

From Isolation to Impact: RENU's Journey in Building Uganda's Digital Research and Education Ecosystem

Twenty years ago, Uganda's research and education community faced a common challenge: institutions were largely working in isolation, with limited, unreliable, and prohibitively expensive Internet access.

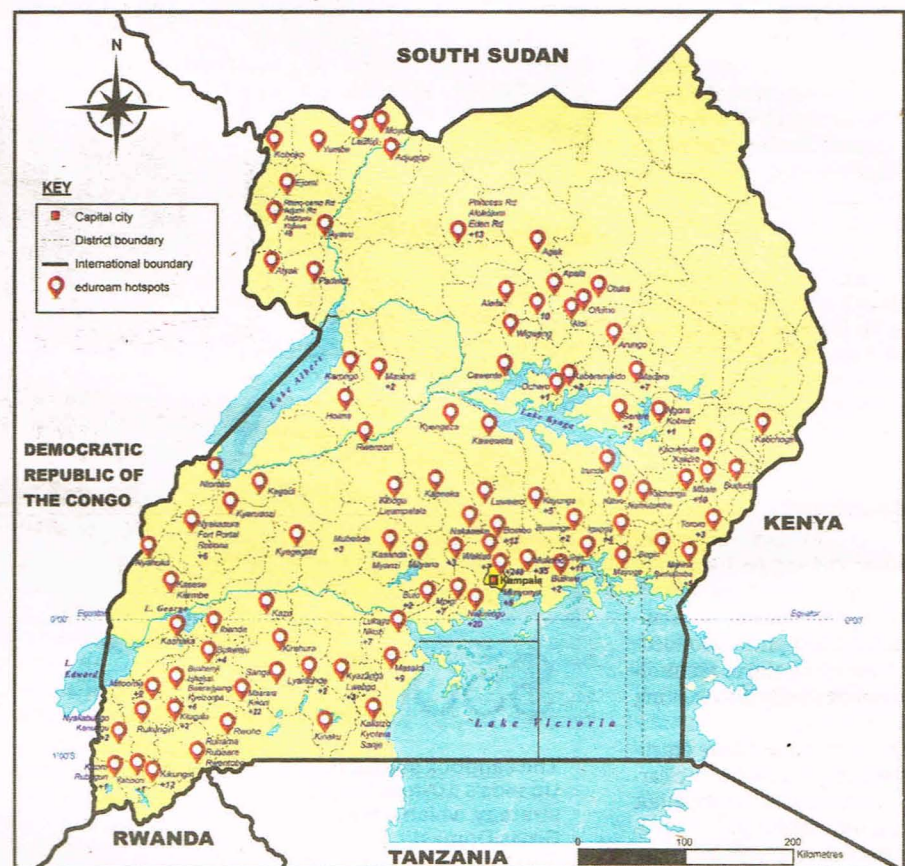
This restricted access to global knowledge resources had hindered collaboration among researchers and educators at a time when the world was rapidly embracing digital transformation. Access to scholarly content was limited, and the digital tools needed for modern teaching, learning, and research remained out of reach for many. Institutions needed to collaborate more, connect faster, and strengthen their internal digital capacity, yet the foundations to do so were weak.

It was from this need that the Research and Education Network for Uganda (RENU) was born. Today, RENU is not only a provider of high-speed connectivity but a key enabler of innovation, delivering specialised ICT services that continue to strengthen the quality of education and research in Uganda.

Chief Executive Officers of research institutions, met and resolved to establish a research and education network. This network was envisioned as a platform for facilitating human networking, boosting intellectual output, and driving research-led transformation of higher education in Uganda. In the same year, RENU was established as Uganda's National Research and Education Network (NREN).

The organisation was incorporated in 2008 as a not-for-profit company limited by guarantee and operates as a member-based organisation. RENU's direction is shaped by the needs of its member institutions, ensuring that its services remain relevant and impactful. Over time, RENU has expanded its membership beyond universities and research institutions to include Other Tertiary Institutions (OTIs), health facilities, and schools, reflecting its growing role in strengthening Uganda's entire education and research ecosystem.

A Map of Uganda Showing eduroam Hotspots



1 The Birth of RENU

In January 2006, Vice Chancellors of leading public and private universities, together with



Between 2006 and 2014, connectivity was delivered through this consortium model in partnership with a commercial telecom provider. While this approach reduced costs, it lacked scalability and sustainability and did not contribute to building national infrastructure. It became clear that Uganda's research and education sector needed more than affordable Internet; it required a dedicated, resilient network supported by specialised services and long-term infrastructure.

3 A Turning Point: Building a National Backbone

A major turning point came in 2013 when RENU joined the AfricaConnect Project through the UbuntuNet Alliance. At a time when the organisation's ambitions exceeded its available resources, this partnership provided the technical and financial support needed to transition from a consortium model to a dedicated national backbone. With support from the Uganda Communications Commission (UCC) and contributions from member institutions, RENU gained access to regional and global research and education networks, intercontinental connectivity, and a stronger technical foundation.

4 From First Connection to National Scale

In 2014, RENU commissioned its first Point of Presence (PoP) at Statistics House in Kampala and launched its own 1 Gigabit per second backbone, connecting its first institution. This marked the transition from reliance on third-party infrastructure to operating its own national network. By the end of 2014, three core Points of Presence (PoPs) were operational in Kampala, Mulago, and Mbarara.

In 2015, the network expanded rapidly, growing from three to six Points of Presence (PoP) and connecting 43 campuses across the country. During this period, RENU established a fully operational 24-hour Network Operations Centre (NOC) to monitor and manage network performance, significantly improving reliability and positioning the network as a mission-critical national service.

5 Scaling to Meet Growing Demand

As demand for connectivity grew, the backbone

2 Early Years: Tackling the Cost of Connectivity

In its early years, the most immediate challenge was the high cost of bandwidth. At a unit price of over US 3,000 per Mbps per month, Internet access was simply too expensive for universities and research institutions to consume at the levels required, and the quality of connectivity was insufficient to support modern teaching, collaboration, and research. RENU's initial response was the establishment of a bandwidth consortium, through which member institutions pooled demand to negotiate better pricing.