procedures): The Education, Trade, and Agriculture/Climate change rely on data management guidance provided by the NITA-U. NITA-U developed [NITA-U\(National Databank Regulations\) 2019](#) that all MDAs/LG must adhere to, and have been partially implemented. The guidelines cover the national data back as well as providing guidance on specific sectors can manage access to their own sector-based databases.

The health sector has implemented several data management strategies, including SOPs outlining the steps for collecting, handling, storing data, validation procedures (verification of the accuracy and completeness of health data prior to data entry system), and backup recovery plans. The HIIRE TWG sub-committee on health data ensures that all data handlers and processors consistently follow the data management guidelines.

No sector has formally adopted and/or contextualized any international data management standards. However, there are ongoing efforts within the health sector to use and contextualize some data management standards, including; SNOMED, LOINC, and ICD 10.

National Data sharing: To promote data sharing and use the national level, NITA-U has implemented an open source Data and Application Integration Platform named UGhub. The [UGhub Systems And](#)

[Data Integration Platform](#), which is built over the "WSO2" technology stack, is hosted within the Government of Uganda Data Center. Its platform is vendor-neutral and can integrate any system regardless of the technology it runs on. In addition, the platform provides capabilities to consume services from other entities and avail services to others. Over 70 institutions, including 37 public and 48 private entities, have been connected to UGhub. The UGhub is one key initiative to encourage sectors to use data from their own and other sectors.

The Government of Uganda, through NITA-U, has also developed frameworks and enacted policies to promote secure data sharing nationally. In 2021, Uganda established the [GoU eGovernment Web Application Security Architecture Framework](#) (WASA) to protect information held by web-based digital platforms. WASA helps to counter cyber threats such as system compromise and data leakage. The WASA framework supports two scenarios:

- Guidance for developing new secure web applications applying the security-by-design principle from scratch
- Guidance on validating security controls of existing web applications (i.e., security assessment/auditing, security/penetration testing).

Sectoral Data Sharing: All sectors reported sharing data internally and with each other. It is a key requirement for every system being procured/developed by MDAs/LGs, including NITA-U, to have Application Programming Interfaces (APIs) for data sharing. For example, the education sector reported an API to integrate the Education Management Information System (EMIS) with the National Identification Registration Authority (NIRA) and Uganda National Examination Board (UNEB). Also, health sector participants indicated existing APIs between DHIS2 and other systems (e.g., Uganda EMR and RX solution). It was, however, reported that the sectors also shared data manually using flash discs, Excel, and CSV files.

No sector reported the existence of a sector-based ESB, but the health and education sectors were reported to be in the final stages of implementing them. All electronic data sharing was said to be taking place through UGhub. NITA-U has signed over 100 Memoranda of Understanding (MoUs) with various MDAs to facilitate data sharing at the UGhub platform. It should, however, be noted that NITA-U facilitates data sharing that happens on the UGhub. Any other form of data sharing is handled on a one-by-one basis. Data custodians are required to evaluate the risk associated with data sharing prior to granting and denying permission.

Uganda-EAC Data Sharing: Participants at the national consultation reported that the health sector shares aggregated data on the outbreak of epidemics with the EAC in an ad hoc way when needed, but there is no formal or digitized system supporting it. Uganda does share negative COVID-19 results through EAC's system for tracking cargo across the region, the Regional Electronic Cargo and Driver Tracking System (RECDTS). For this application, a user login is issued for MOH -Uganda to enter data directly to the system.

Trade shares export and import data to facilitate assessment, taxation, and the collection trade related fees to the [EAC Single Customs Territory](#), this a digital platform designed to enhance clearance and movement of goods across the region.

Education and Agriculture/Climate do not share data with the EAC, COMESA, and SADC. There are, however, plans for some sectors to share data with EAC, COMESA, and SADC via the Tripartite Transport Registers and Information Platform System (TRIPS).

Data centers and infrastructure. Uganda has a [Tier III National Data Center](#) that is equipped with state-of-the-art technology for centralized hosting services, disaster recovery services, and other data center services. The health sector maintains its own data center and uses the national data center as backup, while other sectors, such as education, agriculture and trade among others primarily use the national data center.

RELEVANT PRIORITIES AND ASSETS FOR A REGIONAL DIGITAL PLATFORM

Country-level assets and resources can offer critical foundations for the development of a regional platform following an enterprise architecture approach. This section provides a snapshot of several types of such assets, including:

- **Key strategic documents** that outline EA resource documents that may serve as models for the region, as well as any sector-specific priorities that can inform selection of use cases for the platform.
- **Existing applications** already in use in-country that could be considered for further scale-up or inform similar regionally relevant applications.
- **Tools or building blocks** that can support future application development such as:
 - resources for **creating interoperability** between digital system such as registries, data dictionaries, and interoperability frameworks
 - resources to **support sharing of data across systems** including data sharing protocols, data standards, and data security standards
 - **infrastructure that could support existing and future digital applications** including data warehouses, data centers, and relevant infrastructure standards that may be helpful for harmonizing infrastructure-sharing agreements.

The tables below captures assets at a national, sector-agnostic level, as well as those within specific sectors.

Sector-Agnostic Resources

Asset	Details
Overarching guidance for e-Services applicable to all sectors	

Government Interoperability Reference Architecture (GIRA)	<p>The GIRA can be used for achieving interoperability within each sector through the development of a sector-specific interoperability architecture framework. Future frameworks should be compatible with the GIRA, and where necessary, extend the scope of the GIRA to capture the specific Architectural Building Blocks of the domain in question.</p> <p>GIRA in Uganda is however narrower than EA reference documents in Rwanda, Kenya and Tanzania as it only focuses on interoperability. It does not focus on other eGovernment challenges such as duplication, fragmentation and business-IT alignment.</p>
Government Digital Strategy (GDS)	A strategy to develop a comprehensive government enterprise architecture, as the GIRA only addresses interoperability. The GDS will guide the development of robust architectures across the sectors.
e-Government Master Plan	The e-Government Master Plan was drafted in 2020 and is intended to position Uganda as the leading e-Government model in Africa. The plan was not approved though it has been confirmed for a review and update will occur within the next 2 years.
Tools to support the development of digital services and applications	
Data Management Resources	NITA-U(National Databank Regulations) 2019
Interoperability Frameworks	Uganda e-Government Interoperability Framework(e-GIF) . The e-GIF defines guiding principles for interoperability but has no operational guidelines.
Data Security	GoU eGovernment Web Application Security Architecture Framework(WASA) provides standards for running all applications in government.
Data Servers and Centers	The Tier III National Data Center is fully equipped with state-of-the-art technology for centralized hosting services, disaster recovery services, and other data center services for government applications & data.
Technology Infrastructure	UGhub Systems and Data Integration Platform : UGhub is a vendor-neutral platform with the capability to integrate any system regardless of the technology it runs on.

Agriculture & Climate

*Assets from the agriculture and climate sectors are combined in the table below given that climate change and adaptation activities are often related to agriculture objectives and climate is relatively nascent as a sector. Where there were any specific assets related to climate change or adaptation reported, they are highlighted in green below.

Asset	Details
Sector-specific digital priorities and strategies	
Agriculture Sector Strategic Plan (ASSP) 2015/16-2019/20	The Agriculture strategic plan emphasizes the need to leverage ICTs to improve accessibility, usability and dissemination of agriculture statistics.
Services and capabilities prioritized for digitization	<p>Use cases prioritized by the sector for digitalization include:</p> <ul style="list-style-type: none"> • Geo Information management • Livestock market information management • Food security information management. • Weather information management <p>These have been agreed upon by the sector and NITA-U and are formally documented on the NITA-U website.</p>
Notable digital applications	
Online certification fisheries exports system	The web application allows fish farmers to certify their products.
Total Solutions Automatic Weather Stations (TSAWS)	The system provides improved weather reports, issues early warnings for fast-acting lightning storms, connects Uganda with regional monitoring systems and improves the country's overall sustainability of investments in climate information services.
Tools to support the development of digital services and applications	
Registries	<ul style="list-style-type: none"> • Farmer Registry: collects farmer profile data, e.g., names, national ID number, household composition, and farming enterprises to include Livestock, Crop, and Fisheries.
Digital Management Resources	Relies on resources from NITA-U (see above).

Interoperability Platforms or Frameworks	
Data Standards	
Data Sharing Mechanisms	A MoU between MAAIF and NITA-U that enables the sharing of data with other MDAs through the Data Integration Hub.
Sector-Specific Technology Infrastructure	<p>Data Centers and Servers</p> <ul style="list-style-type: none"> UGhub is hosting agriculture sector data. <p>Infrastructure Standards</p> <ul style="list-style-type: none"> Acquisition of hardware equipment is based on Guidelines and Standards for Acquisition of IT Hardware & Software for MDAs.

Health

Asset	Details
Sector-specific digital priorities and strategies	
Ministry of Health Strategic Plan 2020/21 - 2024/25	The MoH Strategic Plan has been developed in line with Uganda's Vision 2040 which emphasizes the need to leverage ICTs to improve service delivery.
Digital Health Strategy	The health sector has a draft digital strategy under review. The sector is guided by the expired Uganda National eHealth strategy 2017-2021 .
Digital Health Enterprise Architecture Framework (DHEAF)	The DHEAF has only recently been formally approved by senior MOH management, and is not publicly available.

<p>Services and Capabilities Prioritized for Digitization</p>	<ul style="list-style-type: none"> • Public health facilities' IHMIS reporting and analytics • Patient management • Placing, servicing, and tracking drug orders by public health facilities <p><i>These have not been formally approved.</i></p>
<p>Notable digital applications</p>	
<p>National Medical Stores ERP system</p>	<p>This solution manages and tracks the drug stock inventory received and distributed by National Medical Stores.</p>
<p>Integrated Health Management Information System</p>	<p>This digital platform supports routine health-related data collection at public health facilities to generate information that will improve healthcare management decisions at all health system levels.</p>
<p>District Health Information System (DHIS2)</p>	<p>DHIS2 is a free and open-source health management data platform used by multiple MOH organizations.</p>
<p>ASLM-Laboratory Information System</p>	<p>ALIS is a transaction processing system for supporting operations at a facility laboratory.</p>
<p>Tools to support development of digital services and applications</p>	
<p>Data Management Resources</p>	<ul style="list-style-type: none"> • Data management plans: available in the Ministry of Health Strategic Plan 2020/21 - 2024/25 and the Uganda National eHealth Strategy 2017-2021. • Data quality guidelines: defined for all EMRs (UgandaEMR, IHMIS, NSM ERP, mTrac). The sub-committees of HIIRE and the Division of Health Information Management ensure compliance.
<p>Interoperability Frameworks</p>	<p>The sector plans to develop a digital health interoperability framework, but no formal timeframe is set.</p>
<p>Data Security</p>	<p>Draft DHEAF defines the information security management procedures for the health sector.</p>
<p>Sector- specific Technology infrastructure</p>	<p>Infrastructure standards:</p> <ul style="list-style-type: none"> • Some technology infrastructure is in place, e.g., mandating LAN and WAN connections at all Health Centres IV and higher to collect real time data. <p>Data centers and server:</p>

	<ul style="list-style-type: none"> MOH maintains its own data center while connecting to the National Data Center for national data center backup and recovery.
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Education

Asset	Details
Sector-specific digital priorities and strategies	
Education Digital Agenda Strategy 2021 - 2025 (NDP) (Still under development)	The Agenda is aligned to Uganda's National Development Plan NDP II and III which advocate for human capital development; leveraging ICT use to improve quality learning outcomes.
Services and Capabilities Prioritized for Digitization	<p>Services and capabilities prioritized by the sector for digitalization include:</p> <ul style="list-style-type: none"> Teaching and Learning (e-Learning platforms for primary and secondary schools) School inspection (online school inspection platform) Teacher registration and collaboration Education pensioner verification Human resource data analysis
Notable digital applications	
Education Management Information System (EMIS)	Collects, monitors, manages, analyzes, and disseminates information about education inputs, processes, and outcomes.
National Examinations Management Information System (NEMIS)	Web-based solution for managing the administration of national examinations at various levels. The system automates key examination processes to create efficiency, reduce costs and improve service delivery.
Tools to support development of digital services and applications	
Registries	Learner and Teacher registry Tertiary Institutions Registry
Digital Data Collection Tools	ODK

Sector-specific technology infrastructure	<p>Data centers and servers.</p> <ul style="list-style-type: none"> • Educational data is hosted with the National Data Centre. Plans are underway to create an Education sector data center.
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Trade/eCommerce/Digital Finance

Asset	Details
Sector-specific digital priorities and strategies	
National Trade Sector Development Plan 2008/9-2012/13	The sector does not possess a current Trade sector strategy document, however the plan notes the importance of ICT to support trade and industry processes.
Ministry of Finance, Planning and Economic Development Strategic Plan 2016-2021	The Plan presents strategies for initiating innovation and technological advancement for boosting productivity. Improve technology transfer through partnerships and linkages with regional and international bodies.
E-Commerce Strategy Formulation	<p>This is a strategy formulation document to inform the E-Commerce Strategy. Broad goals related to digital transformation include:</p> <ul style="list-style-type: none"> • To increase the incomes of the people through the development and exploitation of ecommerce. • To develop sustainable and robust IT systems, applications and services associated with e-commerce. achieved by expanding the domestic and export markets for ICT products and services, increasing the gross revenue and gross value added by the sector, and increasing tax revenues raised from the ICT sector. • To increase the number of Ugandan businesses trading online by increasing the range of e-commerce products and services.
Services and capabilities prioritized for digitization	<p>Services and capabilities prioritized by the sector for digitalization include:</p> <ul style="list-style-type: none"> • Registration of cooperatives, foreign traders, MSMEs, industries and exporters • Licencing of industries • Profiling of markets, products, districts and investments • Administrative services

	<ul style="list-style-type: none"> Debt Management and Financial Analysis management
Notable digital applications	
Online Business Registration System (OBRIS)	<ul style="list-style-type: none"> Facilitates online business registration. Implemented by Uganda Registration Services Bureau (URSB) who is responsible for civil registrations, business registrations, registration of patents and intellectual property rights, and any other registrations required by law. Designed and developed by MOICT&NG under the National ICT Support Program (NIISP).
E-procurement System (e-GP)	<ul style="list-style-type: none"> A national digital procurement system for mainstream government. Implemented by the Public Procurement and Disposal Authority. Designed and developed by MOICT&NG under the National ICT Support Program (NIISP).
Integrated Revenue Administration system	<ul style="list-style-type: none"> Local government tax collection system. Implemented by the MoLG through selected local governments across the country.
eBiz system.	<ul style="list-style-type: none"> Online Investment License system. Supports online application processing for investment licenses. Implemented by Uganda Investment Authority.
Digital Tracking Solution (DTS)	Track & trace platform that sends production and importation data for specific products immediately, to both Uganda Revenue Authority (URA) and Uganda National Bureau of Standards (UNBS).
Uganda Trade Information Portal	Provides information about export, import and transit procedures.
Electronic Single Window.	Single transaction portal for licensing of timber and tobacco.
Non Tariff Barriers (NTBs) Reporting system	Web and phone based real time reporting system that will enhance reporting and resolution of NTBs
Tools to support development of digital services and applications	
Registries	None reported.

Digital Data Collection Tools	Relies on resources from NITA-U (see above).
Interoperability platforms or frameworks	
Data standards	
Sector-specific technology infrastructure	None reported.

TECHNOLOGY INFRASTRUCTURE AND WORKFORCE: COUNTRY CONTEXT AND INVESTMENTS

Uganda has a select few projects planned or underway to support additional investment in power, digital infrastructure, and workforce, as noted below.

Power and Electrification Projects

Current Context: As of 2020, [42% \(urban 69.9%, rural 32.8%\)](#) of the population has access to electricity, Uganda will need to continue to invest in power and electrification initiatives to support inclusive access to digital applications and services.

- The **Uganda Rural Electrification Project** objective is to extend electricity from the national grid to local communities currently unable to access clean energy. Project includes funds from the EU-Africa Infrastructure Trust Fund to strengthen the capacity of the Ministry of Energy's Rural Electrification Agency (REA).

Digital Infrastructure Projects

Current Context: Uganda has relatively high network coverage with [ITU's 2021](#) data indicating 85% 3G coverage, mobile-cellular subscriptions at 66 per 100 inhabitants, and active mobile-broadband subscriptions at 52 per 100 inhabitants. Uganda has several initiatives intended to accelerate investments in digital infrastructure and workforce development. These include:

- [Regional Communication Infrastructure Program \(RCIP\)](#) This five-year project is aimed at lowering prices for international capacity and extending the geographic reach of broadband networks and improving the Government's efficiency and transparency through e-Government applications.
- [Uganda Digital Acceleration Project \(UDAP\)](#): This is a five-year project implemented by NITA-U and, in its final stages, it is intended to extend the National Backbone Infrastructure (by 1500 km) to underserved districts, mainly targeting the underserved and refuge hosting districts of Uganda. The project is expected to establish tele-centers with access to ICT devices and

internet for selected Refugee Hosting Communities. In addition, the project will deploy mobile broadband in rural areas to improve voice and data services in underserved areas,

- [e-Booster Program](#): This project is championed by Uganda Communications Commission (UCC), it is intended to identify and support ICT solutions that are innovatively deploying ICT applications to solve societal challenges in the unserved and/or underserved sectors of the economy.

ICT Workforce

Current Context: All sectors reported the need to upgrade their human resource to support the development, implementation, and use of digital platforms. An ICT skills and training needs assessment conducted by NITA-U in 2021 revealed that ICT staff in almost all government sectors lacked essential skills in areas such as ICT management, strategy and policy formulation. The assessment also indicated human resource surrounding ICT project design and implementation and Enterprise Architecture skills. This is mainly attributed to a misalignment between ICT education programmes offered by academia and the ICT skills needs of the industry.

- NITA-U's **ICT Skills and Training Action Plan** aims at increasing the ICT skills gaps in the different sectors. The plan is awaiting implementation by the respective stakeholders in the ICT sector.
- The **Uganda Digital Acceleration Project (UDAP)** plans to implement a digital skills program through NITA-U to target the youth, especially females in the Refugee Hosting Districts. Additionally, NITA-U intends to collaborate with the Ministry of Education and Sports to build ICT skills in Primary, Secondary, and Tertiary institutions.