

Internet for all - enabling access to knowledge and empowerment!¹

Given the Digital Divide, with about 2.7 Billion people not using the Internet, and a far more number of people have not experienced the benefit of the Internet, our work is fostered by three questions:

1. Is access to digital goods and information a universal human necessity and consequently a right of everyone?
2. How can we enable access, especially for people and groups left behind by traditional business models?
3. How can we provide local access to decentralised information to address global challenges and achieve the Sustainable Development Goals (SDGs)?

The Basic Internet Foundation was established to address these questions. The mission² is to improve the life of every single human through free (or at the lowest cost possible) access to information on the Internet. We believe that everyone should be empowered to pursue their dreams of decent work and a prosperous life. Our practical work focuses on implementing projects around the world in the areas of internet access, education, healthcare and community empowerment.

The Foundation focusing on Sub-Saharan Africa with partnerships in more than 15 countries has developed solutions for setting up wireless information spots ("InfoSpots") in areas where there is no internet or where no one believes you can connect. We have established InfoSpots having 20-25 km distance to the mobile phone base stations, and demonstrated to reach almost all unconnected areas. Through these InfoSpots and our collaborations, we provide and promote Internet Lite, the freemium access model.



Figure 1. Installation of an "InfoSpot"



Figure 2. School children benefitting from access to information

The aim of the installation is to establish digital inclusion in the community through InfoSpots, community networks and other means of access. In addition to connectivity, which is at the core of the planned collaboration with our local partners, empowerment and value creation for local societies is the second

¹ The concept note was authored by Josef Noll (UiO), Catherine R. Kimambo (African Child Projects), Wisam Ahmed Mansour (Basic Internet Foundation), Sudhir Dixit (Basic Internet Foundation) and Jonathan Muringani (Basic Internet)

² The **Basic Internet Foundation** is a Norwegian Foundation, registered at **Gunnar Randers vei 19, 2007 Kjeller**, Norway under **org. number: 915196489**. The Foundation was established in 2014 by Kjeller Innovasjon and University of Oslo (UiO). See <http://BasicInternet.org>

pillar. We address the second pillar through a decentralised internet with a school/community server in the village. "Access is expensive, local hardware is affordable", and the creation of information packages and videos on a local server allows free access for students and community members (see Figure 2).

Our distributed architecture allows for rapid deployment of low-cost Internet distribution worldwide, enabling 3G/4G network reception even in areas with no connectivity. See Figure 3 for a simplified architecture encompassing different deployment scenarios. We improve the uptake of internet connectivity by working with partners to provide local content, such as health, education, agriculture and other non-profit information, free of charge. The education and healthcare packages, as well as free access to information on the Internet, increase people's ability to see the value of the Internet and use it effectively. In addition, we improve economic upliftment by providing non-profitable content such as health and education for free.

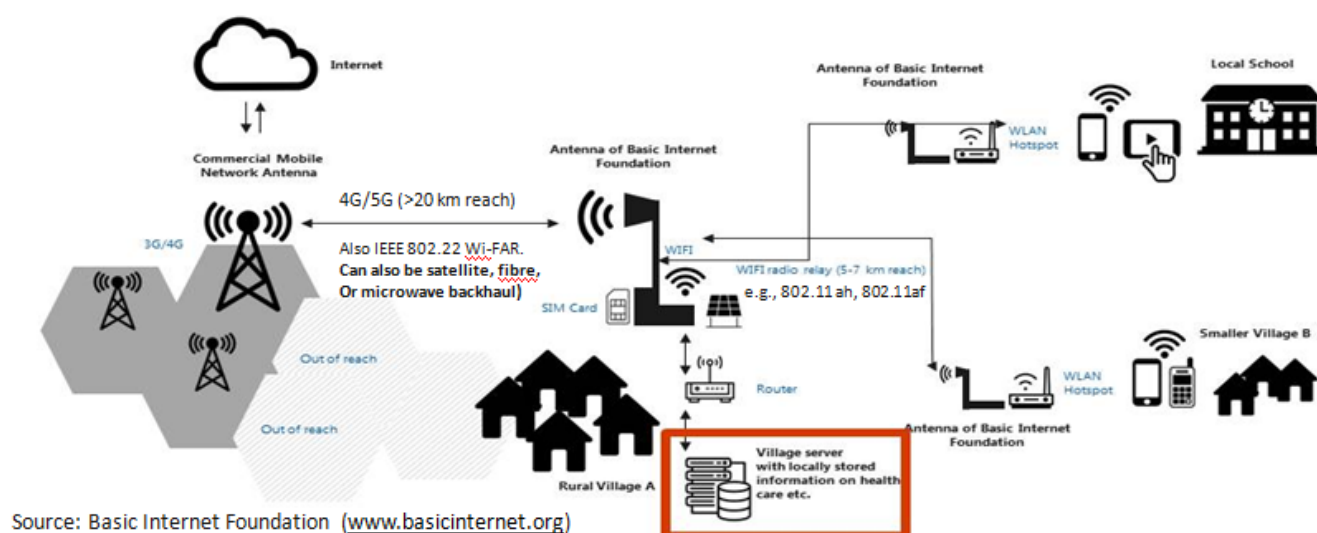


Figure 3. An Architectural Model for Distributed Deployment of Internet Access

By connecting to the Internet, we are preparing for business around the information points and giving start-ups the opportunity to offer their services.

The creation of a local website on the school server is a local identification and added value, as it

- Increases identification with the digital content when creating their own website;
- Sharing local and global content in the community promotes digital heritage and translates the norms of the local society into the digital space;
- Supports the contextual and specific identities of each community; and
- Promotes the transition to smart villages.

We work with universities and technology research centres to create Regional Competence Centres (RCCs). University students configure the off-the-shelf equipment at the RCCs, then deploy the infrastructure and provide training on its use to teachers and students across rural areas.

We work with telecom operators, ISPs, government organisations and NGOs to create sustainable business models. The starting point is a thin data connecting, with 5-10 Mbps and unlimited data packages offered by mobile operators, which ensure the operation of the InfoSpot for as little as USD 20 per month and school. As an example, Vodacom Tanzania Foundation offers 10 Mbps for 60.000 TZS/month (~22 USD/month), supporting the "Affordable Access for Education, Health and Empowerment" (AA4EDU) initiative. The AA4EDU offers are specific to schools, health, and community Learning and Living Labs (CL3). The decentralised model, with local storage and Internet Lite access, keeps OPEX costs down to US\$ 20/month, but allows scalability for higher demands through the embedded voucher system.

The InfoSpot and school server are set up with a basic package of information³, and we invite partners to contribute content, e.g. information on health, education, agriculture, energy and climate. An example of this approach is our collaboration with European and African partners through the EU-funded, the Smart Energy Solutions for Africa (SESA)⁴, where the Basic Internet Foundation contributed by providing InfoSpots and digital information packages focused on renewable energy and sustainable mobility⁵.

"Including everyone in the digital society is not economically viable, but it is worth it".

Research Topics, the role of 5G and community connectivity

Through our collaboration⁶ with universities, including the University of Oslo (UiO) as a member of The Guild⁷ and the University of Dar es Salaam (UDSM), Dar es Salaam Institute of Technology, Makerere University and the University of Rwanda as members of ARUA⁸, we have the academic network to drive research forward.

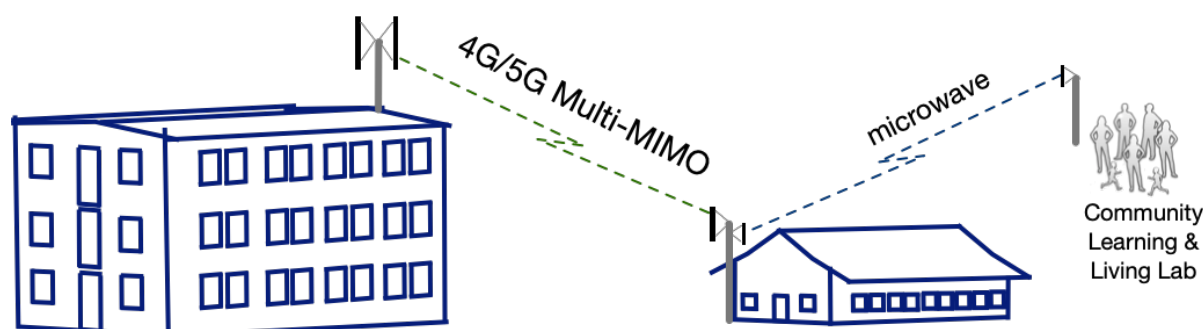


Figure 4. Leveraging access to broadband Internet at the university to connect schools and communities.

Topics currently under discussion include affordable Digital Public Infrastructure (DPI), 5G for all and Community Learning and Living Labs (CL3). Thanks to the multi-MIMO capabilities of 5G, energy can be concentrated only where it is needed. This reduces the energy consumption per area while maintaining the quality of the connection. As the university building is connected via fibre or other broadband access, the distribution requires a 5G base station on the roof, 5G antennas to reach the schools and the 5G receiving antenna in the schools.

The use case is illustrated in Figure 4, with the sketch of the university building on the left, the mobile multi-MIMO link supporting the school (centre), and a potential extension to connect Community Learning & Living Labs (CL3) via a microwave link.

The digital divide affecting large parts of society requires new approaches, including

- (i) Community Learning and Living Labs (CL3), where access to information and digital skills training can be provided,
- (ii) The instantiation of the Digital Public Infrastructure (DPI), and
- (iii) 5G network slicing for Internet Lite⁹, which is a specific 5G network slice available to everyone free of cost.

³ We collected basic information on <http://Yeboo.BasicInternet.org> and provide a local copy of required content

⁴ <https://sesa-euafrica.eu/>

⁵ <https://basicinternet.org/energy-information/sesa-infospot/>

⁶ <https://basicinternet.org/partners/university-collaboration-for-digital-inclusion/>

⁷ The Guild of European Research-Intensive Universities <https://www.the-guild.eu>

⁸ The African Research Universities Alliance - ARUA <https://arua.org.za>

⁹ <https://basicinternet.org/internet-lite-for-meaningful-connectivity-for-all/>

Examples of our work in partner countries

School Connectivity in Tanzania

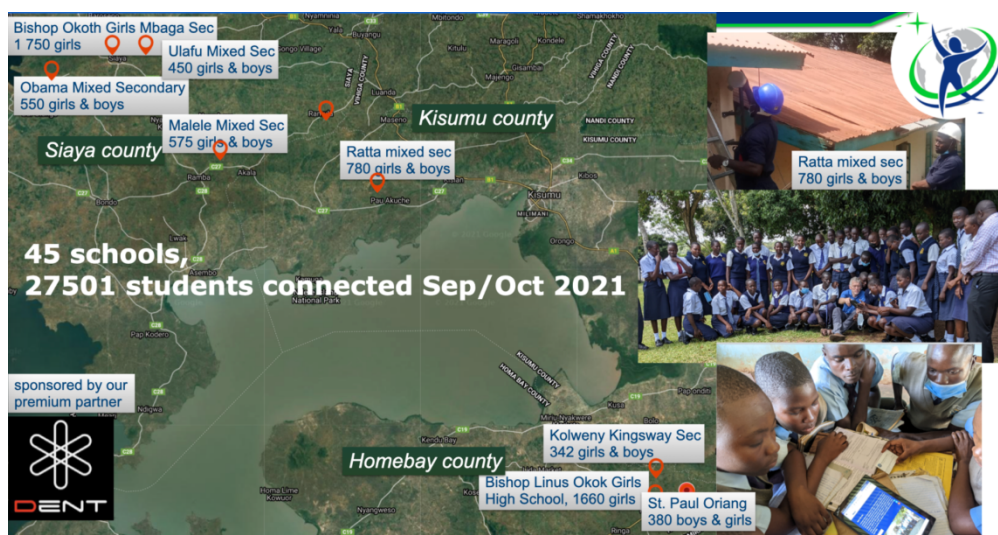


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concept note (.pdf)

Working together with our partner network that include Vodacom, The Universal Communication Services Fund, Africa Child Projects we implemented a school connectivity pilot of 10 schools (Phase I) and Phase II of connecting an additional 50 schools¹⁰. The project established a Regional Competence Centre (RCC) in partnership with the University of Dar es Salaam to equip students with the skills necessary for the sustainable rollout of school connectivity. This initiative highlights the strategic role of Research and Education Networks (RENs)—particularly universities—as vital enablers of school connectivity and broader community empowerment. Following this success, we rolled out Phase III and connected a further 141 schools in 2023/24. To date, our projects have provided digital skills training to more than 200 schools, 1000 teachers and 180,000 students with the aim to integrate ICT in teaching and learning. In the upcoming years, we look forward scaling up the concept as a national initiative.

School Connectivity in Kenya

The partnership with DENT Wireless has enabled us to connect 45 schools in the Kisumu, Siaya and Homebay regions of Kenya in three months. During the first few months, we established the Regional Competence Centre (RCC) with the African Higher Research Institute (AHERI.org), which led to the community network operator AHERInet. Two months were spent connecting schools and delivering digital literacy training. The project shows cases the importance new private players or small to medium enterprises as social enterprises and pathway to community empowerment. The community network approach led by social enterprises addresses the sustainability challenges commonly associated with development interventions, particularly the limitations of projectisation and



¹⁰ School Connectivity phase II: https://basicinternet.org/school_connectivity_tanzania/

pilotitis—where projects end without producing scalable or sustainable outcomes. This model highlights the critical role of social enterprises as solution providers for last-mile connectivity, often complementing or collaborating with telecommunications companies (Telcos). In Sub-Saharan Africa, where private Telcos spearheaded the mobile revolution, network expansion has been hindered by market failures stemming from the absence of a supportive ecosystem. This makes the community-driven model especially relevant, as mobile internet presents a more accessible and cost-effective solution for rural areas compared to fiber. Importantly, the partnership model demonstrates how community networks create a valuable space for policy and business model experimentation. Community network operators often act as intermediaries, bringing together government agencies—including licensing authorities and universal service funds—and Telcos to co-create innovative solutions for connecting the unconnected.

Smart Energy Solutions for Africa (SESA)

The Basic Internet Foundation is a partner in the SESA (Smart Energy Solution for Africa) project. SESA is a collaborative project between the European Union and 9 African countries (Ghana, Kenya, Malawi, Morocco, Namibia, Nigeria, Rwanda, South Africa and Tanzania) that aims to provide energy access technologies and business models that are easily replicable and create local opportunities for economic development and social cohesion in Africa. To provide the necessary connectivity, the Basic Internet Foundation installed 80 InfoSpots, targeting schools and particularly disadvantaged communities.

Read more in the SESA newsletter at <https://sesa-euafrica.eu/the-sesa-info-spots-bringing-education-closer-to-the-communities/>

Join the collaborative effort of all stakeholders

We need a collaborative effort of all stakeholders to establish Regional Competence Centres (RCCs), connect the schools, establish Community Learning & Living Labs (CL3) and co-create content for empowerment. Get involved:

<https://basicinternet.org/get-involved/>



For additional information, scan the QR codes:



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User-Guide for
InfoSpots



Blog: Success
stories, Future



Get involved,
Franchise model