UiO : Universitetet i Oslo

Master Studies related to SDG 3:
- Digital Global Health
- Health topics
- Sustainable Infrastructures

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http://ITS-wiki.no

Sustainability and the Agenda 2030

- 17 main goals
- 169 associated targets
- "Free access to Information" (InfoInternet)

The Basic Internet Foundation

9.c
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

1 Mbit/s costs 2 000 US$/month (Africa, Lisala DR Congo)
- In Norway: 0.04% for Internet access
- Entertainment versus Information

The Basic Internet Foundation

Basic Internet

Digital Health

- digital health info
- digital access
- hotspots with health info

Education

- access to information, hotspots
- schools and community centres
- Off-line videos/courses

Work

- digital Society
- digital Knowledge
- Digital Services

USA: 33% of the GDP from digital
Financial services: 57%, Buz Services 54%
[source: Accenture & Oxford Economics, 2016]

Partnership for Digital Africa

http://www.aftenposten.no/meninger/debatt/
Kronikk-Som-gjesteland-pa-G20-toppmotet-ma-vi-
bidra-til-a-endre-verden--Erna-
Solberg-614076b.html

Comment: As a guest country at the G20 summit, we must help to change the world | Erna Solberg

ERNA SOLBERG (H), PRIME MINISTER

UPDATED: 30.JAN.2017 9:39 P.M. | PUBLISHED: 30.JAN.2017 7:58 P.M.
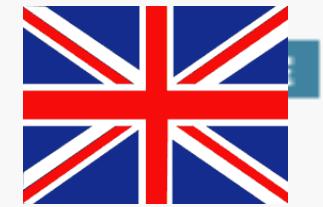
In July last year was Erna Solberg invited by Angela Merkel for this year's G20 meeting. Here from a meeting between the German Chancellor and the Norwegian Prime Minister in Berlin in November, where Norway's participation as guest country at the economic summit were among issues discussed.

1. UN sustainability goals and Agenda 2030:

Germany has chosen this agenda as a backdrop for their entire program for the presidency, and I lead a group at the United Nations that will drive towards implementation.

We will work to ensure that the G20 goes ahead with its own specific commitments to help achieve sustainability goals.

2. Migration and partnership with Africa:

The world is experiencing the greatest influx of refugees since World War II. Europe, and especially Germany, have seen the consequences of that.

It is necessary to improve the situation where people break up close.
Germany will use its chairmanship to do something about the problems which people belong. There is no minimum job creation and private investment. There are agreements with African countries wishing to achieve it.

G20 can therefore help the countries and international organizations use their resources more on measures which create growth and job creation.

3. Health and education.

Norway has long had a heavy international involvement. Education and health are associated with economic growth.

Sustainability Goals (SDGs) and Agenda 2030

Goal: Include people with 1 USD/month for communications

Free local info
- health
- education

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Our contribution:
- Information for all (InfoInternet)
  - ➡ free access to text and pictures
    - the "walk on the Internet"
  - ➡ paid access to amusement
    - "Toll Roads"
- The catalyst for the SDGs

Non-discriminating access for Digital Inclusion
Pilot in Rural Areas for Information for All
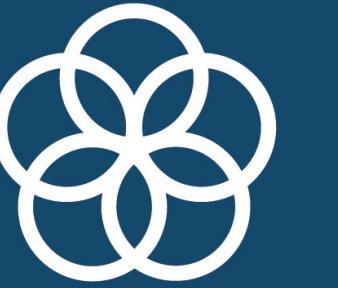
Tanzania
- health as basis for development
- reach women and girls
- towards global digital health

Congo (DRC)
- Internet + GSM network
- enabler for digital society
- digital services, light, radio

Partnership for Information for All

Come and visit our Digital Health Spot at Kjeller
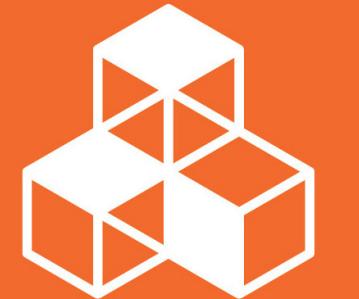
Digital Health Spot for 300 €
Creating digital access for the unconnected
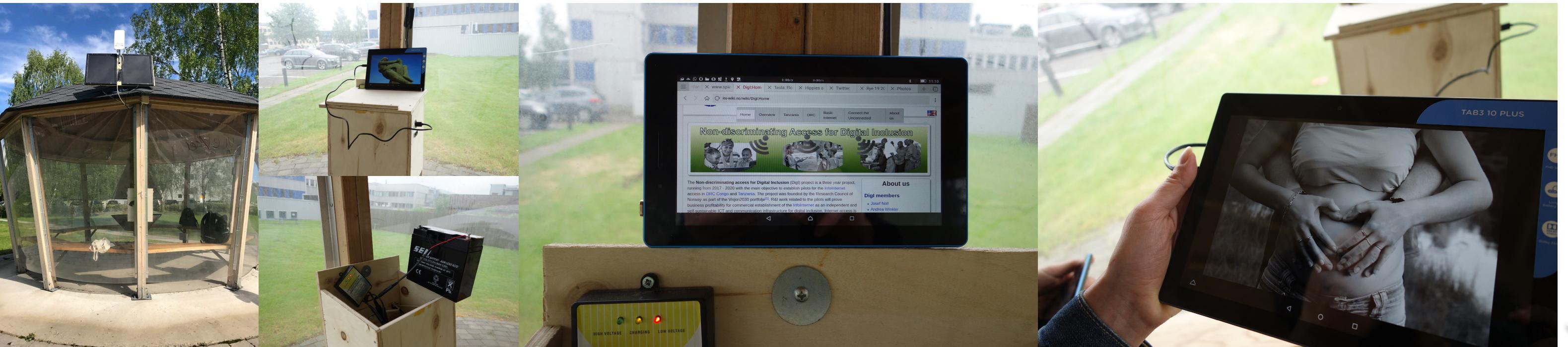
Digital inclusion
The catalyst for sustainable development

300 € digital health hotspot
60.000 € connecting a village in TZ
250.000.000 € connecting all villages in TZ
89.000.000.000 € EU border control per year

Digital society

Agricultural and rural development

Education

Health

Food, water and shelter

80 € Solar panel		30 € Regulator	
50 € Hotspot		20 € USB-charger	
50 € Tablet		15 € LED light	
20 € Battery		20 € Materials	

Come and visit our Digital Health Spot at Kjeller

digi.basicinternet.no

Founded by: UiO : University of Oslo   KJELLER INNOVASJON

Ideas for Master Thesis

- The Village Platform for Africa
- Solar-power Internet-of-Things (IoT) gateway
- Women's Hackathon
- *...feel free to let us know your ideas*

In 2016 the Foundation invited 9 partners for the Digi activity "Non-discriminating access for digital inclusion", with the goal of piloti ital health in Tanzania (TZ) and the digital ecosystem in Congo (DRC). T Council of Norway and the Ministry of Foreign Affairs are supporting

As part of the activities, the consortium h nstallation of a village hot-spot for digital health, and is now planni the 4 pilot villages in TZ and the villages Kano and Palu in DRC. ntified the need for cost-effective infrastructures in the villages. R we have standardised on cost-effective equipment from Mikr wever, we have seen the need for **a village server** and **an IoT ga** tudent work or hackathons to establish the infrastructure for sus

Hackathon: Village platform [edit]

Goal of this hackathon or student work would be to establish a low-p server for a village of 2.000 - 10.000 people. Given the costs of commu electricity, we envisage:

- a low-power (<50W) platform for storage of local video information
- PoE or solar-powered operation
- server for local community content
- social network platform for the village society
- cache server for network content
- low-cost server

Hackathon: IoT home platform [edit]

Goal of this hackathon or student work is to establish a low-cost IoT gateway, first of all controlling the olar panel, charging of battery, and priority of attached devices. Current low-cost solar regulators have no Internet c thus remote configuration and assistance is not possible. The goal of the implementation would include:

- a solar charge regulator for panels up to 1000 W
- communication interface, typically Ethernet or Wifi based
- controlling of produced energy, consumed energy (e.g. USB), batteri status
- interface towards IoT devices, e.g. controlling other IoT devices

Both hackathons are done in collaboration with industry (Eye Networks, Witelcom, IPXextenso), the Partners of Partners of Digi, and the University of Oslo.

http://its-wiki.no/wiki/ BasicInternet:Village_Hackathon

Får Tanzania på nett

Conclusions

- Master thesis opportunities addressing
- Agenda 2030 and the Sustainable Development Goals
    - Security and Privacy in IoT
        - IoTSec.no, Privacy Label
    - Change in Business models
        - Liability, Quality of supply,
    - Digitisation of the Society
        - 4 Billion without Internet
    - Digital Global Health
        - Digital Information
        - Interactivity
- Sustainability and Digital Inclusion
    - UNO Sustainable Development Goals (SDG 2030)
        - Free access to basic information: InfoInternet
        - Partnership: IT-industry, Banks, Public, Telecom
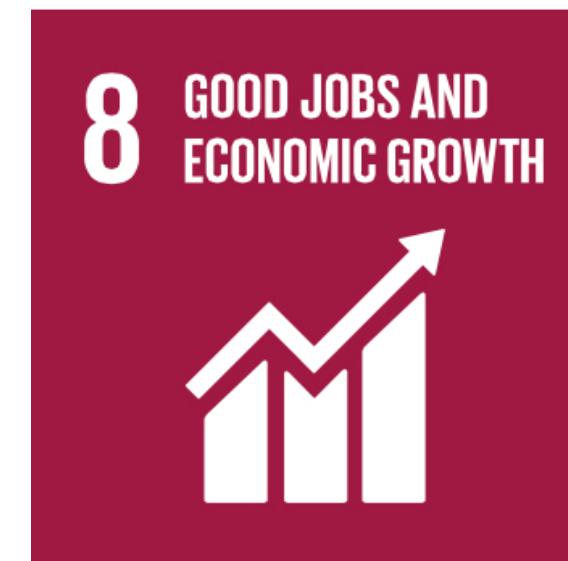
Catalyst for

Background Slides

Why free access to information? Connect the Unconnected (CTU)

- Reality in Tanzania (as an example for Africa)
  - ➔ 49 Million people, 69% living in villages
  - ➔ over 4.000 villages are unconnected, accounting for 13 M People
  - ➔ 35% of people without access to mobile data
- Information for all is sustainable (InfoInternet)
  - ➔ free access to text and pictures
  - ➔ requires 2-2,5% of bandwidth, 97.5% available for commercial use
  - ➔ 10 min with video - or - 10 month with information
  - ➔ >300 people with free access - equals - 1 commercial user
  - ➔ Uptake of commercial use ("Free Basics")
    - 40% of Free Basics Users convert to paid subscription within a month
    - Break-even in 3 months

Goal: Include people with 1 USD/month for communications

5G - demand: "Connect the Unconnected"

no use

Access + Need/desire + Ability
↓

limited use

Understanding of what's possible + Ability to navigate and control + Ability to critically assess content
↓

leverage

Desire to use authoring tools + Ability to use existing platforms + Inspiration & Confidence
↓

creation

"I have never been on the Internet. I don't know what you are talking about." – Rickshaw driver, Dhaka, Bangladesh

"I only use Facebook and WhatsApp." – Student, Nairobi, Kenya

"Internet is my teacher"

"I'm currently learning Python and HTML, so I can make a website for my parents' business"

Telecom focus   InfoInternet

17 PARTNERSHIPS FOR THE GOALS

[Source: GSMA, Nov2015]

Partnership for digital inclusion	
Telecom	**InfoInternet**
revenue-driven	non-profit
targeting leveraged creation	targeting no- and limited use
voice & mobile broadband	compressed text & pictures
subscription based (SIM)	free access & voucher
mobile network: coverage & capacity	Wifi-spots: health-/ community centres, schools
operator cost model	target: 0.5 US$/month
operator roll-out	NGO & community roll-out

- Example: Digital Tanzania
  - ➡ Unconnected: 13 Million people in 4.000 villa
  - ➡ Combined effort of
  - ➡ IT industry,
  - ➡ World Bank,
  - ➡ Telecom and
  - ➡ Industry

GSM + Wifi
- 200W
- MicroBTS

Cost: 70 kUS$/village

1 USD/month for Telecom

Basic Internet   @Basic4all

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- Funding requirements
  - ➡ 0.25 B€ for Digital Tanzania
  - ➡ 2.5 B€, DE for hosting refugees (2016)
  - ➡ 5.4 B€ asked by Banca Monte dei Paschi di Siena SpA to be saved
  - ➡ 55.2 B€ operational Costs for EU Frontex border control (total 89 B€)

Work in DRC

- Addressing Internet as enabler fo
  - existing mobile (GSM only) network
  - existing entry through ongoing colla

- Potential services:
  - voucher-sales for digital services,
  - electrical lights,
  - programs and mentoring for education and health

- Sustainability
  - operated by commercial actor
  - service continuity (free InfoInternet)
    - only 2-2,5% of bandwidth needed