

Digital dilemma

Connectivity paradox:
Data rich,
cash poorDIGITAL WEALTH
BETTY NDAGIRE

While infrastructure and platforms are crucial, digital growth cannot succeed without skilled human capital. Investors and global partners demand measurable, certified skills they can trust.

Ms Aminah Zawedde, the Permanent Secretary at the Ministry of ICT, explains the ministry's approach. "We have trained over 10,200 people to acquire ICDL certification. This means that wherever they go, their skills are recognised. Investors can trust that our talent is ready and measurable," she said, highlighting the importance of internationally recognised digital credentials.

The model addresses a persistent challenge in Africa, the disconnect between training programmes and workplace readiness. Ms Zawedde notes that in some African countries, degrees often fail to translate into usable skills abroad.

Uganda's certification system ensures graduates can immediately contribute to the economy and attract investment without additional training or verification.

This focus extends beyond individual skills. The ministry is developing frameworks to make Uganda's investment profile instantly accessible. "For investors to consider Uganda, key indices and data must be available online, so decisions can be made with a click, without us having to labour to explain everything," she said.

This transparency reduces friction in investment decision-making and positions Uganda as a predictable, business-friendly market.

Ms Zawedde also points to synergies between technology and local innovations. Domestic projects, such as the KayCerber ticketing system for Kira buses, demonstrate how ICT can enhance efficiency and scalability.

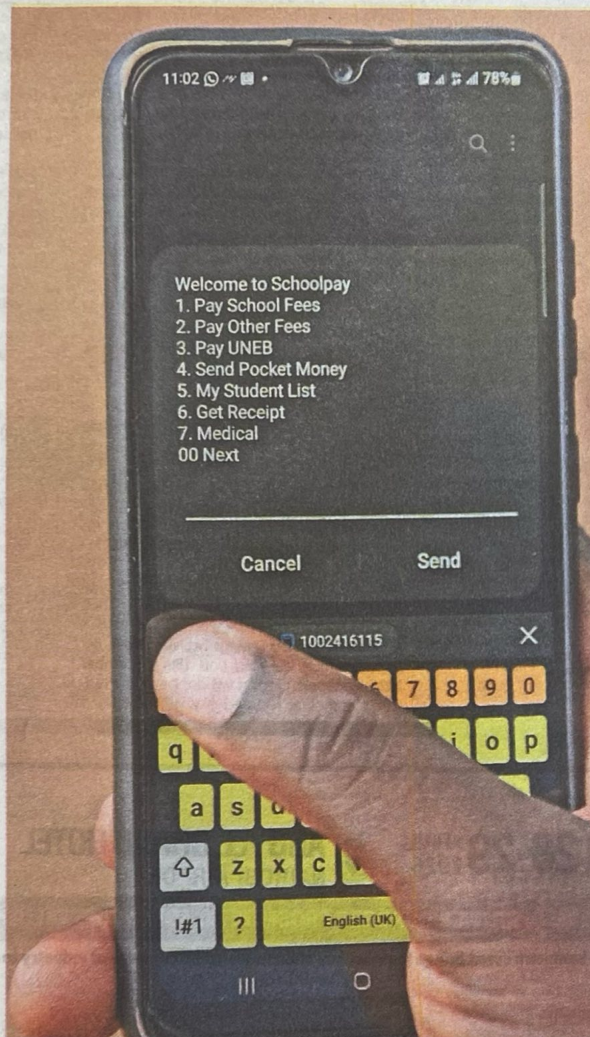
"By integrating ICT into these solutions, Uganda can make homegrown technology more efficient, scalable, and commercially viable," she said.

Beyond technology deployment, the ministry is investing in innovators' capacity. Public speaking, product pitching, and market readiness programmes ensure that locally generated ideas can compete effectively rather than relying on foreign solutions.

She stresses collaboration as a key driver of impact.

"Together, we can ensure that local ideas do not just exist but generate measurable returns for Uganda," she said, outlining a vision where government, innovators, and investors work in unison to retain digital value locally.

Uganda's battle for digital wealth



Limited access to funding and dependence on global platforms constrain the ability of Ugandan developers to fully own their innovations. PHOTO/MICHAEL KAKUMIRIZI

DIGITAL DILEMMA
BETTY M. NDAGIRE

On the outskirts of Kampala, a small private school still records attendance in a worn-out ledger, its pages curled with years of use. Every morning, a teacher ticks off names with a pen, even as smartphones buzz in students' pockets. It is a familiar contradiction in Uganda's education sector, where the need for digital solutions is evident, but the path to building and owning them locally remains uneven.

Across the country, several young developers are stepping in to digitise such everyday systems. Yet behind the innovation lies a quieter reality: Much of the software powering these solutions is not entirely homegrown. From code libraries to templates and frameworks, developers often rely on tools built elsewhere, raising questions about cost, control, and long-term digital independence.

"Software development is more technical than people assume," says Shane Senyonga, founder and chief executive officer at Schoolpal, a Ugandan edtech company. He explains that what is of-

ten described as imported technology is, in many cases, a practical choice rather than a limitation of skill.

"When you are developing, you are writing code. But there are also existing tools, templates and frameworks that developers can use to save time and resources," he notes.

According to Senyonga, the decision

Cost

'If you had to build everything from the ground up, you might have to charge a client between \$5,000 and \$10,000. But very few clients in Uganda can afford that.'

Takeaways

- Uganda is rapidly digitising, with mobile money, telecoms, software services, and e-commerce expanding at unprecedented speed. Yet for all the growth, much of the financial value generated by these sectors continues to leave the country.
- Imported technology, foreign platforms, and outsourced services dominate the digital landscape, creating a persistent net outflow of economic value.

to use pre-existing solutions is largely driven by market realities. Building software entirely from scratch is both time-consuming and expensive.

"If you had to build everything from the ground up, you might have to charge a client between \$5,000 [Shs18.6 million] and \$10,000 [Shs37 million]," he says. "But very few clients in Uganda can afford that. If someone is paying about Shs2 million, a developer will likely rely on a template and customise it to meet the client's needs."

This approach, he argues, is not necessarily a compromise on quality. Instead, it reflects efficiency in a cost-sensitive market.

"There is nothing wrong with using what already exists, as long as you can adapt it and ensure it is secure," Senyonga explains. "In many cases, it does not make sense to reinvent the wheel, especially for simple platforms like company websites or basic e-commerce systems."

However, the reliance on external tools has sparked debate about whether it signals a gap in local capacity. Senyonga disagrees with that assessment, pointing out that the complexity of a project often determines the level of originality required.

"If you are building more advanced systems, like mobile applications, that is when you are more likely to develop from scratch," he says. "That is why such projects tend to cost significantly more," Senyonga says.

Beyond cost and efficiency, the conversation shifts to the broader issue of digital ownership, an area that remains loosely defined but deeply contested. For many local innovators, true ownership means having control over the intellectual property, the infrastructure, and the economic benefits of their creations. Yet several barriers persist.

Limited access to funding, a small pool of high-paying clients, and dependence on global platforms all constrain the ability of Ugandan developers to fully own their innovations. In addition, the absence of strong en-

forcement mechanisms for intellectual property rights makes it difficult to protect locally built solutions from replication without compensation.

Developers like Senyonga remain optimistic. As demand for tailored solutions grows, so does the incentive to invest in more original, locally developed technologies.

The challenge is not only technical but also economic. Until the market can sustain the true cost of building from scratch, Uganda's digital future will continue to balance between global tools and local ingenuity.

Retaining digital wealth

Uganda is rapidly digitising, with mobile money, telecoms, software services, and e-commerce expanding at unprecedented speed. Yet for all the growth, much of the financial value generated by these sectors continues to leave the country. Imported technology, foreign platforms, and outsourced services dominate the digital landscape, creating a persistent net outflow of economic value.

The concern is no longer merely about digital adoption or connectivity. Policymakers are now asking how Uganda can retain more of the value generated by digital activity, support domestic industries, and convert technology consumption into local economic growth.

Ms Monica Musenero, Uganda's Minister for Science, Technology and Innovation, points to the stark imbalance.

"We are not going to completely reinvent this, but even intentionally, at least in the long term, we can work towards value retention," she said, highlighting additional data that reveals persistent outflows in wages, digital services, and other economic channels.

Trade figures underscore her warning. According to the Uganda Bureau of Statistics, Uganda's imports have consistently exceeded exports. Annual import bills are estimated at \$10 billion (above Shs38 trillion) while exports stand at \$7 billion (about Shs26.6 trillion), leaving a sizeable trade deficit, much of it tied to technology goods.

Within the digital economy, telecommunications services command the largest share of value, followed by computer programming and software-related services. But much of the infrastructure underpinning these sectors—software licenses, network hardware, cloud systems—is foreign-owned. As a result, revenues generated domestically often exit the economy before they can strengthen local industry.

The pattern is more pronounced in the hardware trade. Uganda imports more electronic devices and high-tech equipment than it exports. The country ranks highly in importing high-tech digital products in the World Intellectual Property Organisation's innovation assessments, but that reflects reliance on foreign products rather than productive domestic capacity.

Ms Musenero says government policy is shifting from supporting innovation to developing local supply chains.

"If you are laying fiber optic, we want to see what you need so that instead of importing, you buy from a local company. If you are doing software, we want to support local companies to develop that service so that we retain more value, create more jobs and grow Gross Domestic Product [GDP]," she said.