Understanding and Measuring Digital Inclusion

KENET's current mission is to promote digital transformation and digital inclusion of member institutions. Digital inclusion means adequate campus or research station Wi-Fi coverage to support high-speed Internet for the end-users such that end-users should not have to use Mobile data bundles while on campus or their research stations. It also means end-users have appropriate devices to access Internet (e.g., a laptop or tablets for researchers and faculty) and all ICT equipment have stable power. It also assumes users have acquired the necessary digital skills.

Digital inclusion is one of the indicators of the Annual Core Data report (2022/2023) that can be used to measure the readiness of the digital transformation journey of member institutions. KENET supports digital inclusion initiatives and digital transformation of administration, teaching and learning through high-speed, affordable, and secure internet access on-and off-campus.

The KENET indicators of digital inclusion entail Internet bandwidth (Mb/s) per 1,000 users, WiFi access points per 100 users, Internet expenditure as a percentage of total recurrent expenditure and Internet expenditure in KES per 1000 users. Internet bandwidth per 1,000 users indicator measures the institutional internet speeds available to end-users. The KENET target of 100 Mb/s per 1,000 users translates to download speeds of only **1 Mb/s** if only 10% of the users are online at any one time while the national target is **2 Mb/s**.

The WiFi access points per 100 users indicator measures is essential because most users access Internet their smartphones or laptops from the institutional WiFi (e.g., eduroam WiFi). The KENET target for this indicator is a minimum of two WiFi access points per 100 users. A higher density is required for indoor access such as in student hostels or classrooms or offices.

The performance in the above two indicators motivated the launch of the Digital Campus Infrastructure (DCI) initiative in July 2022, the Teaching Hospitals Connectivity initiative in July 2023 and the Tertiary Colleges Connectivity Package in January 2024. These initiatives will increase WiFi coverage, increase end-user Internet access speeds, and reduce the unit cost of Internet bandwidth.

Internet expenditure as a percentage of total recurrent expenditure and Internet expenditure in KES per 1000 users measure the **affordability** of Internet for the member institutions. Despite the assumption that internet is free for the end-users most educational institutions charge a modest annual ICT lab or Internet access fee (see Indicator 9 in the main report). We note universities and tertiary colleges were spending only 0.76% and 1.75% of their respective of their recurrent expenditures in the FY 2021/2022. However, in absolute terms the Internet expenditure per 1,000 users for tertiary colleges was about 50% that for universities.

There is need to enhance and expand coverage of the digital campus infrastructure in educational institutions. Teaching hospitals must also provide high-speed Internet access to medical students and faculty in the hospitals as way of enhancing the teaching, learning and research environments in hospitals.

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