Internet Lite for All for Digital Inclusion and Societal Empowerment

Values and Principles

a) What are the key values that individuals, organizations, and countries should support, protect, foster, or prioritize when working together to address digital issues?

The key value of the **Basic Internet Foundation (The Foundation)**, a non-profit foundation founded by UNIK (now University of Oslo, Norway) and Kjeller Innovasjon, is to enable access to information to everyone free of charge**,** meaning that everyone should be able to access non-dynamic content (i.e. non-video) unless video is served locally, without fees. The Foundation offers free access to low capacity Internet as a carrier of digital content to people in areas with low admission and / or no Internet coverage. The Foundation's project "Non-discriminating access for digital inclusion" (DigI / Internet light for all) is funded by the Norwegian Research Council and The Norwegian Ministry for Foreign Affairs with 15 MNOK (1,5 million euros) between 2017-2020.

While urban Sub-Saharan area develops thanks to participation in the digital society, the rural areas are left behind. The Foundation suggests establishing **"*Internet light*"** – Free **Information spots in each village.**

Internet light is proven technology and provides free access to text, pictures and local content, e.g. education or health videos on a local server. The business model supports the concept of a Social Solidarity Economy. One user paying for video access for 10 minutes will support 300 users for a year with free access to information.

The Norwegian-supported piloting of ***Internet light for all*** is ongoing in Tanzania, and expects a value proposition in **reaching the remote villages.** The main target is to establish domestic pilots in rural Sub-Saharan Africa, which are dedicated to spread health, and educational information locally. The pilots with available health information is the key goal for health knowledge uptake and retention, behavior change, digital literacy uptake, and crucial to solving many social challenges. In this project, we are pursuing to unlock the value of access to the Internet, by allowing free access to non-video digital content on the web and access to local video server, with plans to deploy in areas with or without the

infrastructure, typically near health facilities, educational institutes, and public meeting spots.

Other values: *Internet light* directly addresses SDG Target 9.C [1] ''Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020'' by providing *free access to information for all.* Internet light supports the UNOG [2] work on human rights in the digital world.

Last but not least, *Internet light for all* is seen as **a catalyst for achieving most of the SDGs.** After all, building the ICT infrastructure is much cheaper and faster than building any physical infrastructure.

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[1]SDG 9.C: https://sustainabledevelopment.un.org/sdg9
[2]United Nations in Geneve (UNOG): http://www.unog.org

b) What principles should guide stakeholders as they cooperate with each-other to address issues brought about by digital technology?

Working with information, our group strives to provide not only access to Internet lite, but enable a **quality information** for the people on the local server. The health information available locally is a result of an ongoing cooperation between health professionals, the local community, and the government to ensure culture sensitive, appropriate and targeted health information related to diseases of public health importance.

Important principles when providing general, and health information, are that it should be up to date, safe and of **good quality information**.

The emphasis is held on the health information being understandable and straightforward for all, in addition to non-moralizing and ethically sound. In Internet light for all, an **ongoing cooperation between health professionals, the local community, and the government is ensuring culture sensitive, appropriate and targeted health information related to diseases of public health importance.** The emphasis is held on the health information being understandable and straightforward for all, in addition to non-moralizing and ethically sound.

Without the close collaboration with the local medical staff, the village leaders, the authorities and the local people, we believe the end product will be worthless. Creation of the online content can only be verified and approved by the end users. Thoughtful digital

technology has the great advantage that it can be used by everyone, because of the tailored interface.

The validation of the quality of content should be done by crowd sourcing the comments and reviews and by applying the analytical tools to provide rating about the quality and ordering the content in descending order of reliability or correctness. In our project we create and provide health information for everyone, including illiterates.

Another principle that Internet lite follows is the principle of **net-neutrality**. Addressing net-neutrality as a key value of the Internet, the Foundation adopted the road model for reaching out with Internet to everyone.

Finally, there is the need to have an open spirit of **digital collaboration** among the stakeholders and sound organizational structure to foster the collaboration on the international level. A close collaboration with local people and stakeholders is needed to accelerate digital development in the Global South. The local perspective should be emphasised when planning, implementing and evaluating any project addressing new digital technologies.

c) How can these values and principles be better embedded into existing private and/or public activities in the digital space?

The Internet light for all model can serve and is replicable to any low-income countries and area without the internet access, both in public activities in the digital space or private, through freemium model.

Digital development in the Global South is dependent on a close collaboration with local people. Any project addressing new digital technologies should take into account the local component when planning, implementing and evaluating their project. Digital feedback from the websites and apps, for example, statistic on the use, hits loading of pages, unique users and clicks should be used when evaluating the underlying content. This can provide an important ground for evaluation and for progression and improvement.

The success of the embedding of the values and principles in the digital space will require capacity development in the users to absorb life-changing content and services, which means improving the quality of education and health even if it means providing these free of cost.

Methods & Mechanisms

How do the stakeholders you are familiar with address their social, economic, and legal issues related to digital technologies? How effective or successful are these mechanisms for digital cooperation? What are their gaps, weaknesses, or constraints? How can these be addressed?

It appears that at the present time the stakeholders work individually than collectively to address their issues. Major stakeholders in digital technologies happen to be following: vertical industries (such as healthcare, transportation, banking, education, manufacturing, etc), network service providers, consumers and the government. Each player strives for digitalization to improve their efficiency, reduce cost, improve reach of information, and enhance quality of service. Except for the NGOs, it is mostly the government that attempts to bring all the stakeholders together through regulations, funding of projects or mandating requirements for the social good. The bilateral approaches between the government and a particular stakeholder are generally sub-optimum (or less successful) in achieving their objectives mainly because of the desire to increase profits without regard to social implications and consensus with other stakeholders. Thus, often times, there are gaps both in the intended objectives and the time-scale – government working for the long-term while businesses focusing on the short-term deliverables with different measures of success. Such differences in approaches can be bridged by building consortiums, educating the business leaders by emphasizing that investment in social causes (i.e., good societal impact) is good for their businesses as well, and making decisions by consensus, while also involving the people. Frequent conferences, open meetings and establishing shared goals can go a long way to enable stakeholders to address their social, economic, and legal issues related to digital technologies.

b) Who are the forgotten stakeholders in these mechanisms? How can we strengthen the voices of women, the youth, small enterprises, small island states and others who are often missing?

With the highest portion of entrepreneurial women in Africa, 18%[1], women are forming the major force for empowering the development wheel. In the Global South, female entrepreneurship is concentrated on two aspects a) health and medical issues, and b) women job creation. Enabling and empowering women businesses lead to higher level of

social welfare domestically and subsequently preferable health. Taking the other direction around, evolving the health sector definitely facilitates the women entrepreneurship as it the catalyst to introduce new products and services.
Furthermore, motivating more women to get involved in the political process and encouraging them to higher political positions will ensure that their voices are heard and appropriate new policies are formulate and enacted, and bridge the existing digital gender gap.

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[1]https://www.thecge.net/awec/

c) What new or innovative mechanisms might be devised for multi-stakeholder cooperation in the digital space?

We believe that increased investment by the companies in corporate social responsibility will include more non-corporate actors to get involved. This investment can be encouraged through tax credits, preferential treatment by the government and in the political process. Open platforms to develop and consume content and services can be another mechanism, which in modern taxonomy is called crowd sourcing and social networks.

Collecting analytical data about the user behavior and network usage through AI and machine learning techniques can be very useful to attract the stakeholders and encourage them to collaborate as it would positively affect their business outcome from network provider to content provider to enterprises and the government. As examples, matching users' comprehension with the complexity of the health information could attract more users, collecting the usage of agricultural content, such as fertilizers, pesticides can help the producers of these products. Other important technologies, such as blockchain is already being utilized in education and healthcare through Distributed Ledger Technology (DLT) to improve interoperability and data security, falling under the category of supply chain management, which means collaboration amongst the stakeholders. 5G and Beyond 5G networks, because of their superior performance and applications in the IoT and healthcare, are well positioned to create new opportunities for all types of industry verticals.

Illustrative Action Areas

a) What are the challenges faced by stakeholders (e.g. individuals, Governments, the private sector, civil society, international organizations, the technical and academic communities) in these areas?

The challenges faced by stakeholders often result from their specific roles and responsibilities. As an example, mobile operators have a limited budget for investments, thus need to concentrate the effort where the return-on-investment is maximized. This leads to infrastructure deployment in areas where the respective operator is already strong, or where mobile broadband content is already used. Villages in rural areas with low digital knowledge, low penetration of smartphones and sparse population will thus come late in deployment.

Governments, though often having a regional development activity, are often limited towards separated actions. An example is the mobile coverage, demanding only 2G, thus excluding the opportunity to establish an “Information Spot” per village.

Public Departments, e.g. Health, Education, Regional Development, lack the integrated view. Costs for a Digital “Information Spot” are often allocated to just one activity, and thus allocated to the budget of that department. However, an integrated approach will see the benefits across departments.

The separation into domains, e.g. energy, health and digital access. Every stakeholder works in his domain, with little accounting of the effect of cross-domain effects of the activity. Our experience shows that energy and digital access are the basic building blocks to empower a society, and that digital health promotion will enable both better health (knowledge) and increase digital literacy.

In conclusion, the separation into domains and responsibilities results in a lack of the basic digital infrastructure and affordable access to information.

Though finances are available, there is very little cost-benefit analysis of an action. From our knowledge, the installation of an “Information spot” per village with free access to information (text, pictures) and local video is a minor investment (~300 Euro), given the connectivity to the village.

Another example of a lacking framework is related to digital literacy and the lack of education, including the ability to comprehend, Voice and video important than text based information delivery in local language and locally relevant content.

All in all, the challenges, which the stakeholder face, are often related to the lack of the strategic approach and programmes, resulting in singularly actions rather than integrated approaches.

b) What are successful examples of cooperation among stakeholders in these areas? Where is further cooperation needed?

The collaboration in the DigI.BasicInternet.no project with 11 partners from 7 countries is an example of cooperation of stakeholders in the health area, bringing digital health promotion out at Information spots in villages in Tanzania.

The collaboration includes a.o. Ministries, health research institutes, SMEs, telecom industries, foundations and academia. In the DigI project, the Ministry of Health (MoH) in Tanzania, the National Institute for Medical Research (NIMR), Sokoine University of Agriculture (SUA), University of Oslo (UiO), Global Health Media (GHMP), Future Competence (FCI) and the other partners we have established health promotion in English and Swahili, available at: https://yeboo.com/health_information_dashboard.php.

The installations of Internet Lite in Norway, Germany and Tanzania have proven that a successful cooperation among stakeholders yields the envisaged results. Further cooperation is needed to form the global alliance for sustainable business models supporting «Internet lite for all» at «Information Spots» in each village in rural areas.

c) What form might cooperation among stakeholders in these areas take? What values and principles should underpin it?

We encourage the United Nations to promote the freemium model for access as enabler for the SDGs, and build a global alliance to foster the framework.

- Joint projects in GlobalSouth, such as Compact with Africa
- Digital cooperation panels, boards, and initiatives

- Harmonized standards on digital inclusion KPI

Do you have any other ideas you would like to share with the Panel?

We formed the Basic Internet Foundation in 2014 with the mission to enable Internet access, infrastructure, and digital inclusion programs on Global South and all under-connected areas world-wide.

Creating a common mission and best praxis for digital access in rural and under-connected areas globally, will build the basis for sustainable development and business take-up in these areas.

The Foundation machinery is fueled by the concept "**Internet is a human right**" to provide access to Information referred as "**Internet lite for all**". From our experiences in project activities, we see that at least one "**Information Spot**" per village is the core concept for digital inclusion and societal empowerment. Our developments suggest that the information spot should contain a village/society server carrying information and providing free access in the society. An example of such a village server is http://Yeboo.com, with dedicated health information https://yeboo.com/health_information_dashboard.php.

The basis for digital innovation for development of Africa is the freemium (free & premium) model for access to the Internet. Free access to information "Internet lite" is seen as an enabler for digital literacy, participation and empowerment.

Premium access is used for entertainment, being characterized as broadband content, and ensures a sustainable business model.

Given the experiences from Tanzania, Ghana and Mali, we suggest that every village shall have at least one information spot, where people can experience free access to information. The corresponding infrastructure has been in operation for several years.

Encourage the model of micro and virtual operators and entrepreneurs.

Please provide your numbered references or links to additional reports/documents

Other latest publications

1. Danica Radovanovic (Basic Internet Foundation), Christine Holst (University of Oslo, Norway), Georges Vivien Houngbonon (Orange labs, France), Sarbani Banerjee Belur, (Indian Institute of Technology, Bombay), Josephine Miliza, (Tunapanda Institute, Nairobi), Andrea Winkler (University of Oslo), Josef Noll (Basic Internet Foundation). **"Digital Literacy Key Performance Indicators for Sustainable Development"**.In: Digital Culture & Society, 2019 (to be published).
2. Josef Noll, Sudhir Dixit, Danica Radovanovic, Maghsoud Morshedi, Christine Holst, Andrea S. Winkler, **"5G Network Slicing for Digital Inclusion",**IEEE COMSNETS 2018, Jan 2018, Bangalore, India
3. Danica Radovanovic and Josef Noll, Key Performance Indicators for social development. White paper, Basic Internet Foundation, 20 November 2017.
4. Elibariki Mwakapeje, "**Use of One Health Approach for Anthrax Outbreak Response in Northern Tanzania. A Case Study of Selela Ward in Monduli District",** 10th European Congress on Tropical Medicine and International Health (ECTMIH), 16 - 20Oct2017, Antwerp, Belgium

5G for All

Our common goal of digital inclusion has reached the mobile industry. Thanh van Do from Telenor has established the paper "Reducing Inequalities with 5G Internet Light Network Slice" together with us and colleagues from the Oslo Metropolitan University. The paper demonstrates that networking technologies such as network slicing can be applied for free access to information for all. Though 5G mobile networks have the focus on more bandwidth, reliable services and massive IoT, the claim for 5G for all (#5GforAll) is stated by members of the community. #5GforAll should address to aspects, being mobile coverage everywhere, as well as free access to information.
With #5GforAll we expect to extend the current 5G standardization with the societal aspect of digital inclusion and digital empowerment. The paper demonstrates that Internet lite is feasible, and proves the viability through an implementation using an existing 4G network.

Thanh van Do, Josef Noll, SudhirDixit, Bruno Dzogovic, Van ThuanDo, Boning Feng, "Reducing Inequalities with 5G Internet Light Network Slice", 5G World Summit, IEEE 5G World Forum, 9-11July2018, Santa Clara, California, USA

Download the paper at: https://its-wiki.no/images/2/26/201806Reducing_Inequalities_5G_Thanh.pdf

Information spots in villages with the app on devices

In DigI project in Tanzania, the ultimate goal of the digital health messages is disease prevention and management. The health messages will strengthen people's health literacy related to the diseases of public health importance in this area. The aim is to increase the capabilities to make good choices and live healthy lives for the local people. Small information spots will be built where the people freely can access Internet lite, and use the solar power to charge their phone. The villages will have its own local network control centre (LNCC), and a server where videos and animations with health messages will be stored, in addition to local village information and access to both freemium and premium internet. Own smartphones and tablets fixed in the information spot, can be used to access Internet lite. An APP with the digital health messages will also be available on this server, for people to download and take home to their families, thus promoting community health in an offline setting.

Basic Internet Foundation website: https://www.BasicInternet.org
Our Wiki/About us: https://its-wiki.no/wiki/BasicInternet:Home
Our key messages: https://its-wiki.no/images/7/7e/201811_BasicInternet_KeyMessage.pdf

Basic Internet Foundation on Twitter: @Basic4all

The "Non-discriminating Access for Digital Inclusion" (DigI) project: http://DigI.BasicInternet.no

Village/Society Server at the Information Spot: https://Yeboo.com with health information package: https://yeboo.com/health_information_dashboard.php