POLICY BRIEF 019

Unleashing Potential

Leveraging Internet Connectivity for Efficient Governance and Inclusive Economic Growth in Uganda

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Executive Summary

Introduction

Internet connectivity is now central to Uganda's development agenda, with the potential to expand economic participation, improve governance, and enhance service delivery. However, disparities in access, affordability, and digital skills continue to limit its national impact.

Global Evolution and Trends of Internet Connectivity

Worldwide, digital connectivity has advanced from dial-up to high-speed fibre, 4G/5G, and Low Earth Orbit (LEO) satellite systems. These global shifts increasingly shape competitiveness, digital innovation, and public sector efficiency.

Internet Connectivity and Cost in Uganda (2005–2025)

Uganda's digital landscape has expanded over two decades, with mobile subscriptions reaching 56.7 million, of which 17 million are internet users (UCC, 2025). Despite this progress, affordability remains a major barrier. Internet consumers spend an average of UGX 10,957 per month for only 5.4 GB, a high-cost relative to Uganda's per-capita income of USD 1,263. Data consumption is rapid, with a 1GB bundle priced at UGX 2,000 often lasting only a few hours due to high usage rates.

Internet-Related Jobs

The Information and Communications Technology (ICT) sector has generated employment in fintech, digital freelancing, logistics, and software development. Despite this potential, the national poverty rate remains 16.9%, partly because restrictive policies such as the Facebook ban limit digital entrepreneurship.

Internet Usage in the Public Sector

E-government systems, including URA's e-tax, NIRA's verification services, and the electronic procurement system, have enhanced transparency and efficiency. Gaps in interoperability, low digital literacy, and weak rural connectivity undermine their effectiveness.

Limitations to Internet Usage

High data costs, limited devices, poor digital skills, weak consumer protection, and cybersecurity concerns continue to restrict adoption, leaving large populations digitally excluded.

Key Policy Recommendations

1. **Reduce the cost of smartphones and internet bundles** through targeted tax reforms to expand digital inclusion.
2. **Expand rural broadband** using a stronger Universal Service Fund to close the urban-rural divide.
3. **Implement nationwide digital literacy programs** in schools and communities to build digital competencies.
4. **Strengthen interoperability of e-government systems** through a national data-sharing framework under NITA-U.

Introduction

The transformative potential of the internet is a major determinant of national development in the 21st century. For Uganda, a nation with a rapidly growing, youthful population, strategically leveraging internet connectivity is not merely an option but a strategic imperative for achieving efficient governance and fostering inclusive economic growth. This analysis posits that internet infrastructure acts as a foundational multiplier, capable of simultaneously enhancing public service delivery, creating new economic opportunities, and integrating marginalized populations into the formal economy.

Uganda's developmental trajectory will be significantly shaped by its ability to bridge the digital divide both in terms of access and meaningful usage. While significant progress has been made in expanding network coverage, the persistent challenges of affordability, digital literacy, and relevant local content continue to hinder optimal utilization. This policy brief provides an examination of the global and national context of internet evolution, its impact on employment and the public sector, and a conclusive analysis of its role in service delivery and economic expansion. The objective is to present a holistic, evidence-based perspective on how Uganda can systematically harness connectivity as a tool for transparency, efficiency, and broad-based prosperity.

Global Evolution and Trends of Internet Connectivity

The global evolution of internet connectivity has progressed through distinct, transformative phases. Initially a computer network referred to as Advanced Research Projects Agency Network (ARPANET), a tool for academic and military research, it commercialized in the 1990s, catalysing the "dot-com" boom and establishing the World Wide Web as a public utility. The first major trend was the shift from narrowband dial-up to broadband, which enabled richer content and more stable connections. The 2010s marked the era of mobile broadband, driven by the proliferation of 3G and 4G Long Term Evolution (LTE) technologies. This shift was particularly impactful in developing nations, leapfrogging the need for extensive fixed-line infrastructure and bringing millions online for the first time via smartphones.

The current global trend is defined by the convergence of several powerful technologies: the rollout of 5G networks promising ultra-low latency and massive IoT (Internet of Things) connectivity, the expansion of fibre-optic backbones for unparalleled speed and capacity, and the emergence of Low Earth Orbit (LEO) satellite constellations (e.g., Starlink) which aim to provide high-speed internet to remote and underserved regions globally. The global narrative has shifted from mere connectivity to its application, with trends like cloud computing, big data analytics, and Artificial Intelligence (AI) becoming central to economic competitiveness. These technologies are reshaping industries, governance models (e.g., e-government), and social interactions, setting a global benchmark that nations like Uganda must aspire to integrate with.

Internet Connectivity in Uganda (2005-2025)

The period from 2005 to 2025 represents a transformative journey for internet connectivity in Uganda. Around 2005, connectivity was largely limited, expensive, and dependent on slow dial-up and early-generation mobile data (GPRS/EDGE). Internet usage was predominantly an urban, elite privilege. The pivotal shift began in the late 2000s and early 2010s with the licensing of multiple telecommunications operators and the rollout of 3G networks. This mobile revolution dramatically increased accessibility.

The 2010s saw the arrival of undersea fibre-optic cables (via the East African coast) and the subsequent development of the National Data Transmission Backbone Infrastructure (NBI)/NBI-EGI, which significantly reduced international bandwidth costs and improved domestic network reliability. The expansion of 4G LTE networks by MTN, Airtel, and Africell further accelerated data speeds and coverage. According to the Uganda Communications Commission (UCC), internet penetration has grown exponentially, with mobile data subscriptions reaching millions.

In the 21st century, internet access landscape is defined by both opportunities and challenges. The recent entry of Starlink offers a potential solution for rural last-mile connectivity and enterprise services. The ongoing rollout of the NBI to major towns and border points aims to bolster public and private sector digital services. However, the target of universal, affordable connectivity by 2025 faces hurdles. Key challenges include the high cost of smartphones and data relative to average income, a persistent urban-rural digital divide, and variable quality of service. The future will depend on strategic public-private partnerships, targeted infrastructure investment in rural areas, and policies that drive down the cost of access.

Internet Cost in Uganda

The market performance report for the third quarter, from July-September 2025 by UCC indicates that there are 56.7 million mobile registered subscribers, out of which 17 million use internet (UCC,2025). The report shows that internet consumers spend an average of UGX 10,957 per month for about 5.4 GB of mobile data. This cost is relatively high compared to the average annual per-capita income of Ugandans, which is USD 1,263 (MoFPED, 2025). Though UCU established the Uganda Communications Universal Service and Access Fund (UCUSAF) to promote digital inclusion through extending Information and Communications Technology (ICT) services to unserved and underserved areas in Uganda, the impact is still low and not evenly distributed. For instance, UCC's third quarter report 2025 provides that in Masaka, 209 creatives were trained in content development and distribution, a number which is still low and impact scope still lacking as Uganda has over 130 districts. Uganda obtains 1.62 trillion from telecom revenue (UCC, 2025), however, the revenue would be significantly higher in case there is optimal utilisation of mobile devices by charging affordable internet fees which would enable the majority of the users access internet. Similarly, by considerably subsidising the cost of smartphones, it would increase affordability and accessibility, leading to increased adoption. Subsequently, the more the users, the more the revenue.

Data Consumption Rates

Despite the high cost of mobile devices and high internet costs in Uganda, the rate at which data bundles are consumed is unrelatable. For instance, to subscribe for a promotional "Pakalast" data bundle of 1GB at UGX 2,000 from MTN or Airtel, valid for two days, the subscriber can hardly comfortably watch videos of any duration on YouTube, or social media. They access some information and watch some videos but often on tension that the data bundles are elapsing in case one does not limit what they access or the time they have to spend online. The freedom to be online is limited exacerbated by high consumption rates. Unfortunately, many internet users don't know how to deter background apps from running or do they know how to control over usage of the data bundles, ending up using the bundle for just a few hours that would have worked for two days. The basic internet user in Uganda may be required to make daily subscriptions of at least UGX 2,000 for 1GB of data bundle, roughly UGX 60,000 for 30GB per month. In Uganda, Facebook was banned, but many access it using Virtual Private Networks (VPNs) which consume a lot of data. To use internet in Uganda, it comes with frustration and surrendering your freedom of access to information.

Internet-Related Jobs in Uganda

The internet economy in Uganda has spawned a diverse and growing ecosystem of internet-related jobs, which can be categorized into direct, indirect, and induced employment. Direct jobs are those created within the digital sector, including network engineers, software developers, data analysts, cybersecurity specialists, digital marketing professionals among other technological expertise.

Indirect jobs are those enabled by the internet in traditional sectors. This includes a massive wave of digital freelancers (writers, graphic designers, virtual assistants) using platforms like Upwork and Fiverr; e-commerce logistics and delivery personnel for companies like Jumia and Jiji; and the digital transformation roles within banks, agribusinesses, and media houses. The rise of mobile money has been particularly significant, creating hundreds of thousands of agent positions and fostering a new fintech ecosystem with roles in product development and agent network management.

Induced jobs refer to employment generated by the spending of those in direct and indirect internet jobs, stimulating demand in housing, transportation, and retail. Analytically, while the potential is immense, the sector faces a major skills gap. There is a mismatch between the technical and soft skills offered by the workforce and the demands of the modern digital economy. Bridging this gap requires concerted efforts in revising educational curricula, and scaling up vocational training in digital skills to ensure the youth population can capitalize on these emerging opportunities.

Unfortunately, social media platforms such as Facebook were banned in Uganda, avenues that would have been utilised to create and promote businesses. This has thwarted endeavours such employment generation and technopreneurship initiatives, leaving a significant number of the population especially the youth unemployed and remaining low-income earners. No wonder why the poverty rate has remained high, with 16.9% of persons below the national poverty line (UBOS, 2024).

Internet Usage in Uganda's Public Sector

The Government of Uganda has made deliberate strides in integrating the internet into public service delivery, primarily under the umbrella of its e-Government strategy. Key initiatives demonstrate this commitment. The URA's (Uganda Revenue Authority) integrated online systems for e-tax filing and payment have significantly improved revenue collection efficiency and reduced compliance costs for businesses. The URA's Electronic Fiscal Receipting and Invoicing Solution (EFRIS) further enhances transparency.

The Ministry of Education and Sports utilizes online platforms for the release of national examination results and, increasingly, for university applications, bringing unprecedented speed and accessibility to these inevitable services. The Uganda Electronic Procurement System (UEPs) has been a landmark reform, moving government procurement online to enhance transparency, reduce corruption, and promote fair competition. The National Identification and Registration Authority (NIRA) leverages online verification systems that are integrated with banks and telecom companies, streamlining Know-Your-Customer (KYC) processes.

Despite these advancements, analytical scrutiny reveals implementation gaps. Interoperability between different government IT systems remains a challenge, leading to data silos. The digital literacy of both civil servants and citizens can hinder the adoption of these e-government services. Limited and unreliable internet connectivity in rural government offices creates a two-tiered service delivery system, where digital services are accessible only to the urban connected, thereby risking the exclusion of the very populations that stand to benefit most.

Limitations to Internet Usage in Uganda

Uganda's digital transformation is constrained by a confluence of infrastructural, economic, and socio-cultural limitations. Despite expanding network coverage, a pronounced urban-rural divide persists, with remote areas suffering from negligible or unreliable connectivity. The cost of both data and internet-enabled devices remains prohibitively high for a significant portion of the population, effectively excluding low-income groups from the digital economy. This is compounded by the digital literacy gap. A substantial skills deficit exists, where potential users lack the necessary competence to utilize online services effectively and safely, undermining the utility of even available connectivity.

The ecosystem suffers from a scarcity of relevant local content and services. Many platforms are not optimized for local languages or low-bandwidth environments, and there are insufficient e-government and e-commerce services that directly address the daily needs of the average citizen, particularly in rural areas. This creates a "why connect?" problem, where perceived benefits do not justify the cost. Overarching these issues are concerns about the regulatory environment and cybersecurity. Inconsistent power supply, fears of data privacy breaches, and a lack of robust consumer protection frameworks erode trust and deter the widespread adoption of digital services, particularly for sensitive transactions like digital banking or accessing government records. These limitations collectively form a significant barrier to achieving the inclusive digital dividend that internet connectivity promises.

The cost of internet access in Uganda, as set by major providers like MTN, Airtel, and infrastructure players like Liquid Telecom, remains a significant barrier to achieving universal usage. Data plans, particularly for mobile broadband, are expensive relative to average incomes, with a 1GB bundle often consuming a notable percentage of a low-income earner's daily wage. This high cost directly suppresses usage, creating a phenomenon known as "data poverty," where individuals, even if they own a smartphone, ration their online time and avoid data-intensive activities like streaming video, downloading government forms, or using feature-rich e-government applications. The high pricing also affects government agencies and businesses that rely on internet, increasing the operational cost of digital service delivery. Consequently, the affordability gap perpetuates the digital divide, limiting the potential user base for the very digital services the government is rolling out and excluding a significant portion of the population from the benefits of the digital economy.

There is limited consumer protection regarding internet usage in Uganda, even when internet users log complaints to the telecom companies or UCC, chances of addressing the problem are minimal, and redress opportunities barely exist, leaving many to opt to avoid using internet. Internet users don't know how telecom companies charge the consumption rate of the data but they only use the data

Conclusion

In conclusion, the strategic leveraging of internet connectivity presents Uganda with an unparalleled opportunity to catalyse a dual transformation towards efficient governance and inclusive economic growth. While the foundational infrastructure has seen remarkable progress, the nation's full digital potential remains untapped due to persistent challenges in affordability, digital literacy, and localized content creation. The symbiotic relationship between a digitized public sector and a vibrant digital economy is clear; each reinforces the other in a virtuous cycle of transparency, innovation, and productivity. To bridge the current digital chasm, a deliberate, multi-stakeholder approach is imperative. This necessitates moving beyond mere infrastructure expansion to a holistic strategy that simultaneously addresses the soft infrastructure of skills, fosters a supportive regulatory climate, and incentivizes the development of homegrown digital solutions. By prioritizing these areas, Uganda can effectively convert its expanding digital networks into tangible improvements in service delivery, job creation, and citizen empowerment, ensuring that the benefits of the digital age are broadly shared and foundational to its long-term socio-economic development.

Key Policy Recommendations

1. **Subsidize Universal Access:** The Ministry of ICT & National Guidance should establish a Universal Service Fund to co-finance broadband infrastructure in underserved rural areas, likely with private operators. This will directly bridge the urban-rural digital divide and expand the market base.
2. **Drive Device and Data Affordability:** The government, through the Uganda Revenue Authority, should eliminate or reduce taxes on low-cost smartphones and essential data packages. This will significantly lower the entry barrier for millions of citizens, boosting inclusion.
3. **Integrate Digital Literacy:** The Ministry of Education and Sports must embed a comprehensive digital literacy curriculum at all educational levels and for out-of-school

youth. This will build a future-ready workforce capable of participating in the digital economy. Similarly, telecom companies and UCC should intensify efforts to educate the public on appropriate measures that ensure usage of internet without wastage of data bundles.

4. **Accelerate E-Government Interoperability:** The National Information Technology Authority (NITA-U) should mandate and implement a national data interoperability framework across all Ministries, Departments, and Agencies (MDAs). This will eliminate data silos, creating seamless and efficient public service delivery.
5. **Incentivize Local Content Development:** The Ministry of ICT should offer grants and tax incentives to tech startups and media firms creating digital content in local languages for sectors like agriculture and health. This will increase the relevance and utility of the internet.
6. **Strengthen the Cyber Legal Framework:** Parliament, guided by the Ministry of ICT, must enact and enforce a robust Data Protection and Privacy Act with a dedicated enforcement agency. This will build citizen trust in digital transactions and protect against cyber threats.
7. Internet users should be protected by the telecom companies and compliance monitored by UCC. This will entice consumers to use internet without fear of purportedly stealing their data by telecom companies and instil confidence of the value for their money.
8. The government of Uganda through UCC should reconsider lifting the ban on Facebook as this platform has proved to be an avenue for digital entrepreneurship.

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