20 YEAR PROGRESS REPORT ON WSIS ACTION LINES-UGANDA

1. EXECUTIVE SUMMARY

Over the past 20 years, Uganda has made remarkable strides in its digital landscape, largely driven by the country's commitment to implementing the outcomes of the World Summit on the Information Society (WSIS). The government has crafted a conducive policy ecosystem that includes the Digital Transformation Policy Roadmap, the National Broadband Policy, and Vision 2040—frameworks that have been integrated into successive National Development Plans (NDPs I, III, and the current NDP IV).

This policy framework has catalyzed the growth of Uganda's ICT sector, with substantial progress in infrastructure and services. The number of telecommunications towers has increased from just 260 in 2002 to 5,204 in 2024. Similarly, the length of fiber optic cable has expanded from 222 kilometers in 2002 to 47,771 kilometers today, supporting an industry valued at USD 1.75 billion as of 2024. The mobile market has similarly boomed, with active subscriptions reaching 41.5 million in 2024, up from a modest 330,000 in 2002. The sector has also seen an impressive rise in the number of service providers—from 3 operators in 2002 to 23 in 2025, alongside 300 radio stations and 87 TV broadcasters.

Cognizant of the potential of ICT, the Ministry of ICT and National Guidance has developed a Digital Transformation Roadmap that identifies the key enablers to achieve the commitments set out in the Digital Uganda Vision. The roadmap therefore focuses on the how to get there whereas the Digital Uganda Vision sets the aspirations aligned to the overall national agenda set in the Vision 2040.

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

A key achievement has been the expansion of the National Backbone Infrastructure (NBI), which has significantly boosted high-speed connectivity across the country. The NBI has digitized over 76% of public services, impacting more than 5,000 government offices nationwide, thus improving service delivery to Ugandans.

The Uganda Communications Universal Service and Access Fund (UCUSAF) has played a pivotal role in reducing the digital divide in Uganda, evolving through three strategic phases. In UCUSAF I (2002–2008), the focus was on extending voice access to underserved rural areas. This phase resulted in the establishment of 90 GSM masts, over 4,000 public payphones, and ICT facilities in schools and health centers, raising national voice penetration to 70%.

UCUSAF II (2009–2016) built on this foundation by introducing basic internet access, with an emphasis on public access points at the district level. This phase led to the establishment of 542 new ICT school labs and 19 digital TV broadcasting sites. In UCUSAF III (2016–2023), the emphasis shifted towards promoting the usage of broadband and integrating ICTs into socio-economic sectors like agriculture, education, and trade. This phase saw the establishment of over 300 new ICT school labs, public Wi-Fi hotspots, and targeted digital skilling programs aimed at marginalized groups, including women, youth, and persons with disabilities.

Despite these achievements, several challenges remain. Approximately 7 million Ugandans still lack access to ICTs and the associated benefits. These challenges are often linked to poverty, with 7 million people living below the poverty line.30% of Uganda's passive infrastructure serves only 46% of the population, highlighting significant gaps in coverage. Limited access to electricity is another key barrier, as only 25% of the country has reliable electricity access. The lack of affordable smartphones, compounded by a 40% levy on smartphones, further exacerbates digital exclusion. 40% of Uganda's internet traffic is dominated by social media and content streaming platforms, rather than by productive, value-added use cases such as e-commerce, e-government, and digital health.

In response to these challenges, Uganda's focus moving forward is on addressing infrastructure gaps, particularly in the northern and northeastern regions of the country, which remain underserved. The government is also prioritizing solutions for the country's electricity challenges, with an eye toward increasing rural electrification. UCUSAF's upcoming phase will focus on driving digital inclusion by emphasizing digital skilling, promoting affordable smartphones, and building infrastructure in hard-to-reach areas. In particular, the goal is to ensure that underserved populations—especially in rural and poverty-stricken regions—are not left behind in the country's digital transformation. These efforts aim to bridge the digital access and usage gaps, equipping Ugandans with the tools and skills to harness the benefits of ICTs and propel the country toward its digital future.

2. PROGRESS ON WSIS ACTION LINES

2.1 Action Line C1: The role of governments and all stakeholders in the promotion of ICTs for development

2.1.1 Achievements

a. Policy Frameworks and Regulatory Reforms:

Through the Ministry of Information, Communication and Technology (ICT) and UCC, the Government of Uganda launched a Digital Transformation Roadmap in 2023 to accelerate digitalization across five pillars: digital infrastructure, digital services, cybersecurity, digital skilling, and innovation. The roadmap's alignment with the African Telecommunications Union Master Strategy (ATMS) has enabled Uganda to secure international partnerships, including UNDP's support for scaling Digital Public Infrastructure (DPI) like interoperable e-payment gateways and digital ID systems. Aligned with the African Telecommunications Union, this policy secured $200 million from the World Bank for rural connectivity and e-governance.

- It is noteworthy that, The National Information Technology Authority (NITA-U) was honored with the World Summit for Information Society (WSIS) Digital Service Design Prize 2024 for its outstanding UGPass project. The award was presented to Amb. Marcel Tibaleka, the Permanent Representative of Uganda to the United Nations and other international organizations in Geneva. UGPass is a digital authentication and electronic signatures solution that enables fast, convenient, and secure online document signing and sealing, thereby creating digital trust.

- It aims to improve trust, security, and efficiency within Uganda, demonstrating remarkable integration and impact across various sectors.

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

- The Uganda Communications Commission (UCC), the regulator of the ICT sector has spearheaded a number of initiatives, driven by executing its mandate in the Uganda Communications Act 2013 in the realm of resource management, licensing, competition, market liberalization among others over the years. These efforts are aimed at among others enhancing service availability, investment promotion, consumer protection as well as promoting efficiencies. These include;

- Significant progress and participation in a wide range of areas related to advancing freedom of expression and access to information through the

Access to Information Act,2005 and enabling legislation. Specifically, UCC has explored the impact of emerging issues, such as artificial intelligence (AI), the Internet of Things, big data and block chain on freedom of expression and privacy in the digital age.

- A framework for mobile network coverage assessment of the vast number of licensees framework established in 2024 to transition the country from universal connectivity to meaningful connectivity.

- Migration from Analogue to Digital Terrestrial Television Broadcasting to respond to global industry commitments and movements

- A Test Bed for Emerging & Future Technologies as a flagship initiative to drive innovation in IoT, AI, 3D printing, and other advanced technologies to foster innovation.

- Digital Identity/SIM Registration In line with the growing need for clear and consistent digital identities.

- Cybersecurity: Considering growing cyber threats to critical communications infrastructure, the Commission with support from the International telecommunications Union (ITU) established a Computer Emergency Response Team (CERT) and a Digital Financial Services Laboratory to support and sustain Digital Financial Services. The CERT has since been accredited to the FIRST- a global forum of incidence response and security teams and has undertaken a series of capacity building programs for the industry.

- Data Protection and Privacy Laws and Regulations are in place to support the emerging concerns and risks around protecting consumer and entity data in the ICT ecosystem of Uganda.By fostering trust in digital systems and implementing transparent regulations, we can build a safe and secure digital environment for our citizens and businesses.

- Participation in AI Policy Framework Formulation for Uganda which will encompasses various guidelines and principles aimed at governing the development and use of artificial intelligence.

- Other regulations include;
    - Access to Information Act ,2005
    - Computer Misuse Act.2011
    - Electronic Transaction Act,2011
    - The Competition and Accounting Regulations of 2019
    - The Equipment and Type Approval Regulations of 2019
    - The Fees and Fines Regulations of 2019
    - The Intelligent Network Monitoring System Regulations of 2019
    - Interconnection and Access Regulations 2019
    - Licensing Regulations 2019
    - Pricing and Account Regulations 2019
    - Quality of Service Regulations 2019
    - Universal Service Regulations 2019

- Regulation of Interception of Communications Regulations ,2024

b. Public-private partnerships: The UCC collaborates with the industry in running inter industry engagements to enable sector sustainability, most recently approving infrastructure sharing agreements between the big two operators in Airtel and MTN. The Commission has also enabled Foreign Direct Investment worth USD 225 Million into one of the key state telecom players in UTCL from Rowad Capital Commercial (UAE).

c. Digital Inclusion initiatives: UCC, through its Uganda Communications Commission Universal Service Access Fund has been undertaking various interventions towards bridging the ICT connectivity and usage gap in the underserved and underserved areas. Its key areas of focus include; broadband connectivity, enhanced usage of ICTs including among marginalized communities like PWDs, Research and advocacy among others. To date, achievements overtime include;

- Establishment of over 1,395 ICT laboratories and 219 Health facilities covering over 95% of government aided secondary schools, tertiary institutions and universities.

- Provided a dedicated Internet Link from 256Kbps to 5Mbps to supported 180 Secondary Schools. UCC is meeting 100% costs of installation and subsidizing cost of bandwidth over the first 3 years

- Provision of digital science content in secondary schools with ICT laboratories to support training of science subjects in schools in Uganda

- Retooled over 5000 teachers and lab assistants through the teacher retooling program conducted in partnership with Ministry of Education and Sports.

- Equipped over 50,000 citizens with basic ICT skills through the Community ICT training conducted in partnership with local leaders and schools countrywide.

- Trained over 3,000 small and Medium enterprises countrywide in ICTs for Business. This has enabled an increase in the uptake of ICTs by these SMEs

- Established over 67 public ICT Access Centers at Post Offices and National Libraries to support access to e-government services by the local communities. These ICT Access Centres are located in areas that have formerly been ravaged by war and populations of about 4 million people living below the poverty line.

- Increased access to communication services delivered through the establishment of 150 towers, over 4000 public payphones, over 200.

- Promoting national coverage and access to digital television broadcasting services through the establishment of Nineteen (19) Digital Terrestrial Television Broadcasting sites for Uganda Broadcasting Corporation.

2.1.2 Challenges

The ICT Sector by its nature is highly dynamic. As such, policy and regulatory development in the context of African countries might not be fast paced to keep up with the new technological developments and is expensive e.g. 5G roll outs versus the cut off 2G networks which are predominant in African markets such as the Ugandan market where a vast majority of our users lie.

2.1.3 Future priorities

Uganda's ICT policy and regulatory framework is technology neutral. As such we refine our frameworks to suit the technology neutral ICT environment and move with the trends at the globe.
For instance, Strengthening global partnerships and refining our regulatory frameworks for instance cybersecurity frameworks via AI-driven fraud monitoring and blockchain verification, alongside integrating digital literacy into school curricula, will enhance resilience. Regional collaboration under initiatives like the EACO One Area Network and partnerships with global tech firms will position Uganda as a regional ICT hub, aligning with Vision 2040 to drive sustainable, inclusive growth across sectors like agriculture, healthcare, and education

We will prioritize digital literacy programs, up-skilling and re-skilling initiatives, and promote STEM education to bridge the digital divide and ensure equal opportunities.

2.2 Action Line C2: Information and communication infrastructure

2.2.1 Achievements

a. Towers
In Uganda, the number of telecom towers have grown from 260 in 2002 to 5,204 in 2024. This expansion was largely driven by the replacement of legacy sites, necessitated by aging infrastructure, environmental challenges, and evolving technological demands, especially with the rollout of 3G, 4G and now 5G services. Over 384 site expansions were accelerated following the 2023 spectrum awards in bands such as 700 MHz, 800 MHz, 2.3 GHz, 2.6 GHz, 3.5 GHz, and E-band.

b. Fiber
Dating back to 2002, the country's fiber infrastructure has grown through leaps and bounds. From 222kms of fiber in 2002, to 47,771 km in 2024. At the front of this growth has been the National Backbone Infrastructure (NBI) that has been a cornerstone of national digital transformation. The NBI has cumulatively grown to 4,387Km in 2024, enabling high-speed connectivity across all regions. This infrastructure has connected over 5,000 government offices, digitizing 76% of public services, including tax administration, land registry, and healthcare systems.

- Google, through its C-Squared entity, has laid over 1,000 km of fiber optic cable in the Kampala metropolitan area since 2015. Facebook, through its partnership with Airtel Uganda, has laid over 800 km of fiber optic cable

throughout Uganda, primarily in the northern town of Gulu. MTN Uganda, the largest telecom company in Uganda, has also laid about 6,000 km of fiber optic cable.

- The national outlay of the fiber infrastructure has also facilitated the rollout of 4G coverage to 45% of the population by 2025, up from 35% in 2023, supporting mobile internet subscriptions growth to 22.3 million users.

2.2.2 Challenges

Despite progress, Uganda faces persistent barriers. ICT access challenges such as Infrastructure inequity remains stark, with rural and poverty-stricken regions like the North and East having only 1,570 telecom towers for 21.4 million people, compared to 3,500 towers in the Central and Western region that cover the 24.5 million people in those regions. This is exacerbated by factors like

- Limited Energy Access- Electricity access remains a major barrier to tower deployment and maintenance. Only 25% of Uganda's territory has access to hydroelectric power, significantly raising the cost of powering telecom infrastructure. As a result, more than 780 network-ready sites remain non-operational due to lack of power. A comparison with regional peers illustrates the impact: Kenya, with 76% electricity coverage, has achieved 64% unique mobile access, while Uganda, at 25% electricity coverage, lags at 32% unique mobile access.

- High Rental Fees in Protected Areas - Telecom operators incur substantial costs to deploy infrastructure in ecologically sensitive areas managed by the Uganda Wildlife Authority (UWA) and the National Forestry Authority (NFA). These agencies charge monthly rental fees of USD 20,000 and USD 15,000 respectively. While this ensures adherence to environmental standards, it inflates per-site costs to an estimated USD 420,000—deterring investment in low-population, non-commercial areas where connectivity is nonetheless essential.

- Sector Taxation- The telecom sector is one of the top contributors to national revenue, with two operators consistently ranked among Uganda's top five taxpayers. However, the tax regime significantly affects the cost of doing business. Taxes are levied on multiple service components—including voice, data, and infrastructure. Notably, a 35% import duty on galvanized steel, a key material in tower construction, drives up capital expenditure, eventually increasing end-user service costs due to tax pass-through.

- Uganda's Landlocked Position and International Connectivity Risks - Uganda's inland, landlocked position necessitates routing international internet traffic through neighboring coastal countries, primarily via undersea fiber cables in Kenya through Malaba, facilitated by licensed operators.

- Commercial Viability vs. National Coverage Obligations - Operators tend to prioritize densely populated areas where returns on investment are

higher. For example, the Kampala and Buganda sub-regions—home to approximately 12.9 million people (30% of Uganda's population)—have seen rapid fiber rollouts compared to the other regions.

2.2.3 Future priorities

i. Development of Alternative Fiber Routes - To enhance network resilience, Uganda is exploring the adoption of a ring architecture for fiber infrastructure. This design enables automatic rerouting of data traffic in the event of cable cuts or equipment failure, thereby reducing downtime. The Uganda Communications Commission (UCC) is working on alternative routing strategies, including pathways through Tanzania and integration with the East African Crude Oil Pipeline Project (EACOP). These redundancies will help safeguard against single points of failure in the international connectivity chain.

ii. Focused Investment in Northern and North-Eastern Regions - The Government of Uganda (GoU) is intensifying efforts to close the infrastructure gap in underserved areas. Phase V of the National Backbone Infrastructure (NBI) project will expand broadband access to remote parts of the North and North-Eastern regions. Installation of 5,845 kilometers of additional optical fiber.

iii. Enabling Satellite Broadband Services - While terrestrial networks remain central to Uganda's broadband strategy, the country is also preparing for the entry of satellite broadband providers as a complementary solution, especially for hard-to-reach areas. Major global players such as Amazon Kuiper and SpaceX's Starlink are already operational in neighboring countries including Rwanda, Kenya, and South Sudan. To accommodate this emerging technology, the UCC has updated its Satellite Licensing Framework and is finalizing a Satellite Landing Rights Authorization. This move will allow new entrants into Uganda's broadband market, improving service coverage and enhancing network redundancy.

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

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

vi. Develop the digital addressing platform to enable last mile delivery of physical goods, parcels and documents which is a missing link.

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

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

ix. Support community networks through tools such as license exempt spectrum and design alternative spectrum models to encourage innovation.

x. Development and implementation of the National Big Data Strategy.

2.3 Action Line C3: Access to information and knowledge

2.3.1 Achievements

The Uganda Communications Universal Service Access Fund (UCUSAF) formerly Rural Communications Development Fund (RCDF) has existed since 2001. It was majorly setup to contribute to the realization of universality in access and use of communications services in Uganda through establishment of communications projects in areas that are non-commercially viable i.e. left unserved or underserved by the market operations.

Over three cycles RCDF I (2003 – 2009), II (2010 – 2016) & III (2017 – 2023), it has evolved to become UCUSAF, with a broader mission of achieving digital inclusivity beyond rural and urban demographics. Below is a snapshot of supported initiatives around access to information and knowledge;

a. Digital Skilling Initiatives implemented under UCUSAF (2020/2021 to date)

Thematic Area	**Districts**	**Trained beneficiaries**
Digital skilling for SMEs (Regional)	15	11000
Digital Literacy for the Elderly	23	2,444
Digital Literacy for Women	60	12,189
ICT & Multimedia for Youth	40	4,290
Digital Literacy for Rural Communities	60	10,425
Digital Literacy for Teachers (regional)	8	1400
Digital Literacy for Farmers	50	5,471
	Grand Total	**17,772**

b. Digital Usage using Smartphones

- Most recently, the initiatives above have been supported by the distribution of over 4,500 subsidized smartphones across 23 districts across the country. This has enabled digital adoption to e-commerce platforms like Jumia and digital financial services across the country.

- Public access initiatives, such as UCC's Test Bed for Emerging Technologies, equipped with free IoT sensors, AI workstations, and 3D printers, have empowered innovators to develop skills and solutions like AgriTech apps for smallholder farmers.

- Educational content initiatives such as access improved through partnerships with Showmax and Pearl Magic Prime, which streamed local content like the award-winning TV series Damalie to over 1 million households on smart devices.

2.3.2 Challenges

- Affordability – Affordability remains a hurdle as 1GB of data costs $1.34 compared to Rwanda's $0.76, and only 40% of the population owns smartphones. Rural areas lag, with 35% of households lacking electricity to power devices, and the North's tower density (839 towers for 7.1 million people) trailing the Central region's 2,330 towers. Content relevance is another issue, as foreign programming dominates 80% of pay-TV channels.
- Use Cases – the country is largely dominated by a population below 18 years of age. As such, the most appealing internet use cases and information knowledge base is social media which accounts for 42% of the total internet traffic. Lack of able government internet knowledge bases present online predatory risks even though there are digital adoption opportunities.

2.3.3 Future priorities

- Uganda has enshrined building knowledge and access to information through a policy level. The UCUSAF Strategy (2023-2028) has highlighted key programmes that will drive the access to and usage of information through;
- Undertaking basic digital literacy trainings for different target groupings such as the youth, women, Small and Medium Enterprises, Persons with Disabilities, Farmers, and Teachers, among others.

- Implementing mobile digital literacy programs

- Implementing cyber security awareness and online safety program alongside the basic digital literacy program.

2.4 Action Line C4: Capacity building

2.4.1 Achievements

Uganda has prioritized capacity building as a pillar of its digital transformation, achieving notable milestones through targeted training and innovation ecosystems in all technology facets including broadcasting and telecommunications.

In the film industry, the Uganda Communications Commission (UCC) spearheaded regional workshops in Arua, Gulu, Mbale, and Mbarara, training 1,231 broadcasters and filmmakers in 2024 on broadcasting standards, film licensing, and copyright laws. A standout initiative is the Women in Film Empowerment Program in Gulu, where 1000 women received hands-on training in documentary

production, resulting in films like Down Cast and Bulola, which preserve cultural heritage and generate local employment.

Additionally, UCC sponsored filmmakers like Edris Lubeqa and Penny Nampanga to attend the Cairo International Film Festival, fostering global collaborations. These efforts elevated digital literacy rates to 48% in 2024, up from 35% in 2020, with over 1,500 graduates from institutions like Kampala Film School and Proline Film Academy entering the ICT sector annually.

2.4.2 Challenges

Limited scalability persists, with over 1000 women trained in Gulu against a national female population of 23.5 million. Rural areas remain underserved, as 65% of training programs are urban-centric, and electricity gaps in 35% of rural communities hinder practical ICT application. Gender disparities endure, with women constituting only 25% of ICT professionals.

2.4.3 Future priorities

Expanding the Women in Film Program to 10 districts by 2026, targeting 1,000 female participants annually, and integrating ICT skills into primary and secondary curricula through partnerships with the Ministry of Education. UCC plans to deploy mobile training vans equipped with solar-powered labs to reach 50 remote districts by the end of 2025. Strengthening partnerships with global bodies like the ITU and GSMA will enhance funding for vocational training centers, while the UTCL-Rowad Capital partnership aims to establish a national digital innovation hub. By prioritizing gender equity, rural access, and curriculum reform, Uganda seeks to achieve 70% digital literacy by 2030, ensuring inclusive growth in the digital economy.

2.5 Action Line C5: Building confidence and security in the use of ICTs

2.5.1 Achievements

Uganda's ICT sector has made significant strides in fostering trust and security, as evidenced by robust infrastructure growth and enhanced consumer protection mechanisms. The Uganda Communications Commission has a fully-fledged Computer Emergence Response Team that is FIRS-Certifed, supported by the ITU backed Digital Financial Services lab and a free-to-access Test bed for emerging technologies.

By the fourth quarter of 2024, mobile money registered subscriptions had surged to 50.5 million, up from 45.6 million in the third quarter, with 2.15 billion transactions recorded, reflecting growing trust in digital financial services. In 2024, telecom operators resolved 870,962 complaints, 94% of total complaints within 24 hours, reflecting improved responsiveness. The complaints-to-subscriptions ratio remained stable at 2.2% (2023–2024), indicating effective scaling of grievance redressal systems despite rising subscriptions of 41.8 million in 2024.

Fraud-related complaints saw targeted interventions, with resolutions increasing from 46,594 in 2023 to 63,719 in 2024, supported by stricter SIM registration

policies and mobile money safeguards. Mobile money security was strengthened, with active 90-day subscribers growing to 32.1 million in 2024, while transaction values surged to UGX 271.3 trillion, up 43.6% from 2023, underscoring user confidence.

2.5.2 Challenges

Despite progress, challenges persist. Fraud cases especially in the Digital Finance eco system escalated by 36.8% between 2023 and 2024, highlighting gaps in real-time detection systems. Further, Complaint resolution slowed for complex issues, with 678 cases unresolved for over 30 days in 2024.

2.5.3 Future priorities

Future priorities include deploying AI-driven fraud monitoring, reducing resolution times for escalated complaints, and expanding 4G coverage to underserved regions. Strengthening public-private partnerships for cybersecurity framework gaps. Enhancing consumer literacy programs and Digital Identity mechanisms are critical to sustaining trust in Uganda's ICT ecosystem.

2.6 Action Line C6: Enabling environment

2.6.1 Achievements

Uganda has cultivated a robust enabling environment for ICT growth through progressive regulatory reforms and strategic partnerships. The key policy and regulatory reforms developed are highlighted in section 2.1.1(a) above. Further, the UCC conducts key market assessments that enable it execute its mandate to enable market sustainability and predictability. Some of these include;

The Telecom Market Definition and Assessment Study 2024 identified monopolistic bottlenecks and recommended reforms to spur innovation, leading rural fiber and tower deployments in the telecom sector.

Uganda has built an eco-system to promote public-private partnerships that are. transformative. For instance, the UTCL-Rowad Capital agreement that has revitalized Uganda Telecom, expanding fiber connectivity to 15 border districts, and enabling cross-border trade as well as UCC's Test Bed for Emerging Technologies that has provided startups with free access to AI, IoT tools, and datasets, incubating 45 ventures.

2.6.2 Challenges

The ICT Sector by its nature is highly dynamic. As such, policy and regulatory development in the context of African countries might not be fast paced to keep up with the new technological developments and is expensive e.g. 5G roll outs versus the cut off 2G networks which are predominant in African markets such as the Ugandan market where a vast majority of our users lie.

2.6.3 Future priorities

For instance, Strengthening global partnerships and refining our regulatory frameworks for instance cybersecurity frameworks via AI-driven fraud monitoring and blockchain verification, alongside integrating digital literacy into school curricula, will enhance resilience. Regional collaboration under initiatives like the EACO One Area Network and partnerships with global tech firms will position Uganda as a regional ICT hub, aligning with Vision 2040 to drive sustainable, inclusive growth across sectors like agriculture, healthcare, and education

2.7 Action Line C7: ICT applications: E-government, e-business, e-learning, e-health, etc.

2.7.1 C7. E-Government

Achievements

Uganda's e-government initiatives have transformed public service delivery, with 76% of government services digitized by 2024. Platforms like eCitie streamlined processes such as birth registration and business licensing, reducing processing times by 60%. The National Backbone Infrastructure (NBI) connected 5,000 government offices, enabling real-time data sharing and interoperability. To bridge rural gaps, USSD-based services were introduced, allowing 2 million citizens without internet access to interact with government systems via basic mobile phones.

Challenges

Despite progress, 35% of rural government offices lack reliable connectivity, hindering service accessibility. Public awareness remains low, with only 40% of citizens utilizing digital platforms due to literacy barriers and mistrust. Fragmented systems across ministries also delay seamless data integration

Future priorities

Uganda's Fourth National Development Plan (NDP IV) for the period 2025/26–2029/30 integrates digital transformation as a central strategy to modernize the economy and improve public service delivery. The ICT sector plays a pivotal role in this transformation, with several key focus areas outlined in the Digital Transformation Roadmap (2023–2028).

For the next 5 years the Key Focus Areas for the ICT Sector Under Digital Transformation include;

- Expansion of high-speed broadband networks, including fiber-optic installations and mobile connectivity, to ensure nationwide coverage.
- Development of data centers and cloud computing capabilities to support digital services and data storage needs.

- Integration of advanced technologies such as 5G and satellite communication to future-proof the nation's digital infrastructure
- Digitization of public services to improve efficiency and accessibility for citizens.
- Strengthening / building appropriate cyber security and data protection capabilities.
- Empowering Digital Skills and Literacy targeting various groups, including marginalized populations, to ensure equal opportunities for all
- Creation of a conducive environment for innovation and entrepreneurship through the promotion of research and development (R&D) and startup incubation.
- Enhanced security of digital online services.

2.7.2 C7. E-Business

Achievements

E-business in Uganda has surged from 9 million registered subscribers back in 2009 to the 50.5 million registered users in 2024. The growth has been driven by annual growth in mobile money transactions that have grown from 399 million transactions back in 2009 to 2.5 billion transactions in 2024. E-business has largely been driven by the adoption of Digital Financial Services – mobile money as well as a burst of fintech, with a digital financial sector cross regulated by Bank of Uganda as well as the Uganda Communications Commission. Platforms like Jumia Uganda reported a 25% rise in rural e-commerce orders, reflecting growing trust in online markets

Challenges

High transaction fees averaging 349 UGX per transfer deter small businesses, while limited digitization persists as only 15% of SMEs use online payment systems. Cybersecurity concerns and fraud incidents further erode confidence in digital transactions. Further, smartphone penetration that facilities online payments at agent points is still low with only 18.4 million smartphones compared to the other 30 million handsets in the market.

Future priorities

Regulatory reforms aim to reduce transaction fees by 20% and promote QR-code payments for informal sectors. Strengthening cybersecurity frameworks and expanding SME-focused digital training programs will enhance adoption.

2.7.3 C7. E-Learning

Achievements

Uganda's e-learning initiatives have expanded access to education through innovations like UCC's 3D mini theatre in Kampala, which delivered interactive STEM content to 50,000 students. Partnerships with Showmax and Pearl Magic Prime streamed educational series like Damalie to 1 million households, while Kampala Film School trained 1,500 graduates in digital content creation.

Challenges

Connectivity gaps plague 60% of schools, and device shortages persist, with a 1:50 student-to-tablet ratio in public institutions. Limited teacher training in digital tools further hampers effective e-learning implementation.

Future priorities

Uganda plans to deploy offline e-learning kits to 1,000 schools via partnerships with Eneza Education and to integrate ICT skills into the national curriculum by 2025. Solar-powered digital labs will target remote regions.

Development of the digital skilling pilot program. The design of the pilot program will in addition address the following key aspects: a) Inclusion of people with disabilities; and b) Inclusion of the girl child.

2.7.4 C7. E-Health

Achievements

Telemedicine pilots in Kampala clinics reduced diagnostic delays by 50% for rural patients, while SMS-based disease surveillance systems alerted 10,000 health workers during outbreaks. Mobile health apps improved maternal care tracking in 20 districts

Challenges

Fragmented systems lack a national e-health framework, and 70% of rural clinics face shortages of digital tools. Electricity and internet gaps disrupt service consistency.

Future priorities

A national telemedicine platform will launch by the end of 2025, alongside training for 5,000 health workers in digital diagnostics. Solar-powered health kiosks will expand access to underserved communities.

2.7.5 C7. E-Employment

Achievements

UCC's Test Bed for Emerging Technologies incubated 45 startups, creating 500+ jobs in AI, IoT, and AgriTech. The Women in Film Program trained 37 women in Gulu, linking them to film industry opportunities, while partnerships with global tech firms like Andela upskilled 200 youth

Challenges

Gender disparities persist, with women comprising only 25% of ICT professionals. Youth unemployment remains high, as 65% of graduates lack industry-aligned digital skills

Future priorities

Scaling vocational hubs in refugee settlements and partnering with Andela to train 1,000 software developers by 2026 will address skill gaps. Gender-focused programs aim to double female ICT participation by 2027.

2.7.6 C7. E-Environment

Achievements

Solar-powered towers reduced diesel dependency by 30% in off-grid areas, while e-waste recycling pilots collected 5 tons of devices in Kampala. IoT sensors deployed in national parks improved wildlife monitoring.

Challenges:

Limited scalability restricts solar initiatives to 100 towers, and the absence of e-waste regulations exacerbates environmental risks. Funding gaps hinder green tech adoption.

Future Priorities:

Installing 1,000 solar-powered towers by 2027 and enacting e-waste laws mandating producer responsibility will drive sustainability. Public awareness campaigns on eco-friendly tech will complement these efforts.

2.7.7 C7. E-Agriculture

Achievements

SMS-based weather alerts reached 500,000 farmers, enhancing crop planning, while AgriTech apps like solar irrigation systems boosted yields by 25% for 5,000 farmers. The AgriTech Kiosk Initiative provided real-time market prices to 200 rural communities.

Challenges:

Only 15% of farmers use digital tools due to low literacy, and 60% of rural areas lack 3G/4G connectivity. Limited funding restricts scalability.

Future Priorities:

Deploying 100 AgriTech kiosks with UCUSAF funding and mandating carrier-neutral SMS for weather alerts will broaden reach. Partnerships with telecoms to expand rural coverage are critical.

2.7.8 C7. E-Science

Achievements:

UCC's Test Bed fostered innovations like AI-driven soil sensors, adopted by 200 agronomists. Collaborations with the Cairo International Film Festival enabled tech-driven storytelling, while open datasets supported academic research.

Challenges:

R&D investment stagnates at 0.5% of GDP, and weak academia-industry linkages limit the practical application of research.

Future Priorities:

Partnerships with MIT and GSMA will fund AI research labs, while a national open-data portal for researchers will enhance collaboration. Incentivizing private-sector R&D investment is a key goal.

2.8 Action Line C8: Cultural diversity and identity, linguistic diversity, and local content

Achievements:

Uganda has made significant strides in promoting cultural diversity and identity through building the film and local content industry, driven by policies and initiatives that celebrate indigenous heritage.

The Uganda Communications Commission (UCC) has been instrumental in fostering local film and media production, evidenced by award-winning films like Memories of Love Returned (2024), which won Best International Documentary at AFRIFF, and The Last Shoemaker (2023), which clinched accolades at AMAA and the Uganda Film Festival. These films highlight Uganda's cultural narratives, such as traditional photography in Mbirizi and artisanal craftsmanship, preserving intangible heritage.

The Women in Film Empowerment Program, conducted in Gulu, trained 37 women in documentary storytelling, resulting in films like Down Cast and documentaries on Malakwang, a traditional dish, and Bulola, a royal dance, amplifying grassroots cultural expressions. Linguistic diversity has been supported through 474 licensed radio stations, many broadcasting in local languages like Luganda, Runyankole, and Acholi, ensuring marginalized communities access information in their mother tongues.

UCC's Content Development Support Program (CDSP) funded films like Janani, The Last Stand (2024), which premiered nationwide, blending folklore with contemporary themes. Additionally, partnerships with festivals like Mashariki African Film Festival and Cairo International Film Festival have elevated Ugandan stories globally, while initiatives like the Regional Workshops for Filmmakers in Arua, Gulu, Mbale, and Mbarara have trained 1,231 creatives in cultural storytelling and copyright laws.

Challenges:

Foreign content dominance plagues pay-TV platforms, where 80% of channels air international programs, overshadowing local productions. Linguistic diversity is underutilized in digital spaces, with only 15% of online content available in Ugandan languages. Funding gaps hinder small-scale filmmakers, while piracy erodes revenue for local creators. Rural areas lack the infrastructure to produce and distribute content, limiting cultural representation.

Future priorities:

Enforcing 40% local content quotas by 2027 for broadcasters and streaming platforms, expanding the CDSP to fund indigenous language programming, and establishing regional cultural hubs to digitize oral histories and traditional art forms.

UCC plans to partner with academia to develop orthographies for minority languages and subsidize community radio stations broadcasting in local dialects. Strengthening anti-piracy laws and creating a national digital archive for Ugandan films and music will preserve cultural assets. By prioritizing grassroots participation and policy enforcement, Uganda aims to transform its rich diversity into a global cultural export.

2.9 Action Line C9: Media

Achievements

The Uganda Communications Commission (UCC) enforced stringent content regulations under the Uganda Communications Act 2013, banning R-Rated Content while mandating permits for public events.
Local content production flourished, with 77 Ugandan films submitted to festivals, including Memories of Love Returned, which won Best International Documentary at AFRIFF, and The Last Shoemaker, awarded Best Short Film at AMAA. The TV series Damalie, aired on Pearl Magic Prime and Showmax on local Pay TV channels, won Best TV Drama at the Mashariki African Film Festival, reaching 1 million households.

Capacity-building initiatives, such as regional workshops in Arua, Gulu, Mbale, and Mbarara, trained 1,231 filmmakers and broadcasters on licensing and production standards, while the Women in Film Program empowered 37 women in Gulu to produce documentaries like Down Cast. Infrastructure expansion included 474 radio stations broadcasting in 40+ languages and 116 local TV channels, supported by partnerships with streaming platforms to amplify Ugandan content.

Challenges

Piracy and unlicensed distribution eroded revenue, with limited enforcement against digital copyright violations. Rural access lagged significantly, exemplified by only 527 subscribers for Kampala Siti Cable, like Simba TV, due to limited coverage outside urban areas, while 35% of rural radio stations lacked reliable electricity.

High production costs and low advertising revenue stifled small-scale filmmakers, exacerbating funding gaps and stifling creativity.

Future priorities

The UCC is part of a taskforce to refine the current Copy Right Law of 2006 to cater for emerging concerns around technology. It will thus combat copyright violations, while a CDSP aims to finance filmmakers and digitize oral histories. Rural expansion will prioritize solar-powered community media hubs to support off-grid radio stations and creators. The Uganda Film Festival hosted by the Uganda Communications Commission aims to co-produce content and elevate Ugandan stories internationally, ensuring the sector's sustainable growth and global.

2.10 Action Line C11: International and regional cooperation

Achievements

Uganda is one of the founding members of East African Communications Organisation – EACO. EACO brings together national ICT regulators, operators, services providers (in the telecommunication, broadcasting and postal sub-sectors), ICT training institutions and other stakeholders in the communication sector within Burundi, Democratic Republic of Congo, Kenya, Rwanda, South Sudan, Tanzania and Uganda. The broad objective of EACO is to strengthen and promote cooperation among the seven EAC Countries in the development and provision of postal, telecommunication and broadcasting services in East Africa.

Uganda has contributed to harmonized ICT policies and infrastructure sharing, such as aligning mobile money interoperability standards with Kenya and Rwanda, and most importantly implemented the directives of the One Network Area Framework which reduces the cost of communication within member states.

Challenges

Funding gaps hindered cross-border projects, with only 35% of planned EACO broadband initiatives funded. Regional disparities in infrastructure persist as Uganda's 47,771 km of fiber trails Kenya's 65,000 km, limiting seamless connectivity. Dependency on foreign investors like Rowad Capital risks uneven control over critical infrastructure. Tax regimes across the different member states have hindered the concerted effort on enabling seamless communication in the ONA framework across the region.

Future priorities

Uganda is pushing for an EACO Regional Broadband Network to harmonize tariffs and spectrum allocation, through the East African Community. Uganda plans to leverage ITU's cybersecurity frameworks to secure cross-border digital transactions and collaborate with AfriFF to co-produce pan-African content. Strengthening ties with the African Union's Digital Transformation Strategy, the ITU and GSMA will prioritize improvements across cross country partnerships and digital adoption.

3. NATIONAL STRATEGIES AND POLICY DOCUMENTS

3.1 National Digital Strategy/Policy

The Uganda Communications Commission (UCC) has implemented several national strategies and policies to advance ICT development and digital transformation. Central to these efforts is the **Uganda Communications Commission 2020-2024 Strategic Plan**, titled ***"An Inclusive Digital Economy,"*** which aligns with national frameworks like Vision 2040, the Third National Development Plan (NDP III), and the Digital Uganda Vision. This plan emphasizes building a robust communications sector to drive economic growth, enhance regulatory capacity, and expand infrastructure such as fiber networks and telecom towers to underserved regions.

Additionally, the government launched the **National Digital Transformation Roadmap** in August 2023, structured around five pillars: infrastructure and connectivity like expanding broadband and 5G coverage, digital services such as digitizing healthcare, education, and government services, digital skills development like integrating ICT into education and workforce training, cybersecurity and data protection aligned with the Data Protection and Privacy Act 2019, and innovation and entrepreneurship by supporting startups and SMEs through hubs like the National Innovation Hub.

These initiatives aim to bridge the digital divide, promote financial inclusion, and position Uganda as a regional leader in digital transformation. Other key frameworks include;

- Quality of Service Regulations 2019
- Universal Service Regulations 2019
- Uganda Communications Universal Services and Access Fund (UCUSAF) 4th STRATEGY (2023/4 – 2027/28)

3.2 Strategic Documents/Plans

Key national reports or strategies that have aligned with WSIS Action Lines.

- National Development Plan (NDP) III (2020/21–2024/25): Prioritizes digital transformation, e-government, and ICT-enabled services (WSIS C7)
- ICT Sector Strategy and Investment Plan (2015–2020): Focused on infrastructure, skills, and innovation ecosystems (WSIS C2, C4, C7).
- E-Government Master Plan (2017): Aims to digitize public services, including e-taxation and e-procurement (WSIS C7).
- National Cybersecurity Strategy (2021): Enhances trust in digital systems through cybercrime prevention (WSIS C5).

- UCUSAF Strategy 4: Managed by the Uganda Communications Commission (UCC), it expands rural ICT access (WSIS C2).
- Vision 2040 (2024) which also prioritizes digital transformation, e-government, and ICT-enabled services

3.3 Implementation of WSIS Mandates

Over the past two decades, Uganda has pursued a structured approach to ICT development and digital transformation, guided by national strategies that align with the World Summit on the Information Society (WSIS) goals. The cornerstone of this effort is the National ICT Policy 2014, which aims to transform Uganda into a knowledge-based society. This policy emphasizes universal access to ICT infrastructure, digital literacy, e-government, and innovation, directly mirroring WSIS Action Lines such as expanding connectivity (C2) and building digital capacities (C4).

Complementing this is the Digital Uganda Vision 2040, embedded within the broader Uganda Vision 2040 framework, which positions ICT as a catalyst for socio-economic transformation. It prioritizes investments in digital infrastructure, skills development, and entrepreneurship to drive sectors like agriculture, healthcare, and education. Further advancing these goals, Uganda launched the National Broadband Policy 2018 to achieve universal broadband access by 2030, with a focus on rural areas and affordability.

More recently, the Digital Transformation Roadmap (2023–2040) was introduced to accelerate digital adoption across critical sectors, ensuring alignment with WSIS objectives on ICT applications (C7). These policies collectively reflect Uganda's commitment to embedding digital transformation into its development agenda, fostering inclusivity, and bridging the urban-rural divide. However, challenges such as funding gaps and uneven implementation persist, underscoring the need for sustained investment and stakeholder coordination.

Uganda's strategic documents over the last two decades demonstrate a deliberate effort to align national priorities with WSIS Action Lines.

The National Development Plan III (2020–2025) explicitly integrates ICT as a cross-cutting enabler, prioritizing e-government, digital skills, and innovation ecosystems. This aligns with WSIS Action Line C7, which advocates for ICT applications in governance and public services. Similarly, the ICT Sector Strategy and Investment Plan (2015–2020) focused on expanding infrastructure, fostering innovation, and enhancing digital literacy, addressing WSIS pillars such as access (C2) and capacity building (C4).

The E-Government Master Plan 2017 stands out as a critical initiative, digitizing over 300 government services, including tax systems (URA eTax), business registration (eCitie), and procurement processes. These efforts not only improve transparency but also advance WSIS goals on leveraging ICT for development.

Further, the National Cybersecurity Strategy (2021) tackles cybercrime and data protection, aligning with WSIS Action Line C5 (building confidence in ICT). Uganda's

UCUSAF, managed by the Uganda Communications Commission, has expanded rural access through community ICT hubs and school computer labs, directly addressing the WSIS mandate of leaving no one behind. While these strategies showcase progress, challenges such as low rural internet penetration and gender disparities in digital access highlight gaps that require targeted interventions.

Uganda has systematically incorporated WSIS mandates into its national development framework through policy harmonization, infrastructure investments, and inclusive programs.

The National ICT Policy (2014) and successive National Development Plans (NDPs) explicitly reference WSIS principles, ensuring digital inclusion is central to Uganda's socio-economic agenda. For instance, the government's National Backbone Infrastructure (NBI), a fiber-optic network spanning the country, has reduced internet costs and improved connectivity, operationalizing WSIS Action Line C2 (ICT infrastructure). To build digital capacities (C4), Uganda launched nationwide digital literacy programs, equipping schools with computers and training teachers. Initiatives like Girls in ICT and innovation hubs such as the National ICT Innovation Hub in Nakawa target women and youth, fostering entrepreneurship and narrowing gender gaps. Legal frameworks like the Data Protection and Privacy Act (2019) and the Computer Misuse Act (2011) enhance cybersecurity (C5), creating trust in digital systems.

4. KEY INDICATORS OF PROGRESS

National Census Data as of 2024	**2024**
Population	45,905,417
Number of Households	10,698,913
Population Aged 18 and Above	23,154,716
HH with elecricity as the main energy source	2,706,626
GNI Per Capita	USD 970
Telecom Market Highlights	
5G Coverage and 4G Coverage	5G – 1% 4G – 45% 3G – 71% 2G – 73%
Fiber in Kms	47,771
Fixed Internet Susbcriptions	106,797
Fixed Broadband Pricing	0.59 USD per Mbps
Sites	7,300
5G sites	738
Telecom Towers	5,204
Active Mobile Subscriptions	41,595,067
E-Government Services	76%
Unique Mobile Subscriptions	15,363,890

Active Mobile Internet Subscriptions	19,529,971 (42.5% Penetration)
5G Mobile Internet Subscriptions	1,220,508
Total Handset Count (smart, feature, basic)	47,384,471(90% Penetration)
Active Mobile Money Subscriptions	32.1 million active users (70% penetration)
Smartphone Count	18,259,226 (40% Penetration)

5. CHALLENGES AND GAPS

Key barriers or challenges the country has faced in implementing WSIS mandates and achieving desired outcomes.

1) Infrastructure Inequity across the country: 1570 towers cover 21.4 million people in the North and East compared to the 3500 that cover 24.5 million people in the Central and Western regions.

2) Electricity coverage (only 25% of the country is covered by Hydro Electric Power)

3) Affordability Constraints: High device costs persist, with 26.7 million users on feature phones, limiting access to advanced services. While 1GB data prices stabilized at 5,000 UGX, low-income populations still face affordability hurdles. Over 7 million people live below the poverty line of USD 1 per day.

4) Lack of available and meaningful internet use cases where 40% of our internet traffic is largely on social media.

5) Regulatory Tensions: Content regulation, such as UCC's 2024 crackdown on "vulgar" media, highlights challenges in balancing free expression with societal norms, potentially stifling creative industries.

6) Digital Literacy Gaps: Limited training programs hinder effective ICT utilization, particularly among rural SMEs and women, despite initiatives like UCUSAF's subsidized phones.

7) Dynamism of the ICT sector that hinders policy development in tandem with fast paced industry developments.

8) Funding Sustainability: Reliance on subsidies and donor support, like UCUSAF campaigns, raises questions about long-term viability for projects like the Test Bed or film funding.

9) Cybersecurity Risks: Rapid ICT adoption, including 2.15 billion mobile money transactions, outpaces the development of robust data protection frameworks, exposing users to fraud.

10) Policy Fragmentation: Overlapping mandates between agencies and slow adaptation to emerging technologies like AI, IoT create implementation bottlenecks eg in the Digital Finance Sector where there are two regulators i.e the Uganda communications commission and the Bank of Uganda

11) Limited international partnerships for tech transfer and innovation hinder Uganda's ability to compete in advanced sectors like 5G or smart agriculture.

6. FUTURE DIRECTIONS AND AREAS FOR COLLABORATION AND VISION BEYOND 2025

1) Universal Connectivity: Expand broadband infrastructure like fiber, 5G, and satellite to achieve 100% population coverage by 2030, focusing on rural and underserved regions.
2) Digital Inclusion: Ensure equitable access to affordable devices, especially smartphones and digital services, for all demographics, including women, youth, and Persons with Disabilities (PWDs).
3) Innovation Ecosystem: Position Uganda as a regional hub for tech startups and digital entrepreneurship, supported by incubators like the National Innovation Hub.
4) Cybersecurity Resilience: Strengthen frameworks for data protection, cybercrime prevention, and public awareness through UGCERT and partnerships.
5) Sustainable Digital Transformation: Integrate ICTs into critical sectors such as healthcare, agriculture, and education to drive socio-economic growth under Vision 2040 and NDP III.
6) Regional Integration: Leverage initiatives like the One Network Area (ONA) and Northern Corridor Integration Projects (NCIPs) to harmonize cross-border digital policies and infrastructure.

6.1 Areas for Collaboration to Accelerate Progress

1) Infrastructure Development financing: Partner with multilateral agencies like ITU, World Bank, and private investors to fund rural broadband expansion and renewable-powered towers.

2) Data protection and privacy which provides assurance that digital services are safe, secure, protected, and trusted when in use.

3) Cybersecurity

4) Digital Literacy and Skills

5) Cybersecurity Frameworks

6) Affordable Access

7) Tech Innovation: Collaborate with global tech firms like Google, Huawei, and academia to pilot emerging technologies, for instance, AI, IoT for agriculture and healthcare, such as telemedicine.