



Driving digital transformation of the economy in Uganda

Opportunities, policy reforms and
the role of mobile



GSMA

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Glossary of Abbreviations

AI	Artificial Intelligence	MSS	Mobile Satellite Spectrum
API	Application Programming Interface	MW	Megawatt
ATU	African Telecommunications Union	NBI	National Broadband Infrastructure
D2D	Direct-to-Device connectivity between satellite and mobile handsets	NDP IV	National Development Plan IV (2025/26 – 2030/31)
dBm	Decibel-milliwatts	NTO	National Telecom Operator License
DUV	Digital Uganda Vision 2040	OTT	Over The Top
EASSy	Eastern African Submarine Cable System	PDM	Parish Development Model
ETB	Ethiopia Birr	PWD	People With Disabilities
FY	Financial Year	QoS	Quality of Service
GHC	Ghana Cedi	RAN	Radio Access Network
GDP	Gross Domestic Product	SIM	Subscriber Identity Module
GSMA	GSM Association	SME	Small Medium Enterprise
GSMAi	GSMA Intelligence	SSA	Sub-Saharan Africa
ICT	Information Communication Technologies	STEM	Science Technology Engineering Mathematics
IMT	International Mobile Telecommunications	UCC	Uganda Communication Commission
IoT	Internet of Things	UCUSAF	Uganda Communication Universal Service Access Fund
ITU	International Telecommunications Union	UCIT	Uganda Institute of Information and Communications Technology
KSH	Kenya Shilling	UNDP	United Nations Development Programme
LG	Local Government(s)	UNECA	United Nations Economic Commission for Africa
Mbps	Megabyte per second	USD	United States of America Dollars
MDA	Ministries, Departments, and Agencies	USF	Universal Service Fund
MICTNG	Ministry of Information Communications Technology and National Guidance	VAT	Value Added Tax
MNO	Mobile Network Operator	WRC-27	International Telecommunications Union World Radio Conference 2027

Uganda digital economy - key findings and recommendations

Mobile telecoms and mobile sector in 2025:



96%

population network coverage, contributing to NDP IV 2030 objective of 70% national broadband coverage*



22%

population unique mobile internet users (48% adult), contributing to NDP IV 45% population using internet objective*



75%

population living within mobile internet coverage, but are not using it ("Usage Gap")*



32%

population using smartphones**



34 million

active mobile money accounts**



2.18 billion

mobile money transactions**

GSMA Digital Africa Index 2025:

Digital Nations and Society Index score

42/
100

Digital Policy and Regulatory Index score

54/
100

Proposed policy recommendations contribution to NDP IV and DUV 2040:



Sustainable infrastructure investment environment



Use of digital technology to increase domestic revenue mobilisation AND optimise sector taxation



Device affordability, digital skills, build trust through safety and security, and digital government



Implement policy reform roadmap and modernization of regulation

Proposed policy recommendations impact by 2030:



99%

4G population coverage



4m

unique mobile internet subscribers, reducing usage gap by 7%



UGX 11 bn

value add to key economic sectors and public services

* GSMA Intelligence (2025) showing combined 4G populations coverage.

** Uganda Communications Commission market report quarter ending June 2025.

Executive Summary



Uganda has embraced the importance of digital transformation¹ to contribute to the National Vision of “a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years”.

This is being implemented through the country’s strategies, policies and programmes, including the National Development Plan IV 2025/26 – 2030/31 (NDP IV) which outlines the government strategy to grow the economy 10-fold in the next 15 years and includes the integration of Science, Technology and Innovation (STI) and Information Communication Technologies (ICT) into all sectors of the economy², the Digital Uganda Vision 2040 (DUV) published in 2022, the Uganda Digital Transformation Roadmap 2023/2024 – 2027/2028 (Digital Transformation Roadmap), and the Uganda Communications Commission (UCC) 2020 – 2025 strategy.

Uganda is making progress with its digital transformation. The Digital Transformation Roadmap reported that the “ICT sector continues to grow at an average growth rate of 14.8%, contributes 9% to Uganda’s Gross Domestic Product (GDP), and the proportion of employment in the ICT sector is 2.3 million people”³. **International organisation digital indices such as the International Telecommunications Union (ITU)’s Global ICT Development Index⁴ and the GSMA’s Digital Nations and Society Index⁵ recognise Uganda’s digital progress, however Uganda is ranked behind leading African nations showing there is a need for changes to accelerate digitalisation.**

The Minister of Information Communications Technology and National Guidance policy statement of March 2025 (Minister Policy Statement 2025), the NDP IV, DUV, and Digital Transformation Roadmap amongst others provide clear priorities, initiatives and targets to accelerate Uganda’s digital transformation. The Minister Policy Statement 2025 also outlined challenges to overcome including: inadequate complementary utilities such as electricity and road access to support rollout of ICT, improvement required in automation of government systems, inadequate ICT take up due to high cost of internet and equipment citing taxation, and low levels of civic consciousness and responsiveness⁶. Further, in June 2025, the Minister of Finance outlined digital transformation being amongst the government’s priorities and provided UGX 381.75 billion for ICT and digitalisation in the Budget Speech for Financial Year 2025/2026, more than a 55% increase on the previous year⁷.

The mobile telecommunications sector, together with mobile money, provides digital infrastructure and connectivity and is a critical partner for the achievement of Uganda’s NDP IV and other digital programmes and objectives. With the UCC reporting over 82% population 4G

1 Throughout this study, the term digitalisation (sometimes referred to as Information Communication Technologies (“ICT”)) is used to denote the adoption of new technologies by consumers, businesses and governments across economic sectors. Digital transformation is the economic transformation resulting from such adoption. The digital economy encompasses the actors and exchanges taking place in the economy as a result of digitalisation.

2 Uganda National Development Plan IV, 2025/26 - 2030/31, Executive Summary, Pages XXII and XXVI.

3 Uganda Digital Transformation Roadmap 2023/2024 – 2027/2028, Pages 6 and 18.

4 ITU Global ICT Development Index 2024 reported a 16% increase in Uganda’s overall score from 34.8 in 2023 to 40.4 in 2024, although this is lower than Africa’s average score (51) and behind East African countries such as Kenya (58.5), Rwanda (46.8), and Tanzania (43.1).

5 The GSMA Digital Nations and Society Index 2025: Uganda is middle ranked (42.04 overall index score, with digital government performing well at 70.08, digital consumer performing at mid-level (46.24), and further development is required for digital business (9.79 score)). The country is above the African average (36), ranked similar to countries such as Nigeria (overall index score 44.58), Senegal (48.69) and Rwanda (48.49), and behind higher ranked South Africa (65.63), Kenya (58.57), and Ghana (50.45).

6 Minister of Information Communications Technology and National Guidance Policy Statement FY24/25, March 2025.

7 Minister of Finance Budget Statement FY25/26, June 2025. MTN Uganda article - “Uganda’s ICT investment is a good step, but more is needed” by Mulinge Sylvia M.B.S., CEO, 18 July 2025.

mobile network coverage - one of the highest in Africa, 44.3 million active 90-day mobile subscribers, 16.5 million 30-day active mobile internet subscribers, and 34.6 million 90-day active mobile money subscriptions⁸. GSMA Intelligence coverage mapping conducted for this report finds 96% population 4G mobile network coverage and GSMA Intelligence data reports 47% population as unique mobile internet users⁹.

As part of this partnership, the government and regulators can, in turn, support the mobile sector to deliver on these initiatives by improving the regulatory environment and investment climate through the proposed Policy Recommendations identified in this report, contributing to Uganda's National Vision and NDP IV and other digital objectives and programmes:

Figure 1: Proposed Policy Recommendations

Infrastructure investment environment

Ensure that policies and decisions on the sector create a sustainable digital infrastructure investment environment. These include:

- Amend the coverage obligation requirements in the NTO license from the current 5-year to 20-year period, and a phased investment rollout programme agreed with the operators.
- As part of this phased investment programme, consider revising the 90% geographic license obligation to:
 - Population-focused obligations with designated priority locations including designated MDAs and LGs, transport routes, and key economic sector areas.
 - Coverage obligations to exclude uninhabited, mountain, waterbodies, protected areas which are difficult to operate mobile networks (noting the potential use of alternative technologies, such as LEO satellite technology, to provide coverage in these areas as part of UCUSAF programme).
 - Review signal strength thresholds, especially to consider network opex optimisation requirements in rural and remote areas.
- Implement measures to address the underlying barriers to network coverage and quality of service delivery to achieve NDP IV and DUV objectives.
- Designate telecoms infrastructure as constituting Critical National Infrastructure and measures to provide more effective deployment, energy supply, and protection against criminal damage.
- Review the Uganda Communication Universal Service Access Fund policy to achieve NDP IV and DUV objectives, including rural connectivity subsidy programme to include OPEX costs, USF contributors to participate in the USF decision making process, and published audited funds reports for transparency.

Noting that GSMA analysis finds that:

- To achieve compliance with the 90% geographic coverage obligation for 4G networks, using UCC signal thresholds, would require ~ 1,400 new sites in mostly uninhabited areas at a cost of USD 550 million. This cost would reduce to USD 80 million if the UCC adopted industry proposed signal thresholds and revised coverage obligations to land only (excluding waterbodies).
- If the above proposed coverage policy recommendations are implemented, they would help 4G coverage increase from 96% to 99% population with a lower investment cost of USD 15 million (compared to USD 25 million if policy recommendations are not adopted)¹⁰.

8 UCC Market Performance Report, quarter ending June 2025.

9 GSMA Intelligence - 4G Coverage and Investment in Uganda, October 2025. GSMA Intelligence Database, 2025. Please note that 96% population 4G coverage is calculated from combined Airtel and MTN network coverage data and mapped against Global Human Settlement Layer (GHSL) population estimates for 2025. This is used to calculate the state of coverage for each population settlement in the country, and the average geographic and population coverage for each administrative area in the country.

10 GSMA Intelligence - 4G Coverage and Investment in Uganda, October 2025.

Digital technology to increase domestic revenue mobilisation AND Optimise sector taxation

Increase domestic revenue mobilisation through accelerating the use of digital technology for cashless payments, to improve accuracy in filed tax returns and tax compliance, and public service delivery.

Forward-looking fiscal policies by optimising sector specific taxation on telecoms and mobile money to broaden the tax base, thereby increasing affordability and promoting digital inclusion, including:

- Remove 12% excise levy on data telecoms services.
- Parity on electronic transactions regarding 0.5% duty on mobile money withdrawals to enable seamless transactions in the digital financial services ecosystem, fostering a more integrated financial ecosystem and financial inclusion.
- Exempt telecoms equipment and services supporting advanced technologies, such as 4G and 5G, from 18% VAT on imported services, which applies to software and entry-level smartphones.

Device affordability, digital skills & other demand side reforms.

Implement measures to improve entry-level smartphone affordability and adoption, including eliminating taxes and import duties. GSMA analysis finds that entry-level smartphones are priced at USD 38.91 in Uganda. This price equates to 39% of monthly GDP per capita, and 96% of monthly GDP per capita for the poorest 40% of the population. Taxation contributes to 35% of smartphone cost.

- Accelerate digital government programmes to fast track use of digital technologies in public service delivery (e.g. Digital Parish Model)
- Accelerate National Digital Skilling Framework and related initiatives (e.g. Digital Skills Factory, UCC teachers and youth digital skills programme, Airtel Uganda and UNICEF Digital Learning Programme, MTN Digital Skills Academy, GSMA Mobile Internet Skills Training Toolkit).
- Use embedded solutions and APIs in commercial and public service delivery to address digital skills and increase digital adoption.
- Implement Pillar 3 Cyber Security and Data Protection programmes under Digital Transformation Roadmap and reform data location and cross-border transfer regulations.

Implement policy reform roadmap and modernise regulatory framework

Fast track the implementation of NDP IV, DUV, and the Digital Transformation Roadmap and modernise the regulatory framework to accelerate Uganda's digitalisation, with key areas being:

- Regulatory framework for emerging electronic communications infrastructure and services (e.g. partnerships between mobile operators and LEO satellites to extend broadband coverage and the use of D2D connectivity).
- Develop a National AI Strategy (together with the AI Ethical Framework and Data and AI Ethics Council), informed by African Union Continental AI Strategy, which addresses local language requirements.

This report finds that these proposed policy recommendations would accelerate the mobile sector's contribution to Uganda's National Vision, NDP IV and DUV objectives as follows:

- 1. Extending 4G mobile network coverage from 96% to 99% population** (with remaining remote areas covered by alternative technologies), contributing to NDP IV 2030 objective of 70% national broadband coverage.
- 2. Adding 4 million unique mobile internet (broadband) subscribers by 2030**, totalling almost 19 million (32% total and 61% adult population). **This would reduce the mobile internet usage gap by 7%** and contribute to the NDP IV 2030 objective of 45% population using the internet.
- 3. Increasing digitalisation across important sectors and in public services.** The potential macroeconomic impacts on agriculture, manufacturing, transport, trade, and healthcare sectors and government public services, resulting in additional UGX 14,600 billion value add, 1,790,000 jobs, and UGX 2,100 billion tax revenues.
- 4. Should** the proposed sector tax policy recommendations be adopted, combined with the other policy recommendations, **economic growth generated by increased mobile digital usage across all sectors of the economy will generate gross additional tax revenue of UGX 3,100 billion at a loss of UGX 370 billion in taxes from the mobile sector by 2030.** Contributing to NDP IV domestic revenue mobilization and tax collection objectives¹¹.

¹¹ See Section 4 for more detail on the policy recommendations and the evaluated impacts on the mobile sector and the wider economy to contribute to Uganda's NDP IV, DUV, and digital transformation programmes.



1. Introduction



1A. Digital economy country snapshot

Uganda is a rapidly growing country in East Africa with a young and mostly rural population, and a growing economy with healthy macroeconomic fundamentals. Key economic sectors include agriculture, manufacturing, trade and tourism.

Figure 2: Uganda - key indicators

Number of 3G+ connections	34 million
Number of unique internet subscribers (UCC data 2025)	15.2 million
3G network coverage (% pop) (UCC data 2025)	98%
4G network coverage (% pop) (UCC data 2025)	82%
Mobile money registered accounts (% pop ages 15+)(-)	66%
Formal financial or mobile money accounts (% pop ages 15+)(-)	66%
Population, of which % rural pop	73%
Gross Domestic Product (local currency)*	183,004 billion
Gross Domestic Product (USD)*	49 billion
GDP growth (annual)*	5.3%
GNI per capita (Atlas method, current USD)*	970
Infant mortality rate (per 1,000)(*)	29
Life expectancy at birth (years)*	68

*Data for 2024, except 2025 if stated, 2023 if marked *, 2022 of marked +, or 2021 if marked - Source: World Bank World Development Indicators, GSMA Intelligence, Findex, UCC*

Mobile technology is a key foundation and contributor to digital services in Uganda, with the UCC reporting in June 2025 that there were over 44.3 million 90-day active mobile subscribers, 16.5 million 30-day active mobile internet registered subscribers and 34.6 million 90-day active mobile money registered subscriptions¹².

Digital services are making an increasing contribution to the Uganda economy, with the Digital Transformation Roadmap stating that the “ICT sector continues to grow at an average growth rate of 14.8%, contributes 9% to Uganda’s GDP, and the proportion of employment in the ICT sector is 2.3 million people”¹³. The further digitalisation of public services (e.g. government, education, healthcare) and key economic sectors, examined in this study, has the potential to build upon this and contribute significantly to Uganda’s economy and citizen’s lives.

¹² UCC Market Performance Report, quarter ending June 2025.

¹³ Uganda Digital Transformation Roadmap 2023/2024 - 2027/2028, Pages 6 and 18.



It is estimated that, in 2024, the telecommunications sector contributed 7.3% of GDP when account is taken of direct and indirect components and productivity stimulus from mobile technologies used across the economy. The estimated breakdown of GDP contributions is shown in Figure 3.

Figure 3: Direct, indirect and productivity impacts of mobile in 2025

Source: GSMA Mobile Economy SSA.

Component	% of GDP
Mobile operators	1.4%
Remainder of mobile ecosystem	0.8%
Indirect (supply chain)	0.5%
Productivity stimulus in wider economy	4.9%
Total	7.6%

1B. The impacts of digital transformation

Digitalisation of the economy as a driver of economic growth and socio-economic development is a key pillar of Uganda’s Nation Vision 2040 and is being implemented through its strategies, policies and programmes including the 10-Fold Growth Strategy, NDP IV, the DUV, the Digital Transformation Roadmap, and the Uganda Communications Commission 2020 – 2025 strategy. In doing so, partnering with continental and global initiatives, including the African Union Agenda 2063 and the United Nations Sustainable Development Goals.

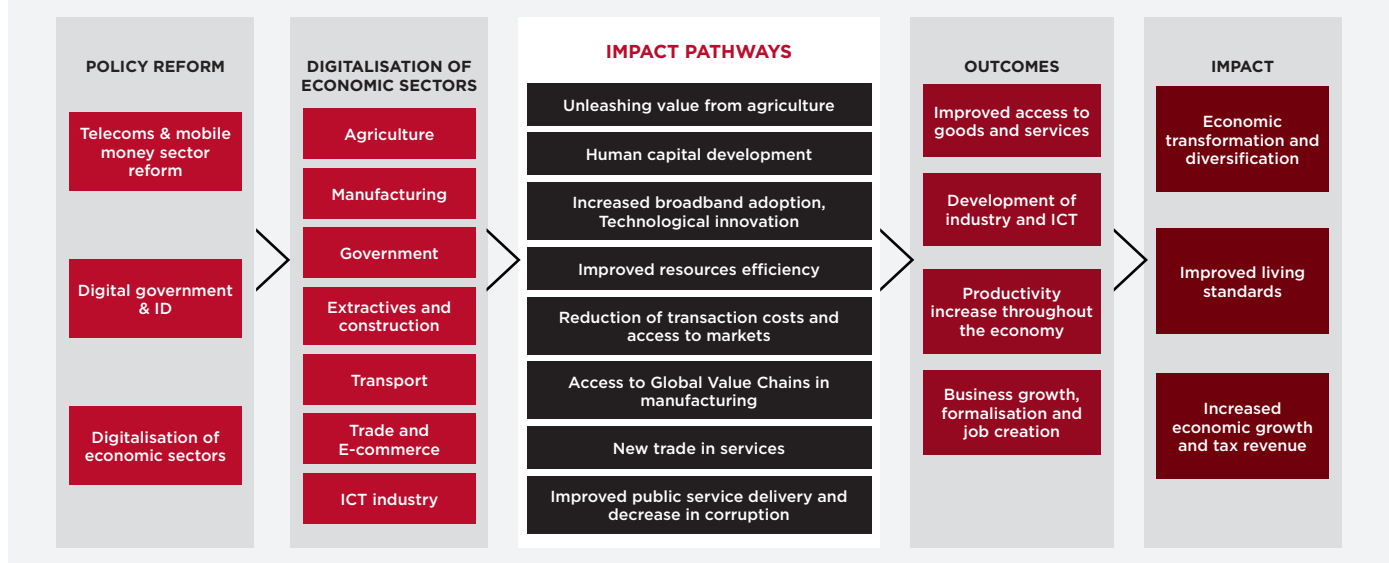
The NDP IV, published in 2025, provides a specific Digital Transformation Programme setting objectives, including: increase the population using the internet from 16.5% in FY 2023/24 to 45% by FY 2029/30, increase digital skills from 26% population in FY 2023/24 to 36% by FY 2029/30, and increase local products (government and private sector) commercialised from 23% in FY 2023/24 to 45% by FY 2029/30. The use of digital technologies is also identified as a key enabler for other NDP IV economic and public service delivery programmes¹⁴.

The adoption of digital technologies across public services and economic sectors can unlock important pathways for inclusive digital transformation¹⁵. This is experienced, for example, through increasing value from existing agricultural resources, improving access to global value chains, enhancing education and healthcare provision, reducing transaction costs and improving the inclusivity, efficiency, transparency and governance of government-to-business and government-to-citizen services. Access to emerging technologies such as AI, big data and cloud computing, as well as services such as mobile money drive increased digital and financial inclusion.

As digitalisation progresses through each sector of the economy, the resulting effects include improvements in productivity, job creation and formalisation of the economy. This in turn leads to increased standards of living, higher economic growth, and greater availability of public resources (Figure 4). The internet economy is projected to reach 5.2% of the GDP in Africa in 2025 and the development of the digital ecosystem has been shown to add up to 1.9% in GDP per capita in Sub-Saharan Africa (SSA)^{16 17}.

Figure 4: Digital pathways to economic transformation

Source: GSMA, Driving digital transformation of African economies, 2024.



14 Uganda National Development Plan IV, Pages 175 - 182.

15 GSMA, Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.

16 Accenture Africa, iGPD forecast.

17 ITU, Economic contribution of broadband, digitization and ICT regulation: Econometric modelling for Africa, 2019.

1C. The role of the telecommunications sector in the digital economy

The mobile telecommunications, together with mobile money sector, provides the digital connectivity that forms the foundation on which the digital transformation process is built. In Africa for the calendar year 2024:

- The mobile sector contributed USD 220 billion to Africa's economy, representing 7.7% of GDP. By 2030, this is expected to increase to USD 270 billion (7.4% of GDP).
- The mobile ecosystem (i.e. MNOs, infrastructure companies, and content and services) contributed USD 30 billion to public funding.
- The mobile ecosystem supported 5 million jobs directly and an additional 3 million indirect jobs¹⁸.

Mobile telecommunications, together with mobile money, is the most common means of access to broadband and financial services in Africa and is essential to the realisation of this potential economic impact. Research shows that a 10% increase in mobile internet penetration is estimated to increase GDP per capita by up to 2.5% in Africa¹⁹. Mobile money contributed USD 190 billion to GDP (4.5%) in 2023 in SSA²⁰.

The adoption of 5G is expected to benefit most sectors of the economy. Low-band 5G could contribute nearly USD 3 billion in Sub-Saharan Africa, whilst the mid-band 5G could deliver USD 13 billion, adding almost 0.4% to GDP in 2030²¹. The wide area coverage enabled by low band 5G will be essential in driving the digital transformation of the agricultural and manufacturing sectors, enabling Internet of Things (IoT) applications such as smart farming solutions, smart factories, smart cities and smart grids²². For the economy to realise these gains, an enabling policy and regulatory environment is critical.

¹⁸ GSMA The Mobile Economy Africa 2025, Pages 2 and 4.

¹⁹ Ibid.

²⁰ GSMA State of Industry Report on Mobile Money, 2025.

²¹ GSMA The Mobile Economy Africa 2025, Page 3.

²² GSMA Socio-Economic Benefits of 5G - The importance of low-band spectrum, 2023.

1D. This Report

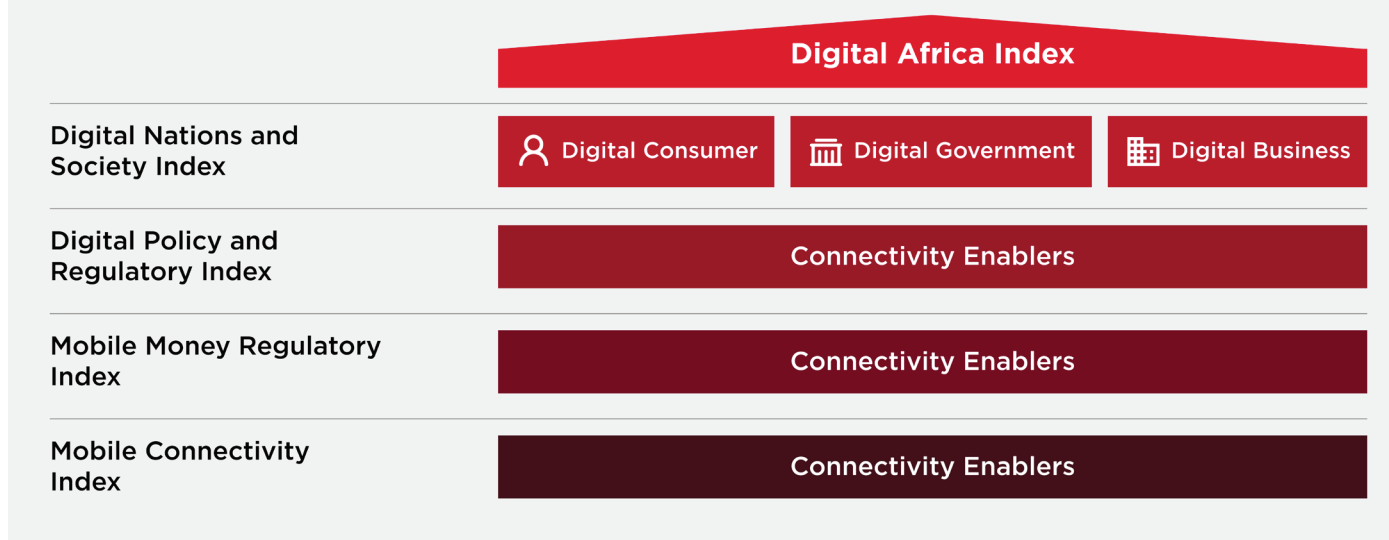
This report examines the role of digital technologies in Uganda’s National Vision 2040 objectives, considering the country’s NDP IV, DUV and Digital Transformation Roadmap, and other applicable government and regulatory frameworks and strategies. The starting point is an analysis of how digital technologies can drive socio-economic development through enhanced productivity and job creation, as well as how they can improve the efficiency of government and public services.

It identifies opportunities and quantifies the economic value of adopting digital technologies across specific sectors of the economy. It explains how these can be unlocked through proposed policy reform recommendations, recognising the mobile telecommunications sector’s role in supporting digitalisation. It then quantifies the impacts of these policy recommendations on digitalisation of key sectors of the economy.

In doing so, this study has considered information provided by government, regulators, telecoms operators, industry and other stakeholders; public source reports from national agencies and international organisations; and the GSMA’s Digital Africa Index²³.

Figure 5: GSMA Digital Africa Index²⁴

Source: GSMA



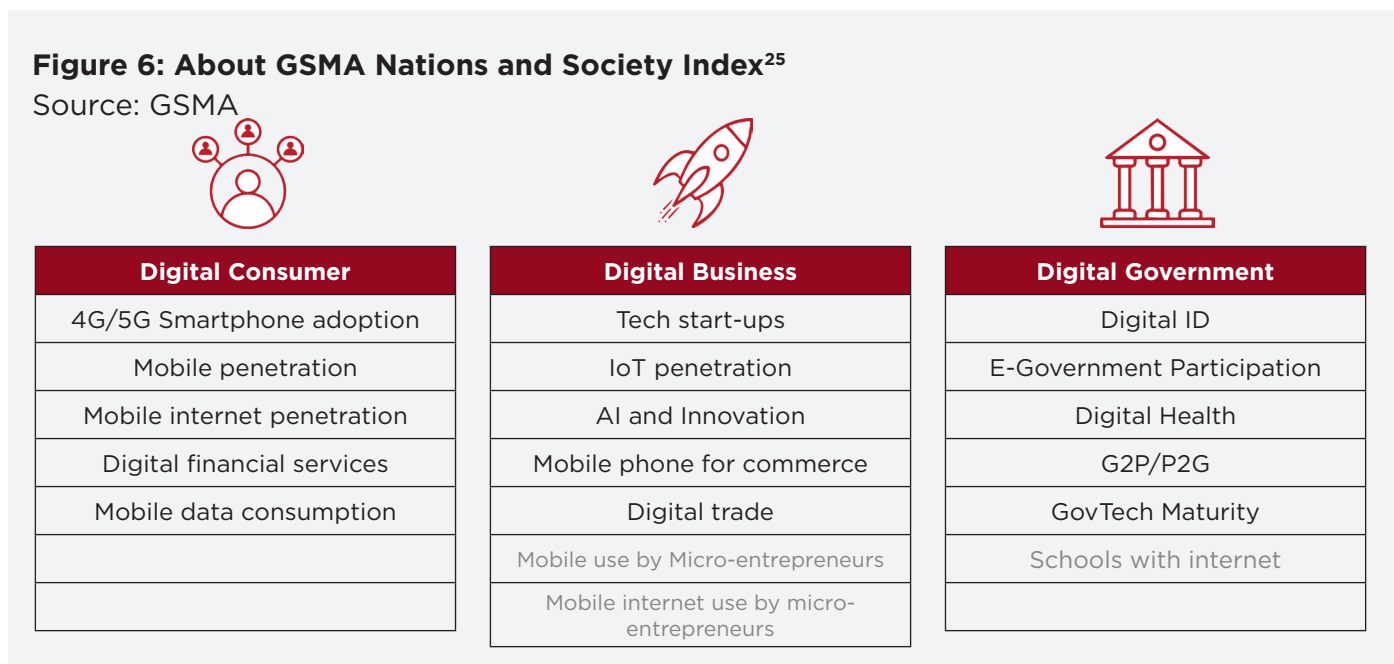
The **GSMA Digital Africa Index**, first published in October 2024 and updated in October 2025, includes a **Digital Nations and Society Index** and a **Digital Policy and Regulatory Index**, and complements other existing GSMA indices (notably, Mobile Connectivity Index and the Mobile Money Regulatory Index) to provide a comprehensive assessment for African countries to understand how advanced they are in terms of integrating digital technologies into their society and to provide guidance on policy and regulatory interventions required to accelerate digital growth. The Digital Africa Index is informed by information requests provided by operators,

²³ For Index: Digital Africa Index - GSMA Sub Saharan Africa; For Methodology: Digital Africa Index and Digital Policy & Regulatory Index: Methodology

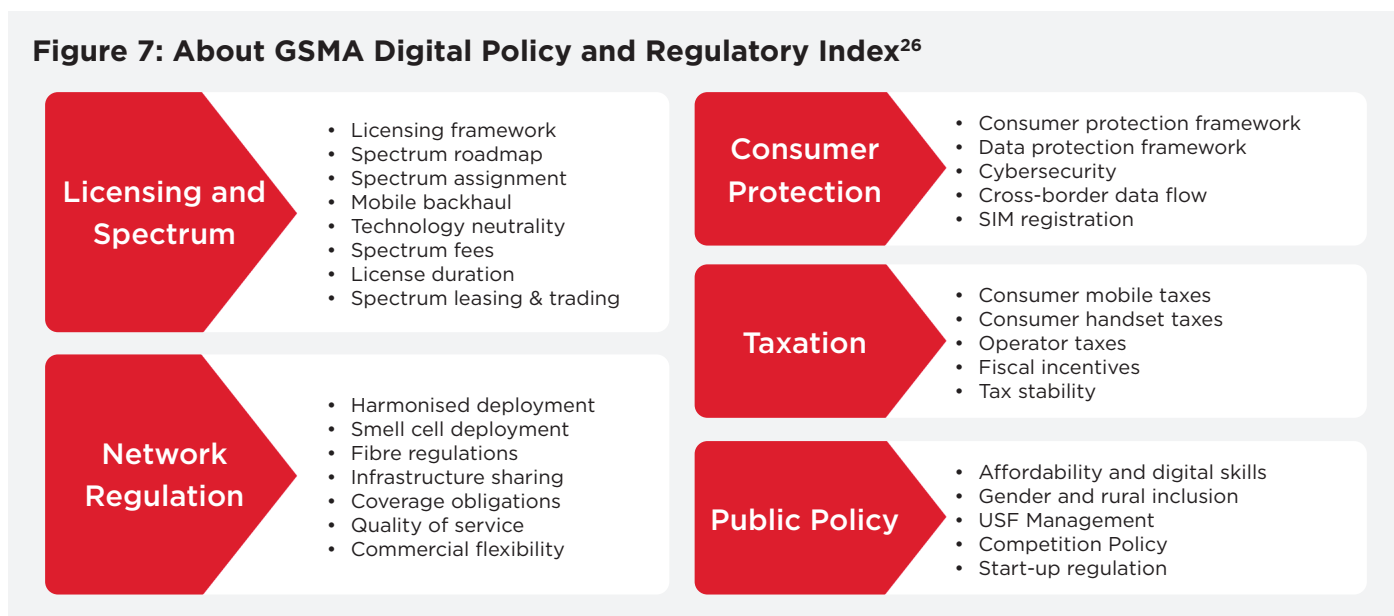
²⁴ GSMA Digital Africa Index Presentation, 2024.

government ICT ministries, and regulatory authorities; public source information from national and international organisations; and other GSMA indices and research.

The **Digital Nations and Society Index** measures the adoption and usage of digital technologies by consumers, businesses and governments structured around 3 pillars and 15 indicators as summarised in Figure 6.



The **Digital Policy and Regulatory Index** assesses the policy levers that governments can pull to drive digital investment and inclusion structured around five pillars (with 30 indicators) outlined below in Figure 7:



²⁵ GSMA Digital Africa Index Presentation, 2025. Note from the GSMA: There is insufficient data on the indicators in grey to include in the Digital Nations and Society Index. However, given their importance, the GSMA include data on the GSMA Digital Africa Index web platform where it is available. As more data is gathered, this will be fully incorporated into the index.

²⁶ GSMA Digital Africa Index Presentation, 2025.

The combined results of the Digital Africa Index indicate that countries with higher Digital Policy and Regulatory Index scores are more likely to have higher mobile connectivity and higher Digital Nations and Society Index scores. Information on Uganda's assessment and score in the GSMA Digital Nations and Society Index and Digital Policy and Regulatory Index, and how it compares with other African countries following in Section 2C and 2D respectively.

This report provides a quantitative model of Uganda's mobile sector to evaluate the impacts on the wider economy of the proposed policy recommendations to address the challenges and to maximise the digital economy potential to contribute to Uganda's NDP IV, DUV, and digital transformation programmes²⁷.

The base case forecast projects market developments, assuming that the policy environment remains as it is today. It is based on historical trends and sector analysis which are used to extrapolate market outcomes to 2030. This base case focuses on unique mobile subscriptions, mobile internet (broadband) adoption and mobile money usage.

The impact of changes in regulation and policy on the sector is modelled by analysing how these changes would affect the operators in general and how they would affect the adoption and usage of mobile internet (broadband) adoption and mobile money.

In contrast to many models used to evaluate policy changes, the model developed for this report is dynamic rather than static. This means it is able to model the impact of policy changes over time on the growth of the mobile market. For example, a reduction in excise duties, will not immediately raise the number of mobile users, but rather will increase the rate of adoption. In this way the model more accurately reflects the build-up of policy change impacts over a number of years.

The base case scenario shows a steady increase in unique mobile broadband connections. In this scenario, unique mobile internet (broadband) connections are expected to increase from 11.5 million in 2024 to 14.6 million in 2030.

The following sections of this report consider how digitalisation affects outcomes in the key economic sectors and public service delivery:

- Section 2 focuses on the mobile telecommunications sector, assessing its performance in terms of infrastructure, access, and adoption of digital services and mobile money. It identifies some important policy challenges and quantifies the impact of each policy recommendation scenario.
- Section 3 discusses the digitalisation of Uganda's economy and explores how it can positively impact productivity, economic growth and job creation. The potential economic impact of digitalisation is estimated for each sector, together with qualitative case studies.
- Section 4 summarises the policy and regulatory reform recommendations that the government could undertake to support the development of mobile telecommunications, mobile money, the wider digital transformation process, and NDP IV and DUV objectives.

²⁷ Further information on the methodology and modelling for this report, please see GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.

2. Telecommunications sector in Uganda



2A. The mobile telecoms market

Mobile Penetration and usage

Uganda’s mobile telecoms market currently has 4 mobile operators (Airtel, MTN, Utel, and Lycamobile) and has shown continued growth in adoption and usage of services. Figure 8 provides the UCC’s market report for the quarter ending in June 2025²⁸ (compared with June 2024 and June 2023 reports):

Figure 8: UCC market reports for quarter ending June 2025, June 2024, and June 2023

	Market report June 2025	Market report June 2024	Market Report June 2023
Mobile registered subscribers (million)	55.8	N/A	N/A
Mobile registered subscribers - 90 days active (million)	44.3	38.5	34.9
Mobile internet subscribers (million)	16.5 (30 day active)	16.4 (90 day active)	12.5 (90 day active)
Smartphones (million)	17.6	16.7	13.3
Featurephones (million)	30	25.8	25
basic phones (million)	6	2.3	1.9
Voice on-net minutes (billion)	20.1	18.6	17.1
Voice off-net minutes (billion)	1.4	0.918	0.250
Mobile internet traffic Gigabytes (million)	254.1	195.7	156.1
Monthly average Gigabytes per user	5.1	4	1.7
Gross telecom revenue (UGX trillion)	1.78	1.66	1.36

The GSMA undertakes analysis of the number of unique mobile subscribers across Africa and globally. This is lower than the number of active SIM cards reported by the UCC because many customers have multiple SIM cards. Estimating the number of unique users is important for policy because it is a measure of how many people have access to mobile services. The GSMA uses a range of different techniques, including surveys and modelling, to estimate the number of unique mobile users using a consistent methodology that allows cross-country comparison. **It estimates, in 2025, that approximately 24 million people in Uganda use mobile services, equivalent to 47% of the population. This metric, for Uganda, lies midway above the average for East Africa but slightly below the average for the whole African continent.**

28 UCC Market Performance Reports for quarter ending June 2025, June 2024, and June 2023.

Figure 9: Unique Mobile users as percentage of population

Source: GSMA Intelligence data (2025 estimates)

Uganda	47% (80% of the adult population in 2023)
East Africa	43%
Africa	51%

The GSMA also reports mobile internet penetration in Uganda has grown since the launch of mobile broadband networks. By the end of 2024, it is estimated that there were almost 11 million mobile internet connections, giving a mobile internet penetration rate of 22% the total population - again midway between the averages for East Africa and the African continent as a whole.

Figure 10: Mobile internet unique users as % of population

Source: calculation based on GSMA Intelligence data (2024 estimates)

Uganda	22% (48% of the adult population in 2023)
East Africa	20%
Africa	28%

Mobile coverage and the internet usage gap

Uganda has seen continued investment in mobile network infrastructure, with the UCC reporting 5,327 towers nationally in June 2025 (compared to 3,312 towers in 2020)²⁹ and ~ 98% 2G and 3G population coverage and investment being made in 4G and 5G (Figure 11).

Figure 11: Mobile Network Coverage % Population (2025)³⁰

Source: UCC

2G	98%
3G	98%
4G	82%
5G	15%

Mobile operators continue to invest in mobile broadband coverage through 4G and 5G network infrastructure across the country. Noting that in 2022, the National Broadband Baseline Survey estimated that “to increase the 4G population coverage from the current 72% to 92% is about USD 41 million... 503 new RAN sites... bringing 4G coverage to 9 million more Ugandans”³¹.

29 UCC Market Performance Report, quarter ending June 2025. UCC Annual Report, 2023.

30 UCC Market Performance Report, quarter ending June 2025.

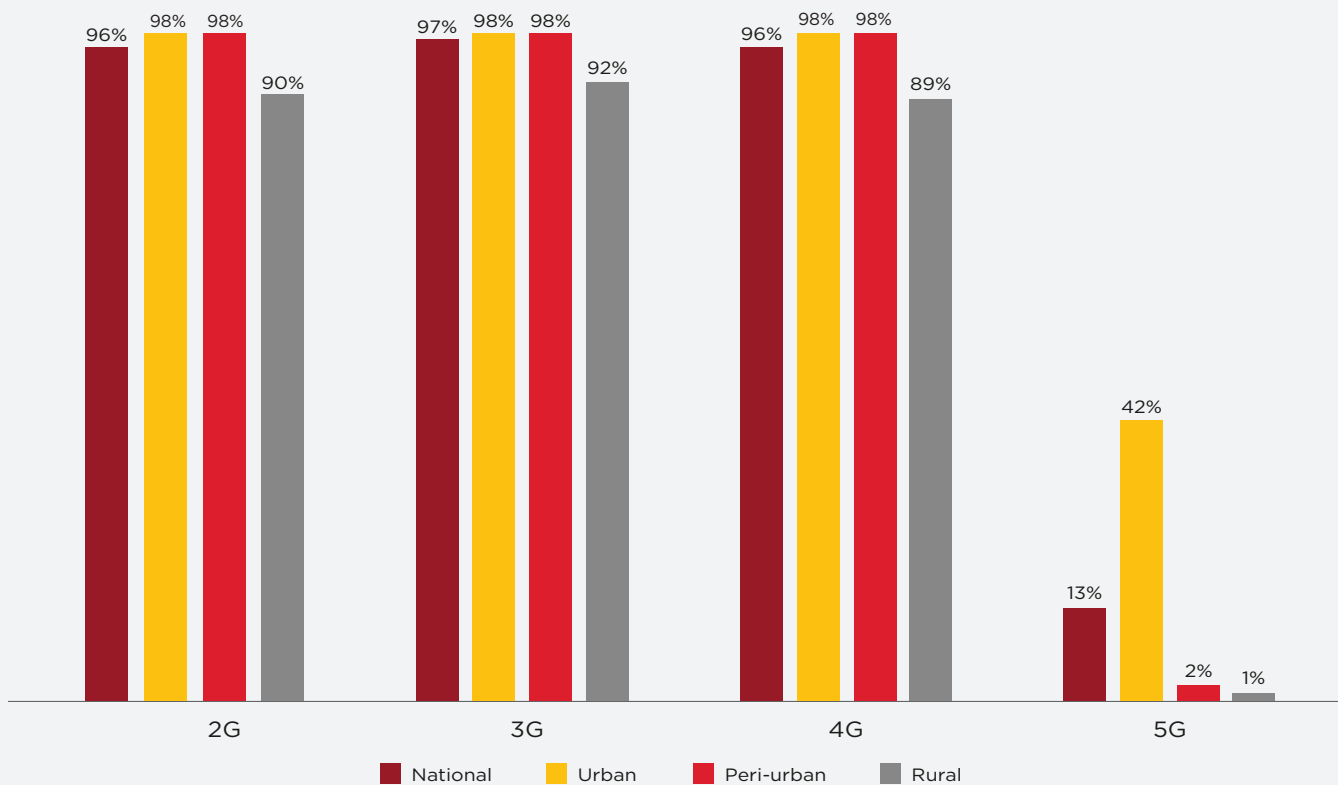
31 Uganda National Broadband Baseline Survey 2022, Page 19.

Using GSMA analysis, Uganda has achieved National Broadband Baseline Survey 2022's 4G network coverage 92% population target with 4G network coverage at 96% of the population, closely following populations settlements, and has commenced early stages of 5G network deployment with urban areas being the current focus (Figures 12, 13, and 14). **Putting Uganda as one of the leading countries in East Africa** (78% 4G population coverage average, 18% 5G population coverage average) and Africa (81% 4G population coverage average, 13% 5G population coverage average) **in terms of mobile broadband infrastructure**³².

Figure 12: Mobile network population coverage by technology and degree of urbanisation

Source: GSMA Intelligence. Urban and rural classification are based on Global Human Settlement Layer (GHSL) "Degree of Urbanisation Classifications"³³

Population coverage by technology and degree of urbanisation



32 GSMA Intelligence coverage data, 2025.

33 For methodology - see GSMA Intelligence 4G Coverage and Investment in Uganda presentation (October 2025).

Figure 13: Population coverage maps by 2G, 3G, 4G, and 5G mobile technology

Source: Analysis of operator site data and GHSL population data by GSMA Intelligence and GoYo Analytics

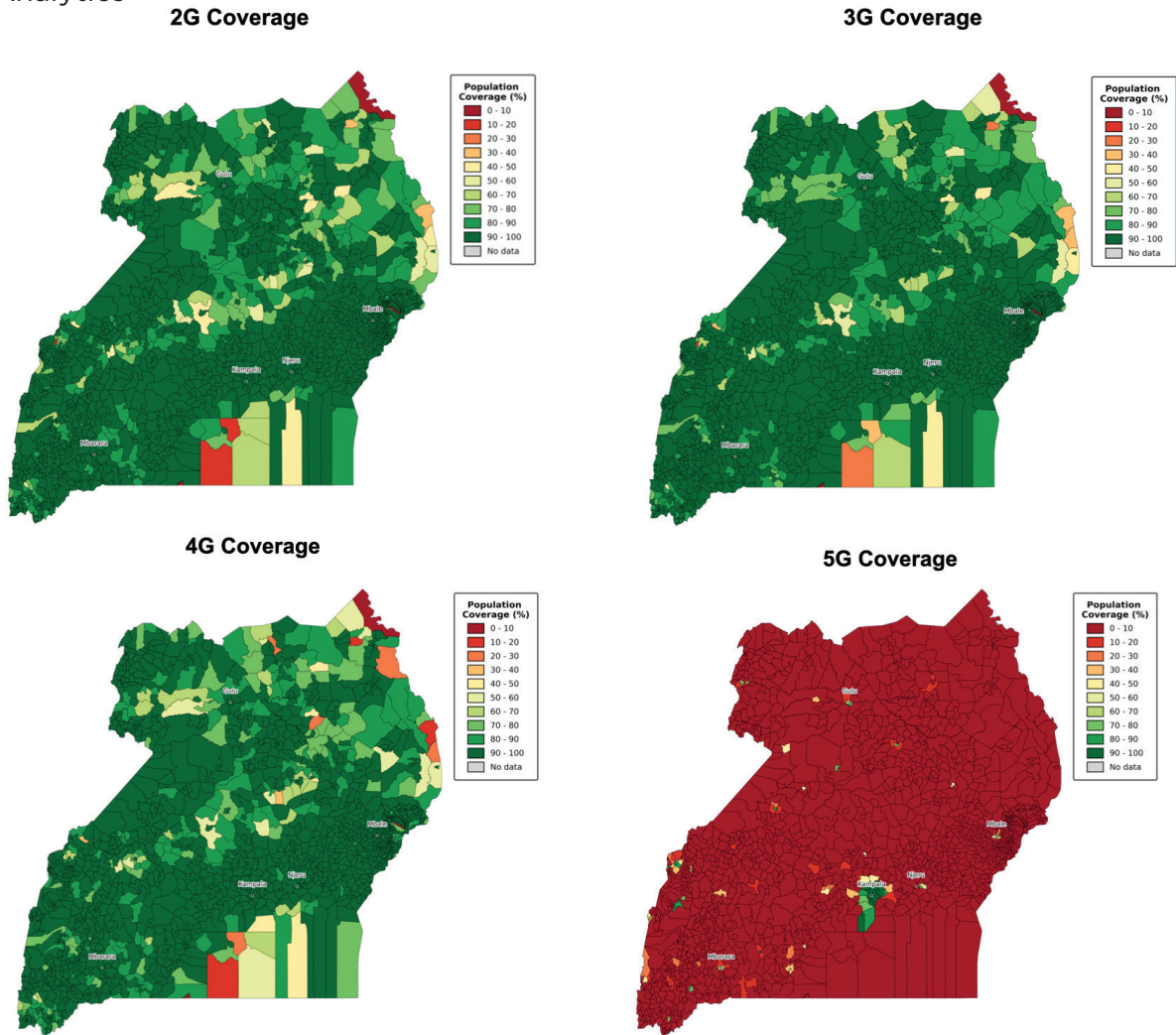
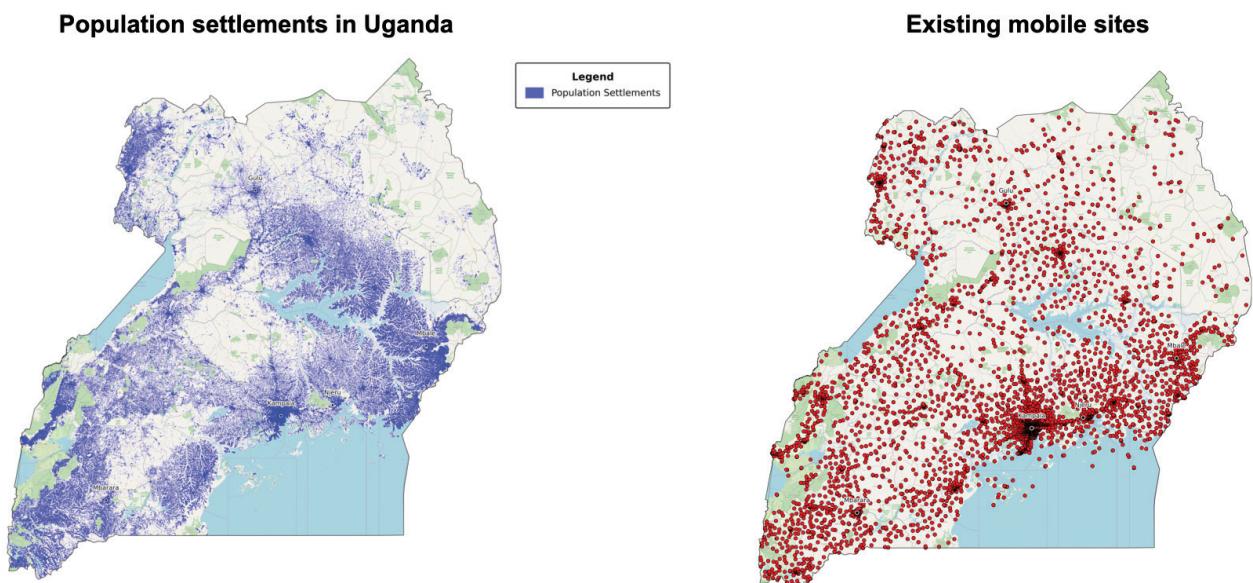


Figure 14: Mobile 4G network sites mapped with population settlements

Source: Analysis of operator site data and GHSL population data by GSMA Intelligence and GoYo Analytics



The GSMA undertakes “usage gap” analysis by comparing the number of unique mobile mobile internet (broadband) users with the size of the population covered by the mobile broadband networks. This is a measure of the number of individuals covered by mobile broadband networks but who do not use it. In Uganda, the usage gap is 75% of the population in 2025 (Figure 15), which is similar to that in the East African region and in Africa (Figure 16).

Figure 15: Mobile internet usage gap in Uganda 2015 to 2025

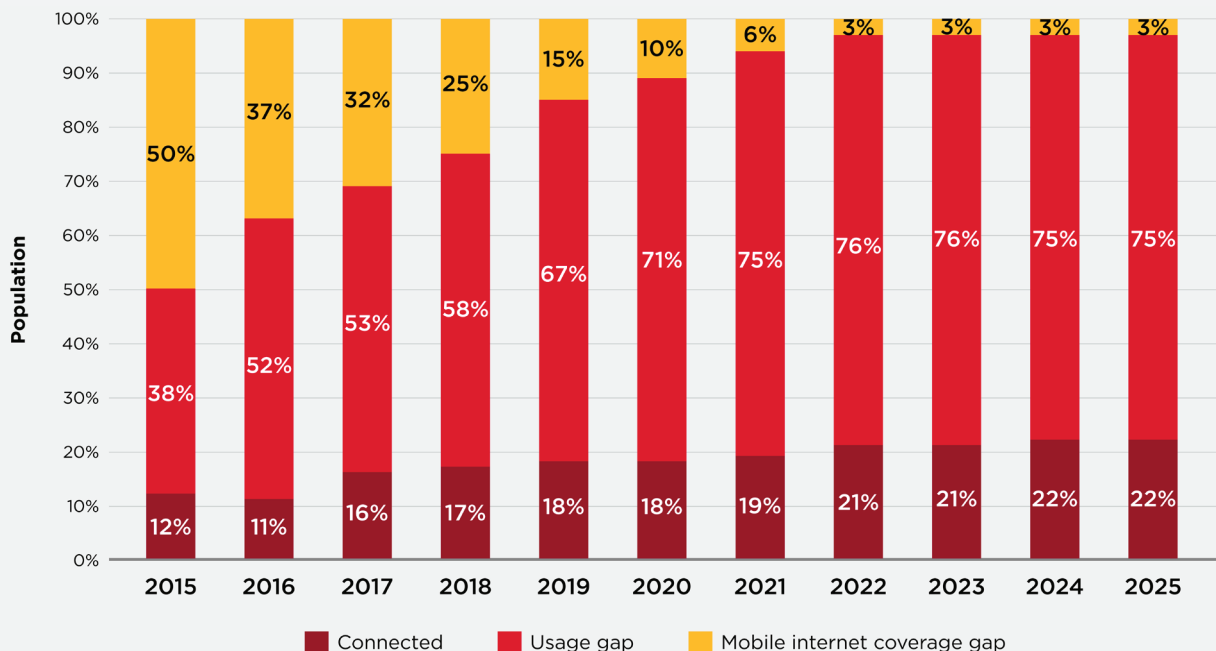


Figure 16: Mobile internet usage gap in Uganda compared to other African countries

Source: Calculated from GSMA Intelligence data

	Uganda	East Africa	Africa
Mobile internet usage within coverage area	22%	21%	28%
Usage gap in overall population	75%	79%	72%

Unique mobile internet users³⁴ as a % of population; “Usage gap” refers to populations that live within the footprint of a mobile broadband network but who are not using mobile internet.

Figure 15 shows the evolution of the usage gap in Uganda over the last 10 years. It is concerning that the growth in mobile internet coverage by MNOs has not been reflected in an equal growth of mobile subscribers, resulting in a widening of the usage gap. This report examines the challenges and barriers that are required to address this (Section 2D) and provides proposed policy recommendations to address this (Section 4) to increase mobile internet adoption and contribute to Uganda’s NDP IV and digital transformation objectives.

Domestic and international fibre connectivity

A key enabler identified in the DUV and the Digital Transformation Roadmap is the continuation of fibre infrastructure investment programmes in the country. The UCC reports in June 2025 that there was 56,486 kilometres fibre (compared with 12,369 kilometres in

³⁴ In this report “mobile internet users” or “unique mobile internet users” refers to unique individuals using the mobile internet. It does not refer to the number of SIM cards or mobile internet accounts, which is usually greater than the number of individuals using the internet.

2020). However, the 2022 National Broadband Baseline Study identified that only 29% of the population living within 10 kilometres of fibre nodes. The study provided a 10-year investment plan to expand broadband coverage and quality including USD 29 million on an additional 3,242 kilometres of fibre to connect all district capitals, increase backhaul capacity for RAN sites, and to increase people living within 10 kilometres radius of fibre nodes from 29% to 56% and those living within 25 kilometres radius from 67% to 94%³⁵.

Current fibre infrastructure investment programmes include:

- National Backbone Infrastructure (NBI), which currently serves 1,567 sites with a total length of 4,387 kilometres fibre (53 district offices, 11 border stations and 1,480 MDAs). In December 2024, a Phase V of the NBI was announced for an additional 5,845 kilometres fibre covering 63 more districts, providing last-mile connectivity to more than 2,800 locations (including schools, hospitals, government buildings, parishes, youth centres, and community centres) and Wi-Fi connectivity to an additional 1,754 locations nationally³⁶.
- Commercial fibre including Airtel’s fibre network (10,891 kilometres)³⁷, Bayobab Uganda, a subsidiary of MTN Group (17,000 kilometres fibre)³⁸, Savanna Fibre, and CSquare fibre network (1,050 kilometres metro fibre in Greater Kampala).

As a landlocked country, **Uganda’s international connectivity** relies on cross-border fibre optic infrastructure and submarine cable access through neighbouring countries. Key aspects of Uganda’s international connectivity include cross-border fibre with Kenya, Tanzania, Rwanda and the DRC, and access to 8 submarine cables on the East African coast. **The National Broadband Baseline Study 2022 assessed this to be “adequate” for Uganda’s requirements.**

Data centre capacity

The Digital Transformation Roadmap identifies increasing Uganda’s data centre capacity as a priority.

The National Data Centre, operated by NITA-Uganda, is used for centralized hosting Services, Disaster Recovery Services and other Data Centre Services for government Applications & Data³⁹.

Commercial data centres include Airtel Uganda, with 2 data centres with a combined capacity of 327 racks, and MTN Uganda, which operates six data centres across the country with a combined capacity of 972 racks, and Raxio Data Centre, a Tier III-certified, carrier-and cloud-neutral facility with 400 racks⁴⁰.

35 Uganda National Broadband Baseline Survey 2022, Page 19.

36 Infrastructure.go.ug press release: President Museveni Launches Phase V of National Backbone Infrastructure, December 2024.

37 Airtel information request for this report.

38 MTN Uganda article - “Uganda’s ICT investment is a good step, but more is needed” by Mulinge Sylvia M.B.S., CEO, 18 July 2025.

39 NITA-U website - Data Centre information (retrieved June 2025).

40 Airtel Uganda information request for this report. MTN Uganda website - Data Centre information (retrieved June 2025). Raxio Data Centre website (retrieved June 2025).

2B. The mobile money market

Uganda is one of the leading mobile money countries on the continent, deepening financial inclusion, with the UCC and Bank of Uganda reporting for the quarter ending in June 2025 that there were 51.1 million mobile money registered subscriptions (compared with 39.4 million in June 2023), of which 34.6 million were active in the previous 90 days (compared with 26.5 million in June 2023), and there were 2.18 billion mobile money transaction counts (compared with 1.62 billion in June 2023)⁴¹. In 2023, UCC reported there were 667,000 mobile money agents⁴². The GSMA reported that mobile money services in Uganda contributed more than more than 5% to GDP in 2023⁴³.

Mobile money providers (including Airtel and MTN) are licensed and subject to the regulatory framework under the National Payment Systems Act 2020. The GSMA in its 2025 Mobile Money Regulatory Index assesses Uganda as having a high overall score of 88.33 out of 100, 15th highest out of 90 countries globally and 5th highest in Africa. The GSMA identifies Uganda as performing well against the majority of its measures, with KYC identification and taxation assessed as areas for improvement⁴⁴.

GSMA consumer research survey conducted in 2024 indicates that mobile money is making a significant contribution to the financial inclusion strategic framework objectives, with strong mobile money awareness, account ownership, and usage by both male and female Ugandans (Figure 17).

Figure 17: Consumer survey of proportion of male and female usage of mobile money services⁴⁵

Source: GSMA Consumer Survey. Regular and diverse use classed as 3 user cases in the last 7 days.

Percentage of the total adult population

	Mobile ownership		Mobile money awareness		Mobile money account ownership		Used mobile money in the last...			Regular and diverse use	
	Male	Female	Male	Female	Male	Female	90 days	30 days	7 days	Male	Female
Egypt	89%	86%	68%	62%	15%	6%	15%	14%	8%	5%	1%
							6%	5%	3%		
Ethiopia	86%	65%	74%	57%	22%	9%	19%	17%	12%	8%	3%
							6%	5%	4%		
Kenya	95%	93%	99%	99%	95%	94%	95%	93%	85%	77%	68%
							93%	89%	79%		
Nigeria	94%	91%	88%	80%	43%	25%	41%	39%	31%	24%	12%
							22%	20%	14%		
Senegal	92%	81%	100%	97%	91%	74%	88%	85%	70%	50%	29%
							71%	65%	49%		
Tanzania	93%	91%	99%	99%	97%	96%	93%	86%	65%	47%	40%
							92%	82%	59%		
Uganda	90%	85%	97%	96%	88%	80%	83%	78%	60%	46%	34%
							73%	65%	46%		

41 UCC Market Performance Report, quarters ending June 2025 and June 2023.

42 UCC Annual Report, 2023

43 GSMA State of Industry for Mobile Money Report 2025.

44 GSMA Mobile Money Regulatory Index 2025.

45 GSMA State of Industry for Mobile Money Report 2025.

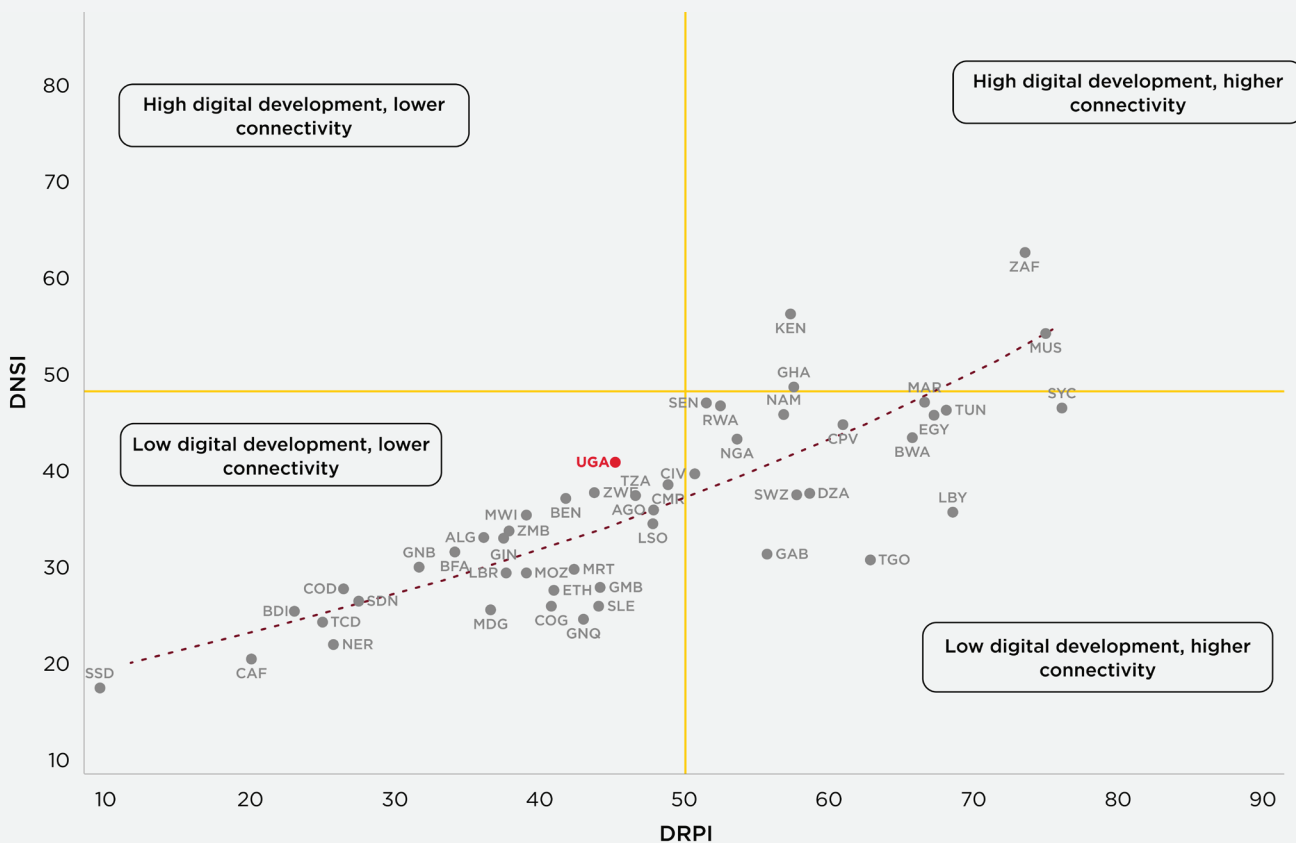
2C. Uganda digital strategies

Uganda has embraced the importance of digital transformation to contribute to the National Vision 2040 of “a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years”.

Uganda is making progress with its digital transformation, although it is behind Africa’s leading digital countries. The ITU’s Global ICT Development Index reported a 16% increase in Uganda’s overall score from 34.8 in 2023 to 40.4 in 2024. However, this is lower than Africa’s average score (51) and behind East African countries such as Kenya (58.5), Rwanda (46.8), and Tanzania (43.1).

The GSMA Digital Nations and Society Index 2025, where Uganda is a middle ranked (42.04 overall index score, with digital government performing well at 70.08, digital consumer performing at mid-level (46.23), and further development is required for digital business (9.76 score)). The country is ranked by this GSMA Index above the African average (36), in the middle-ranked group such as Nigeria (overall index score 44.58), Senegal (48.69) and Rwanda (48.49), and behind higher ranked South Africa (65.63), Kenya (58.57), and Ghana (50.45). Figure 19 below shows the correlation between mobile connectivity and digitalisation, with Uganda in the middle group indicating the need for Uganda to take further action to realise the economic and social benefits from mobile services and digitalisation.

Figure 18: Digital Nations and Society Index (DNSI) and Mobile Connectivity Index (MCI) scores in Africa, 2025



The opportunity to accelerate digital transformation is recognised by the government, and it has outlined clear objectives, initiatives and targets through the country's strategies, policies and programmes, including the NDP IV, the DUV published in 2022, the Digital Transformation Roadmap, the Uganda Communications Commission Strategy 2020 – 2025, and the Minister Policy Statement 2025.

The Minister of Finance also identified digital transformation as being amongst the priorities and provided UGX 381.75 billion for ICT and digitalisation in the Budget Speech Financial Year 2025/2026, presented in June 2025. Noting the requirement for digital infrastructure and platforms for government services, broadening the taxation base and tax collection, national e-health infrastructure, distribution of government grants through digitalised Parish Development Model, economic sectors, and tourism areas⁴⁶.

The **NDP IV recognises that digital and ICT are enablers for economic growth and increasing national productivity by making government and business enterprises more efficient, effective and globally competitive.** The NDP IV sets five overall strategic objectives, where ICT (and digital) are a key component and enabler:

- Sustainably increase production, productivity, and value addition in agriculture, minerals, oil and gas, tourism, ICT and financial services;
- Enhance human capital development along the entire life cycle;
- Support the private sector to drive growth and create jobs;
- Build and maintain strategic sustainable infrastructure in transport, housing, energy, water, industry and ICT; and
- Strengthen good governance, security, and the role of the state in development⁴⁷.

The NDP IV outlines the country's macro-economic strategy and provides 18 national development programmes with clear objectives, results and interventions to be achieved by FY 2029/30. Digital Transformation is one of these 18 programmes and is identified as an enabler in the majority of the NDP IV programmes as summarised in Figure 19 (with more detail on the Digital Transformation Programme in Annexure Figure 1).

Figure 19: Summary of NDP IV use of digital technology⁴⁸

- Digital transformation programme - 5 objectives:
 - Increase internet coverage across the country, notably setting FY 2029/30 objectives to achieve increased national broadband with a minimum speed of 8 Mbps to 70% and increased proportion of the population using the internet to 45%.
 - Improve efficiency of business processes and public service delivery.
 - Increase take up of digital products and services.
 - Increase cyber security, data protection and privacy
 - Strengthen enforcement of policies, laws and regulatory frameworks and institution coordination.

⁴⁶ Minister of Finance Budget Statement FY25/26, June 2025.

⁴⁷ Uganda National Development Plan IV, Page 30.

⁴⁸ Author's review of the use of digital technology in Uganda National Development Plan IV Programmes.

- Macro-economic strategy domestic resource mobilisation - the use of digital technology for cashless payments and to improve accuracy in filed tax returns and tax compliance.
- Agro-Industrialisation - introducing digital traceability systems, such as QR codes or blockchain, to enable farmers to verify the authenticity of inputs.
- Tourism - use of digital marketing.
- Science, Technology, and Innovation (STI) - digital infrastructure required for business parks and STI institutions.
- Private Sector Development - increase access to efficient and convenient financial services, and the use of digital technology to improve efficiency and lower costs of government and business administration.
- Use of digital technology for programmes on Natural Resources, Environment, Climate Change, Land, and Water Management.
- Human Capital Development - use of digital technology for education and digital skills.
- Public Sector Transformation and Governance and Security - implementation of e-government services and systems, as well as digital identification for all citizens of Uganda.

The **DUV 2040, consistent with the National Vision and National Development Plans, outlines a national digitalisation plan**, which is expanded upon in terms of specific initiatives, “enablers” and targets in the **Digital Transformation Roadmap** (see Annexure Figures 2 and 3 for summary).

The Minister Policy Statement 2025 outlined the progress being made on the initiatives and targets outlined in the NDP IV, DUV, and the Digital Transformation Roadmap, and **sets priorities for the year ahead**. At the same time, the **Minister outlined challenges that need to be overcome**. Figure 20 provides a summary from this statement.

Figure 20: Extracts from Information Communication Technology & National Guidance - Ministerial Policy Statement FY2025/2026, March 2025

**FY25/26
Priorities**

- Extension of ICT infrastructure across the country.
- Connecting essential service centres such as schools, hospitals, tourism sites, police, and local governments to the national backbone.
- Support the roll-out and integration of e-services to digitally transform public service.
- Implementation of basic and specialized ICT training programmes.
- Support for local innovation and commercialization of homegrown products.
- Create employment opportunities by leveraging Business Process Outsourcing and Innovation.
- Promotion of community mobilization, sensitization and awareness creation for increased uptake of development initiatives.
- Implementation of a national civic education and adult literacy programme with emphasis on roles and responsibilities of families, communities and citizens.

Milestones accomplished

- The Business Processing Outsourcing & Innovation Policy was approved by Cabinet and its implementation commenced in the current FY 2024/25.
- Number of sites connected to the National Backbone Infrastructure is currently 1,567 and the total length of Optic Fibre Cable laid is 4,387 kilometres.
- The price of internet bandwidth for MDAs connected to the National Backbone Infrastructure has been reduced from USD 70 to USD 35.
- Internet penetration has increased from 25% in 2017 to 63.7% by the end of June 2024.
- The proportion of government services provided online has increased from 20% in 2017 to 62% by the end of June 2024.
- The population covered by broadband services has increased from 74% in 2017 to 85% by the end of June 2024.
- Developed by local developers and used by MDAs: Parish Development Model Information System; Integrated Health Management Information System (IHMS); Education Management Information System (EMIS); Electronic Document and Records Management System (EDRMS); and Online Business Registration Services System (OBRMS).

Challenges

- Inadequate complementary utilities and services such as electricity and road access to support rollout of ICT.
- Infrastructure automation of government systems or processes is still slow.
- The existence of many stand-alone systems in government that do not work in sync.
- Inadequate ICT uptake across the Country due to high cost of internet and ICT equipment.
- Low levels of civic consciousness, responsibility and responsiveness to spur effective participation in the political socio-economic transformation.

Plans to improve performance

- Engage the relevant stakeholders to harmonize infrastructure and utility rollout plans.
- Supporting public and private institutions to review and re-engineer their processes to facilitate automation and delivery of services online.
- Integration of existing systems by aligning them to complement each other by sharing functionalities i.e. making them customizable to address the specialized needs of individual entities as opposed to building new systems that duplicate each other.
- Review of tax regimes on the internet, ICT equipment, and services with a view to reducing the taxes and promoting the use of local applications for the e-government agenda.
- Design and implement a robust National civic education programme to sensitize and mobilize the community on the uptake and utilization of development programmes.

The combination of the NDP IV, DUV and Digital Transformation Roadmap provides a clear programme, objectives, and initiatives for the government, regulators, MNOs, and other stakeholders to work together to realise the full benefits of digitalisation in Uganda.

GSMA Intelligence analysis for this report finds that:

- **Mobile 4G population network coverage at 96% is contributing to NDP IV 2030 objective of 70% national broadband coverage.**
- **Unique mobile users at 47% (80% adult) population and 22% (48% adult) population unique mobile internet users are contributing to NDP IV 2030 objective of 45% population using the internet.**
- **However, there is a mobile internet “usage gap” of 75% of the population living within mobile internet coverage, but are not using it⁴⁹.**

The following sections of this report identify key challenges (described in Section 2D) and propose policy recommendations (outlined in Section 4, with Section 3 providing a quantitative model to evaluate the impacts on the wider economy of the policy recommendations) to increase mobile internet adoption and to contribute to the NDP IV and other digital transformation objectives.



⁴⁹ GSMA Intelligence data, 2025.

2D. Regulatory and policy challenges in mobile sector

Policy environment overview

In accordance with the National Development Plans and DUV 2040, Uganda has over the last 15 years continuously modernised and evolved sector legislation, policies and regulations.

This includes the Communications Act 2013 and implementing regulations, National Broadband Policy, National E-waste Policy, ICT Policy for Persons with Disabilities (PWDs), National Environment Management Authority Act 2019, Data Protection and Privacy Act 2019, National Payment Systems Act 2020, and Cyber Security Strategy 2022.

Despite Uganda’s digital progress and achievements, there is recognition in the interviews with government, regulators, operators, and other stakeholders conducted for this report **that there are policy barriers and challenges – and recently outlined in the Minister Policy Statement 2025 - which should be addressed to build to accelerate Uganda’s digital transformation nationally and beyond.**

This is consistent with international organisation assessments. The ITU ranked Uganda as 88th out of 193 countries globally and 12th out of African countries in its G5 Benchmark 2023 (Kenya was ranked 1st in Africa, with South Africa 2nd, Nigeria 5th, Malawi 9th, and Tanzania 13th), with the pillars “digital policy design principles”, digital development”, and “digital economy policy agenda” identified as where improvements can be made⁵⁰.

The GSMA Digital Policy and Regulatory Index 2025 ranks Uganda with a score of 54.47 out of 100, which is above the African average (47) but behind leading African countries. This index identifies key policy challenges in Uganda including license duration, network regulation, and sector specific taxation. The country performs well on technology neutral license regulatory framework, consumer protection regulations, and policies on affordability and digital skills amongst other areas (Figure 21).

⁵⁰ ITU Benchmark of fifth-generation collaborative digital regulation 2023: Global and regional trends. This ITU benchmark, operational since 2020, aims to help national regulators to evaluate their progress toward inclusive, cross-sector digital regulation primarily based on self-reported information gathered via official ITU surveys, datasets compiled by international organizations, as well as desktop research based on official government sources and direct outreach to national telecommunication and ICT regulatory authorities. The benchmark overall score is calculated based on seventy indicators grouped around four pillars: (i) national collaborative governance; (ii) policy design principles in the digital arena; (iii) digital development toolbox; and (iv) digital economic policy agenda.

Figure 21: GSMA - Digital Policy and Regulatory Index 2025 - Uganda

Source: GSMA Africa Digital Index 2025

Licensing and Spectrum		Consumer Protection	
Licensing Framework	100 / 100	Consumer Protection Framework	100 / 100
Spectrum Roadmap	100 / 100	Data Protection Framework	75 / 100
Spectrum Assignment	80 / 100	Cybersecurity	83 / 100
Mobile backhaul	77 / 100	Cross-border data flow	50 / 100
Technology neutrality	100 / 100	SIM Registration	100 / 100
Spectrum fees	100 / 100		
License duration	50 / 100	Taxation	
Spectrum leasing and trading	0 / 100	Consumer mobile taxes	0 / 100
		Consumer handset taxes	0 / 100
		Operator taxes	50 / 100
		Fiscal incentives	0 / 100
		Tax stability	0 / 100
Network Regulation		Public Policy	
Harmonised deployment	0 / 100	Affordability and Digital Skills	100 / 100
Small cell deployment	0 / 100	Gender and rural inclusion	100 / 100
Fibre regulation	100 / 100	USF Management	50 / 100
Infrastructure sharing	80 / 100	Competition Policy	0 / 100
Coverage Obligations	50 / 100	Start-up Regulation	0 / 100
Quality of Service	50 / 100		
Commercial Flexibility	50 / 100		

The GSMA Digital Africa Index 2025 indicates that countries with higher Digital Policy and Regulatory Index have higher mobile adoption (Figure 22) and higher Digital Nations and Society Index scores (Figure 23). Therefore, addressing these challenges identified in the Digital Policy and Regulatory Index and in this report through enabling policy and regulatory framework can result in increased mobile internet adoption and contribute to the NDP IV and the country’s digital transformation programme and objectives.

Figure 22: GSMA - Mobile Connectivity Index (MCI) and Digital Policy and Regulatory Index (DPRI) scores in Africa, 2025

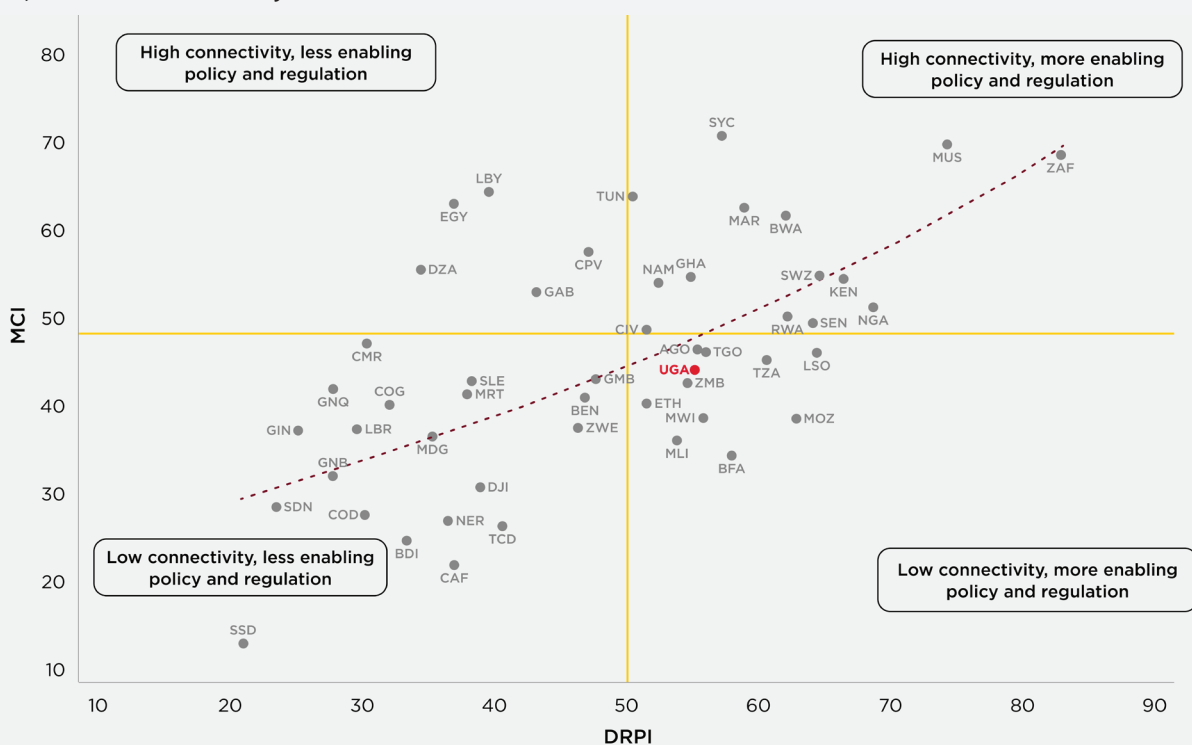
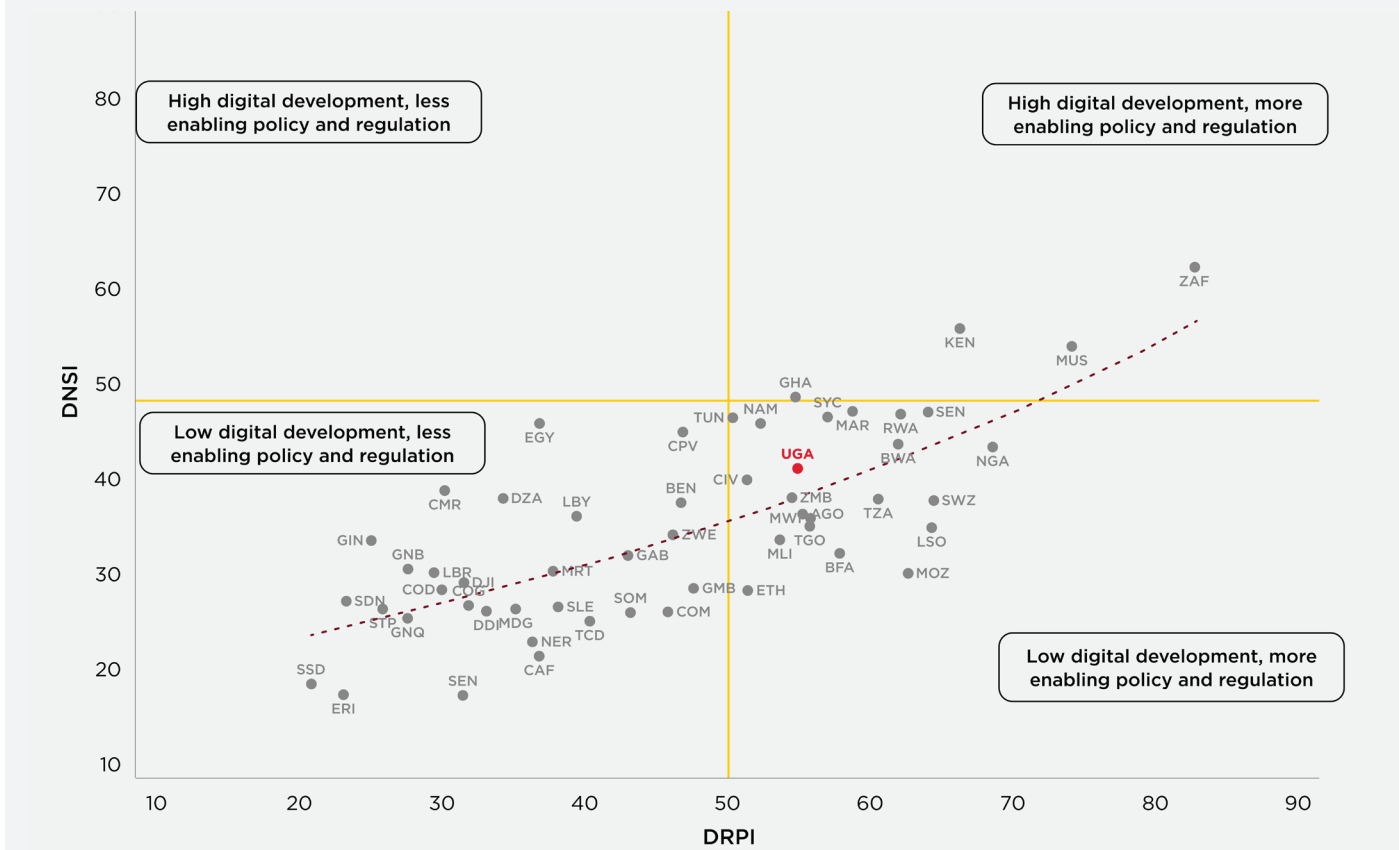


Figure 23: GSMA - Digital Nations and Society Index (DNSI) and Digital Policy and Regulatory Index (DPRI) scores in Africa, 2025



Following the consultation process and information gathered for this report, 4 key policy challenges have been identified, which are described in this Section 2D with the proposed policy recommendations provided in Section 4 of this report:

1. **Costs and operational conditions of providing digital infrastructure and services.**
2. **High and complex taxes on mobile telecoms and mobile money services.**
3. **Device affordability, digital skills, cyber security, and other demand-side barriers.**
4. **Implementation of the NDP IV, DUV and Digital Transformation Roadmap policy reforms and modernise digital policy and regulation.**

Policy challenge 1 - Costs and operational conditions of providing digital infrastructure and services

Uganda has made significant progress in providing telecommunications 2G, 3G and 4G mobile network infrastructure and is progressing 5G mobile network infrastructure deployment (as described in Section 2A of this report).

Continued investment in 4G, 5G and other digital infrastructure will be required to expand and update networks. Operators, tower infrastructure companies, and other infrastructure providers spend large amounts of money on network investment. In parallel with this, the cost of operating the networks is a key driver of business performance and financial sustainability.

Policy and regulatory decisions to address the following key issues are critical to enable a sustainable investment environment for mobile network investment and the mobile sector’s contribution to the NDP IV, 10-Fold Growth Strategy and DUV objectives.

Coverage and Quality of Service obligations

Since September 2018, the UCC has applied 90% geographic broadband coverage within 5 years of the effective date of the National Telecommunications Operator (NTO) Licence and applied minimum data speed Quality of Service (QoS) obligations, including those set in June 2023 broadband award process:

- To provide throughput of an average street-level (outdoor) downlink speed of 50Mbps in Kampala district within twelve months effective the date of spectrum assignment (2300 MHz, 2600 MHz, 3300 MHz, and 3500 MHz).
- An average street-level downlink internet speed on handheld mobile terminals of 25Mbps in the Great Metropolitan Area (Nsangi, Goma, Mukono Town Council, Mukono Kawuga, Kira, Nangabo, Nabweru, Gombe, Wakiso, Ssisa, Katabi and Entebbe Municipality) by 2025.
- An average street-level (outdoor) downlink internet speed on handheld mobile terminals of 15Mbps in all other district centres (in a coverage radius of 8 kilometre) to be achieved by the 5th Anniversary of the date of grant of the associated NTO license⁵¹.

The UCC set the 90% geographic broadband coverage in accordance with the Uganda Vision 2040, National Development Plan, and DUV objectives to provide broadband network coverage throughout the country to enable digitalisation for economic sectors such as tourism, agriculture, and trade.

Interviews for this report indicate that achieving the 90% geographic coverage obligation is challenging for the sector to achieve within the current 5 year duration period, taking into consideration the topography of Uganda, and infrastructure challenges that are outlined in this report, and GSMA Intelligence coverage and energy analysis conducted for this report (see summary of key findings on Pages 39 - 42 below).

ITU guidance is that “coverage obligations should be useful for customers and realistic for operators”⁵². Figure 24 provides a summary of the benefits and challenges of geographic and population coverage obligations.

Figure 24: Summary of benefits and challenges with geographic coverage and obligations⁵³

Coverage obligation type	Benefits	Challenges
Geographic	<ul style="list-style-type: none"> • Provides coverage across geographic areas, valued by economic sectors such as tourism, agriculture and trade in rural and remote regions. • Supports national requirements for telecoms services, including MDAs, LGs, and emergency services. 	<ul style="list-style-type: none"> • High capex and opex of providing infrastructure in remote and lowly populated areas. • Barriers to build, operate, and maintain infrastructure in remote and inaccessible areas, including energy supply, transmission, access roads, security, and other utilities. • Complex to consistently measure QoS. which requires complex terrain modelling and signal propagation analysis.

51 UCC Results of the Multi-band Radio Frequency Spectrum Award Process for the Deployment of Broadband Services in Uganda, June 2023.

52 ITU Quality of Service Regulation Manual, 2017, Page 151.

53 Authors summary for this report, informed by ITU, GSMA and other institutions' public reports.

Coverage obligation type	Benefits	Challenges
Population	<ul style="list-style-type: none"> • Ensures that services reach the largest number of users with the least infrastructure cost. • Prioritises investment and resources (e.g. efficient use of spectrum) in network coverage and services that are directly linked to actual service accessibility for consumer, government, and business users. • Population-based metrics highlight gaps in service where people live and work, allowing for a more precise identification of investment and resources to provide services to underserved communities, designated MDA and LGs, and transport routes. • Population-based QoS metrics are easier to measure by operators and regulator. 	<ul style="list-style-type: none"> • Unless specific coverage obligations or addressed under USF programmes, risk of underserved areas, communities, MDAs, LGs, and transport routes. Widening the digital divide and impacting on national digital objectives.

The most common approach adopted in African countries and internationally is that coverage obligations are set by population rather than geography. It is also common for additional obligations to provide coverage and quality of service to identified key public buildings (e.g. schools, hospitals, government buildings) and universal service policy rural areas in accordance with national digital policies and strategies developed in consultation with the MNOs and other stakeholders. Figure 25 below provides examples from African countries where 4G coverage obligations set by population together with obligations to provide coverage to underserved areas and priority public service institutions.

When mobile operators are required to allocate resources towards meeting geographic coverage obligations, due to the capital intensity of investment in telecom, their capacity to invest in other areas such as demand stimulation to achieve internet penetration targets and next-generation technologies such as 5G is reduced. This, in turn, hampers innovation and delays the introduction of advanced services in regions where demand and economic benefits would be most significant. Furthermore, geographic coverage does not necessarily correspond to user experience. While a large land area may technically be covered, including deserts, forests, or water bodies, this does not equate to meaningful connectivity for individuals. Population coverage, by contrast, provides a more accurate indication of real-world access.

With regard to license duration periods, it is an ATU recommendation and ITU and World Bank guidance to have longer duration periods for licenses and related obligations to provide regulatory certainty and encourage investment. 20 years and renewable license duration periods are recommended by the ATU. Longer duration periods provide operators with regulatory certainty for the significant capital infrastructure investment required for 4G and 5G (and future technology) network investment, for financial and operational planning and

to recover investment costs⁵⁴. Figure 25 provides examples of license durations in African and other regions or countries, in which most have at least 15- or 20-year (renewable) license duration periods⁵⁵.

Figure 25: Examples of coverage obligations and license durations

	4G license coverage obligation	Other coverage-related obligations	Typical license duration period
Brazil	92% population	USF rural obligations	4G 15 years, 5G 20 years
European Union	Member States vary, ~95% to 98% population	Some member states (e.g. Finland, France, Sweden) include geographic targets for rural areas and transport corridors.	European Electronic Communications Code (EECC) recommends a minimum of 20 years to promote investment certainty
Ghana	80% population		15 years
India	100% population	BharatNet and USF rural programs imply geographic goals, especially for villages	10 years + extended for further 10 years
Kenya	Phased nationwide coverage rollout (not published)	Prioritise underserved area, schools and hospitals	15 years
Nigeria (2021)	94% population	Designated underserved areas	10 years + extended for further 10 years
South Africa (2022)	80% population	Designated underserved areas and public service institutions	20 years
Tanzania (2018, 700 MHz)	90% population by 2024	Universal Service Fund 4G remote area coverage programme	15 years
Tanzania (2025, 3600-3800 MHz)	At least 6 administrative zones by 2028 All regional administrative capitals by 2033	Designated rural communities	15 years
United Kingdom	98% population	Mobile operator Shared Rural Network (SRN) targets 88% to 89.2% landmass coverage by 2027	20 years

The UCC applies the following signal strength thresholds when measuring coverage and QoS: 2G -90 dBm, 3G -100 dBm, and 4G -105 dBm⁵⁶. Whilst these thresholds are largely consistent

54 ATU-R Recommendation relating to spectrum licensing for mobile/broadband systems, March 2021, Page 36.

55 Authors review of licensing information on region or country regulator websites.

56 UCC Framework for Monitoring Mobile Network Operator Service Coverage Obligations, February 2024.

for urban populated areas with international standards and other countries, in interviews for this report, MNOs have identified the UCC signal strength thresholds as challenging especially for rural and remote area network coverage investment and operations. The MNOs stated that they have submitted proposals to the UCC to adjust these thresholds to: 2G -105 dBm, 3G -110 dBm, and 4G -115 dBm. GSMA Intelligence coverage and energy analysis conducted for this report estimates the potential impact of the proposed changes to the UCC signal strength thresholds for infrastructure investment, especially in rural and remote areas (see summary of findings on Pages 39 - 42 below).

The UCC undertakes regular QoS assessments, with most recent published in September 2024⁵⁷, and the UCC noted the following:

Figure 26: UCC commentary on QoS (September 2024)

“it is evident that network coverage, particularly the presence of black spots (geographical areas with weak or no signal), remains a critical issue affecting quality of service.

To address these challenges, operators have been mandated to roll out their networks to cover 90% of Uganda’s geographical area within five years of being licensed.

Furthermore, in 2023, the Commission allocated additional spectrum to operators, specifically to enhance network performance and improve service quality for users.

While the limitations and challenges of wireless technology are well understood, the Commission is committed to bridging the existing gaps and ensuring consistent improvements in consumer experience. This includes working collaboratively with operators to address coverage issues, empower consumers with the ability to choose service providers and ensure access to modern, reliable, and high-quality communication services.”

The mobile sector recognises that continuing the delivery of mobile broadband coverage and QoS are important to deliver the NDP IV, DUV and Digital Transformation Roadmap objectives. This includes operators working on commercial infrastructure wholesale sharing programmes to further expand mobile network infrastructure, improve quality of service, and reduce operating costs⁵⁸.

The GSMA has conducted coverage and energy supply analysis this year of 4G coverage performance and QoS requirements to achieve license coverage obligations in Uganda, the key findings include:

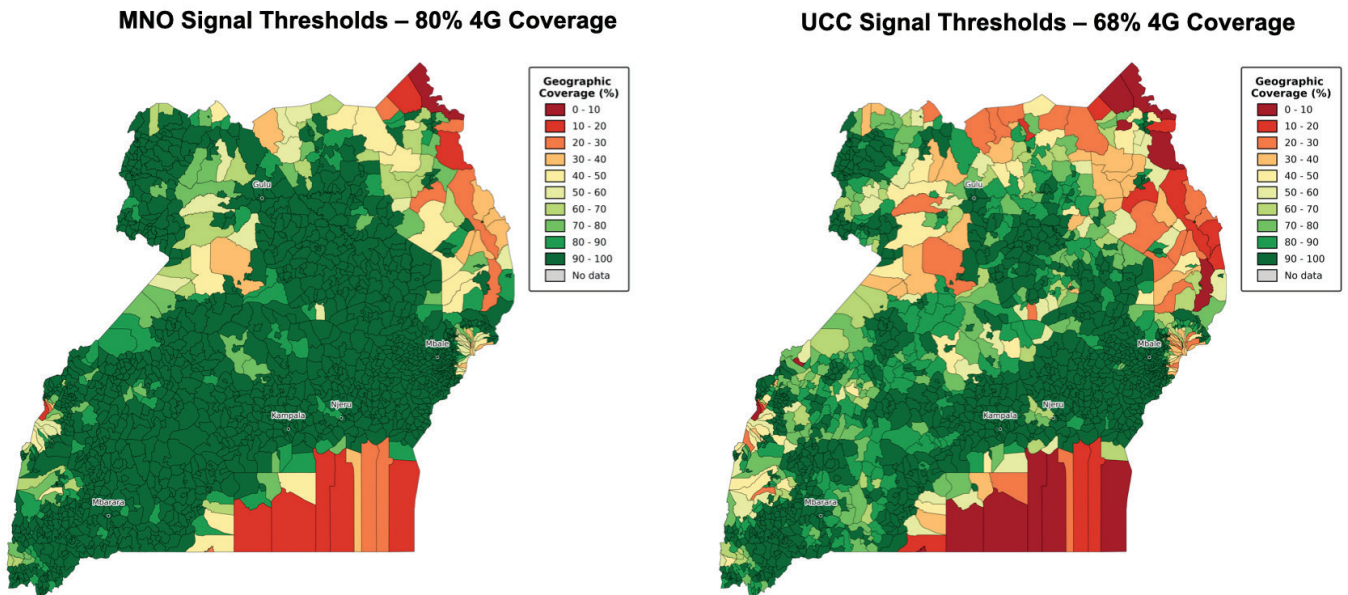
- 4G network population coverage closely tracks population settlements in the country, with 96% national coverage, 98% Urban and Peri-Urban coverage, and 89% rural coverage (Figures 12, 13, and 14) - putting Uganda as one of the leading African countries in terms of mobile internet (broadband) coverage.
- 68% 4G network geographic coverage, UCC signal strength threshold has been achieved. Using the MNOs proposed alternative threshold, this increases to 80% geographic coverage (Figure 27).

⁵⁷ UCC Quality of service findings for mobile voice telephone and data services in Uganda, September 2024.

⁵⁸ Press release - MTN Group and Airtel Africa agree to network sharing in Uganda and Nigeria, March 2025.

Figure 27: MNO 4G geographic coverage by UCC signal threshold and MNO proposed threshold

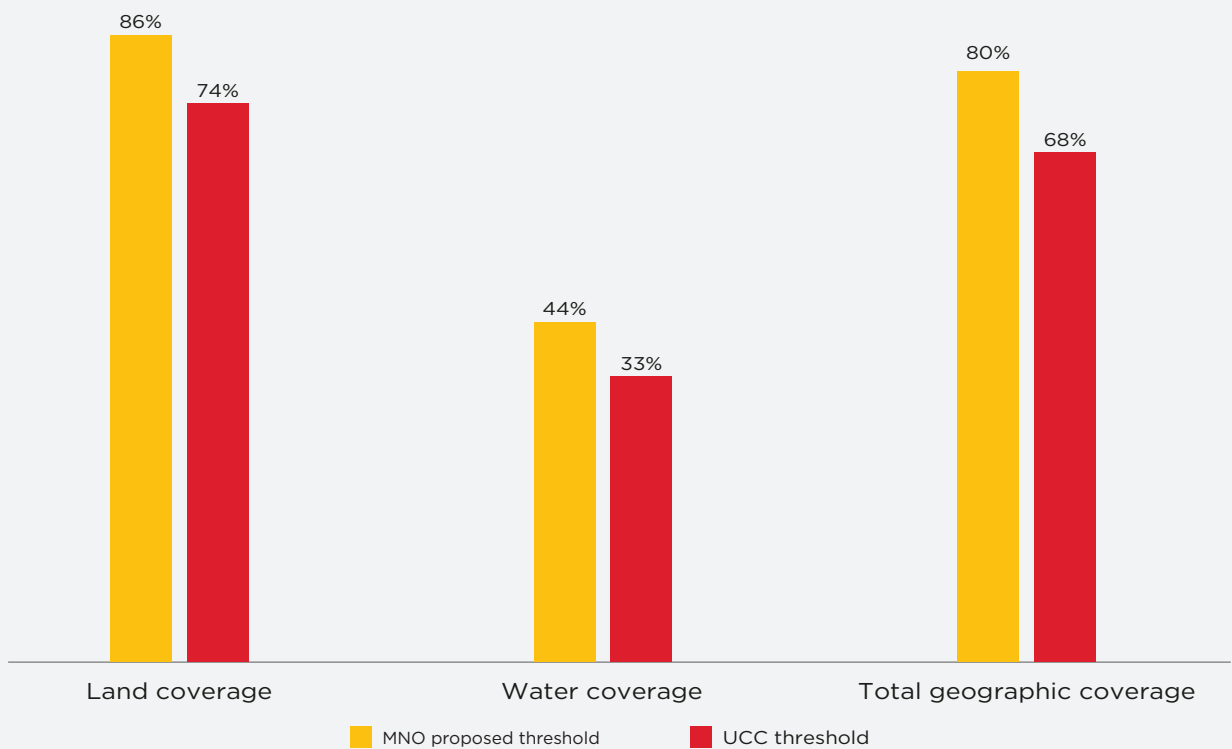
Source: Analysis of operator site data and GHSL population data by GSMA Intelligence and GoYo Analytics GSMA Intelligence



- Uganda’s territory includes mountains (over 2,800 named mountains), terrestrial protected areas (16% of Uganda’s territory which includes national parks, nature reserves, wildlife sanctuaries, and other conservation zones⁵⁹), and waterbodies (15% of Uganda’s territory⁶⁰). Using UCC signal threshold, 74% land and 33% land is covered by 4G networks. Using the MNOs proposed signal strength thresholds, this increases to 86% land and 44% water 4G coverage (Figure 28).

Figure 28: 4G network geographic coverage of land and water

Source: GSMA Intelligence



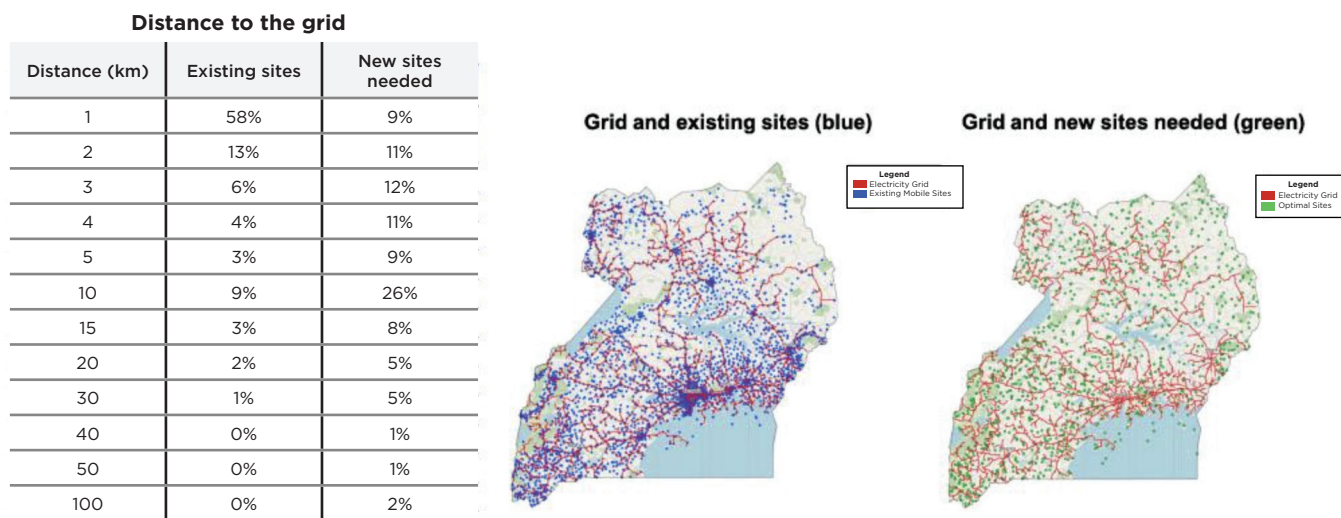
59 World Database on Protected Areas (WDPA).

60 Global Human Settlement - Datasets - European Commission.

- Energy costs as examined further in this Section 2D report is a key issue for operating telecommunications networks. GSMA analysis finds that 58% of existing 4G network sites are within 1 kilometre of the national electricity grid, however 91% of new 4G sites required to achieve the remainder of the 90% geographic coverage obligation are outside of 1 kilometre of the electricity grid (Figure 29). Based on information provided by the MNOs, the annual Opex cost of off-grid diesel sites are ~ USD 55,000 compared to on-grid ~ USD 38,000, and providing these new sites off-grid and at current cost levels would be financially and commercially unviable in remote areas with low population.

Figure 29: Electricity grid and mobile site locations

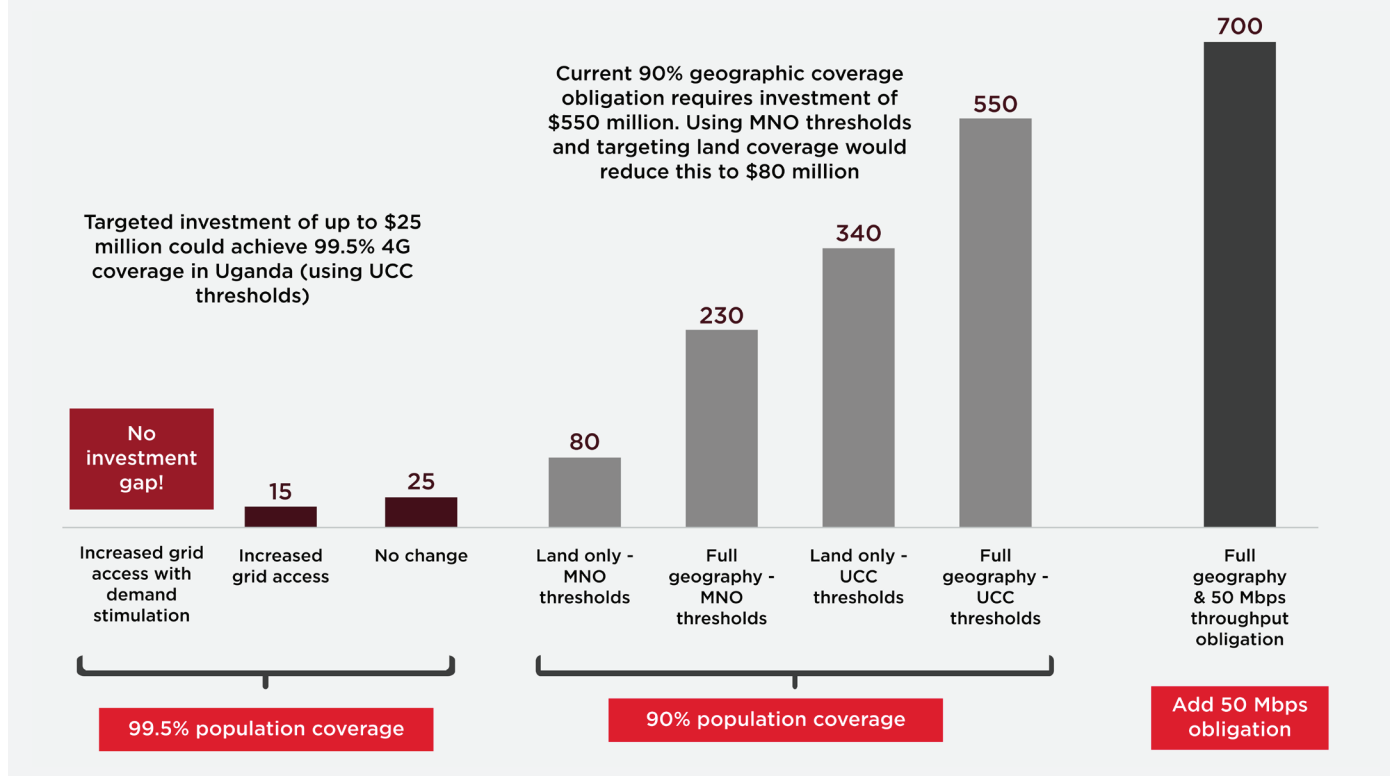
Source: GSMA Intelligence



- To achieve compliance with the 90% geographic coverage obligation for 4G networks, using UCC signal thresholds, would require ~ 1,400 new sites in mostly uninhabited areas at a cost of USD 550 million. This cost would reduce to USD 80 million if the UCC adopted the MNO proposed signal thresholds and revised coverage obligations to land only (excluding waterbodies). (Figure 30).
- An estimated USD 25 million investment required to expand 4G population coverage from current 96% to 99.5% (using UCC signal thresholds) without increased electricity grid access, which could be reduced to USD 15 million if increased electricity grid access (Figure 30).

Figure 30: Investment required to meet coverage obligation (with scenarios on electricity assess, signal thresholds, and land only)

Source: GSMA Intelligence



A collaborative approach of the UCC, as stated in September 2024, is welcomed to work with operators to address coverage and QoS issues and to contribute to the achievement of NDP IV 2030 digital transformation programme objectives of 70% national broadband coverage and 45% of the population using the internet. Taking into consideration the above GSMA analysis and the analysis contained in this report, **the following recommendations are made related to coverage and QoS obligations to enable efficient investment allocation to drive continued sustainable infrastructure deployment:**

1. Amend the coverage obligation requirements in the NTO license from the from the current 5- year to 20- year period, and agree a phased investment rollout programme with the operators.
2. As part of this phased rollout programme, consider revising the 90% geographic license obligation to:
 - a. Population-focused obligations with designated priority locations including providing services to designated MDAs and LGs, education, healthcare, transport routes, and key economic sector areas (e.g. agriculture, tourism, manufacturing and services).
 - b. Coverage obligations to exclude uninhabited, mountain, waterbodies, protected areas which are difficult to operate mobile networks (noting the potential use of alternative technologies, such as LEO satellite technology, to provide coverage to these areas as part of UCUSAF programme).
 - c. Review signal strength thresholds, especially to consider network opex optimisation requirements in rural and remote areas.
3. The UCC, MNOs, tower companies and other stakeholders should collaborate on the development and implementation of an action plan with measures to address the underlying

barriers to coverage and QoS required to achieve NDP IV, DUV, and Digital Transformation Roadmap objectives.

This action plan and applicable regulation should consider “reasonable endeavours” undertaken by MNOs to address these barriers such as inability to obtain planning permission for sites, restrictions on towers applied by government and regulatory agencies, unreasonable landlord and regulatory fees, energy supply restrictions and costs, availability and cost of backhaul fibre and transmission, access roads to towers, and infrastructure vandalism and theft. This would be similar to the approach adopted by other national regulators such as the UK’s Ofcom⁶¹.

4. If the NTO license 5-year duration period is not extended, the UCC should assess the coverage obligation compliance from February 2024, the date of the publication of the Framework (Methodology) for Measuring Geographical Coverage, and not from June 2020 when the NTO License was issued.

Building on the progress achieved to date with 4G mobile network coverage, these proposed policy recommendations can address the remaining coverage gap. GSMA analysis, as summarised above, concludes that these policy recommendations if implemented would help 4G coverage increase from 96% to 99% population with a lower investment cost of USD 15 million compared to USD 25 million if policy recommendations are not adopted. The remaining 0.5% to 1% population in remote areas would require the use of alternative technologies, such as LEO satellite technology. Figure 31 provides a summary of the GSMA analysis and findings.



61 Ofcom Coverage Obligations Notice of Compliance Verification Methodology, version 20 February 2024.

2. Spectrum

Uganda is acknowledged for its progressive radio spectrum policy, including technology neutral and long-term spectrum licensing. This includes UCC spectrum assignments to MNOs in 700 MHz, 800 MHz, 2.3 GHz, 2.6 GHz and 3.5 GHz bands in 2023⁶².

It is noted that the current UCC's Radio Frequency Spectrum Master Plan 2021/22 to 2025/26 will be revised for the next 2026/27 to 2030/31 period. Continuing a future proof spectrum management policy and roadmap approach⁶³ adopted by the UCC to date will be important, as recognised by spectrum related “enablers” included in the Digital Transformation Roadmap (see Annexure Figure 3):

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

3. Infrastructure construction and maintenance

The telecommunications sector and digital infrastructure require continued large-scale investment into building and maintaining infrastructure, including 4G and 5G mobile sites and fibre-optic cables. This begins with the regulatory processes to obtain construction permits from local authorities and the conditions that are attached to those permits.

The sector continues to face the following key challenges with regard to infrastructure construction and maintenance regulatory processes, which are resulting in increased cost of deployment, operation, and maintenance:

Figure 32: Challenges with infrastructure construction and maintenances

Source: GSMA Intelligence

Challenge	Case Studies
Construction processes lengthy in time and complex	UCC Annual Report 2023 cited that tower construction permits had slowed from 82 days in 2020 to 382 days in 2023. Limited coordination of fibre and ducts building and maintenance, especially in the building of new property developments resulting in overbuild and damage of infrastructure.
Limited coordination of infrastructure and utilities such as roads and energy required for telecoms infrastructure	Minister Policy Statement 2025 cited this as a key challenge and proposed to “engage the relevant stakeholders to harmonize infrastructure and utility rollout plans”.

It is recommended that the government and UCC consult on the development - and then prioritise implementation - of a national infrastructure policy and applicable regulation for telecommunications and the introduction of a single digital administrative, coordination, and approvals platform to address these infrastructure deployment and maintenance challenges.

62 GSMA Article - Spectrum assignment moves Uganda closer to national broadband targets, August 2024.

63 As part of this review, the GSMA 5G Spectrum Public Policy Position 2025 recommendations may be in informative.

African countries that are introducing new harmonised digital infrastructure construction and maintenance legislation, regulation, and masterplan with reduced right of way fees include Nigeria and Tanzania⁶⁴.

4. Energy supply

Digital infrastructure is dependent on Uganda’s electric power supply. Meeting telecoms network coverage and quality of service obligations, especially in remote rural areas, are challenging due to inconsistent grid power supply and rising costs of national grid electricity and alternative energy sources such as diesel generators.

This is consistent with many countries, Sub-Saharan Africa accounts for more than 80% of the global population without electricity⁶⁵. To address this challenge, the World Bank and African Development Bank are leading Mission 300 Initiative to connect 300 million Africans to electricity by 2030. Governments are implementing new energy investment compacts and programmes. For example, Nigeria’s Distributed Access through Renewable Energy Scale-Up programme was launched in 2024 with the aim of bringing clean and renewable energy to 17.5 million Nigerians underserved or unserved, supported by USD 750 million investment provided by the World Bank and includes financing for the private sector to rollout solar hybrid mini-grids and standalone solar systems⁶⁶.

In Uganda, the UCC stated in its Annual Report 2023 that 22% of telecommunications networks had access to the main electricity grid supply, and the Minister Policy Statement 2025 listed energy supply as a key challenge for the sector. GSMA analysis, as outlined earlier in this report, finds that 91% of new 4G sites required to achieve the remainder of the license 90% geographic coverage obligation are outside of 1 kilometre of the national electricity grid (see Figure 29).

GSMA research has established that higher energy costs result in higher mobile prices. Conversely where operators have lower costs, for example by accessing the national grid energy, this results in improved affordability of services. Uganda is one of the lowest performers in terms of access to energy impacted by high energy costs (Figure 33)⁶⁷.

64 GSMA Digital Economy Report for Nigeria (2024). Tanzania digital economy strategic framework 2024 – 2034.

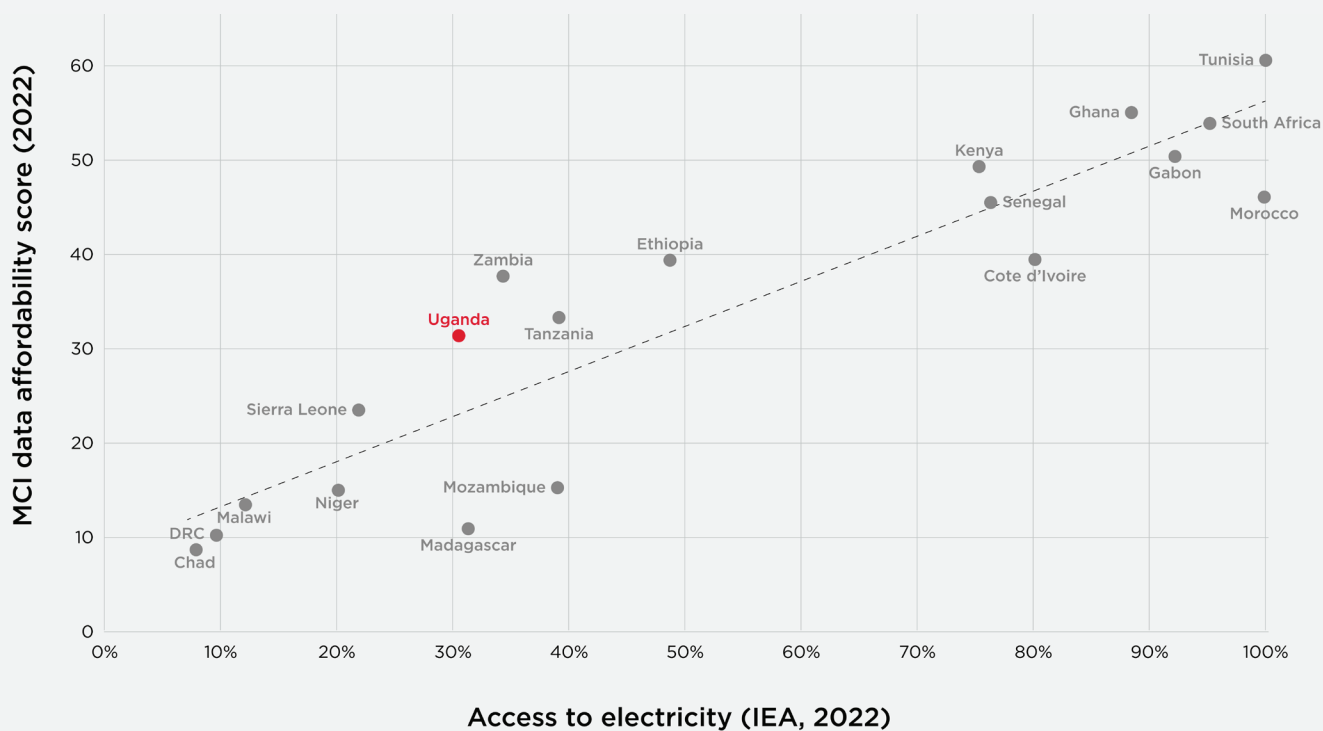
65 GSMA Intelligence, Rural renewal: telcos and sustainable energy in Africa, 2024.

66 See Mission300Africa website. GSMA The Mobile Economy for Africa 2025, Pages 29 – 30.

67 GSMA Intelligence Report: Rural renewal - telcos and sustainable energy in Africa, November 2024.

Figure 33: Relationship between energy costs and data affordability in selected African countries

Source: GSMA Intelligence



Mobile operators are undertaking programmes to increase efficient usage of energy, including energy supply from renewable energy sources – consistent with the Digital Transformation Roadmap “preserving environment” initiatives, for example:

Figure 34: Case studies on mobile operator’s renewable energy programmes

Airtel Uganda is actively working on renewable energy initiatives, as part of Airtel Africa’s broader commitment to achieving net zero emissions by 2050, reducing emissions intensity by 62% by 2032⁶⁸.

MTN Uganda, as part of MTN Group’s Project Zero, has sought to stabilise power supply, reduce generator dependence and improve energy efficiency, ultimately lowering carbon emissions and enhancing network resilience. In 2024, MTN Uganda upgraded 3,339 cell sites to solar and hybrid clean power⁶⁹ and achieved a 58.40% reduction in Scope 1 and 2 emissions against a target of 12.5% and achieved monthly cost saving of USD 289.32⁷⁰.

The mobile sector is committed to work with the government and the UCC on the proposed engagement with stakeholders on energy supply for the ICT outlined in Minister Policy Statement 2025 and related initiatives as part of the NDP IV, DUV, and Digital Transformation Roadmap. The following recommendations are proposed for consideration:

- Establish and implement a masterplan between the Ministry of ICT and National Guidance and the Ministry Energy, Kampala Capital City Authority working with the mobile network operator and energy companies, to ensure telecoms energy supply requirements are part of national energy programmes⁷¹.

68 Airtel Africa Article - Journey to a net zero future (retrieved from Airtel Africa website).

69 MTN Uganda Annual Report FY24, Page 21.

70 MTN Uganda - Project Zero: Improving energy efficiency in Uganda, 25 April 2025.

71 In the Finance Budget Statement FY25/26, the Minister of Finance outlined UGX 1.04 trillion investment in the Uganda Electricity Generation Company Limited to ensure affordable, efficient, and reliable distribution of electricity to consumers;

- Lower energy charges for telecoms sector.
- A diesel rebate tax relief incentive for mobile operators and tower companies to lower costs of energy supply.
- Reduce the regulatory burden for licensees, particularly for UCC regulations (e.g. coverage, QoS) and for UCUSAF requirements, whose compliance depends on a consistent power supply for optimal network connectivity.
- Provide incentives for alternative energy supply and renewable energy sources used by the sector.

Adopting these recommendations can contribute to lowering the cost of energy supply to mobile network infrastructure in existing areas and assist with expanding coverage in remaining areas (as summarised in Figures 30 and 31).

5. Infrastructure theft and vandalism

High rates of theft and vandalism of telecoms network infrastructure are raising costs and affecting network performance in Uganda. Between 2022 and 2024, telecom operators reported 820 cable thefts, 283 fuel robberies, and 90 battery thefts, leading to service outages lasting over 134 hours in districts like Sheema, Kaliro, and Masaka⁷².

This requires operators to invest in additional security and the replacement of affected infrastructure and constrains operators' ability to expand coverage and improve quality of service.

Uganda's challenges are similar to other SSA countries such as Nigeria (for example, MTN Nigeria was required to relocate 1,069 kilometres of fibre cables due to cuts and other damage in Financial Year 2022 and a further 1,433 kilometres in Financial Year 2023. The budgets for these repairs were NGN 4.4 billion (USD 2.7 million) and NGN 6.7 billion (USD 4.2 million), respectively, and could have been invested to build an additional 870 kilometres of new fibre⁷³) and South Africa (for example, MTN and Vodacom invested a cumulative ZAR 550 million (USD 2.9 million) in repairs due to vandalism and theft at base stations during calendar year 2024⁷⁴).

The support of the government, following last year's sector meeting with the President, and the UCC and telecom operators recent joint launch of the TOKIGEZA ("don't do it") countrywide initiative and the in-principle commitment to apply critical national infrastructure status to towers are welcome⁷⁵.

It is recommended that the following measures are considered by the government and the UCC to further protect telecommunications infrastructure and ensure investment is focussed on providing services rather than replacing vandalised or stolen infrastructure:

- Confirmation of the designation of the telecommunications sector as national critical infrastructure status in applicable legislation and regulations, similar to other countries such as Kenya and Nigeria⁷⁶.
- Penalties for vandalism and theft by organised crime and individuals to be increased to provide a harder sanctions and deterrent, similar to being applied in the energy sector following the Uganda Electricity (Amendment) Act 2022⁷⁸.

to enhance access to electricity through implementation of the USD 638 million Electricity Access Scale-up Project covering grid expansion, connectivity and clean energy options for 1 million new electricity connections; and investment in priority transmission lines and sub-stations, particularly to the industrial parks, growth centres and other strategic manufacturing facilities.

72 Pulse Uganda Article - Ugandan telcos join hands to take on infrastructure vandals, 22 May 2025.

73 GSMA Digital Economy Report for Nigeria, May 2024.

74 My Broadband Article - R550 million per year disaster in South Africa, December 2024.

75 Pulse Uganda Article - Ugandan telcos join hands to take on infrastructure vandals, 22 May 2025.

76 Kenya Protection of Critical Infrastructure Bill 2024.

77 Further Africa Article - Safeguarding Nigeria's Critical National Information Infrastructure, December 2024.

78 Ministry of Finance, Planning and Economic Development, Development Policy and Performance Portal - New Developments in the Electricity Amendment Act, 2022.

- Police and security authorities work together with telecommunications operators to coordinate activities to protect infrastructure security. An example is in South Africa with the establishment of a Communication Risk Information Centre and other programmes established by mobile operators – such as MTN – with the police forces⁷⁹.

6. Universal Service Fund Modernisation

The UCC, with its responsibility for UCUSAF, – is making an important contribution to the objectives of UCUSAF IV strategy, which seeks to achieve “Digital Inclusivity through sustainable interventions and impactful collaborations” in accordance with the NDP IV, DUV and the Digital Transformation Roadmap⁸⁰.

In accordance with their licenses, the mobile operators pay 2% of gross revenue annually to the UCC Universal Service Fund. The UCC reported in May 2025, that MTN paid UGX 42.5 billion and Airtel paid UGX 37.9 billion⁸¹.

It is recommended that the UCC undertakes a new UCUSAF policy review, including the achievement of NDP IV, DUV and Digital Transformation Roadmap objectives and targets in areas not covered by the mobile operators. This UCUSAF review should consider, amongst others:

- The introduction of targeted subsidies - including capex and opex (energy supply, transmission, access roads, and other utilities) costs - for mobile broadband coverage in remote and low populated areas. A good example is the Tanzania Universal Communications Service and Access Fund subsidy programme, supported by the World Bank, which has resulted in 4G mobile broadband coverage of 1,643 towers, covering 4,250 villages and reaching 18.5 million people⁸².
- The use by MNOs of LEO satellites to extend coverage in remote and low populated areas (noting GSMA recommendations in Figure 57).
- Operator participation in the universal service policy governance, and increased transparency including published annual audit reports⁸³.

Impact of “Sustainable Infrastructure Investment” policy recommendations to address Policy Challenge 1 - costs and operational conditions of providing digital infrastructure and services

As described in Section 1D, this report provides a quantitative model of Uganda’s mobile sector to evaluate the impacts of the proposed policy recommendations to address the challenges and to contribute to Uganda’s NDP IV, DUV, and digital transformation programmes.

Key recommendations to address Policy Challenge 1 and to provide a sustainable digital infrastructure investment environment, include amendment to coverage obligations in the NTO license from the current 5- year to 20- year period, and agree phased investment rollout plan with operators, revised QoS signal strength thresholds, and energy supply reforms.

⁷⁹ IT Web article - New entity to fight telecoms theft, vandalism, January 2022. Africa Telecoms Review article - MTN SA Fights Network Theft & Vandalism, February 2024.

⁸⁰ UCC website – UCUASF page.

⁸¹ UCC Market Performance Report, quarter ending June 2025.

⁸² Tanzania Universal Communications Service and Access Fund (UCSAF) article - Connecting Rural Communities: UCSAF’s Role in Tanzania’s Digital Transformation. For description of the subsidy mechanism and recommendations - see World Bank Group report, Allocating universal service subsidies using electronic multi-round reverse auctions: Telecommunications in Tanzania, June 2023.

⁸³ Further recommendations can be found in the GSMA and ATU report, Universal service funds in Africa Policy reforms to enhance effectiveness, 2023.

GSMA analysis estimates that the UCC’s current 90% geographic coverage obligation requires an additional investment of USD 550 million and if the proposed policy recommendations are adopted that 4G population coverage could increase from 96% to 99% at a lower investment cost of USD 15 million (compared to USD 25 million if policy recommendations are not adopted). This includes GSMA analysis that better access to energy and lower costs would raise the operator’s ability to profitably expand 4G coverage by 1%. The combination of the proposed policy recommendations and operators’ investment would further contribute to the NDP IV 2030 objective of 70% national broadband coverage.

GSMA analysis also find that in 2025 there are 47% (80% adult) population unique mobile users and 22% (48% adult) population unique mobile internet users, contributing to NDP IV 2030 objective of 45% population using the internet.

Outputs from the report quantitative model find that if the proposed policy recommendations are adopted to address Policy Challenge 1, specifically on coverage obligations reforms (Figure 35) and energy supply (Figure 36), this would result in an increase of 1.44 million unique internet users (+2.4% of the population) (Figure 37).

Figure 35: Mobile internet uptake in Uganda with reforms to coverage obligations

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Sustainable Investment Measures	11.48	12.07	12.70	13.36	14.04	14.73
Y-on-Y difference to BAU	0.0%	0.2%	0.4%	0.6%	0.7%	0.9%
Increase in growth from 2025 vs BAU	0.0%	0.2%	0.4%	0.6%	0.9%	1.1%

Figure 36: Mobile internet uptake in Uganda with lower energy costs

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Sustainable Investment Measures	11.48	12.55	13.74	14.45	15.18	15.92
Y-on-Y difference to BAU	0.0%	4.2%	8.6%	8.8%	8.9%	9.0%
Increase in growth from 2025 vs BAU	0.0%	4.4%	9.5%	10.2%	10.8%	11.5%

Figure 37: Combined impact of sustainable investment initiatives

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Sustainable Investment Measures	11.48	12.58	13.79	14.52	15.28	16.05
Y-on-Y difference to BAU	0.0%	4.4%	9.0%	9.3%	9.6%	9.9%
Increase in growth from 2025 vs BAU	0.0%	4.6%	9.9%	10.8%	11.7%	12.6%

Policy challenge 2 - High and complex taxes on mobile telecoms and mobile money services

The Minister Policy Statement 2025 concluded with the following statement: “the high cost of ICT devices and services has been identified as a potential impediment to the attainment of this (DUV) goal. Discussions to review the tax regime for ICT devices and services with a view to reducing their tax rates have been ongoing but have taken long. It is therefore the programme’s desire that the proposed review of the tax regime for ICT devices and services is expedited”.

There are at least 20 taxes and fees applying to the mobile telecoms and mobile money sector, including several sector-specific fees and general taxes as set out in Figure 38.

Figure 38: Taxes, regulatory fees, and levies applicable to mobile telecoms and money operators in Uganda⁸⁴

	Tax name	Tax rate and details	Tax type or base
Corporate taxes	Corporate income tax (CIT)	30% of taxable income less allowable deductions	Profit
	Turnover tax	30% of turnover and fixed fees charged as taxes for companies with annual turnover between UGX 10 million and 150 million	Revenue
Employment taxes	Local service tax	Between UGX 5,000 and UGX 100,000 per annum, subject to employee’s income bracket	Labour costs
	National Social Security Fund	An employer is required to make contributions to each employee’s National Social Security Fund, equal to 10% of their gross pay	Labour costs

84 GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Uganda, October 2025. Information provided by mobile operators, October 2025. Taxes marked by * are subject to proposed policy recommendations in this report.

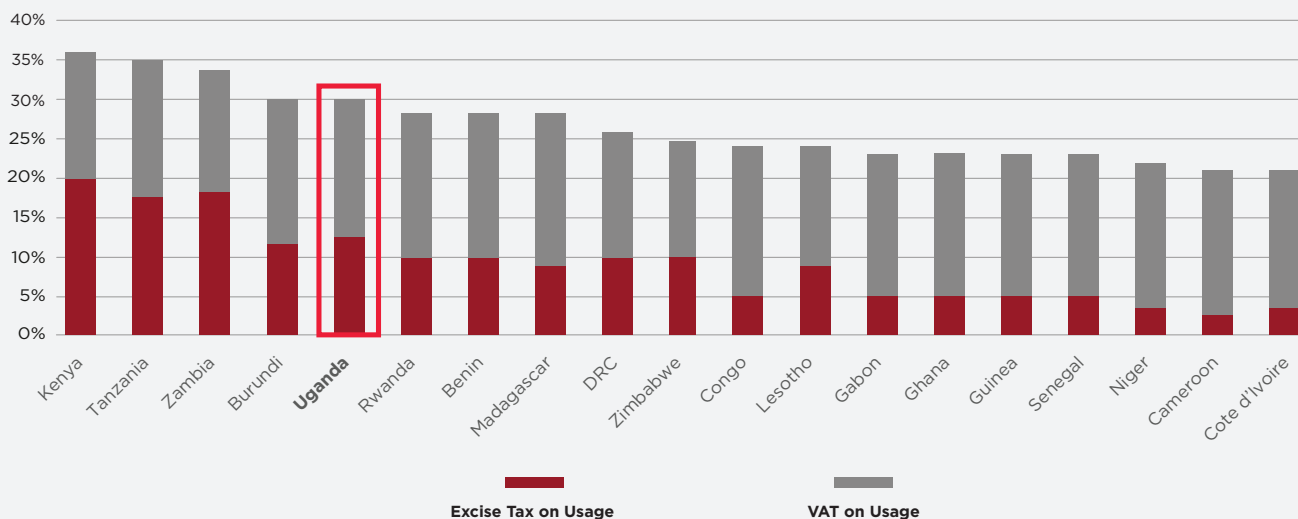
	Tax name	Tax rate and details	Tax type or base
Consumption taxes	Customs duty*	Mobile phones: 10% Base stations: 0% Towers and masts: 25% SIM and memory cards: 25% Spares and Parts of Telco Equipment: 10%	Cost of goods / services
	Excise duty*	12% of price charged exclusive of VAT on airtime, data services and value-added services	Price of service
	Value added tax (VAT)*	18% on mobile services and mobile phones	Price of goods / service
Other taxes	Capital gains tax	30% (CIT rate)	Taxable gains
	Stamp duty	Stamp duty 1.5-2% is applied on exchange of property, liable to the buyer	Transaction value
	Environmental levies	Environmental levies are charged on vehicle purchases manufactured over nine years ago (No vehicle purchases for the purpose of carrying goods and services assumed)	Import value
Sector-specific taxes	Commission paid by Telecommunication Service Providers for Airtime Distribution or Provision of Mobile Money Services	A telecommunications service provider must withhold a 10% tax on the gross amount of any commission paid for airtime distribution or mobile money services.	Transaction value
	Duty on mobile money withdrawals*	0.5% of mobile money withdrawal amount	Transaction value
	Duty on mobile money non-band transfers	15% of fees on non-bank transfers	Transaction value
	Transfer of telecommunications licence	2.5% of previous year gross annual revenue or USD 50,000, whichever is higher.	Revenue / Fixed fee
	Rural Communications Development Fund	2% of gross annual revenue	Revenue
	Telecom operators acting as service payment providers	Telecom operators facilitating mobile money services are liable to pay an annual fee of UGX 50 million per annum	Fixed fee

Tax name	Tax rate and details	Tax type or base
National Telecom Operator licence	Telecom operators are required to procure a licence to establish and operate a telecommunications network spanning across Uganda: <ul style="list-style-type: none"> • Minimum licence value: USD 21,300,000 • 1.8% of gross annual revenue multiplied by licence payment terms (10 years) / minimum licence value - whichever is higher • Initial licence is for a duration of 20 years, with 10-year extensions thereafter 	Fixed fee
Sale of telecommunications apparatus	The licence involves the following fees: <ul style="list-style-type: none"> • Application fees: USD 1,500 • National distributors of telecoms apparatus: annual licence fee of USD 5,000 • Importers, wholesalers of telecoms apparatus: annual licence fee of USD 2,500 	Fixed fee
Annual spectrum fees on mobile operators	Formula: spectrum fee in USD paid per MHz paired: <ul style="list-style-type: none"> • 1.37 GHz: USD 2,700 • 1.8 GHz: USD 4,500 • 2.1 GHz: USD 4,500 for first 5 MHz paired then 40,500 per extra MHz • 2.3 GHz: 2,700 for first 5 MHz paired then 40,500 per extra MHz • 2.6 GHz: USD 4,500 • 3.5 GHz: USD 4,500 • 2.6 GHz: USD 5,400 • 900 MHz: USD 30,000 for first 5 MHz paired and then 81,100 per extra MHz • 1.8 GHz: USD 45,000 for first 5 MHz paired and then 81,100 per extra MHz • 2.4 GHz: USD 22,500 for first 5 MHz paired and then 81,100 per extra MHz 	Per MHz paired

Uganda's mobile sector tax contribution is amongst the highest in SSA, driven by the level of sector specific taxes, with VAT and excise duty on airtime (Figure 39).

Figure 39: Combined usage tax rates (Excise Tax + VAT) for selected countries in SSA (2021)

Source: GSMA Tax Database. Data for 2021.



The high level of tax rates shown in Figure 39 translate into tax as a proportion of mobile sector revenues (Figure 40), and sector specific taxes (Figure 41) where Uganda has amongst the highest tax burden in the region.

Figure 40: Tax and fee payments as a proportion of mobile sector revenues for selected countries in SSA (2021)

Source: GSMA analysis and operator data.

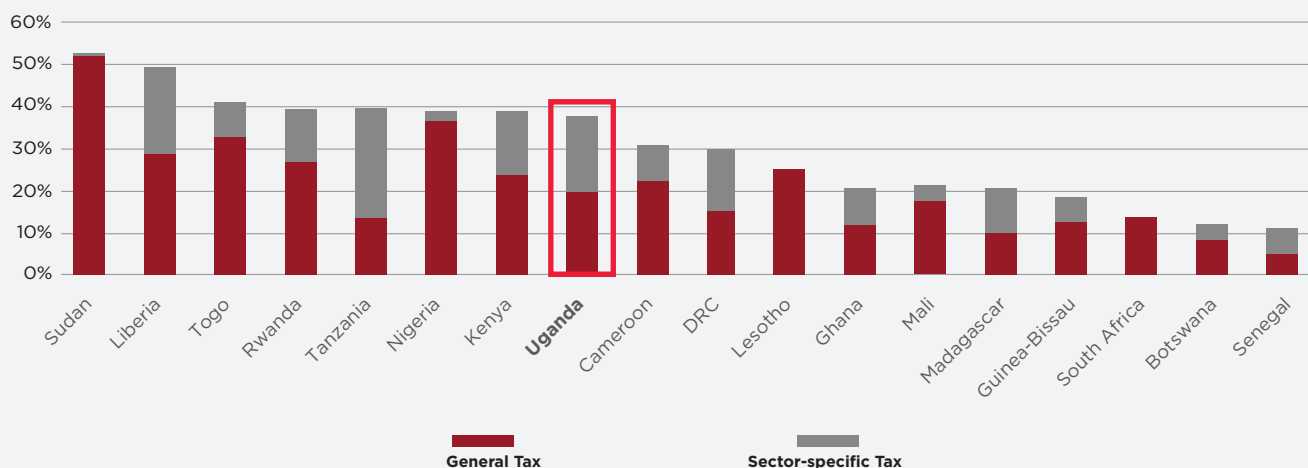
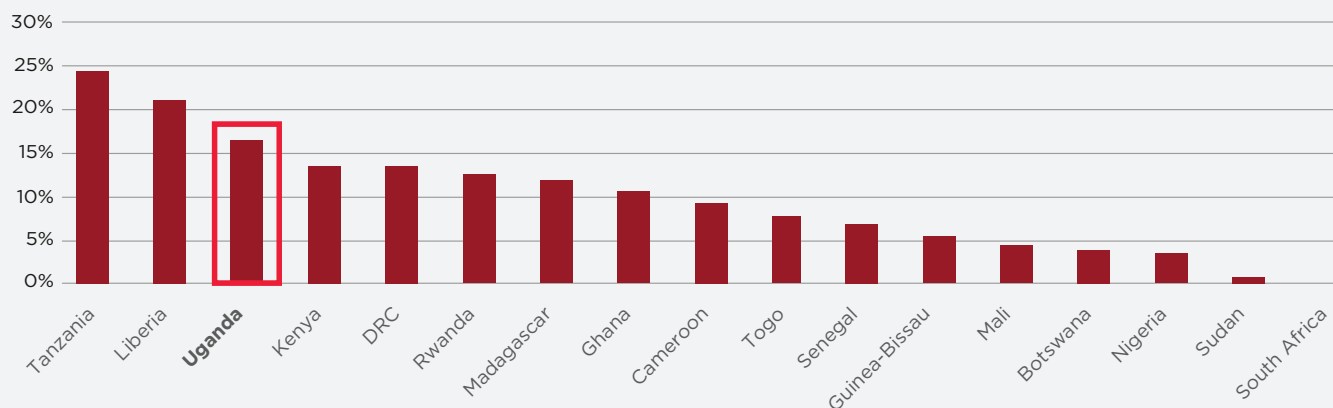


Figure 41: Sector-specific taxes and fee payments as a proportion of market revenue for selected countries in SSA (2021)

Source: GSMA analysis and operator data.





Further, Uganda mobile operators are subject to one of the highest tax levels when compared with other sectors in the country. GSMA analysis⁸⁵ finds that:

- The Average Effective Tax Rate (AETR)⁸⁶ in the mobile telecoms sector is at 68% when compared with the retail finance sector at 39% (chosen as a key contributor to the Ugandan economy and similar to the mobile sector in that it is a regulated service industry that supports transactions between consumers and businesses). This elevated burden is driven largely by sector-specific excise taxes on mobile services and fees based on operators' turnover rather than profit, as well as the fixed upfront regulatory charges (Figure 42).

Figure 42 - Comparison of effective tax rates in mobile telecoms and retail finance sectors in Uganda

Source: GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Uganda, October 2025

	 Mobile Telecoms	 Retail Finance
AETR (tax as a % of pre-tax profits)	68%	39%
AETR (tax as a % of revenues)	24%	11%

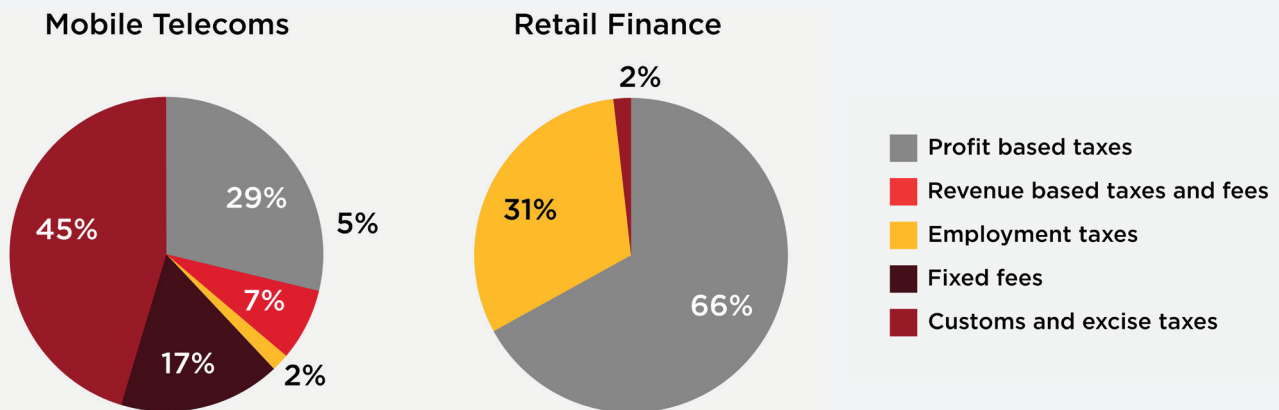
- Only 29% of the mobile sector's tax burden is profit-based, with most taxes derived from sector-specific fees either fixed or as % of revenues. In contrast, profit-based taxes comprise 66% of the total tax burden for the retail finance sector. Notably, the retail finance sector faces no significant sector-specific taxes, with most of its tax obligations arising from standard corporate income taxes and employees-related contributions (Figure 43).

⁸⁵ GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Uganda, October 2025.

⁸⁶ To ensure a fair comparison between the sectors, EY adopted the following approach was used when measuring the effective tax rate: 1. These calculations used revenue, capex, and opex profiles specific to each sector over the modelling period of 15 years, along with the applicable tax regimes. 2 AETR as a share of revenue: NPV of total tax payable / NPV of revenue (10% discount rate). 3. AETR as a share of pre-tax profit: NPV of total tax payable / NPV of pre-tax profit (10% discount rate).

Figure 43 - Share of total tax base - mobile telecoms and retail finance sectors in Uganda

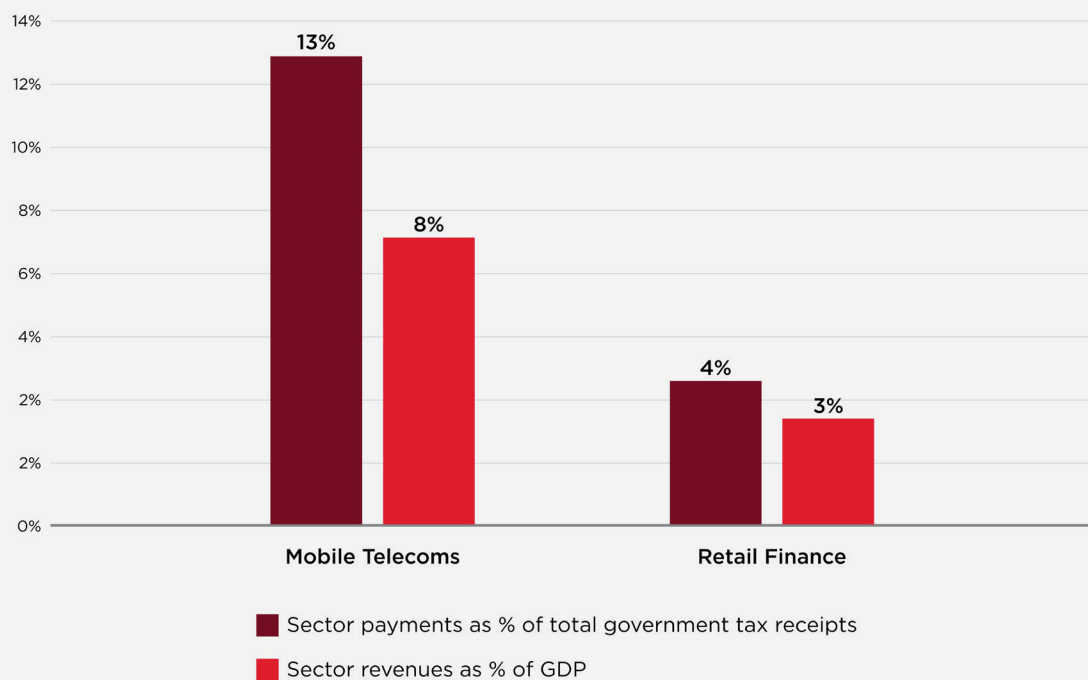
Source: GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Uganda, October 2025



- When tax contributions are compared with each sector’s share of national GDP, the telecoms sector contributes disproportionately more. This is primarily due to heavy sector-specific taxes and fees (Figure 44).

Figure 44: Sector share of total Uganda GDP vs. sector tax contributions

Source: GSMA Mobile Sector Taxation: Comparative Fiscal Burden in Uganda, October 2025



- The mobile telecoms sector shares several similarities with the retail finance sector. Like retail finance, it operates in concentrated markets and primarily serves consumers. The two sectors also tend to have comparable operating margins. However, despite these commonalities and the mobile sector’s critical role in socioeconomic development, it is subject to a significantly heavier tax burden than retail finance.

The current tax framework for the mobile sector is complex and increases the cost of providing telecoms services in Uganda. For operators, the multiple taxes and differing government levels increase compliance costs, diverting resources from investment in infrastructure and service innovation to support the growth of the digital economy. For the government, the various taxes create higher costs for tax collection and auditing.

As examined in Section 3 of this report, the **NDP IV identifies the use of digital technologies and payments as an enabler for increased domestic revenue mobilisation and enhanced tax collection** efficiencies and effectiveness to broaden the tax base and compliance⁸⁷.

Taxation of the telecoms sector may be seen by governments as an effective tax collection channel, however high and complex taxation and fees results in reducing telecoms sector revenues due to higher prices to consumers, as the taxation cost is passed on by operators to consumers, and lowers all revenue-based taxes and fees. Studies have found that 90% of changes to the value of consumer taxes (e.g. sales and usage taxes) are passed through to consumers, while 85% of changes to the value of operator taxes (e.g. revenue and profit taxes, spectrum and license fees) are passed through to consumers⁸⁸. Studies also show that higher mobile data and handset prices lowers mobile broadband adoption and contribution to GDP⁸⁹.

UNECA has recently published its ICT Tax Impact Calculator for African countries, **and found that sector excise duty directly reduces the net revenue a telco receives and lowers all revenue-based taxes and fees** - an increase of 10% for an excise duty results in an overall tax increase of less than 10%, and in some cases may actually reduce tax revenues due to its chilling effect of mobile broadband growth. The **UNECA findings evidence that simplifying the tax regime and reducing sector-specific taxes will not only enhance broadband penetration but also lead to a significant increase in revenues due to enhanced productivity and growth as well as widening of the tax base**⁹⁰.

Using the UNCEA’s calculator shows the following results for Uganda of reducing the excise duty on telecoms services from 12% to 10%, in terms of tax revenues, GDP and jobs (Figure 45).

Figure 45: Impact of reduction in excise duty on telecoms services from 12% to 10% in Uganda

Source: UNECA ICT Tax Impact Calculator

	Full pass-through	No pass-through
Change in mobile broadband demand	+1.8%	-
Increase in mobile broadband penetration due to greater coverage investment	+0.16%	+0.82%
Change in tax revenues	+0.25%	-0.09%
Additional jobs generated	+90,000	+40,000

The ICT Tax Impact Calculator presents results for two scenarios:

- “Full pass-through” of the tax reduction into consumer prices. Under this assumption mobile demand is directly stimulated through lower prices.

87 Uganda National Development Plan IV, Page 44.

88 World Bank “Using Geospatial Analysis to Overhaul Connectivity Policies”, Table A.2, 2022.

89 GSMA - Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.

90 UNECA Presentation “Optimizing Africa’s ICT Tax Regimes Towards Economic Growth and Job Creation”, March 2025.

- “No pass-through” of the tax reduction into consumer prices. Under this assumption, whilst there is no direct impact on consumer demand, MNOs respond to the higher margins by investing in additional network coverage as more areas become economically viable.

As discussed above, previous research has found that the actual rate of pass-through into prices of a consumer tax reduction is of the order of 90%. Therefore, we would expect the impacts to be closer to the “Full pass-through” case shown in the table above.

The Minister Policy Statement 2025 plan includes a “Review of tax regimes on the internet, ICT Equipment, and services with a view to reducing the taxes and promoting the use of local applications for the e-government agenda”. The following recommendations are proposed to be considered in this review:

- **Remove 12% excise levy on data telecoms services.**
- **Parity on electronic transactions regarding 0.5% duty on mobile money withdrawals to enable seamless transactions in the digital financial services ecosystem, fostering a more integrated financial ecosystem and financial inclusion.**
- **Exempt telecoms equipment and services supporting advanced technologies, such as 4G and 5G, from 18% VAT on imported services, which applies to software and related licenses, and entry-level smartphone devices.**

Further, it is recommended that the government’s review of sector taxes considers the following tax policy recommendations developed by the GSMA (and in line with international organisations such as the World Bank and IMF) for consideration to balance objectives of raising government revenues, broadening tax base, and enabling digital economy (Figure 46).

Figure 46: GSMA recommendations on tax policy for digital economy⁹¹

Enhancing Affordability:

- Eliminate or reduce sector-specific excise taxes on mobile services.
- Lower or remove import duties on mobile handsets and avoid imposing higher VAT rates than standard.
- Remove fixed-rate taxes like activation and numbering taxes, which disproportionately affect low-income individuals.

Encouraging Investment:

- Remove sector-specific taxes and fees on mobile operators, especially those on revenues irrespective of profitability.
- Eliminate import duties on network equipment to reduce investment costs.
- Streamline and stabilize taxes to reduce compliance costs and provide predictability for operators.
- Consider tax incentives for operators investing in underserved and rural areas.

Promoting Mobile Money and Digital Services:

- Avoid imposing taxes on mobile money services to enhance accessibility, inclusion and usage.
- Integrate mobile money into government payment systems to improve transparency, service delivery, and revenue mobilization.

91 GSMA Mobile Tax Policy and Digital Development - A study of markets in Sub-Saharan Africa, October 2023.

Impact of “Use of digital technology for domestic revenue mobilisation and optimise sector taxation” policy recommendations to address Policy Challenge 2 – high and complex taxes on mobile telecoms and mobile money services

As described in Section 1D, this report provides a quantitative model of Uganda’s mobile sector to evaluate the impacts on the wider economy of the proposed policy recommendations to address the challenges and to maximise the digital economy potential to contribute to Uganda’s NDP IV, DUV, and digital transformation programmes.

Recommendations to remove 12% telecoms data service tax and exempt 18% VAT on imported entry-level smartphones

Outputs from the report quantitative model find that the policy recommendations to:

- Remove 12% telecoms data service tax, assuming 90% of tax reductions will be passed on to consumers, results in an increase of 0.23 million unique mobile internet users by 2030 (0.4% of population) (Figure 47); and
- Exempt 18% VAT on imported entry-level smartphones, results in an increase of 0.56 unique mobile internet users by 2030 (+0.9% of population) (Figure 48).

Figure 47: Mobile internet uptake in Uganda with reduction in taxes on telecoms services

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Impact of removing telecoms service tax	11.48	12.09	12.74	13.42	14.12	14.84
Y-on-Y difference to BAU	0.0%	0.4%	0.7%	1.0%	1.3%	1.6%
Increase in growth from 2025 vs BAU	0.0%	0.4%	0.8%	1.2%	1.6%	2.0%

Figure 48: Mobile internet uptake in Uganda with removal of VAT on imported devices

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Impact of removing telecoms service tax	11.48	12.15	12.86	13.6	14.38	15.16
Y-on-Y difference to BAU	0.0%	0.9%	1.7%	2.4%	3.2%	3.8%
Increase in growth from 2025 vs BAU	0.0%	0.9%	1.8%	2.8%	3.8%	4.9%

This would result in the combined increase from these two recommendations of 0.79 million unique mobile internet users by 2030 (+ 1.3% of population).

The long-term impact of these measures (beyond 2030) is likely to be greater. For example, UNECA predicts that removing the telecoms excise duty would grow the broadband subscriber base by 4.8% to 11.7% (depending on the level of pass-through). This is equivalent to 0.7 to 1.7 million unique subscribers (1.2% to 2.9% of population)⁹².

Recommendation on parity on electronic transactions regarding 0.5% duty on mobile money withdrawals

It is noted that this tax had a significant impact when it was introduced in July 2018 at a rate of 1% and then partially reduced to 0.5% in November 2018. The impact is not only to reduce the number of withdrawals, but also to disincentivise the overall take-up of mobile money services. It is estimated that even following the reduction of the levy to 0.5%, mobile money transactions remained 26% below the pre-July 2018 levels.

The report quantitative model estimates that increased take-up of mobile money will generate an additional UGX 3 billion of value added in key economic sectors. This is assuming that the 26% gap is closed over a period of 10 years following removal, reflecting the fact that it will take time to rebuild consumer willingness to once return to the use of mobile money. The acceleration in mobile money take-up that would occur if the levy were removed and would give a consequential increase in tax that the government would receive from fees charged on mobile money transactions⁹³.

Impact of these policy recommendations on NDP IV and government domestic revenue mobilisation and tax collection objectives

Over the economy as a whole by 2030, the report quantitative model estimates that the economic growth generated by increased mobile digital usage across all sectors of the economy through the implementation of all of the report's policy recommendations will generate gross additional tax revenue of UGX 3,100 billion at a loss of UGX 370 billion in taxes from the mobile telecoms sector (which itself is a net effect for lower tax rates on higher demand), and contribute to NDP IV domestic revenue mobilisation and tax collection objectives (see Section 4).

92 See Figure 45 for Uganda calculation using UNECA ICT Tax Impact Calculator.

93 Please note that the model captures- conservatively - the impact on growth of the digital economy through network usage and financial inclusion overtime through introducing the policy reform on parity on electronic transactions.

Policy challenge 3 - Device affordability, digital skills, cyber security and other demand barriers

The Minister Policy Statement 2025 identified “the high cost of ICT devices” and referred to “low levels of civic consciousness, responsibility and responsiveness to spur effective participation in the political socio-economic transformation” as key challenges (see Figure 20).

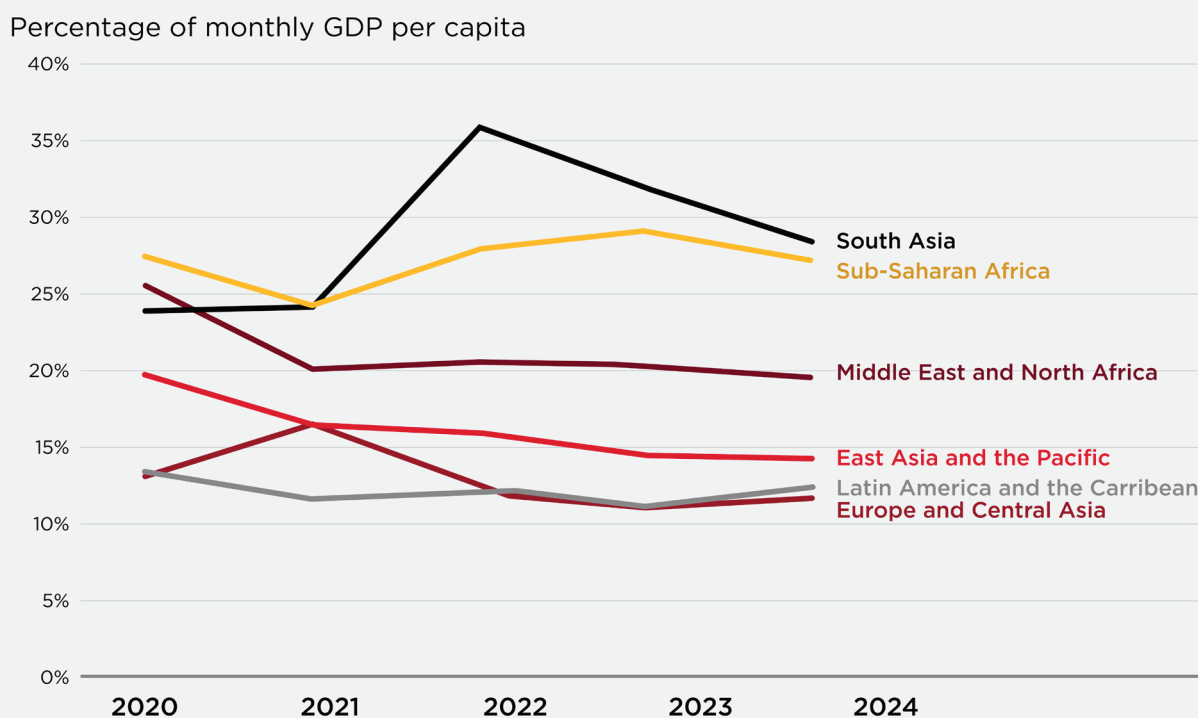
These challenges – as identified in the NDP IV, the DUV and the Digital Transformation Roadmap – include digital skills, and cyber security and privacy (see Annexure Figures 1, 2 and 3).

1. Device affordability

Access to smartphone devices – especially entry-level smartphones – and their affordability is one of the key barriers to digital transformation and inclusion – and the mobile internet usage gap – in Uganda and other African countries.

Prices for internet-enabled phones for Sub-Saharan African consumers are amongst the highest when comparing with low- and middle-income regions.

Figure 49: Affordability of an internet-enabled handset across low- and middle-income countries by region⁹⁴



To address this, the GSMA Handset Affordability Coalition was recently launched by the GSMA in collaboration with six of Africa’s mobile operators, including Airtel and MTN. This includes:

- Engagement with the Original Equipment Manufacturers (OEMs) and technology companies on the development of reduced cost entry-level smartphones, using baseline minimum requirements including memory, RAM, camera quality, display size, battery performance and other features.

94 GSMA, The Mobile Economy Africa 2025, Page 40.

- A call to action for governments to remove taxes on entry-level smartphone prices below USD 100.

GSMA Intelligence estimates that USD 40 and USD 30 priced smartphones could bring mobile internet within reach for additional 20 and 30 million people in Sub-Saharan Africa respectively⁹⁵.

In Uganda:

- The UCC reports that 68% of Uganda mobile users are using featurephones (30 million) or basic phones (6 million) compared to 32% smartphones (17.6 million) in the quarter ending June 2025⁹⁶.
- A Ugandan National Information Technology Authority Survey conducted in 2022 found that 74% of respondents had used a mobile phone of which 87% also owned the mobile phone in the 3 months prior to the survey. It also found that more urban respondents had used (83%) and owned (92%) the mobile phone than rural respondents' usage (71%) and ownership of a mobile phone (85%).
- The same 2022 survey revealed that 97% of individuals had not used any computing device in the previous three months, while only 1.3% owned personal computers/laptops. In addition, only 10% had used the internet for any purpose in the previous three months⁹⁷.

GSMA research, conducted in 2024, found that in Uganda:

- the entry smartphone device price was at USD 38.91;
- which equated to 39% of monthly GDP per capita, and 96% of monthly GDP per capita for the poorest 40% of the population; and
- that taxation contributes to 35% of smartphone device cost, which is amongst the highest in SSA⁹⁸.

It is welcomed that the Minister Policy Statement 2025 highlighted device affordability as a key challenge and proposed a review to address this. The following recommendations are submitted for this review:

- Reduce taxation on entry-level smartphone devices including exempt 18% VAT applied on imported equipment (which applies to entry-level smartphones) and eliminate import duties. While other smartphone costs are exogenous, tax is an endogenous cost and reducing handset costs can be achieved through removing sector-specific taxes and fees by the Ugandan government and regulators.
- Increase access to financing by enabling innovative financing mechanisms for handsets (for example developing a regulatory code for Buy Now, Pay Later (BNPL) which allows consumers to purchase handsets and pay for them over time)⁹⁹, carefully considering remote locking for handsets while protecting consumers, engaging public-private partnerships to de-risk handset financing, and partnering with the industry to provide device subsidies for targeted user groups.

95 GSMA press release - GSMA and Leading African operators propose minimum requirements for affordable 4G smartphones, October 2025.

96 UCC Market Performance Report, quarter ending June 2025.

97 Pilot Digital Acceleration Programme 2023/2024 - 2025/2026, Page 10.

98 GSMA Intelligence Handset Affordability Analysis, 2024.

99 BNPL is projected to reach USD 5.34 billion (9.1% growth annually) in Africa, contributing to financial inclusion (source: PPA Capital Group article "BNPL: Revolutionizing Africa's Finance Landscape in 2025", October 2025). BNPL is commonly regulated under general consumer credit and financial services regulation in many countries globally, and is an emerging area being closely monitored by policymakers and regulators.

- Continue partnering with the mobile sector on awareness campaigns on both the benefits and potential risks of using mobile internet and how to address them, and digital skills strategies that promote the value of handsets.
- Implement effective strategies to tackle handset theft.
- Review the opportunities and barriers to incentivise local production¹⁰⁰.

As part of the initiatives to address device affordability in Uganda mobile operators are doing the following:

Figure 50: Mobile operator initiatives on device affordability

Airtel Uganda has implemented a device financing scheme to improve smartphone affordability. Partnering with MOGO Uganda, customers can purchase Tecno, Infinix, or itel smartphones by paying an initial deposit of only 28% of the device price, with daily repayments starting at UGX 848. The remaining amount can be settled through daily, weekly, or monthly payments spread over up to 52 weeks¹⁰¹.

MTN Uganda has recently introduced a new Kabode Supa smartphone under the “Mpola Mpola” device financing scheme, allowing customers to own it at UGX 45,000 and pay the balance “Mpola Mpola” in daily instalments of not more than UGX 1,000, or weekly and monthly payment options¹⁰².

2. Digital skills and local content

The importance of advancing digital skills is widely accepted as being critical for digital and economic development, noting that GSMA research finds that underserved population groups (such as women, rural communities, older people, persons with disabilities, and forcibly displaced persons) are more likely to report literacy and digital skills as a barrier to mobile internet adoption and use¹⁰³.

Whilst there have been a number of programmes to address digital skills, with over 1.5 million Ugandans estimated to have received some form of digital training as of 2023, digital skills remain low. In 2021, 20% of Uganda’s population was estimated as “digitally skilled”¹⁰⁴. The Ugandan National Information Technology Authority survey conducted in 2022 found that among the individuals that had not used the internet in the prior 3 months, lack of knowledge or skills was the biggest barrier 37%, followed by lack of knowledge about what the internet was 28%¹⁰⁵.

The NDP IV, DUV, the Digital Transformation Roadmap (Pillar 4) – including the Pilot Digital Acceleration Programme 2023/24 - 2025/26, the National Digital Skilling Framework, and the Minister Policy Statement 2025 (Figures 19 and 20, and Annexure) identifies digital skills as a priority and outlines a comprehensive programme.

¹⁰⁰ Author recommendation on reduction on mobile phone taxation. GSMA Digital Inclusion Policy Brief - Improving Handset Affordability in low- and middle-income countries, 2024.

¹⁰¹ Uganda Standard Article - MOGO Uganda, Airtel launch smartphone loan programme, April 2025.

¹⁰² MTN Uganda Unveils the Kabode Supa Smartphone – Making Digital Access More Affordable Than Ever, April 2025.

¹⁰³ GSMA Digital Inclusion Policy Brief - Advancing Digital Skills for Greater Digital Inclusion, 2024.

¹⁰⁴ Uganda National Development Plan IV, Page 176.

¹⁰⁵ Pilot Digital Acceleration Programme 2023/2024 - 2025/2026, Page 10.

These programmes are broadly consistent with a GSMA report's policy recommendations on designing and implementing digital skills programmes.

Figure 51: GSMA policy recommendations on digital skills programmes¹⁰⁶

- Use a comprehensive approach to design digital skills strategies focused on people's goals and needs, and to address barriers to digital skills acquisition.
- Run campaigns to increase awareness of mobile internet and digital skills training opportunities
- Consider and invest in the different channels that can be used to effectively deliver digital skills training and capacity building initiatives.
- Incorporate digital skills development in education policies at all levels and promote lifelong learning.
- Ensure digital skills programmes are inclusive and address the needs of the underserved (including women, persons with disabilities, rural communities, and forcibly displaced persons).

Building on previous initiatives, the Minister Policy Statement 2025 and the UCC have reported that:

Figure 52: Examples of government's digital skills and awareness programmes¹⁰⁷

For FY 2024/25, the Minister Policy Statement reported:

- UCC digital skills training for 1,200 teachers across the country at four regional locations (National Teachers College Muni, Kaliro NTC, Mubende NTC, and Makerere College).
- UCC digital skills training for over 850 youth in partnership with Association of Film Practitioners in Uganda, Prime-time communications and Goldserve, in the districts of; Adjumani, Gulu, Kitgum, Kabale, Kiboga, Kabale, Palisa, Mayuge and Bugiri.
- Uganda Institute of Information and Communications Technology (UICT) trained 3,796 participants from formal and informal business in digital literacy skills. The areas covered included use of computers, mobile devices, Data Science, AI, Networking & Cybersecurity and Ethical Hacking.
- UICT trained 996 teachers and education practitioners to integrate ICT into education, focusing on digital literacy, cybersecurity, IoT, and emerging technologies.
- UICT trained 119 ICT practitioners to be certified in globally recognized professional courses with support from international bodies.
- UICT trained 1,268 Secondary/TVET, teachers, students and professionals in STEM subjects.
- UICT undertook 7 Digital skilling and entrepreneurship trainings for innovators at ICT hubs, including application of AI in business and education, tax management and workplace mental health.
- Documentaries on NDP III implementation in Agriculture, Oil and Gas, Tourism, ICT were produced and translated into Luganda, Runkyankole, Rukiga, and dissemination on UBC TV, Star TV, and all UBC Radios.

¹⁰⁶ GSMA Digital Inclusion Policy Brief - Advancing Digital Skills for Greater Digital Inclusion, 2024.

¹⁰⁷ Minister Policy Statement 2025. UCC Market Performance Report for quarter ending June 2025.

- Digital Content on Parish Development Model (PDM) implementation in Western, Eastern and Northern Uganda were translated into Luganda, English, Ateso, Lango and Karimajong, and dissemination on all UBC Televisions and Radios.
- Digital Skills Factory (DSF) is a capacity-building platform that offers internationally accredited digital training programs. It is designed to bridge Uganda's digital skills gap by providing learners with both technical competencies and critical thinking abilities needed for the modern workforce.

In June 2025, the UCC reported:

- UCC and UCUSAF digital skills programme for people with disabilities, with 900 people receiving training across 28 districts between April - June 2025.
- UCC and UCUSAF launched a new Digitally Enabled Community-Centred Early Childhood Approach programme in partnership with the Ministry of Education and Support for 31 public primary schools.

As part of the NDP IV, DUV and Digital Transformation Roadmap, the government is prioritising making more government and public services available digitally. As described in more detail in Section 3 of this report, digital government can drive demand by citizens to develop digital skills and use the internet and mobile broadband services.

The mobile operators are partnering to support the government on increasing digital skills and access to local education content:

Figure 53: Mobile operator initiatives on digital skills

Airtel Uganda and UNICEF Digital Learning Programme has to date provided 4G/5G internet connectivity and digital learning programme to 200 schools, 45,200 students and 1,820 teachers during the last 2 years¹⁰⁸.

MTN digital skills programmes include:

- MTN Skills Academy platform provides access to digital and financial skills training across including; coding, web development, digital marketing and data analytics.
- MTN Uganda's digital literacy programme has been rolled out in regions, including Northern Uganda in November 2024 where 571 youth undertook 10 intensive training days on essential digital skills needed to navigate careers, entrepreneurship, and higher education.
- MTN Uganda has established 48 ICT labs across various educational institutions nationwide.
- MTN Girls in Tech which aims to train 400 youth annually in traditionally male-dominated fields.
- MTN Uganda participates in the GSMA Mobile Internet Skills Training Toolkit (MISTT) programme. MISST provides training on how to use internet services and apps, how data consumption works and how to control costs, how to stay safe online. This has resulted in a 3x increase in average data usage following the training and for every customer trained 1.1 additional persons benefitted from new mobile internet knowledge and skills¹⁰⁹.

¹⁰⁸ UNICEF article - Airtel Uganda and UNICEF scaling digital learning at schools across Uganda, March 2025.

¹⁰⁹ MTN Group Sustainability Report 2023. Nile Post article - MTN Uganda empowers youth with digital skills, November 2024. MTN Uganda Annual Report FY2024, Page 23. GSMA briefing - Multiplying the impact of mobile internet skills training, October 2021.

MTN also partners with the Maendeleo Foundation, a Ugandan NGO, which provides digital literacy and digital skills programmes for Uganda’s underserved youth and communities. With a current outreach of 100 schools, 60 districts, 90% youth, and 65% Women¹¹⁰.

An emerging area for Uganda to consider under its Digital Transformation Roadmap, Digital Skills Framework, and other related policies is the use of digital technologies to advance digital skills and digital services adoption. Increasingly embedded solutions and APIs are being used in online services and apps to integrate digital skills and how to use training, and to tailor content based on user location, device type, and local language requirements in accordance with applicable cyber security, data protection and privacy regulations.

The GSMA Open Gateway initiative, launched in 2023, aims to harness the capabilities of mobile network operators worldwide by providing access through standardised APIs. As of September 2025, there are 60 APIs available for development and 14 mobile network operators across 12 countries have adopted this initiative in Africa. This includes Airtel and MTN Group¹¹¹. It is recommended that Uganda works in partnership with local and international technology companies, mobile operators, and app developers to use embedded solutions and APIs in government public services and commercial services.

3. Cyber security, data protection and privacy

A barrier to digital adoption is commonly the level of trust in digital services. In 2023, a GSMA survey (conducted across Egypt, Ethiopia, Ghana, Kenya, Nigeria and South Africa) found that 48% of MSMEs identified customers’ lack of trust in e-commerce marketplaces and websites as a challenge to growing their e-commerce business¹¹².

It is welcomed that Uganda’s progress in cyber security, data protection and privacy is a key area of focus for NDP IV, DUV and the Digital Transformation Roadmap – including the National Cyber Security Strategy 2022, the Data Protection and Privacy Act 2019, and the operationalised Personal Data Protection Office. For example, the number of data processors and controllers registered in accordance with the Data Protection and Privacy Act has increased from 400 in FY 2017/18 to 2,224 in FY 2023/24¹¹³. This progress **is recognised by improving rankings in international indices** such as the ITU Global Cybersecurity Index 2024 (5th Edition) which ranks Uganda as in the Tier 3 (“establishing”) of 5 tiers¹¹⁴.

Continuing this progress is recognised as a priority by the NDP IV, DUV and Digital Transformation Roadmap, which collectively provide a clear programme and objectives for cyber security, data protection and privacy including legal and regulatory frameworks, technical capabilities, coordination and skills capacity building (See Figure 19 and Annexure). As described in Section 2D Policy Challenge 4, these frameworks need to be continually updated with technological innovations such as AI as envisaged in the planned new National AI Strategy, AI Ethical Framework and Data and AI Ethics Council.

As part of Uganda’s continuing focus to establish a Safe and Trusted Digital Economy, **Mobile operators are working closely with the government and regulators to ensure safety and security of users:**

¹¹⁰ Maendeleo Foundation website.

¹¹¹ GSMA, The Mobile Economy Africa 2025, Pages 25 – 26.

¹¹² GSMA article “Scaling e-commerce in Africa; why trust is key”, November 2023.

¹¹³ Uganda National Development Plan IV, Page 177.

¹¹⁴ ITU Global Cybersecurity Index 5th Edition, 2024.

Figure 54: Mobile operator programmes on safety and security¹¹⁵

Airtel adopts strict cybersecurity and data protection standards, and undertakes public awareness campaigns to educate users about online fraud and scams and asks customers to report suspicious activities and verify communications from Airtel through official channels. Initiatives include:

- Spam SMS alert service using AI to detect potential spam and sends alerts customer by labelling SMS as a suspicious spam message.
- Multi Factor Authentication (MFA) measures during the process of withdrawal of Airtel Money funds. Airtel money customers who intend to withdraw e-money in cash are required to initiate the withdrawal upon which an OTP (One time password) is sent by SMS to the customer as a security measure¹¹⁶.

MTN complies with national legislation, and follows global cybersecurity and data protection standards, including ISO/IEC 27001:2013, United States National Institute of Standards and Technology Cybersecurity Framework, and European Union General Data Protection Regulation (GDPR).

As part of this review, data location (or sovereign) and cross-border transfer regulations should be carefully considered to ensure Uganda’s benefits from digital technologies such as big data, cloud, AI, quantum computing globally and at the same time ensure cyber security, data protection and privacy requirements are met. Figure 55 provides recommendations for consideration.

Figure 55: Recommendations for data location and cross-border transfer regulations¹¹⁷

Clear legal and regulatory requirements

Policymakers should establish clear and consistent international data transfer rules. This will reduce business challenges and protect personal data. Clarity in data localisation laws, especially concerning data specificity and categorisation, ensures effective data protection mechanisms are in place for each category.

Regulatory guidelines for cross-border data transfers should be clearly defined, ensuring operators can easily comprehend and adhere to them. Streamlining the authorisation process and reducing administrative hurdles will aid compliance.

Harmonisation of cross-border data transfer requirements

The African Union’s Convention on Cyber Security and Personal Data Protection (Malabo Convention) provides a framework for the harmonisation of laws and policies on cross-border transfers.

Harmonising cross-border data transfer requirements nationally, regionally, and globally will allow businesses to operate more efficiently and effectively across different jurisdictions, resulting in increased innovation and the seamless flow of information that benefits both companies and consumers.

Harmonisation will help to facilitate equal opportunity for all market participants, ensuring fair competition and driving further advancements in technology and trade.

¹¹⁵ Airtel Africa and MTN Group annual reports FY 2024.

¹¹⁶ Airtel Uganda information request completed for this report.

¹¹⁷ GSMA Report - Cross Border Data Flows, April 2024.

Proportional data transfer regulation

Policy makers and regulators should prioritise the ease of cross-border data flows by reevaluating and, where feasible, minimising or eliminating data localisation requirements. This approach would amplify the benefits of data mobility for the broader community, encompassing individuals, enterprises, and the public sector.

Also, evaluating their public interest, necessity, and legitimacy is crucial when imposing limitations on cross-border data transfers.

Policies should only restrict data transfers when essential for protecting legitimate public interests, ensuring that any stipulated conditions are reasonable and not too stringent.

Policy and regulatory impact assessments and consultation

Policy makers and regulators are encouraged to regularly analyse the impact of regulatory measures, such as data localisation, in consultation with operators and other relevant stakeholders, to ensure that policies and regulations remain relevant, do not stifle innovation, and are effective, efficient, and equitable.

Impact of demand-side policy recommendations to address Policy Challenge 3 – device affordability, digital skills, cyber security and other demand-side barriers

As described in Section 1D, the report quantitative model measures the impact of the proposed demand-side policy recommendations including entry-level smartphone affordability programme (which includes the elimination of taxes, customs duties, and other importation costs on entry level smartphones), increase digital literacy and skills for educational, commercial, social and financial purposes, embedding solutions and APIs into online services and apps to increase digital adoption and usage, and building trust in the safety and security of digital technology. These policy recommendations, particularly the elimination of import duties on entry-level smartphones, would contribute to an increase of 1.85 million unique mobile internet users by 2030 (+3.1% of population) (Figure 56).

Figure 56: Mobile internet uptake in Uganda with demand side policy recommendations

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Demand side reforms	11.48	12.36	13.39	14.29	15.35	16.46
Y-on-Y difference to BAU	0.0%	2.5%	5.1%	7.6%	10.2%	12.7%
Increase in growth from 2025 vs BAU	0.0%	2.7%	5.6%	8.8%	12.3%	16.2%

Policy challenge 4 – Implementation of the NDP IV, DUV and Digital Transformation Roadmap policy reforms and modernise digital policy and regulation.

The rapid evolution of technology means that the regulation of the sector needs to be regularly assessed to ensure that it reflects current market realities. Many other countries are moving forward on this, evolving their regulatory frameworks to both reflect the way the market is changing and to support the digital transformation.

It is welcome that the NDP IV, DUV and the Digital Transformation Roadmap sets initiatives and targets to ensure policies, laws, regulations, strategies and guidelines continue to be updated to provide an enabling regulatory framework. Critical to the successful implementation of these programmes will be effective coordination, consultation, and monitoring and reporting across all MDAs, LG, and other stakeholders.

Key issues facing the sector, which should be addressed, include:

1. Regulatory framework for emerging electronic communications infrastructure and services

An update of the regulatory framework that governs the digital economy is an opportunity to address the policy issues that arise from the entry of new technologies and new business models into the market, and to provide a clear regulatory framework for all players of the digital ecosystem ensuring continued investment in infrastructure and service innovation to contribute to Uganda's NDP IV, DUV, and other digital objectives.

For example, an area for updating the regulatory framework is the development of commercial partnerships between mobile operators and LEO satellite providers to extend broadband coverage to sparsely populated or inaccessible areas and the use of Direct-to-Device (D2D) connectivity between mobile and satellite handsets (for example, Airtel Africa's partnership with Starlink announced in May 2025¹¹⁸). The GSMA has recently published positions for consideration of the national telecommunications regulators, which may be instructive for Uganda to consider in its review of the regulatory framework (Figure 57).

118 Airtel Africa press release - Airtel announces agreement with SpaceX to bring Starlink's connectivity solutions to its customers in Africa, May 2025.

Figure 57: GSMA positions spectrum for D2D and the use of satellite to supplement mobile coverage¹¹⁹

D2D in IMT
Spectrum

1. D2D using mobile spectrum should be provided through MNO licenses

- D2D operating in IMT spectrum bands provides a supplemental service to terrestrial networks and enables MNOs to collaborate, under commercial arrangements with satellite network operators (SNO), to extend the MNO's coverage.
- With the regulator's permission, this should be done through the spectrum licence of the MNO; i.e., the rights of use by satellite for any given terrestrial band should derive from the exclusive rights on MNO licences, through lease agreements or other authorisation tools as applicable in each country.
- Authorising the utilisation of an MNO's licensed spectrum with a D2D satellite provider may mean the MNO remains responsible for ensuring the mitigation and management of interference under the terms of its original licence, depending on how the authorisation of satellite use of the mobile spectrum is framed.
- In this case, the MNO may also remain responsible for compliance with other regulations. This approach will allow MNOs to decide how best to use their licensed mobile spectrum bands to enable satellite connectivity for subscribers.
- Such market-led choices will support the most efficient and optimal use of mobile licensed spectrum as MNOs are best positioned to determine how to leverage spectrum to better-support customers in remote, rural, suburban or urban settings. This includes determining which licences or portions of licences might be best used to extend their network coverage via satellite.

2. When using IMT spectrum, D2D must protect IMT networks in accordance with the ITU Radio Regulations

- Noting that the ITU World Radiocommunications Conference 2027 (WRC-27) is looking at establishing an international framework to facilitate the development of D2D services, where regulators plan to introduce D2D services soon they may need to define cautious national regulatory frameworks for D2D in IMT spectrum. As such, regulators could create a regulatory framework based on one of the following options:
 - D2D operations should protect existing services in accordance with the ITU Radio Regulations. As there is no satellite allocation in some of the mobile bands being used at present, D2D should thus operate on a no interference / no protection basis.
 - Create secondary allocations in certain mobile bands along with some conditions, in order to make sure that D2D operations do not cause harmful interference to the services it is designed to supplement.
- Any approach to D2D introduction should be based on regulatory and technical conditions which ensure coexistence with mobile terrestrial networks. This means managing the risk of harmful interference with an operator's own terrestrial network, with mobile operators licensed to operate in the same band in adjacent areas (including neighbouring countries), and with users licensed to operate in adjacent frequency bands.

¹¹⁹ GSMA Public Policy Paper - Spectrum for D2D - The use of satellite to supplement mobile coverage, September 2025.

3. Standard handsets may be used for D2D using IMT spectrum

- As D2D services using IMT mobile bands share the frequencies already licensed to MNOs for terrestrial mobile services, standard mobile handsets should be able to work seamlessly between both systems, and no tailoring should be required.
- Economies of scale through the use of mobile handsets benefit both forms of D2D to some extent, but while D2D using MSS spectrum requires either proprietary standards or 3GPP Release 17+ handsets that are also designed to tune to specific satellite bands, D2D using mobile spectrum can use standard handsets. This will allow for D2D using IMT spectrum to become available both in recycled and second-hand handsets, as well as all new handsets including the most affordable ones.

4. Agreement with MNOs must be in place to use their licensed spectrum in the licensed area

- Regulators should not grant separate licences to D2D operators for the same frequencies and areas as existing terrestrial licences. This would undermine the regulatory ecosystem currently supporting mobile terrestrial infrastructure investment and services for billions of consumers.
- Access to MNO spectrum for D2D should derive from the MNO licence rights, not any separate licence from the regulator.
- The MNO licensee must provide consent to the satellite operator via a lease agreement or similar commercial transaction.
- The D2D satellite entity will need satellite authorisations to operate their constellations but its rights of use of terrestrial MNO spectrum licences should derive from the rights of the MNO.

5. Ahead of WRC-27, interference needs to be managed through domestic regulations

- WRC-27 will endeavour to agree internationally harmonised parameters to ensure coexistence between terrestrial mobile and D2D services when using adjacent frequencies or using the same frequencies in adjacent areas.
- Where regulators plan to introduce D2D services soon, they may need to define specific national arrangements to authorise MNOs to share their spectrum with D2D satellite providers. Various schemes are available for authorising use of mobile devices to transmit to the satellites, including a licence exemption option, but authorisation of transmissions from satellite space stations to user devices may not currently be in scope of some national regulatory frameworks.
- Where countries wish to provide a framework, regulations should ensure both the compatible operation of D2D in one spectrum block next to terrestrial mobile in the adjacent spectrum block, and that terrestrial mobile operating in one licensed geographic location is protected from D2D in a neighbouring licensed geographic location.

6. Any new Mobile Satellite Service (MSS) allocations at WRC-27 must protect IMT networks

- WRC-27 aims to define internationally harmonised technical and regulatory provisions for D2D services operating in IMT bands under Agenda Item 1.13. Any new allocations to MSS that come about in bands identified for IMT must be on a secondary basis, so that MSS does not cause harmful interference to IMT networks, nor claim protection from them, in accordance with the ITU Radio Regulations.
- Local regulations developed ahead of WRC-27 may be revised in order to ensure that D2D services using mobile spectrum are harmonised as widely as possible.

D2D in Mobile Satellite Spectrum

7. Existing MSS regulations may allow D2D using MSS spectrum

- Where in-country regulations allow the operation of D2D using MSS spectrum, technical and regulatory provisions to address possible interference already exist in the ITU Radio Regulations. In this case, satellite service providers must meet all eligibility and any other legal requirements of the national legislation of a given country. Some regulations may require updating (e.g. to include low-earth orbit satellite constellations) and “same services, same rules regulation” principle must always apply.
- When using MSS spectrum, the licence holder will typically be an entity separate from the MNO (e.g. a specialised MSS satellite network operator (SNO)). The service will then operate under the technical requirements of the MSS spectrum licence.
- As a result of this separate licensing regime, it may not be necessary for the SNO to enter into any partnership with the MNO. However, users may adopt services more seamlessly where SNOs enter into commercial partnerships with MNOs at a wholesale level rather than trying to compete with them in the retail market.

8. 3GPP specification is in place but handset availability remains low

- 3GPP completed the standardisation of several mobile satellite bands including the 1610-1626.5 x 2483-2500 MHz as band n254, 1626.5-1660.5 x 1525-1559 MHz band as n255, and 1980-2010 x 2170-2200 MHz as n256. 3GPP standardisation of the MSS bands was an important step forwards but does not guarantee that they will be included in mobile handsets (over 60 terrestrial 5G bands have been standardised by 3GPP, only a portion of which are commonly used in handsets).
- As D2D develops, handsets may increasingly make use of n254, n255 and n256 in the future. As of today, these are limited to a small number of high-end models and handset availability is one of the issues that D2D using MSS spectrum needs to overcome before it is successful.

9. Any new MSS allocations at WRC-27 must protect IMT networks

- WRC-27 will assess other bands for MSS. It contains two Agenda Items (1.12 and 1.14) that will consider additional allocations of spectrum to the mobile satellite service. The bands being considered under these two Agenda Items are: — 1427-1432 MHz — 1645.5-1646.5 MHz — 1880-1920 MHz — 2010-2025 MHz — 2120-2170 MHz.
- All these bands except the 1645.5-1646.5 MHz band (i.e. all bands in bold) hold an IMT identification. As such any introduction of new mobile satellite services including D2D must protect the existing IMT identification in accordance with the Radio Regulations.

2. National Artificial Intelligence strategy

As identified in the NDP IV and the Digital Transformation Roadmap, the action to develop the National AI Strategy, the AI Ethical Framework, Data and AI Ethics Council, and a new 4IR strategy are required.

AI is a rapidly evolving technology, an enabler of digital transformation, and a policy priority for governments across the continent. Recent estimates suggest that AI could boost Africa's economy by USD 2.9 trillion, equivalent to increasing annual GDP by 3% by 2030¹²⁰.

Mobile operators, global technology companies, and local start up technology companies are scaling up investment in AI for smart solution services to businesses and enhanced services for consumers. For example, Safaricom in Kenya is partnering with IX Africa to deliver East Africa's first AI-ready data centre services for enterprise and cloud-solution clients, MTN Nigeria has launched Tier III data centre to support AI and cloud services, Google is investing USD 37 million to expand AI development in Africa supporting start-ups and education institutions to accelerate AI talent and local solutions, local tech companies are using AI solutions in agriculture, healthcare, and credit-rating analysis.

Mobile operators are also using AI to enhance their network operations and to improve customer experience. Airtel Africa have entered into a partnership with Xtelify to deploy cutting edge AI-powered software platform to simplify network operations and customer services processes. MTN is implementing AI solutions to optimise network traffic and enhance customer service delivery.

Policymakers globally and in Africa are responding by developing AI strategies at a continental and country level for Uganda to consider when developing its national AI strategy, policy and regulatory framework. The African Union has launched a Continental AI Strategy (Figure 58) and several Africa countries have developed (or are under development) their national AI strategies, including Benin, Egypt, Kenya, Mauritius, Nigeria, Rwanda, and South Africa. It is recommended that the new AI strategy for Uganda should address the critical requirement for AI development in local languages to increase adoption¹²¹.

¹²⁰ AI in Africa - The state and needs of the ecosystem, AI4D Africa, 2024.

¹²¹ GSMA - The Mobile Economy Africa 2025, Pages 13 - 16.

Figure 58: Focus areas for African Union Continental AI Strategy¹²²

Focus Area	Description
Maximising AI's benefit	Ensuring AI technologies contribute to economic growth, social inclusion and improved public services across the continent.
Minimising AI's risk	Putting in place safeguards to manage ethical, security and privacy risks while preventing misuse of AI systems.
Enabling infrastructure and skills that underpin AI development	Building digital infrastructure, investing in data ecosystems and equipping the workforce with the skills needed to develop and use AI responsibly.
Fostering cooperation and partnerships	Promoting collaboration between governments, the private sector, academia and international partners to accelerate AI adoption and governance.
Stimulating investment	Encouraging public and private investment in AI research, innovation and startups to drive sustainable growth and competitiveness.
Creating an inclusive governance and regulatory framework	Establishing clear, inclusive and adaptive governance structures to ensure AI deployment aligns with societal values. Policies must balance innovation with accountability, promoting transparency, fairness and equitable access to AI benefits.

Progressing the update of policies, laws, regulations, strategies and guidelines is critical to the achievement of the country's NDP IV and DUV objectives and provide a key process to address the policy challenges outlined in this report. Section 3 estimates the macroeconomic impacts of increased digitalisation in Uganda for each key sector of the economy and Section 4 provides a summary of all the policy recommendations and the modelled impact of these recommendations.

¹²² GSMA Intelligence based on the Continental Artificial Intelligence Strategy, GSMA The Mobile Economy Africa 2025, Page 13.

3. Potential Economic Impact of Digitalisation in Uganda



3A. Structure of the economy and policy objectives

Uganda has a strong and growing economy, averaging real GDP growth of 6.0% since the year 2003, and outgrowing the average of SSA in most years. After allowing for population growth, GDP per capita still shows strong growth averaging 2.7% since 2003, also consistently higher than that of the SSA average.

Figure 59: Uganda real GDP growth

Source: World Bank Economic Outlook, April 2025

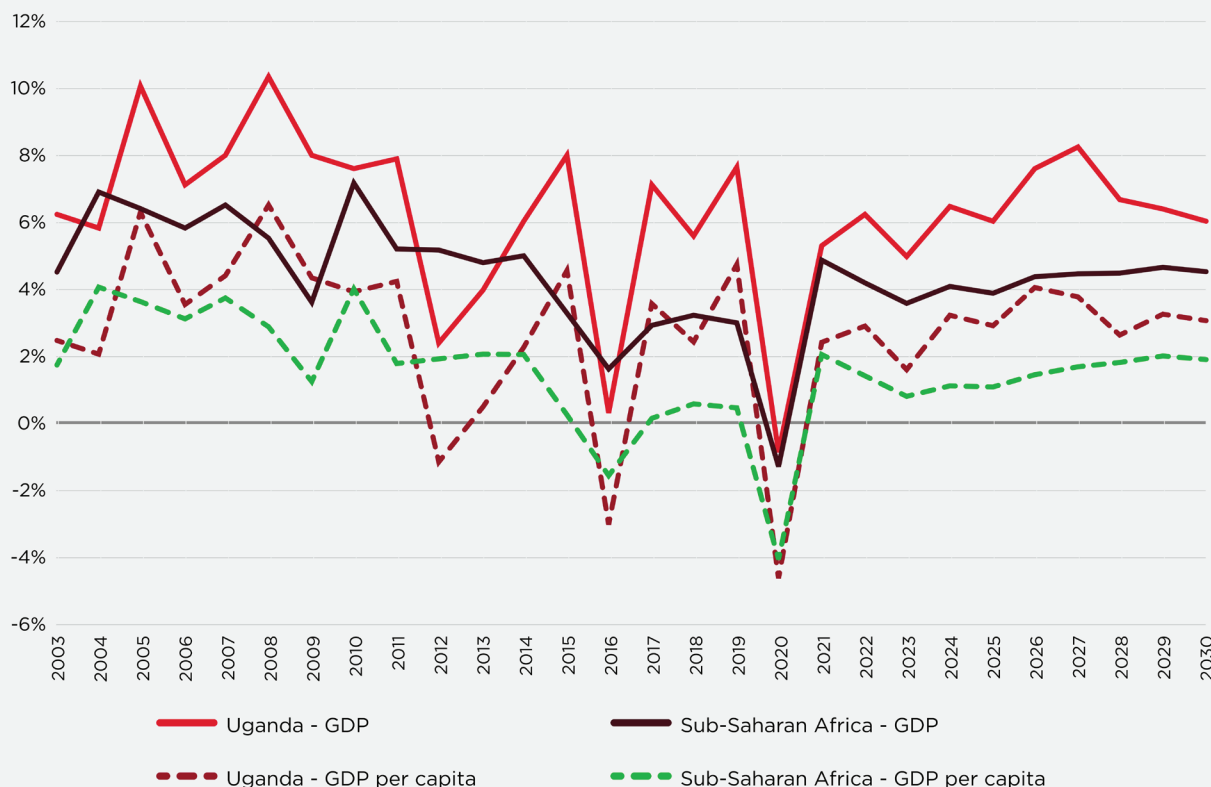


Figure 59 also shows the World Bank forecasts to 2029. GDP is forecast to continue its historical growth in excess of 6%.

The ADB states *“The economy is projected to expand by 6.0% in 2024 and 7.0% in 2025, buoyed by stronger regional growth as global supply chains normalize. The oil sector will continue ramping up investments in wells and pipelines, further underpinning growth and future exports.”* PWC writes *“Uganda’s economy has demonstrated significant growth in FY 23/24, positioning it as one of Africa’s fastest-growing economies in the next five years. This growth suggests the existence of business opportunities arising from a favourable economic climate.”*

Figure 60 shows that growth has been supported by a rising investment as a percentage of GDP up until 2013, although the proportion has stagnated since then. The IMF forecasts that investment will resume a rising trend from 2025 (shown in the chart). However, “pro-growth” government policies will be important to support this growth, with the digital sector being critical.

Figure 60: Uganda investment as a percentage of GDP

Source: World Bank Economic Outlook, April 2025.

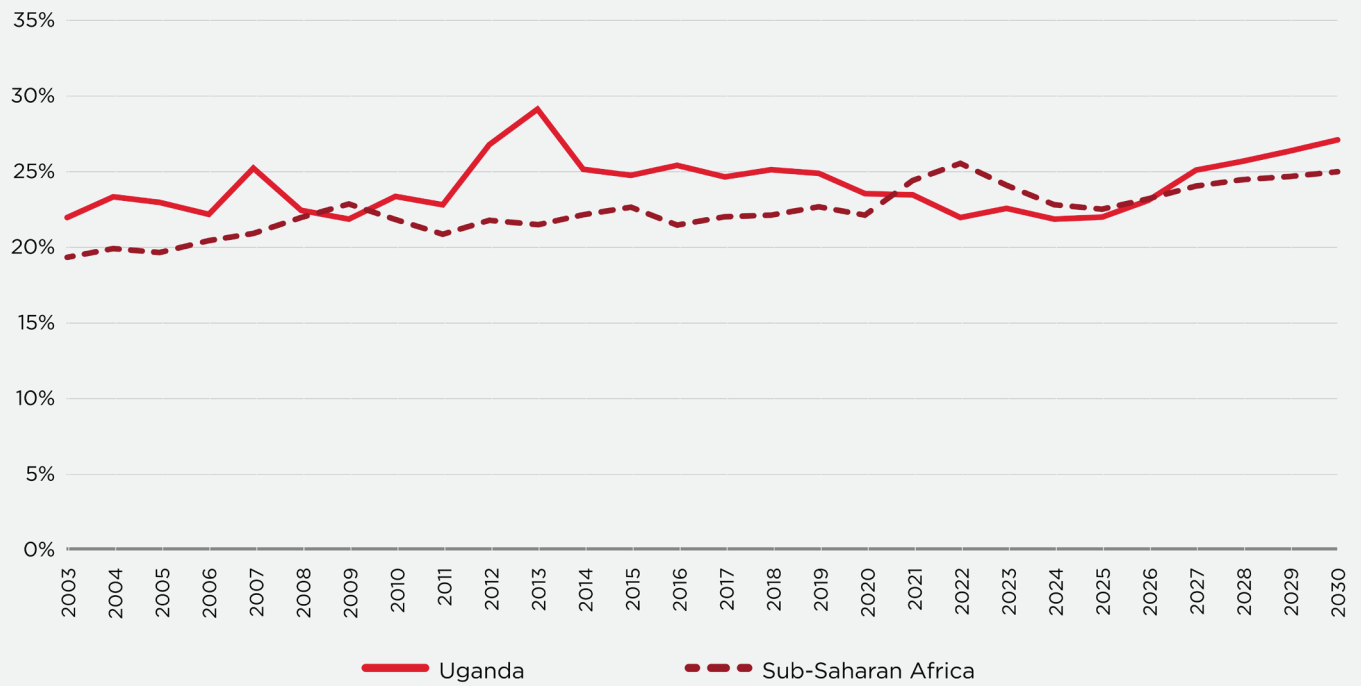
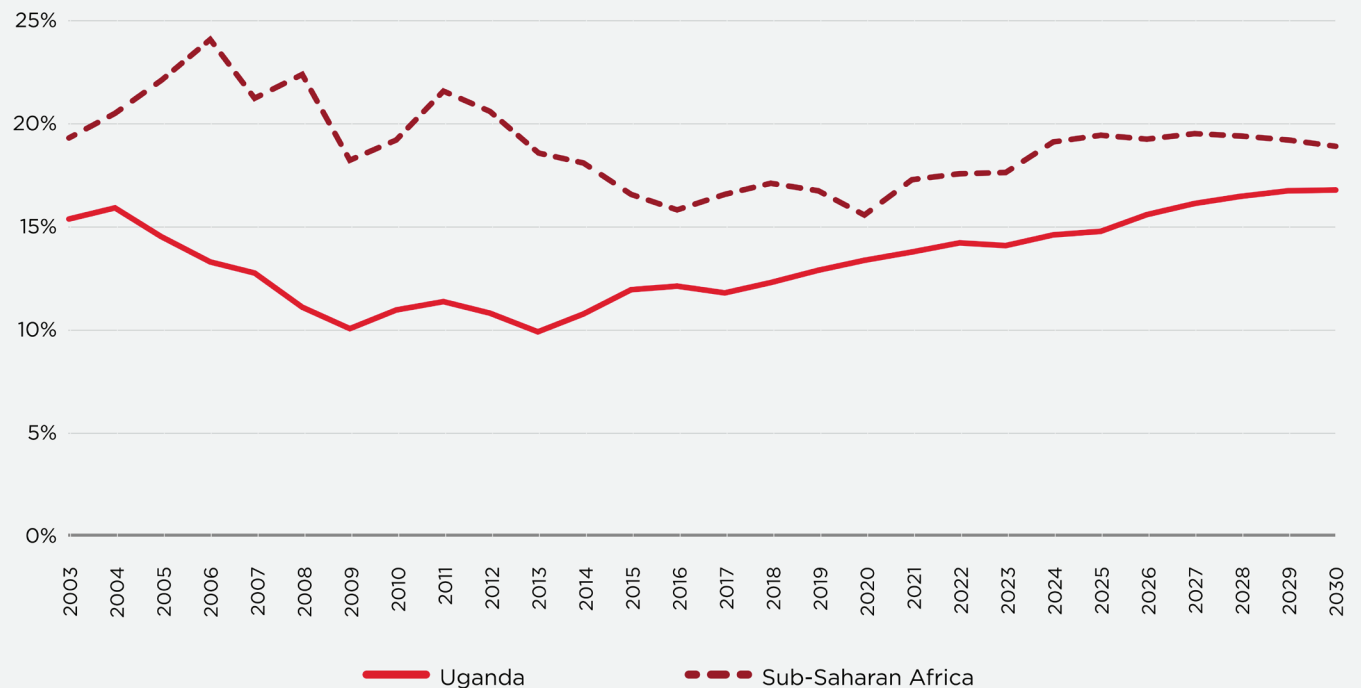


Figure 61 shows that government revenues as a percentage of GDP, whilst modestly rising over the last 20 years, remains 20% below the SSA average, indicating a potential for rises to support government services and infrastructure investment.

Figure 61: Uganda government revenues as a percentage of GDP

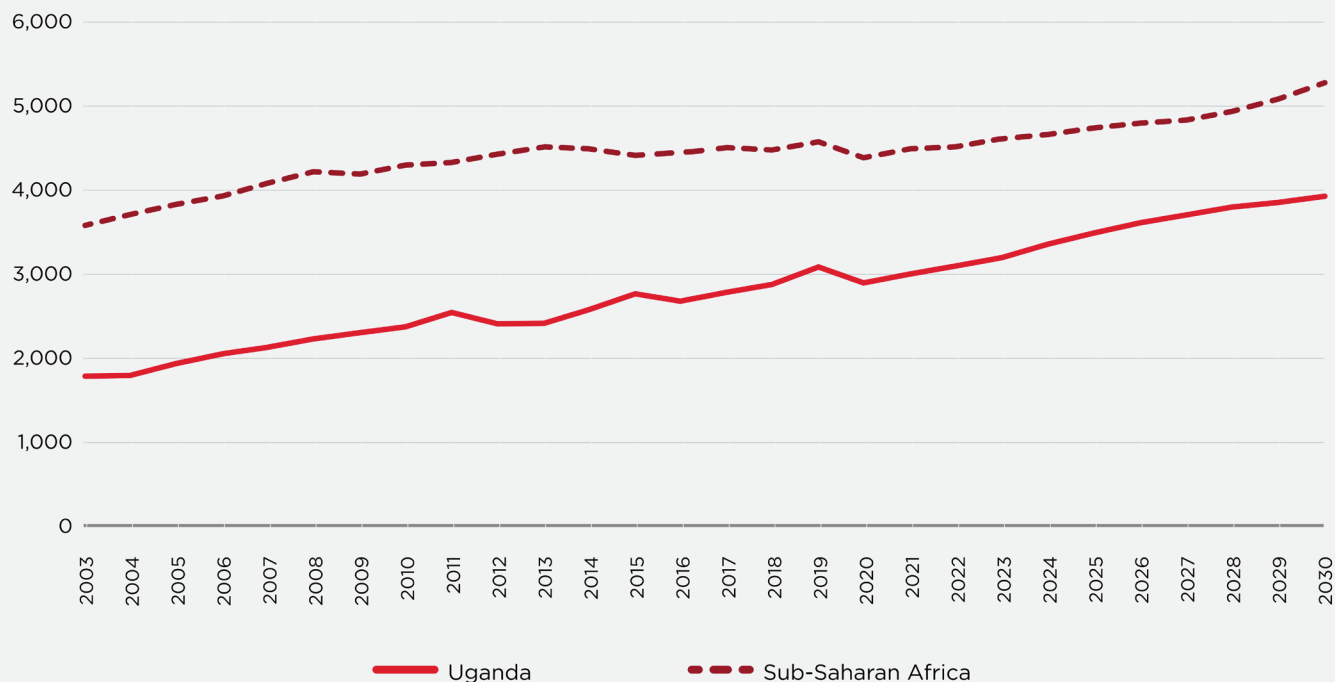
Source: World Bank Economic Outlook, April 2025.



However, despite the positive economic outlook, Figure 62 shows the absolute value of GDP per capita of Uganda remains significantly lower than the average for SSA. While the gap has been slowly closing in recent years, Uganda GDP per capita remains over 30% below the SSA average in 2024.

Figure 62: Uganda GDP per Capita

Source: World Bank Economic Outlook, April 2025.

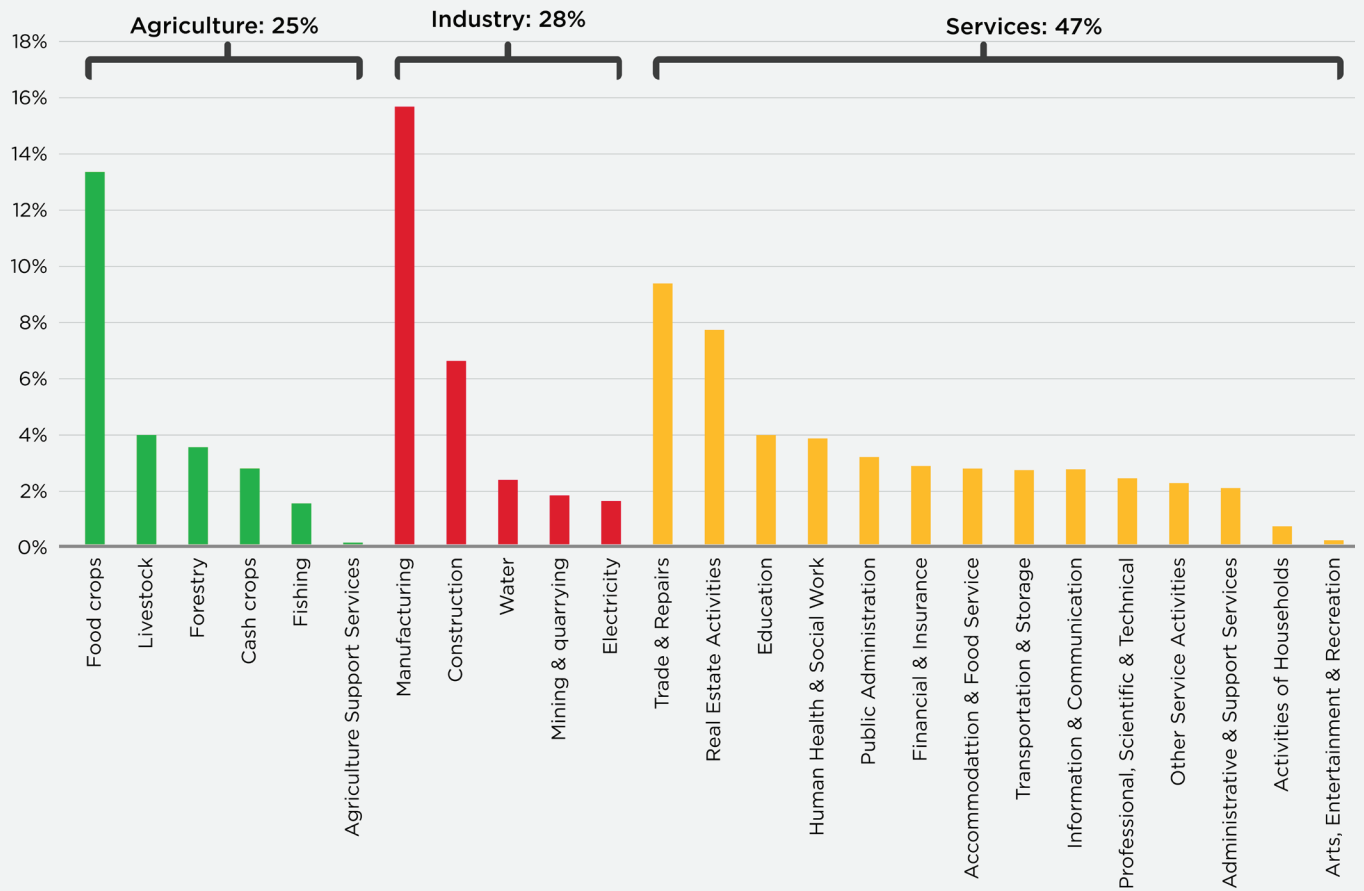


This shows that there is a need for Uganda to sustain growth in order to achieve higher levels of GDP per capita and reduce levels of poverty.

Figure 63 shows that the Ugandan economy is heavily skewed towards food crops, manufacturing and service industries. These are all sectors where digital technologies offer a transformational impact.

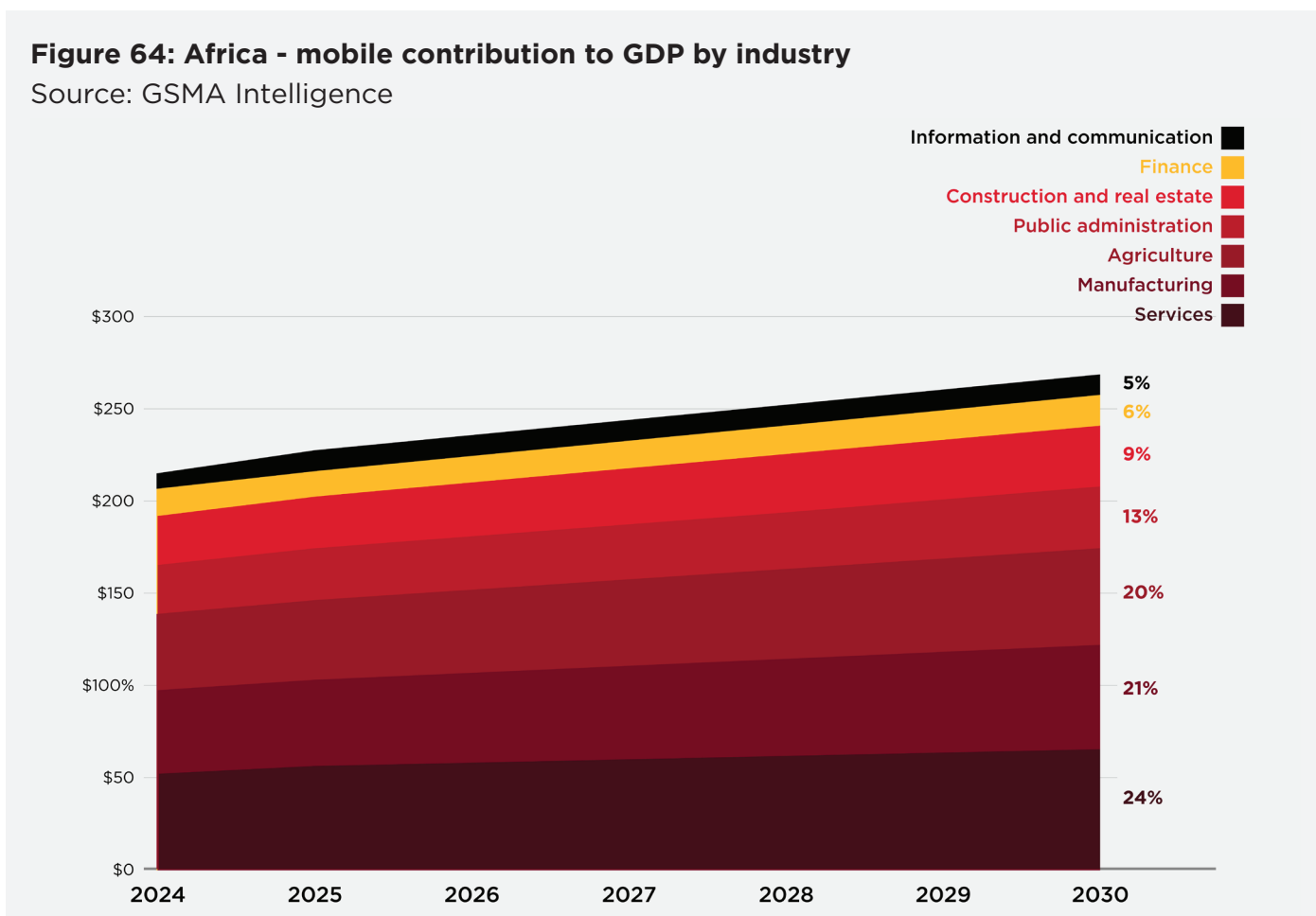
Figure 63: Share of Economic Activities to GDP in Uganda

Source: Uganda Bureau of Statistics, Explore Statistics - Uganda Bureau of Statistics.



3B. The potential economic impact of digitalisation

Mobile technologies are expected to drive growth across all sectors of the economy in Uganda and Africa. The mobile sector contributed USD 220 billion, representing 7.7% of GDP, in Sub-Saharan Africa in 2024 and is expected to increase to USD 270 billion (7.4% of GDP) by 2030 (Figure 64)¹²³.



This Section 3 estimates the macroeconomic impacts of increased digitalisation in Uganda for each key sector of the economy based on academic and policy research together with data on the economy of Uganda.

These impacts reflect digital pathways to economic transformation and are mapped onto the government's strategic objectives, as articulated in the Uganda Vision 2024, 10-Fold Growth Strategy, NDP IV, DUV and Digital Transformation Roadmap.

The policy objectives, impacts of digitalisation by sector and their relationships are shown in Figure 65, as well as the evidence used to quantify them. The separate methodological document accompanying this report contains more details on the methodology and evidence review¹²⁴.

¹²³ GSMA, The Mobile Economy Africa 2025, Page 11.

¹²⁴ For methodology see: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.

Figure 65: Mapping digitalisation to policy objectives and estimating the impact

Sector	Policy objectives	Outcomes of digitalisation	Impact relationship	Evidence rule
Agriculture	Agricultural development and agricultural productivity, access to markets, increase and diversify production	Precision agriculture, targeted information, better access to markets	Access to technology by farmers productivity, profits	Access to technology and precision agriculture increase crop yields between 10.5% and 20%, and profits up to 23%
Manufacturing	Diversify and develop manufacturing, attract FDI, increase technology exports	Expand manufacturing capabilities, diversify production, increase FDI and exports	Adoption of new technologies by firms productivity, GDP, exports	Application of industrial IoT and Industry 4.0 increases value add between 15-25%
Transport	Improve trade links, infrastructure for transport and logistics, strengthen competitiveness of ports	Reduce transaction and logistics costs, border delays and tax leaks. Increases productivity and integration into GVCs.	Digital platforms and infrastructure increase productivity, port capacity, GDP	Transport upgrades increase incomes by 10%. Digitising ports reduces logistics costs by 15-25%. Digital customs increases revenue by 54% in 5 years
Trade	Economic diversification, strengthen trade and exports	Improves trade flows, growth of E-commerce and exports of ICT services and digitally delivered services	Digital trade increased integration in AfCFTA, E-commerce and service exports	Potential to increase E-commerce value to 15% GDP and ICT exports value to 7% GDP
Healthcare	Increase access to healthcare, improve well-being, increase productivity of healthcare sector	Telemedicine, digital health records, digital payments for insurance contributions increase access to health services and productivity	Digital health increased access to health services and productivity	Digital health solutions enable doctors to increase visits by 30%

Sector	Policy objectives	Outcomes of digitalisation	Impact relationship	Evidence rule
MSMEs	Strengthening competitiveness and formalisation of MSMEs	Improves profits of MSMEs. Facilitates business registration, access to finance, formal contracts	Access to digital by MSMEs increased incomes and formalisation	Technology adoption is associated with labour productivity of 2-4% for small firms
Government	Strengthen domestic revenue mobilisation, prevent corruption, improve services delivery	Increases tax revenue and provides saving in public expenditure through better targeting, transparency and reduction of corruption	Mobile money, P2G, G2P adoption increase GDP, tax revenue, reduce leakage	Mobile money adoption increases tax revenue by 12% on average. Digital ID for social protection decreases leakage by 41-47%

Note: For details and references see separate methodological document that accompanies this report¹²⁵.

125 For methodology see: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.



3C. Impact of digitalisation on the agricultural sector

The role of ICT and digital technologies in facilitating economic productivity and growth in Uganda, particularly in agriculture, is recognised by the NDP IV, DUV, and Digital Transformation Roadmap.

The transformative role of digitalisation of agricultural sector includes the availability of information platforms for farmers and livestock keepers and associated mobile apps providing access market prices, weather forecasts, and agricultural advice. This helps farmers to make better decisions about what to plant or animals to keep, when to harvest, and where to sell produce. Research for this report finds that access to technology and precision agriculture can increase crop yields between 10.5% and 20%, and profits up to 23%¹²⁶.

Digital technology is increasing being used in Uganda for agriculture as described in Figure 66:

Figure 66: Digital agriculture case studies in Uganda¹²⁷

Agri digital skills programmes and solutions

- UCC Digital Skilling for Farmers initiative, in partnership with the Uganda National Farmers Federation, provides skills training to access and utilize technology for accessing information for improved agricultural practices, including market information, weather updates, and crop management approaches among others. The training also equips farmers with skills to utilize online selling platforms, to connect with buyers, suppliers and other farmers. As of March 2025, this had covered 12 out of the targeted 24 districts including: Kwanja, Moyo, Madi-Okollo, Nabilatuk, Amuru, Amolatar, Karenga, Koboko, maracha, Obongi, Pakwach and Terego. At least 100 farmers have been trained in each district and local farmer networks strengthened.
- UICT's green growth bootcamp at this year's national agricultural show aimed at providing solutions to propel the agricultural industry towards a more sustainable, efficient, and resilient future.
- UCC and Makerere University Business School (MUBS) have been implementing the E-booster Initiative which focuses on promoting the development of local digital solutions that address the societal challenges of unserved and underserved communities, including:
 - Cinnamon Solutions digitized 21 Village Savings and Loan Associations (VSLAs) across fishing communities on the shores of Lake Victoria, training over 10,000 people in financial literacy and digital transformation.
 - Voyage Technologies has expanded agricultural trade through its FarmSell platform that has connected over 100 farmers to markets and suppliers of farm inputs.

¹²⁶ Ibid.

¹²⁷ Minister Policy Statement 2025. EzyAgric website.

Digital agri solutions EzyAgric digital platform connects smallholder farmers with a range of essential services such as quality agro-inputs, agronomical extension advice, financial services, coordinated market linkages, and farm records management. To date, 106,000 farmers are served and estimates that 8,000 jobs have been created through improved efficiencies and returns.

The telecom policy reforms in Section 4 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the agriculture sector. This has the potential to add UGX 4,300 billion value add, equivalent to 5.8% of the sector’s value add by 2030. This would result in additional employment of 1,250 million people by 2030 and UGX 720 billion in additional tax revenues.

Figure 67: Potential impacts of increased digitalisation of agriculture in Uganda in 2030¹²⁸

Digital agriculture value add (UGX billion)	4,300
% Sector GDP	5.8%
% of GDP	1.4%
Employment	1,250,000
Tax revenue (UGX billion)	720



¹²⁸ For methodology see: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.

3D. Impact of digitalisation on industry and manufacturing

Digital technologies, such as cloud computing, 3D-printing, big data analytics and AI, have the potential to transform industry in Uganda, including manufacturing, and mining. Research indicates that:

- Factory automation with cellular IoT technology optimizes manufacturing processes with increased efficiency, fewer human errors, increased reliability and safety and reduced wastage and downtime. Expanded manufacturing capabilities can lead to greater integration into GVCs and further increases in outputs, reduced concentration in products and markets and enhanced links to specialised markets¹²⁹.
- Industry 4.0 technologies have been shown to achieve 30% to 50% reductions in machine downtime, 10% to 30% increases in throughput, 15% to 30% improvements in labour productivity and an 85% improvement in the accuracy of forecasting¹³⁰.
- The application of IoT devices in the manufacturing context alone could increase manufacturing productivity by 10% to 25% and value added by 20%¹³¹.
- IoT devices can be used in mining to improve safety through monitoring air quality, tracking structural stability, and environmental impact¹³².

The NDP IV, DUV and Digital Transformation Roadmap, including the Big Data Utilization Strategy 2023/2024 - 2027/2028, recognises the value of the integration of automation, data analytics, IoT, machine learning, and AI technologies into production processes. This enables the digitization of manufacturing operations, predictive maintenance, real-time monitoring, and customization of products. The result is increased productivity, improved quality control, operational efficiency and reduced costs.

Digital technology programmes are increasingly being adopted in industrial sectors in Uganda, including digital skills training, as described in Figure 68.

Figure 68: Digital industry case studies in Uganda¹³³

Ministry of Energy and Mineral Development's Mining Cadastre eGov Portal enables parties to manage and update mining licenses online. They can submit applications, renew licenses, make online payments, update contact information, and report relevant data.

MTN Uganda's SMART Mining and Manufacturing IOT end-to-end solutions are designed to enable customers to connect and interact with their remote assets and environments through a smart combination of core MTN connectivity, pre-installed IOT sensors and access to a cloud based IOT self-service management platform.

129 World Bank, World Development Report, 2020.

130 McKinsey & Co - Capturing the True Value of Industry Four Point Zero, April 2022.

131 European Parliament Member's Research Service - Industry 4.0: Digitalisation for Productivity and Growth, September 2015.

132 Moshood Onifade et al - Challenges and applications of digital technology in the mineral industry, Resources Policy Volume 85, Part B, August 2023.

133 Ministry of Energy and Mineral Development's Mining Cadastre eGov Portal. MTN Uganda website.

The telecom policy reforms in Section 4 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the industrial and manufacturing sector. This has the potential to add UGX 5,600 billion value add, equivalent to 6.9% of the sector's value add by 2030. This would result in additional employment of 160,000 people by 2030 and UGX 950 billion in additional tax revenues.

Figure 69: Potential impacts of increased digitalisation of industry and manufacturing in Uganda in 2030¹³⁴

Digital industrial value add (UGX billion)	5,600
% Sector GDP	6.9%
% of GDP	1.8%
Employment	160,000
Tax revenue (UGX billion)	950

¹³⁴ For methodology see: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.



3E. Impact of digitalisation on the transport sector

Digitalisation is having a transformative impact on improving efficiency and safety of transport, logistics and supply chain, which is critical domestically and internationally. For example:

- Mobile-enabled technologies, such as pay-as-you-go models, big data, geographic information systems, and IoT, are being used to address road and public transportation issues, such as congestion, high travel costs, safety concerns, and pollution¹³⁵.
- Uganda's Intelligent Transport Monitoring System (ITMS) is being implemented using IoT-enabled digital number plates and sensors to monitor vehicle movements and road conditions, and road safety. As of June 2025, 26,818 vehicles and 62,512 motorcycles were registered. The government has also started implementing speed limit regulations and is using the Express Penalty System (EPS) for the payment of fines¹³⁶.
- Digital customs systems are being used to reduce clearance times and improve trade facilitation, through paperless customs declarations, electronic payment systems, and automated risk management tools¹³⁷.
- Postal services are using digital solutions to improve service delivery accuracy and operational efficiencies. The Minister Policy Statement 2025 has set a priority for FY 2025/26 to complete a geo-referenced database for postcodes of all parishes, wards and major service delivery points developed.
- Research for this report indicates that transport upgrades increase incomes by 10%, digitising ports reduces logistics costs by 15%-25%, and digital customs increases revenue by 54% in 5 years (see Figure 65).

This is recognised by the NDP IV, DUV, Digital Transformation Roadmap and the Big Data Utilization Strategy, which has outlined initiatives to accelerate Uganda's use of digital services for transportation and logistics.

The telecom policy reforms in Section 4 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the transport and logistics sector. This has the potential to add UGX 700 billion value-add, equivalent to 8.6% of the sector's value-add by 2030. This would result in additional employment of 50,000 people by 2030 and UGX 120 billion in additional tax revenues.

Figure 70: Potential impacts of increased digitalisation of transport in Uganda in 2030¹³⁸

Digital transport value add (UGX billion)	700
% Sector GDP	8.6%
% of GDP	0.2%
Employment	50,000
Tax revenue (UGX billion)	120

¹³⁵ GSMA Report - Powering Mobility: The Rise of Digital Transportation in Africa, 2023.

¹³⁶ IMTS website. Minister of Finance Budget Statement FY 25/26, June 2025.

¹³⁷ For methodology see: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.

¹³⁸ Ibid.

3F. Impact of digitalisation on trade and services

Digitalisation - including the use of mobile money - of trade, services and commerce is driving growth, efficiency, accessibility, innovation, and opportunities for businesses of all sizes, including Small and Medium Enterprises (SMEs), in Uganda and across Africa. It can also create opportunities for economic, business and jobs, and financial inclusion for persons in the informal sector and disadvantaged communities, including unemployed, youth, women, rural communities, persons with disabilities, and forcibly displaced persons.

GSMA estimated, in 2023, that digital wallets and mobile money services will process over USD 500 billion transactions across Africa and UNCTAD estimates that over half a billion people on the continent are becoming e-commerce users, which could potentially add up to USD 180 billion in GDP¹³⁹. The IFC estimates that more than 600,000 formal businesses and 40 million microbusinesses in Africa could benefit from digital transformation, citing the need to remove barriers to entry such as higher costs of software and equipment and regulations¹⁴⁰.

Importantly, the African Continental Free Trade Area (AfCFTA) has introduced a Digital Trade Protocol to create a harmonized framework for digital trade, including market access, data governance, and digital payments, which Uganda is a signatory to¹⁴¹.

Open APIs are being adopted by mobile operators and technology companies to improve efficiency and service delivery for enterprise clients' business processes, including:

- Cross-border payments and financial solutions.
- Location tracking, notification systems, and authentication systems.
- Real time consumption tracking and automated billing and alerts.
- Security and fraud prevention.

An example is the GSMA Open Gateway initiative launched in 2023, which aims to harness the capabilities of mobile network operators worldwide by providing access through standardised APIs. As of September 2025, there are 60 APIs available for development and 14 mobile network operators across 12 countries have adopted this initiative in Africa¹⁴².

Addressing barriers to digital participation for SMEs and creating economic and job opportunities for unemployed and other disadvantaged communities is critical for Uganda, as recognised by the NDP IV, DUV and Digital Transformation Roadmap - notably pillar 2 digital services and pillar 5 innovation and entrepreneurship.

Government and mobile technology programmes are contributing to these initiatives and targets, as illustrated by case studies below:

¹³⁹ GSMA Article - What is the opportunity for e-commerce in Africa, March 2023.

¹⁴⁰ IFC report - Digital Opportunities in African Businesses, May 2024.

¹⁴¹ AfCFTA website - Ministers of Justice Adopt AfCFTA Protocol on Digital Trade Annexes in Zanzibar.

¹⁴² GSMA, The Mobile Economy Africa 2025, Pages 25 - 26.

Figure 71: Case studies supporting digital e-commerce and payments¹⁴³

<p>NIISP</p>	<p>The Government of Uganda established the National ICT Initiatives Support Programme (NIISP) to facilitate growth and development of the local software applications and innovations by providing access to seed capital as well as working environment under the National ICT Innovation Hub. The NIISP has over the last five years supported over 24 startups of which 4 have increased their market access beyond Uganda. The fund has realized notable local development and implementation of enterprise cost effective solutions such as the Electronic Government Procurement System and Education Management Information System leading to significant cost savings.</p>
<p>MICTNG</p>	<p>The Ministry of ICT and National Guidance in 2022 unveiled an initiative named “Discover Africa’s Innovation Powerhouse”, geared towards profiling successful Ugandan innovators and supporting them to obtain access to new markets and funding at the global level.</p> <p>The Business Process Outsourcing and Innovation policy was approved by Cabinet and implementation commenced in FY 2024/25, including a campaign strategy to communicate to key audiences including investors on boosting the BPO industry has been developed. This has resulted in 50 companies being licensed, creating over 10,000 jobs.</p>
<p>UCC</p>	<p>During FY24/25, UCC trained over 200 SMEs who were provided digital skills training in Jinja and Wakiso in partnership with the Federation for Small and Medium Enterprises of Uganda-FSME and Uganda Small Scale Industries Association (USSIA).</p>
<p>Innovation Hubs</p>	<p>Partnering with public and private innovation hubs is a key part of the Digital Transformation Roadmap. There are ~ 15 private innovation hubs in Uganda, including:</p> <ul style="list-style-type: none"> • Innovation Village with a mission to build resilient infrastructure, promote inclusive and sustainable industrialization, and foster a culture of innovation across Africa. • Hive Colab incubates and provides acceleration training programmes with companies and startups critical to Uganda’s technology ecosystem, including financial technologies, medical technologies, educational technologies, agricultural technologies, and technology for governance.
<p>Airtel</p>	<p>Xstream Packages for Business include both wireless and fibre options that provide scalable data solutions essential for day-to-day operations.</p> <p>Airtel Money’s Merchant Till Number for Business Transactions enables SMEs—such as market vendors, boda riders, and small shop owners—to create a unique digital wallet designated specifically for business transactions. The Merchant Till Number is accessible via a simple USSD code to set up without the need to visit a physical service centre.</p>

¹⁴³ Uganda National Development Plan IV, Page 177. National Digital Transformation Roadmap. Minister Policy Statement 2025 (March 2025). Minister of Finance Budget Speech FY 25/26 (June 2025). Innovation Village website. Hive Collab website. Airtel Uganda website. MTN Uganda website. MTN Uganda Annual Report FY24, Pages 19, 52 - 55. GSMA report - Creating jobs and expanding financial inclusion in refugee settlements: Using an inclusive market systems approach. GSMA Humanitarian Positioning Strategy: A Catalytic Approach to Cross-Sector Partnerships in Support of Humanitarian Assistance, April 2025, Pages 8 - 9.

MTN

MTN SME Internet—a high-speed, unlimited, and affordable internet solution designed specifically for businesses. With packages starting at affordable price points (from around UGX 290,000 per month), this service leverages MTN's fibre and 4G LTE networks to deliver reliable connectivity across Uganda. This enables SMEs to conduct online business, manage digital transactions, and utilise cloud-based applications.

MTN's Five-in-One SME Solutions Package provides digital payment reception, utility and supplier payments, airtime sales, access to loans, and bank integration to help SMEs to streamline their cash flows, improve record-keeping, and boost overall business efficiency.

MTN MoMo (mobile money) Pay feature enables merchants to receive payments directly on their phones, with 85,900 merchant customers and a transaction value of UGX 158.6 trillion during FY24. MTN MoMo's Fast-Moving Consumer goods (FMCG) suite is used by over 860 companies dealing in beverages, milk, alcohol and daily household products.

MTN Uganda reported that it had paid UGX 980.2 billion for services provided by local suppliers, of which UGX 73.6 were women suppliers, in FY 2024.

Be-FINE 2 Refugee settlement project

Uganda boasts one of the most progressive refugee policies in the world, granting refugees the right to work, freedom of movement, land, and social services. The goal is to ensure refugees have what they need to start businesses for their own self-reliance. However, limited access to financial services prevents most from taking their businesses beyond a micro-level. Mobile money agents have the potential to close this gap by bringing financial services closer to rural communities.

An assessment by Grameen and GSMA in refugee settlements in northern Uganda found insufficient agents to adequately meet community needs, and it was difficult for MNOs to recruit and maintain additional agents in the settlements.

To address this gap, Grameen Foundation worked with GSMA and private sector partners, MTN Uganda and Nilecom Limited, to implement the Building an Enabling Financial Services Ecosystem for Refugees Phase 2 (Be-FINE 2) project from January 2022 to June 2023 in Bidi Bidi and Palorinya refugee settlements.

Be-FINE 2 aimed to improve financial inclusion through awareness, access and uptake of digital financial services via the establishment of new mobile money businesses and digital financial literacy training, with the following results:

- 60 women and young people supported to become mobile money agents.
- Average monthly income of Ugandan mobile money agents increased by 43% after 4 months of operation.
- Ugandan mobile money agents were making an average of UGX 226,000 in commission each month after 4 months of operation.
- Refugee agents were making an average of UGX 141,000 in commission each month after two months of operation.

4,599 people, of which 2,933 were women, received digital financial skills training from the agents.

Using mobile money for humanitarian assistance

Airtel Uganda has worked with the World Food Programme to enhance their mobile money offering by providing additional features for users receiving cash and voucher assistance payments. By reforming the cash-out process and facilitating utility bill payments directly through their mobile money agents, recipients are now able to access essential goods and services more quickly.

The telecom policy reforms in Section 4 would increase access and adoption of mobile technology and positively affect the level of digitalisation of trade and services (including e-commerce) sector. This has the potential to add UGX 700 billion value add, equivalent to 2.8% of the sector's value-add by 2030. This would result in additional employment of 110,000 people by 2030 and UGX 100 billion in additional tax revenues.

Figure 72: Potential impacts of digitalisation of trade in Uganda in 2030¹⁴⁴

Source:

Digital trade value add (UGX billion)	700
% Sector GDP	2.8%
% of GDP	0.2%
Employment	110,000
Tax revenue (UGX billion)	120



3G. Impact of digital government

International organisations and governments are prioritising digital government (often referred to as e-government and increasingly referred to as digital public infrastructure) **and public services (including education and healthcare)** to use digital infrastructure and services to deliver enhanced and inclusive public services, reduce costs and improve efficiencies, contribute to economic growth, improve transparency, increase fiscal revenue, and increased data to inform government policies and decisions. For instance:

- The World Bank Digital Transformation Programme partners with national governments, countries to invest in inclusive and safe digital public infrastructure¹⁴⁵.
- African Union Digital Transformation strategy 2020 - 2030 identifies digital governance, digital education, and digital health as critical sectors.
- Governments are using digital technology to enhance public service delivery, to improve government administrative and cost efficiencies, and to increase revenue. For example:
 - Ethiopia has used digital payment channels to pay with coupons for subsidised fuel mandated by the government to prevent illegal activities, fuel wastage and promoted digital payments adoption. As of October 2024, more than 1,600 gas stations were participating in the scheme with 141,000 vehicles paying through Telebirr with the subsidy transaction and 1.1 million vehicles paying without the subsidy. The total transaction value through the scheme was ETB 255 million, of which 52% were transactions with the subsidy. It is estimated that this has generated a saving for the government on the monthly cost of fuel subsidies from ETB 7 billion to ETB 188 million, a reduction of over 95% of the cost of the subsidy to the government¹⁴⁶.
 - Ghana.Gov provides 1,500 government agency services and has collected GHC 210 billion between launch in 2020 to 2024¹⁴⁷.
 - Kenya e-citizen provides over 22,000 government and public services digitally, collects KSH 700 million to 1 billion daily, and has collected over KSH 550 billion in the last three years prior to 2025¹⁴⁸.
 - The South African Revenue Service reported in FY 2023/24 that 77% of taxation payments were made through e-filing and is investing in digital platforms (including AI and machine learning) to increase tax efficiency and compliance¹⁴⁹.
- The United Nations e-Government Index (EGDI) conducted most recently in 2024, ranks Uganda 150th out of 193 countries. Uganda is part of the “middle” EGDI group and has above the average EDGI score for African countries, although it is ranked after countries such as South Africa (40th), Egypt (95th), Kenya (108th), and Nigeria (144th). Tanzania is ranked 153rd ¹⁵⁰.

145 World Bank Briefing - Digital Transformation Drives Development in Africa, January 2024.

146 GSMA report - Driving Digital Transformation of the Economy in Ethiopia Opportunities, policy reforms and the role of mobile, October 2024, Page 28.

147 BusinessGhana article, “ Ghana.gov revenue platforms: Govt bags GHC210bn... as revenue since introduction in 2020”, February 2024.

148 The Star Newspaper Kenya article, “E-Citizen now collects up to Sch 1 billion daily”, September 2025.

149 South Africa Revenue Service Tax Statistics 2024, Page 1. TechCentral Article, “Advanced’ data analytics, AI to help Sars reach ‘tougher’ collections target”, May 2025.

150 UN E-Government Survey, 2024.

The NDP IV, DUV, the Digital Transformation (notably Pillars 1 Infrastructure and Connectivity and Pillar 2 Digital Services), **and the Minister Policy Statement 2025 sets actions to further accelerate digital government.**

Noting that the Minister Policy Statement 2025 listed as a priority this year to address the continuing challenges of the “infrastructure automation of government systems or processes still slow... and the existence of many stand-alone systems in government that don’t work in sync”.

Figure 73 provides a selection of case studies on successful digital government initiatives as part of NDP IV, DUV and the Digital Transformation Roadmap in Uganda, including digital infrastructure, e-government, the Digital Parish Model, national identification, use of digital technology for taxation collection and compliance, and healthcare (See Section 2D for case studies on digital skills).

Figure 73: Digital government and public services case studies¹⁵¹

NDP IV, DUV and Digital Transformation Roadmap	NDP IV, DUV and Digital Transformation Roadmap collectively provides clear programmes, initiatives and targets for deployment of government infrastructure and digital services (see Figure 20 and Annexure).
Government digital infrastructure	<p>1,567 sites are connected to the National Backbone Infrastructure (NBI). The total length of Optic Fibre Cable laid is 4,387 kilometres and is to be extended by an additional 6,000 Kilometres during FY2025/26.</p> <p>Last mile connectivity is to be extended to 67 additional government service delivery units across the country (parishes, district headquarters, markets, and education centres) during FY2025/26.</p> <p>The price of internet bandwidth for MDAs connected to the NBI has been reduced from USD 70 to USD 35 during FY 2024/25.</p> <p>151 government entities are currently onboarded onto the UGhub platform, the government’s integrated digital system.</p> <p>NITA National Data Centre is hosting 542 websites.</p> <p>UCIT trained 1,161 government officers across ICT, Education, Trade, Industry, and Local Government, in cybersecurity, project management, data privacy, and emerging technologies during FY2024/25.</p>

¹⁵¹ Digital Transformation Roadmap; Minister Policy Statement 2025 (March 2025). Minister of Finance Budget Speech Financial Year 2025/2026 (June 2025). Authors’ review of government portals/websites. UNDCF digitalizing a village health team in Uganda case study, January 2022. Ministry of ICT and National Guidance article - Digitization driving progress in Uganda’s Parish Development Model, August 2025.

e-government platforms

The proportion of government services provided online has increased from 20% in 2017 to 62% by the end of June 2024. Uganda currently has 36 separate e-government platforms (e.g. Directorate of Citizenship & Immigration Control (DCIC) national ID, e-visa and e-passport platforms, Driver Licensing System, Online Business Registration System (OBRS), Single Transaction Window for customs, E-Procurement Portal). This helps efficiency of government services for citizens, for example, the Uganda Driver Licensing System has reduced the turnaround time from 1 month to 45 minutes in Kampala and 48 hours in upcountry stations.

E-government platforms developed by local developers and used by MDAs, included the Parish Development Model Information System (PDMIS), the Integrated Health Management Information System (IHMIS), the Education Management Information System (EMIS), the Electronic Document and Records Management System (EDRMS), and the Online Business Registration Services System (OBRS).

Digital Parish Model

The Parish Development Model (PDM) is Uganda's strategy for decentralizing service delivery and economic empowerment across Parishes, the lowest administrative unit.

The Parish-Based Management Information System (PDMIS) launched two years is digitalising these processes and service delivery, including the disbursements to households using a digital database of beneficiaries including names, addresses, National Identification Number (NIN), and Savings and Credit Cooperative Organization (SACCO) affiliations.

PDMIS is used to send secure and efficient payment of government grants from the National Treasury to beneficiaries, and to enhance operations and minimise corruption. To ensure that only eligible and traceable beneficiaries receive payments, PDMIS verifies all NINs with the National Identification and Registration Authority (NIRA) database. This feature allows the Government to easily track and confirm the identities of recipients, preventing fraud and ensuring that funds reach the intended beneficiaries.

PDMIS is integrated with the WENDI mobile wallet application provided by the Post Bank of Uganda to send money, and the "ZAIDI" application to monitor and ensure that monies are paid to the right beneficiaries.

Since launching two years ago, the PDMIS results include:

- Digitized over 8 million household records throughout Uganda, covering nearly 79% of households.
- UGX 2.7 trillion sent to PDM Savings and Credit Cooperatives (SACCOs), with UGX 2.5 trillion reaching more than 2.5 million beneficiaries directly.

The Government of Uganda, through the Ministry of ICT and National Guidance, has recently joined the global 50-in-5 initiative, a collaborative effort aimed at accelerating the adoption of Digital Public Infrastructure (DPI) over five years. Uganda plans to showcase its Parish Development Model digital platforms and payments.

National ID In May 2025, the government commenced a new campaign for the enrolment of national identity cards, with the targets of registering 17.2 million unregistered persons and renewing 15.8 million expired cards. The National ID is used in elections and contributes to improved efficiency in accessing public services, broadened financial inclusion, eased travel within the East African Community and addressing fraud arising from identification.

Taxation The Uganda Revenue Authority launched a three-year digital strategy in 2023, in partnership with the United Nations Development Programme, aimed at integrating technology in tax administration. This builds on services, including current eTax platform for taxpayers to file returns, make payments, access tax education information, and access tax-related services online, Electronic Receipting and Invoicing System (EFRIS) for e-filing and e-invoicing and Digital Tax stamping (DTS) for manufacturers.

The Integrated Revenue Administration System (IRAS) is an online and mobile application platform to enable local governments and cities collect revenue through registration, assessment, billing, payment awareness raising for taxpayers, and connecting residents to local governments.

Payments for Other Non-Tax Revenues gathered by the local governments are registered using this procedure. They include the cost of registration, tenders, nominations, and medical care, among others.

Healthcare Uganda Ministry of Health's Health Information and Digital Health Strategic Plan (2020/21-2024/25) and Digital Strategic Health Plan provides a framework for digitalisation of healthcare. Systems implemented and being connected to national and regional hospitals, include the Uganda Electronic Community Health Information System and the Electronic Medical Records System, which has improved patient record management, drug dispensing and monitoring attendance of health workers.

The Ministry of Health partners with leading community health partners to digitalise 4,500 village health teams (VHT) in 72 districts. A pilot funded by the United Nations Capital Development Fund (UNCDF) in four districts in Uganda —Lira, Koboko, Maracha and Nebbi—targeting 400 VHTs (100 per district). The key outcomes expected includes improved service quality of Maternal Child Health and Nutrition (MCHN) implemented by the VHTs, improved adoption and usage of digital health services, and Improved collection of real-time data in key health indicators.

National Census The government undertook the first digital national population and household census during May 2024.

The policy recommendations in Section 4 would increase access and adoption of mobile technology and positively affect the level of digitalisation of the government and health sectors. This has the potential to add additional employment of 330,000 people by 2030 and UGX 2,200 billion in additional tax revenues raised across all sectors (3.1% of tax revenues in 2030)..

Figure 74: Potential impacts of increased adoption of digital government in Uganda in 2030¹⁵²

Employment (government & healthcare)	330,000
Digital government revenue increase (UGX billion)	2,100
% tax revenues	3.1%

¹⁵² For methodology see: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024.



4. Policy recommendations



The proposed policy recommendations, provided in this report and summarised below in Figure 75, balance short-term objectives with long-term investment and development to realise the full potential of the digital economy and transformation in Uganda, and are consistent with the NDP IV, DUV and Digital Transformation Roadmap objectives. Achieving the wide-ranging benefits of the digital economy and transformation will require bold actions to support demand, reduce the cost of supply and promote a policy environment that supports investment.

The economic and social value of digital and emerging technologies relies on mobile networks as the backbone of digitalisation of the economy and the mobile sector is a committed partner with the government to achieve NDP IV digital transformation objectives across the economy and delivery of public services.

The following proposed policy recommendations will accelerate the mobile sector’s contribution to Uganda’s NDP IV digital transformation objectives by 2030, including:

- Extending 4G mobile network population coverage from 96% to 99% (with remaining remote area covered by alternative technology), contributing to NDP IV 2030 objective of 70% national broadband coverage; and
- Connecting an additional 4 million unique mobile internet (broadband) subscribers, totalling almost 19 million (32% population, 61% adult population), and reduce the mobile internet usage gap by 7%. Contributing to NDP IV 2030 objective of 45% population using the internet.

Figure 75: Proposed policy recommendations and contribution to NDP IV Digital Transformation Programme

Report Policy recommendations	Contributing to NDP IV digital transformation programme objectives	Policy recommendation impact by 2030, contributing to NDP IV objectives (compared with base case)
<p>Infrastructure investment environment</p>	<p>Ensure that policies and decisions on the sector create a sustainable digital infrastructure investment environment. These include:</p> <ul style="list-style-type: none"> • Amend the coverage obligation requirements in the NTO license from the current 5-year to 20-year period, and a phased investment rollout programme agreed with the operators. • As part of this phased investment rollout programme, consider revising the 90% geographic license obligation to: <ul style="list-style-type: none"> - Population-focused obligations with designated priority locations including designated MDAs and LGs, transport routes, and key economic sector areas. - Review signal strength thresholds, especially to consider network opex optimisation requirements in rural and remote areas. 	<p>Increase internet connectivity across the country, including objectives to achieve 70% national broadband coverage and 45% population using the internet.</p> <p>Improve efficiency in business processes and public service delivery, including: e-govt satisfied users and e-govt turnaround.</p> <p>Increase uptake of digital products and services, including: local commercial products, digital skills (36% pop) and ICT investment.</p> <p>4G mobile network services contribution to NDP IV internet connectivity objectives today, according to GSMA Intelligence data (2025):</p> <ul style="list-style-type: none"> • 96% 4G population network coverage, contributing to NDP IV 2030 objective of 70% national broadband coverage; and • 47% (80% adult) population unique mobile users and 22% (48% adult) population unique mobile internet users, contributing to NDP IV 2030 objective of 45% population using the internet. <p>These policy recommendations would result in 99% 4G population coverage and an additional 1.44 million unique mobile internet users by 2030 (+ 2.4% of population).</p>

Report Policy recommendations

Contributing to NDP IV digital transformation programme objectives

Policy recommendation impact by 2030, contributing to NDP IV objectives (compared with base case)

- Coverage obligations to exclude uninhabited, mountain, waterbodies, protected areas which are difficult to operate mobile networks (noting the potential use of alternative technologies, such as LEO satellite technology, to provide coverage in these areas as part of UCUSAF programme).
 - Implement measures to address the underlying barriers to network coverage and quality of service delivery to achieve NDP IV and DUV objectives.
 - Designate telecoms infrastructure as constituting Critical National Infrastructure and measures to provide more effective deployment, energy supply, and protection against criminal damage.
 - Review the Uganda Communication Universal Service Access Fund policy to achieve NDP IV and DUV objectives, including rural connectivity subsidy programme to include OPEX costs, USF contributors to participate in the USF decision making process, and published audited funds reports for transparency.
- Noting that GSMA analysis finds that:
- To achieve compliance with the 90% geographic coverage obligation for 4G networks, using UCC signal thresholds, would require ~ 1,400 new sites in mostly uninhabited areas at a cost of USD 550 million. This cost would reduce to USD 80 million if the UCC adopted industry proposed alternative signal thresholds and revised coverage obligations to land only (excluding waterbodies).
 - If the above proposed coverage policy recommendations are implemented, they would help 4G coverage increase from 96% to 99% population with a lower investment cost of USD 15 million (compared to USD 25 million if policy recommendations are not adopted)¹⁵³.

This would generate an estimated UGX 4,200 billion value added, 515,000 jobs and UGX 600 billion tax revenue across key economic sectors and public services. Contributing to NDP IV objectives.

153 GSMA Intelligence - 4G Coverage and Investment in Uganda, October 2025.

Report Policy recommendations	Contributing to NDP IV digital transformation programme objectives	Policy recommendation impact by 2030, contributing to NDP IV objectives (compared with base case)	
<p>Digital technology to increase domestic revenue mobilisation</p> <p>AND</p> <p>Optimise sector taxation</p>	<p>Increase domestic revenue mobilisation through accelerating the use of digital technology for cashless payments, to improve accuracy in filed tax returns and tax compliance, and public service delivery.</p> <p>Forward-looking fiscal policies by optimising sector specific taxation on telecoms and mobile money to broaden the tax base, thereby increasing affordability and promoting digital inclusion, including:</p> <ul style="list-style-type: none"> • Remove 12% excise levy on data telecoms services. • Parity on electronic transactions regarding 0.5% duty on mobile money withdrawals to enable seamless transactions in the digital financial services ecosystem, fostering a more integrated financial ecosystem and financial inclusion. • Exempt telecoms equipment and services supporting advanced technologies, such as 4G and 5G, from 18% VAT on imported services, which applies to software and entry-level smartphones. 	<p>Increase internet connectivity across the country.</p> <p>Improve efficiency in business processes and public service delivery.</p> <p>Increase uptake of digital products and services.</p>	<p>These policy recommendations would result in an increase of 0.79 million unique mobile internet users by 2030 (+ 1.3% of population).</p> <p>This broken down as follows:</p> <ul style="list-style-type: none"> • Remove excise level levy on data telecoms services: 0.23 million unique mobile internet users by 2030 (+ 0.4% of population). • Exempt VAT on imported entry level phones: 0.56 million unique mobile internet users by 2030 (+ 0.9% of population)¹⁵⁴. <p>The impact of mobile money parity with banks for electronic transactions is best measured by its impact on the economy. It is estimated that increased take-up of mobile money will generate an additional UGX 3 billion of value added in key economic sectors.</p> <p>Together, these initiatives would generate an estimated UGX 5,000 billion value added, 609,000 jobs and UGX 700 billion tax revenue across key economic sectors and public services.</p> <p>If all policy recommendations are implemented, increased mobile digital usage across all sectors of the economy would generate gross additional tax revenue of UGX 3,100 billion at a loss of UGX 370 billion in taxes from the mobile sector by 2030.</p>

¹⁵⁴ The long-term impact of these measures (beyond 2030) is likely to be greater. For example, UNECA predicts that removing the telecoms excise duty would grow the broadband subscriber base by 4.8% to 11.7% (depending on the level of pass-through). This is equivalent to 0.7 to 1.7 million unique subscribers (1.2% to 2.9% of population)

Report Policy recommendations	Contributing to NDP IV digital transformation programme objectives	Policy recommendation impact by 2030, contributing to NDP IV objectives (compared with base case)
<p>Device affordability, digital skills & other demand side reforms.</p>	<p>GSMA analysis finds that entry-level smartphones are priced at USD 38.91 in Uganda. This price equates to 39% of monthly GDP per capita, and 96% of monthly GDP per capita for the poorest 40% of the population. Taxation contributes to 35% of smartphone cost.</p> <ul style="list-style-type: none"> Accelerate digital government programmes to fast track use of digital technologies in public service delivery (e.g. Digital Parish Model). Accelerate National Digital Skilling Framework and related initiatives (e.g. Digital Skills Factory, UCC teachers and youth digital skills programme, Airtel Uganda and UNICEF Digital Learning Programme, MTN Digital Skills Academy, GSMA Mobile Internet Skills Training Toolkit). Use embedded solutions and APIs in commercial and public service delivery to address digital skills and increase digital adoption. Implement Pillar 3 Cyber Security and Data Protection programmes under Digital Transformation Roadmap and reform data location and cross-border transfer regulations¹⁵⁵. 	<p>Increase internet connectivity across the country.</p> <p>Increase uptake of digital products and services.</p> <p>Improve efficiency in business processes and public service delivery.</p> <p>Increase cybersecurity and data protection and privacy, including: cybersecurity posture and data protection compliance.</p> <p>These policy recommendations, particularly the elimination of import duties on entry-level smartphones, would contribute to an increase of 1.85 million unique mobile internet users by 2030 (+3.1% of population).</p> <p>This would generate an estimated UGX 5,400 billion value added, 661,000 jobs and UGX 800 billion tax revenue across key economic sectors and public services.</p>
<p>Implement policy reform roadmap and modernise regulatory framework</p>	<p>Fast track the implementation of NDP IV, DUV, and the Digital Transformation Roadmap and modernise the regulatory framework to accelerate Uganda's digitalisation, with key areas being:</p> <ul style="list-style-type: none"> Regulatory framework for emerging electronic communications infrastructure and services (e.g. partnerships between mobile operators and LEO satellites to extend broadband coverage to and the use of D2D connectivity)¹⁵⁶. Develop a National AI Strategy (together with the AI Ethical Framework and Data and AI Ethics Council), informed by African Union Continental AI Strategy¹⁵⁷, which addresses local language requirements. 	<p>Strengthen enforcement of policies, laws and regulatory frameworks and institution coordination, including: compliance, regulatory framework review, and programme coordination.</p> <p>Contributes to all NDP IV digital transformation programme objectives.</p> <p>Total combined impact of policy recommendations by 2030:</p> <p>+4 million unique mobile internet users, totalling ~ 19 million (32% population, 61% adult population) and closing the Usage Gap by 7%.</p> <p>UGX 14,600 billion value add, 1,790,000 jobs, UGX 2,100 additional tax revenues across key economic sectors and public services.</p>

155 See more detailed recommendations on data location and cross-border transfer regulations in Figure 55.

156 See more detailed recommendations on LEO satellites and Direct-to-Device Connectivity in Figure 57.

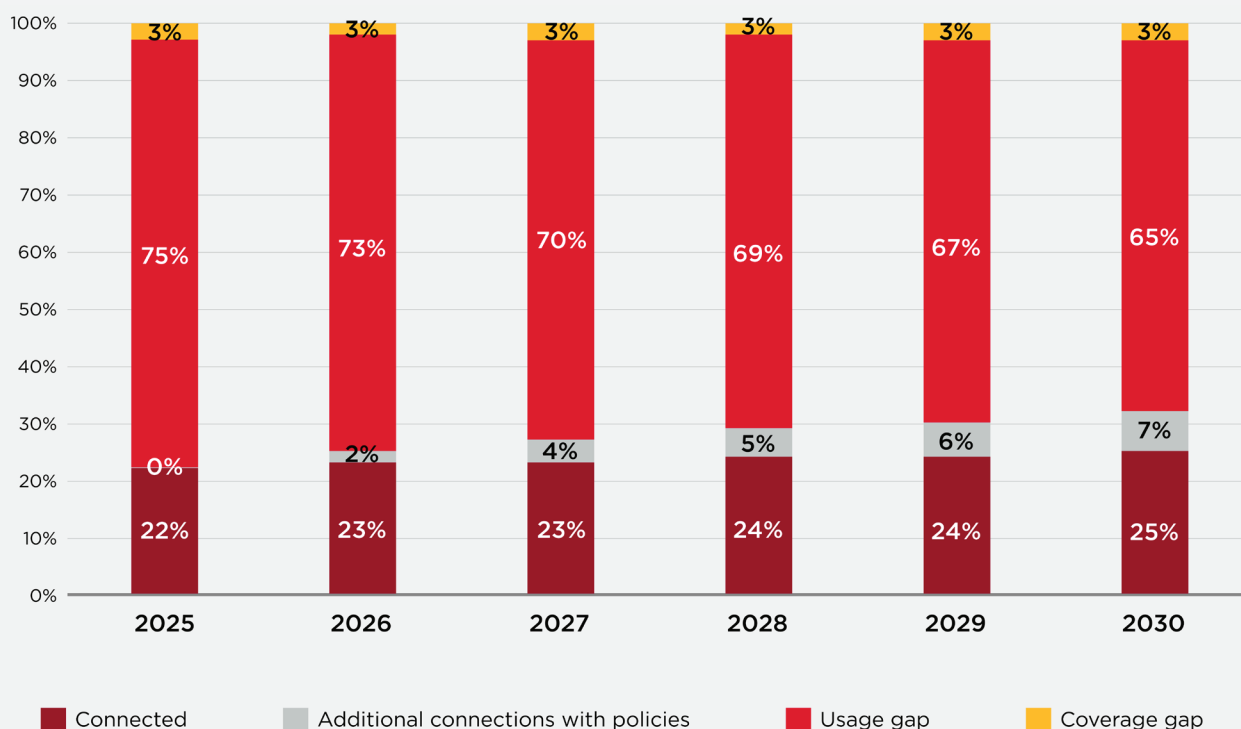
157 See summary of African Union Continental AI Strategy in Figure 58.

If these proposed policy recommendations are adopted, it would have a material impact on the mobile broadband (internet) adoption. It is estimated that they could result in higher adoption by up to 34% over the period to 2030 (Figure 76) and contributing to the closing of the usage gap by 7% (Figure 77).

Figure 76: Combined impact of policy recommendations on internet uptake in Uganda

Mobile internet users (m)	2025	2026	2027	2028	2029	2030
BAU	11.48	12.05	12.65	13.28	13.94	14.60
Combined Policies	11.48	13.03	14.73	15.99	17.32	18.69
Y-on-Y difference to BAU	0.0%	8.1%	16.4%	20.4%	24.3%	28.0%
Increase in growth from 2025 vs BAU	0.0%	8.5%	18.1%	23.6%	29.5%	35.6%

Figure 77: Combined policy impact of the mobile internet usage gap in Uganda



Increased digitalisation would significantly contribute to economic transformation and NDP IV objectives across important economic sectors (agriculture, manufacturing, transport, trade) and in public services (healthcare, government), resulting in an additional UGX 14,600 billion value add, 1,790,000 jobs, and UGX 2,100 billion tax revenues (see Figure 78).

Figure 78: Combined impact of policy recommendations on internet uptake in Uganda

Mobile internet users (m)	Agriculture	Manufacturing	Transport	Trade	Healthcare	Government
Value Added from digitalisation (billion UGX)	4,300	5,600	700	700	1,100	2,200
% of sector GDP	5.80%	6.90%	8.60%	2.80%	10.30%	4.10%
% of total GDP	1.40%	1.80%	0.20%	0.20%	0.40%	0.70%
Employment	1,250,000	160,000	50,000	110,000	110,000	110,000
Tax revenue (billion UGX)*	720	950	120	120	190	N/A

For methodology: GSMA Driving Digital Transformation of African Economies Evidence and Methodology Document, 2024. (*) sum of tax revenue raised from digitalisation of sectors

Over the economy as a whole by 2030, it is estimated that the economic growth generated by increased mobile digital usage across all sectors of the economy resulting from the proposed policy recommendations will generate gross additional tax revenue of UGX 3,100 billion at a loss of UGX 370 billion in taxes from the mobile telecoms sector (which itself is a net effect for lower tax rates on higher demand), and contribute to NDP IV domestic revenue mobilisation and tax collection objectives (Figure 79).

Figure 79: Overall tax impact of combined scenarios

Mobile internet users (m)	2026	2027	2028	2029	2030
Tax change from mobile sector (billion UGX)	-397	-378	-393	-383	-370
Tax increase from wider economy (billion UGX)	619	1,412	1,943	2,521	3,145
Net tax impact (billion UGX)	221	1,034	1,550	2,138	2,775

Annexures - Summary Of NDP IV, Digital Uganda Vision, and Digital Transformation Roadmap

Figure 1: National Development Plan IV - Digital Transformation Programme¹⁵⁸

Objectives	High level programme results	Interventions
1. Increase internet connectivity across the country	<p>Increased national broadband with a minimum speed of 8 Mbps from 65% in FY 2023/24 to 70%.</p> <p>Increased proportion of the population using internet from 16.5% in FY2023/24 to 45%.</p>	<p>Expand broadband ICT infrastructure coverage countrywide</p> <ol style="list-style-type: none"> Extend last-mile NBI connectivity by 5,613 kilometres. Implement last mile connectivity with alternative technologies to sites including strategic tourism sites. Extend high-speed broadband to schools, tertiary institutions, hospitals, local governments.
2. Improve efficiency in business processes and public service delivery	<p>Increase proportion of the population satisfied with e-government services from 22.2% in FY 2023/24 to 30%.</p> <p>Increased percentage of parishes with broadband connectivity from 72% in FY 2023/24 to 85%.</p> <p>Improving turnaround time for e-government services: (a) building plans from 3 months in FY 2023/24 to 1 month, and (b) Registration of transfer of titles from 10 working days in FY23 2023/24 to 5 working days.</p>	<ol style="list-style-type: none"> Digitalise government services, support automation of PDM pillars, and develop and rollout integrated enterprise e-government systems. Develop intelligence information systems for traffic, waste, urban planning, and air quality management to support implementation of smart cities. Automate identified postal services. Implement the national addressing system Develop and integrate a comprehensive geospatial metadata catalog in national spatial planning processes.
3. Increase uptake of digital products and services	<p>Increased proportion of local products commercialised (both government and private sector) from 23% in FY2023/24 to 45%.</p> <p>Increased proportion of the population that is digitally skilled from 26% in FY2023/24 to 36%.</p> <p>Increased growth in investment in ICT in FY 2023.24 to 2.3%.</p>	<ol style="list-style-type: none"> Support local innovation and commercialization of homegrown products, including the development and marketing of homegrown innovations. Develop innovation and incubation centres in Gulu, Kabarole and Mbale. Implement specialised ICT and basic digital skills training programmes including emerging technologies such as blockchain technology, AI, machine learning, IoT, cloud computing, 5G and next-generation networks, and robotics. Develop ICT centres of excellence to support applied research, including upgrade and develop existing facilities.

¹⁵⁸ Uganda National Development Plan IV, Pages 175 - 182.

Objectives**High level programme results****Interventions**

4. Increase cybersecurity and data protection and privacy

Increase cybersecurity posture of the country from 50.65% in FY 2023/24 to 60.65%.

Increase compliance with the Data Protection and Privacy Act from 6% in FY 2023/24 to 30%

1. Implement and enforce the Data Protection and Privacy Act and its regulations.
2. Strengthen cyber security resilience across all sectors of the economy:
 - a. enforce implementation of national information security framework.
 - b. enhance the monitoring capacity of the communication sector CERT.
 - c. Implement the national cyber security strategy.

5. Strengthen enforcement of policies, laws and regulatory frameworks and institution coordination

1. Enhance compliance with ICT policies, laws and regulations.
2. Review and develop appropriate policies, strategies, standards, and regulations that respond in industry needs, including National ICT Policy 2014, National Broadband Policy 2018, National Communicational Policy, Electronic Waste Management guidelines, and National Postal Policy 2012.
3. Strengthen coordination, planning and implementation including functionalise programme secretariat, improve administrative efficiency, and capacitate programme actors to deliver the programme.

Figure 2: Digital Uganda Vision 2040¹⁵⁹

Vision	'Digital Uganda Vision' will empower its citizens, striving to achieve the goals of universal inclusion, sustainable development, economic progress and poverty eradication through digital innovation combining initiatives across multiple sectors. It will also electronically deliver a variety of government and private services in various fields like education, health, agriculture, social security, banking, justice, communication.
Objectives	7 objectives: <ul style="list-style-type: none"> • Socio-Economic Development • Transformation • Competitiveness • Investment • Human Capital Development • National Guidance • National ICT Governance and Coordination
Pillars	5 Pillars: <ul style="list-style-type: none"> • Digital infrastructure and connectivity • Digital Services • Cyber-security, data protection and privacy • Innovation and entrepreneurship • Digital Skills
2040 Outcomes	<ul style="list-style-type: none"> • 90% household connectivity • 90% connectivity for all government institutions (2025 target 50%) • 90% connectivity for SMEs and other private institutions • 90% broadband coverage by geography (2020 baseline 79%, 2025 target 90%) • 90% of citizens accessing e-services online (2020 baseline 5%, 2025 target 20%) • 95% of government services online (2020 baseline 25%, 2025 target 80%) • 90% of government services integrated and interoperable • 90% of institutions with cyber security safeguards in place • 90% compliance to data protection and privacy laws and standards • 90% of digital literacy citizenry • 70% of industry skills requirements addressed • 60% utilisation of local ICT products and services by government and private sector
Implementation framework	<ul style="list-style-type: none"> • Re-alignment of the Ministries Agencies • Formation of a Programme Management Structure to lead the development, adoption, implementation, monitoring and evaluation of Digital Uganda Vision • Monitoring & Evaluation • Sustainability and government interventions • Digital Uganda Vision Implementation Budget • Development of Financing models • Time bound implementation approach

¹⁵⁹ Ministry of ICT and National Guidance website; Digital Uganda Vision 2040; Uganda Digital Transformation Roadmap 2023/24 - 2027/28, Pages 18 - 20.

Figure 3: Uganda Digital Transformation Roadmap 2023/24 – 2027/28

Pillar 1: Digital Infrastructure and Connectivity

Interventions

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

Enablers

- Rationalisation of broadband policies into single source.
- Adopt Radio Spectrum Management Policy.
- Develop guiding principles for spectrum assignment to enable a balance among the desired outcomes of increasing broadband access at prices affordable to consumers; ensuring fair competition; eliminating hoarding; and ensuring efficient utilization.
- Expand the National Backbone Infrastructure (NBI) to reach all districts.
- Develop facilities sharing regulations.
- Enforce existing fair competition regulations.
- Enhance capacity (compute and storage) for the Government Cloud.
- Design alternative spectrum models to encourage innovation.
- Support community networks through tools such as license exempt spectrum.
- Create a social purpose International Mobile Telecommunications spectrum license to support community operated cellular networks.
- License Low-earth Orbit technology to provide backhaul for small wireless operators to help bridge the digital divide.
- Develop an investment plan to roll out fibre [New technologies such as 5G (and soon 6G) demand significant bandwidth that alternatives cannot supply].
- Subsidize the expansion of the Radio Access Network (RAN) site roll out after the connection of all districts to fibre.

In addition to the above, the following are necessary:

- Development of a National Public Key Infrastructure strategy to support trust in use of e-services across public and private sector.
- Regulatory interventions to incentivize network operators to peer at the Uganda Internet Exchange Point.
- Regulatory interventions to recognize, promote and attract Content Distribution Networks and Cloud Providers to establish Data Centres or Points of Presence in country.
- Enhance and re-purpose use of regional postal outlets as e-service delivery points.
- Develop the digital addressing platform to enable last mile delivery of physical goods, parcels and documents which is a missing link and one of the challenges in e-commerce.
- Develop the national spatial data infrastructure to provide trusted geospatial data for government and business.
- Subsidize the expansion of the RAN site roll out after the connection of all districts to fibre.
- Establish a national payment switch that connects different payment networks and allows for interoperability of payment instruments and bank accounts.

Targets

By 2028:

- 60% internet penetration
- 90% broadband coverage in the country

Pillar 2: Digital Services

Interventions

- Review and automate integrated end to end government business and service delivery processes.
- Facilitate access to and utilization of e-Governance services including e-cities.
- Promote citizen awareness, engagement and participation.

160 Uganda Digital Transformation Roadmap 2023/24 – 2027/28, Pages 21 – 39; Pilot Digital Acceleration Programme 2023/24 – 2025/26, Pages 16 – 21; Big Data Utilization Strategy 2023/2024 – 2027/2028, Pages 20 – 24.

- Enablers
- Development of single identifiers, shared digital registries and related catalogue of information systems and services within sectors to promote data exchange, meta data management.
 - Development and implementation of a citizen e-service co-creation strategy that will drive user focus engagement and include citizens in the design and enhancement of digital services.
 - Development and implementation of the National Big Data Strategy. Noting that the Ministry of ICT and National Guidance published 2023/24 – 2027/28 strategy including 6 strategic areas to develop and implement policies, standards, and programmes:
 - Data foundations and governance
 - Data literacy and skills
 - Data privacy, security and responsibility
 - Data access, integration and availability
 - Data services and innovation
 - Data sovereignty and equality.
 - Each Ministry Department and Agency (MDA) to develop a minimum of three flagship integrated e-services to enable roll out of e-services across all NDP III programmes compliant with e-service regulation and standards drawn from the Sector ICT interventions listed in the DUV.
 - Establishment of a testing and certification scheme for software to ensure that quality standards are met and our services are exportable.
 - Capacity building for ICT cadre and policy makers in government to ensure government has in place the right competencies to drive the digital transformation agenda.
 - Development of a digital mindset change programme to increase appreciation and support for digital services amongst the top management layer of MDAs and Local Government (LG) and adoption of the digital first fast for service delivery as well as promote data governance.
 - Promote and ensure continual enhancement of digital shared services.
 - Improve access to KYC digital services to enable ease in roll out of digital services that require user identification.
 - Develop a Digital Service Standard that will promote enhanced user experience (user centric) and mandate service performance metrics to drive continual improvements and also increase transparency and accountability The Standard will also provide for principles related to: a) Digital access and inclusion of people with disabilities; b) Needs of people with poorer digital skills/ low digital literacy; and c) Needs of diaspora that need to access e-services back home.

- Targets
- By 2030:
- 85% of government services online.
 - 50% of transactions conducted through the shared public service delivery system.
 - 85% increased transactions on automated end to end government business processes.
 - 75% of public entities that have e-services compliant with the Enterprise Architecture Framework.
 - 50% enhanced citizen participation and inclusion.

Pillar 3: Cyber security, data protection and privacy

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

- Enablers**
- Fostering a safe and trusted digital economy: (a) Prioritize support for Small and Medium Enterprises, (b) Expand Cyber security Investments.
 - Threat preparedness and response: (a) Promote National Cyber risk assessments, (b) Enhance national and sectoral incident response and information sharing.
 - Robust cyber security ecosystem: (a) Enhance protection of National Critical Information Infrastructure. (b) Enhancement on enforcement and compliance with the Personal Data Protection and Privacy Act.
 - Cyber skilled Uganda: (a) Raise public cyber security awareness, (b) Enhance knowledge through research and development.
 - Active and reliable partner of the international community: (a) Increase bi and multi-lateral dialogue at the regional level, (b) Build capacity and confidence through international collaboration, (c) Promote calls for action for responsible state behaviour in cyberspace.

- Targets**
- By 2028:
- 75% of entities with access to adequate and relevant capacity for increased operational and responsive cyber security.
 - 75% of public entities in compliance with the National Information Security Framework.
 - 75% of all entities in compliance with data protection and privacy legal and regulatory framework.
 - 85% Enhanced protection of National Critical Information Infrastructure.

Pillar 4: Digital Skills

- Interventions**
- Develop and implement a national digital skills formation framework.

- Enablers**
- Development of the digital skilling pilot programme.
 - The design of the pilot programme will in addition address the following key aspects: inclusion of people with disabilities; and inclusion of the girl child.
 - Noting that the Ministry of Education and Sport has published pilot programme for 2022/23 to 2025/26 in collaboration with the Ministry of ICT and National Guidance. There are 4 strategic areas (each with key initiatives):
 - Governance & private public partnerships: (a) Constitution of a multi-sectoral working group, (b) Establishment of a working framework for implementation, (c) Establishment of M&E framework and metrics, (d) Consolidated funding for digital skilling acceleration programme, and (e) Digital skills awareness.
 - Digital literacy and skilling: (a) skills as well as trainings on emerging technologies such as cloud computing, robotics, AI, (b) Conduct an ICT Digital skills pre-assessment with the aim of categorizing the various levels and types of skills required, (c) Development of curriculum and training manuals for digital skilling, (d) Inclusion of digital skills in curriculum to primary and secondary levels, and TVET levels. (e) Conduct data literacy and skills courses in the public primary and secondary schools, TVET institutions and government bodies, and (f) Undertake train-the-trainer data literacy and online for teachers.
 - Access and availability: (a) Government's efforts to expand the National Backbone Infrastructure, MYUG and other national infrastructure; (b) Conduct Research and monitoring on provision of ICTs and digital skills for Females, Hard-to-reach areas and PWDs, (c) Provision of ICT tools and devices to support digital skilling, and (d) Mass advocacy on the value of digital skills as an economic and social resource.
 - Inclusion of education services and data: (a) Development of a centralized E-Learning platform and digital platforms, (b) Integration of existing educational management information systems, and (c) Use of Big data and Open Data in the education sector.

- Outcomes**
- Ensure no one is left behind concerning digital inclusion in Uganda providing the adequate skills.
 - Bridge the gender digital divide, by increasing the number of persons in hard-to-reach areas, females and PWDs being equipped with ICT tools, studying, and working in the ICT field.
 - Achieve a critical mass of digital skills for education among teachers/trainers and students especially at primary and secondary level, TVET and Government Public Servants.
 - Ensure that Uganda has adequate training and sustainable resources to meet the need for digitally skilled workforce in all areas of this digital economy.

Pillar 5: Innovation and entrepreneurship

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| Interventions | <ul style="list-style-type: none">• Development of an ecosystem that promotes development and commercialization of local ICT products and solutions including data and collaborative research. |
| Enablers | <ul style="list-style-type: none">• Enhance the National ICT Innovation hub at the Ministry of ICT and National Guidance to:<ul style="list-style-type: none">- Provide shared services as digital rails for use by startups.- Champion access to government e-services and APIs through UgHub by private sector.- Drive mindset change to increase the acceptance of locally developed innovations.- Ensure sustainability of digital national projects through enhancing the Hub structure.- Enhance support for growth of the startup ecosystem by creating digital centres of excellence as well as in country and off shore promotion of Uganda's innovations building on the Uganda as Africa's Innovation Powerhouse campaign.- Enhancing access to funding for startups. Promote use of sandbox environments with regulators to support innovators and systematic experimentation. |

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| Targets | <p>By 2030:</p> <ul style="list-style-type: none">• Increase in Number to 282 ICT innovation products developed and commercialized.• Increase in Digital Centres of Excellence in the productive centres of the country.• Strengthened partnerships for knowledge sharing. |
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Other initiatives

National 4IR Strategy	The Ministry of ICT and National Guidance will initiate systematic experimentation (e.g. IoT, blockchain, AI) in the following areas within the first two years of the approval of the Roadmap using a proof of concept approach under the National 4IR Strategy, including: agriculture, education, healthcare, water, land registration, and community e-participation.
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| Uganda AI Ethical Framework | <ul style="list-style-type: none">• Develop a National AI Strategy that will provide guidance on the social value, societal unity, and social impact arising from the use of AI and other data-driven technologies.• Invest in AI literacy and research to empower people to effectively use and interact with AI systems, reduce digital divides, stimulate ethical AI development and further understanding of AI-related social, legal and ethical implications.• Mobile delivered digital extension services to upskill farmers knowledge and capabilities to increase productivity embedded with AI capabilities and natural language processing.• Develop ethical framework guides and self-assessment tools to help empower people to effectively use and interact with AI systems, reduce digital divides, stimulate ethical AI development and further understanding of AI-related social, legal and ethical implications.• Establish a Data and AI Ethics Council to act as a “steward” of the AI Ethics Principles and to co-ordinate independent research into best practices and standards for the ethical application of data and AI technologies to benefit society. |
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| Preserving the environment | <ul style="list-style-type: none">• Reduction of energy consumption by promoting the use of cloud services and designing e-services to run by default in virtualized environments.• Promote the use of end computing devices especially modern versions that use less energy.• Disposal of e-waste in compliance with the National e-waste Policy. Promotion of Environmental, Health and Safety best practices to protect human health and the environment as we increasingly utilize ICT products and services.• Continuous greening of the NBI transmission sites using solar energy.• Government will further encourage Internet Service Providers to implement green initiatives that reduce carbon emissions at transmission sites. |
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