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Basic Internet FOUNDATION Connect The Future

NURTURE Seminar, 16-17Sep2024, Hawassa

Connecting the Future for Schools and Community learning & Living Labs

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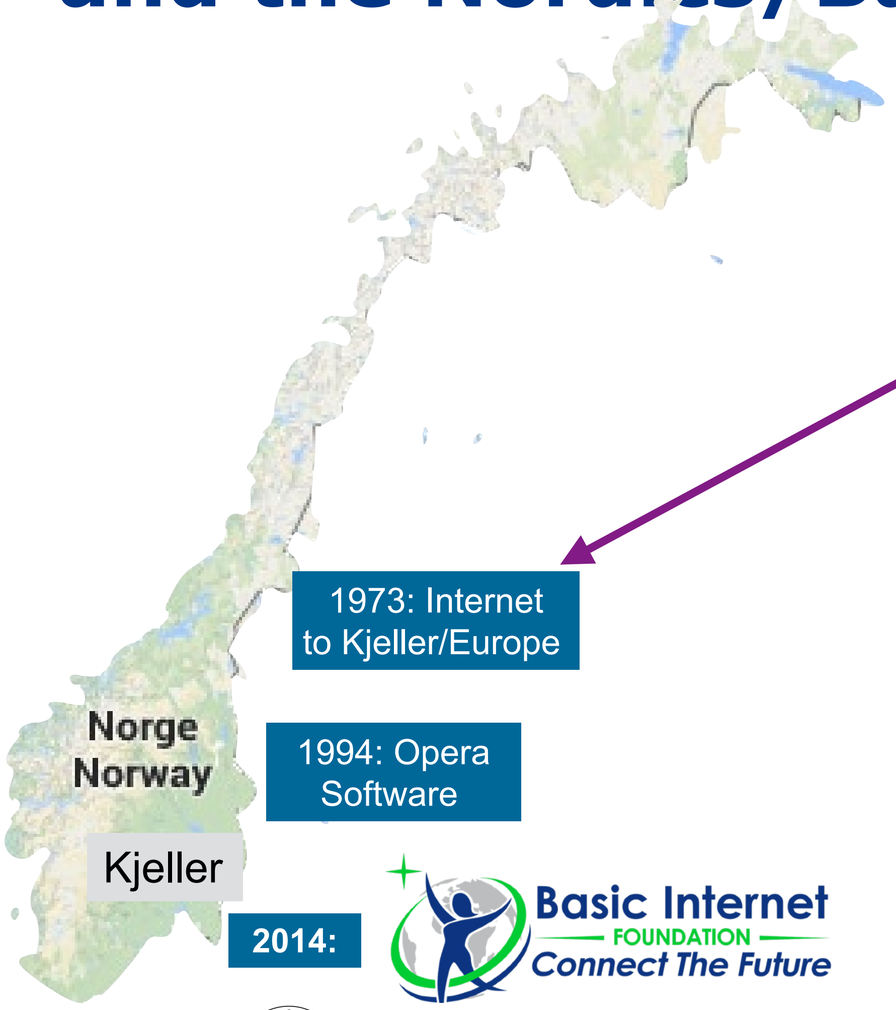
Inclusive digitalisation in Norway and the Nordics/Baltics (N8)



1973: Internet to Kjeller/Europe

1994: Opera Software

2014:

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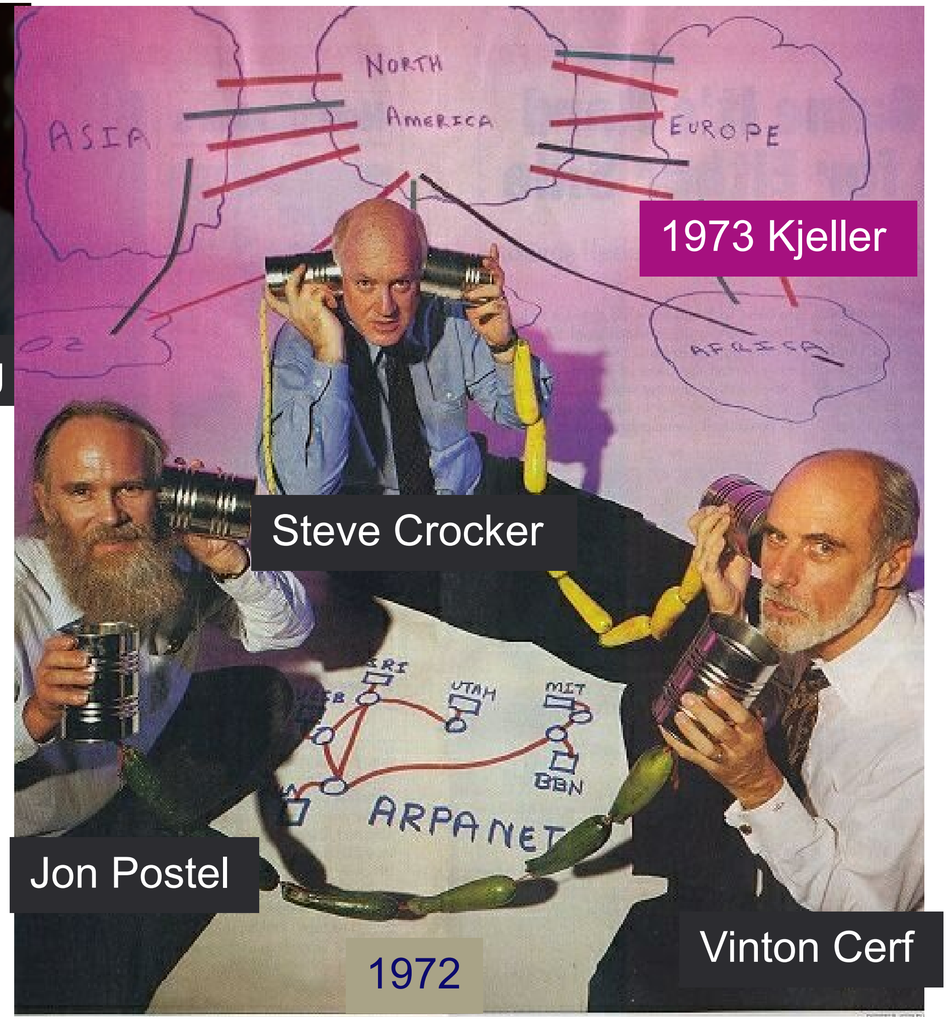
KJELLER INNOVASJON



.php, OpenSource, Linux, Skype, Spotify
Opera Software, FAST search
Nokia, Ericsson
GSM
GovStack.global, X-Roads

Source: http://www.michaelkaul.de/History/history.htm

Sustainable Empowerment -
what are the catalysts for the SDGs?

SDG 1.4 Equal access to basic services

SDG 4.A Education facilities for effective learning for all

SDG 5.B Use of enabling technologies

SDG 9.C universal and affordable access

SDG 16.10 ensure public access to information

SDG 17 Partnerships for the Goals

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**

- **57%** of the global population (4.6 billion people) using mobile internet
  - 30% decline in new mobile broadband (200 million new users in 2023)
  - **95% of unconnected** people in LDCs

- Adults in **rural 29% less likely** to use mobile Internet (compared to urban)
- Gender Gap: **Women 19%** less likely
- 41% South Asia, 36% in SSA

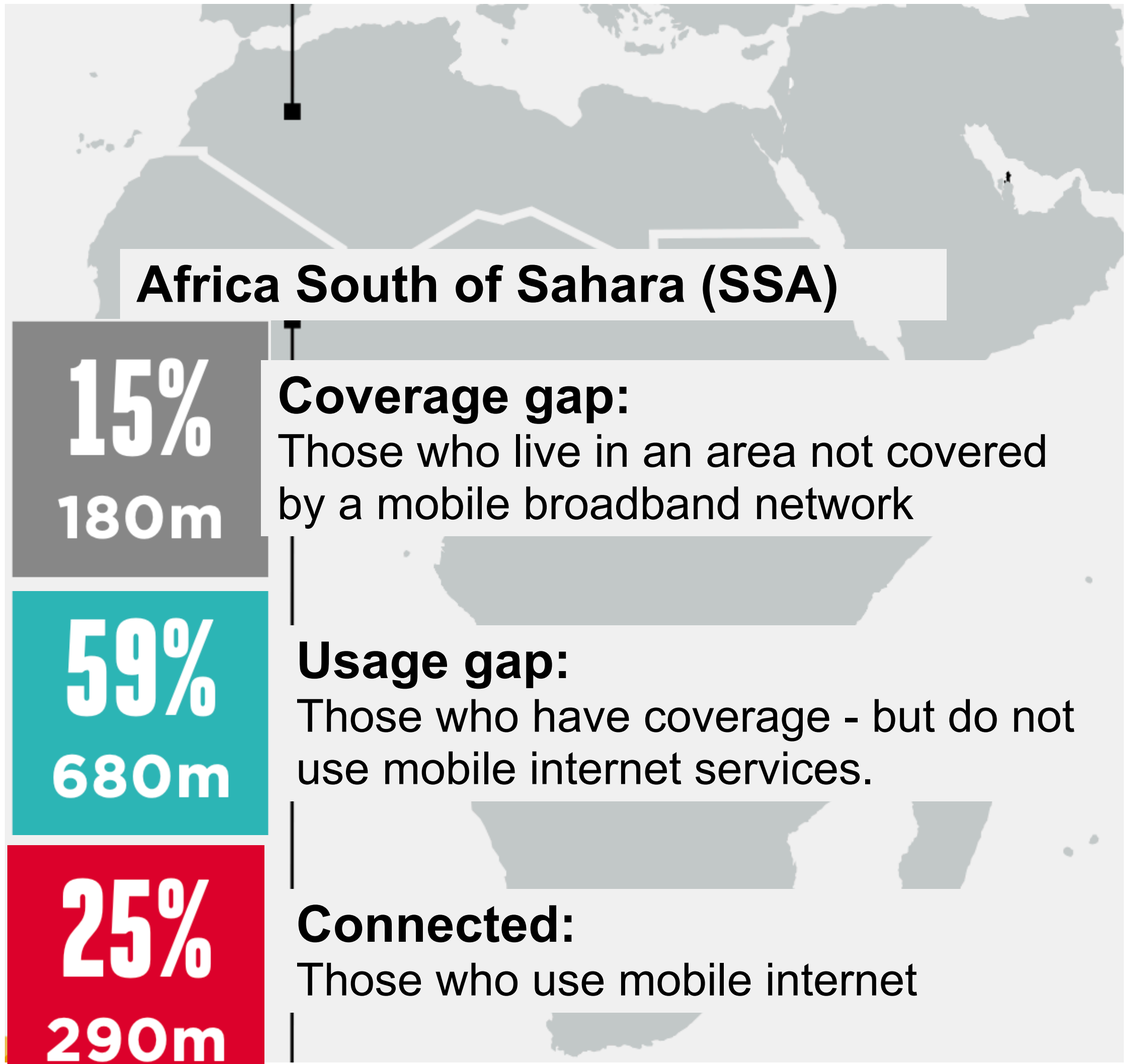
Digital Inclusion?

SSA:
75% not using mobile internet

SSA:
49% rural / urban gap

People in rural are more likely to have **reduced** their mobile **internet use**

Women
900 million don't use mobile internet (2/3 living in SSA or South Asia)



South Asia

4%
80m

52%
990m

44%
840m

[Source: GSMA 2024]

Let’s trigger our discussion

- Please fill in:

  http://EGM.BasicInternet.org

Drivers for Mobile Internet

Thanks for your help in addressing topics related to mobile Internet access. Your input is used as a basis for an academic study to identify evidence and gaps between mobile internet uptake and the impact on people, businesses, community, and society. For more information, please scroll down to the bottom of this page

Note: all answers are handled anonymously, thus we don’t identify you. Your input is used to quality control our assumptions in the study.

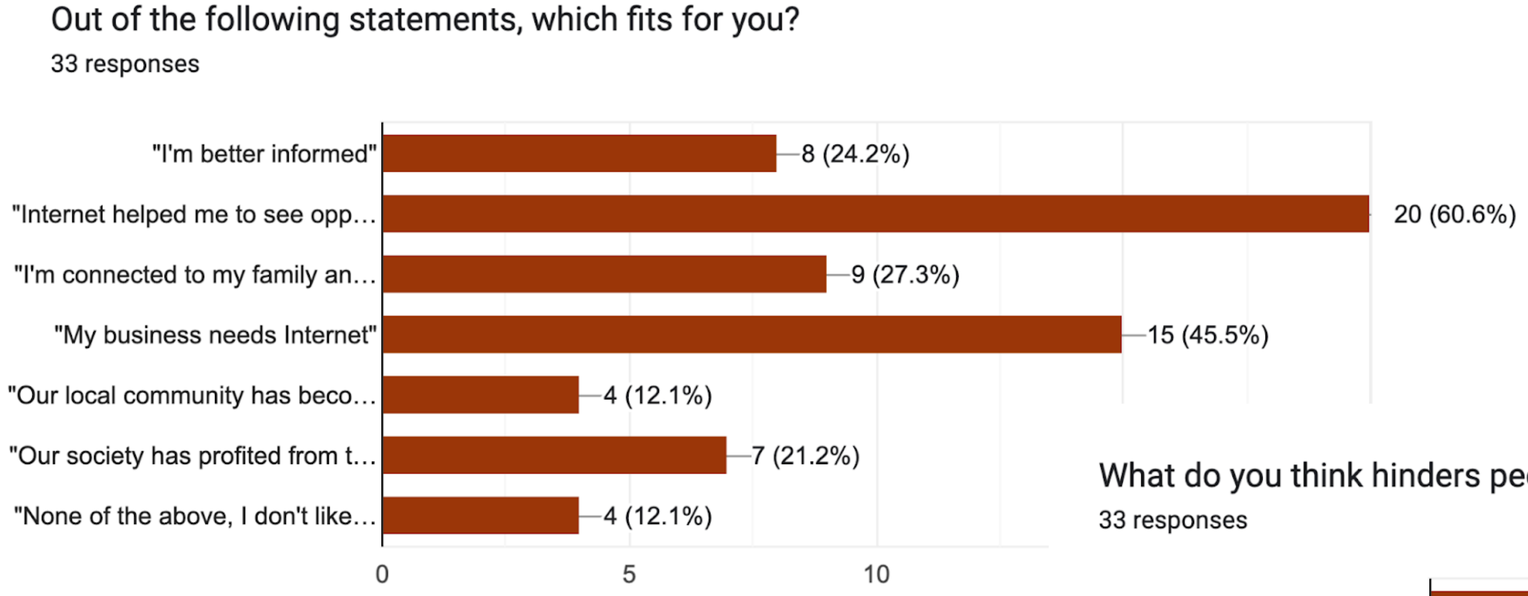
josefnoll@gmail.com Switch accounts

Not shared

your country (TZ, KE, UK... or spell out: Tanzania)

Your answer

Evidence - Gap Map (EGM) Mobile Internet
Drivers & hinders



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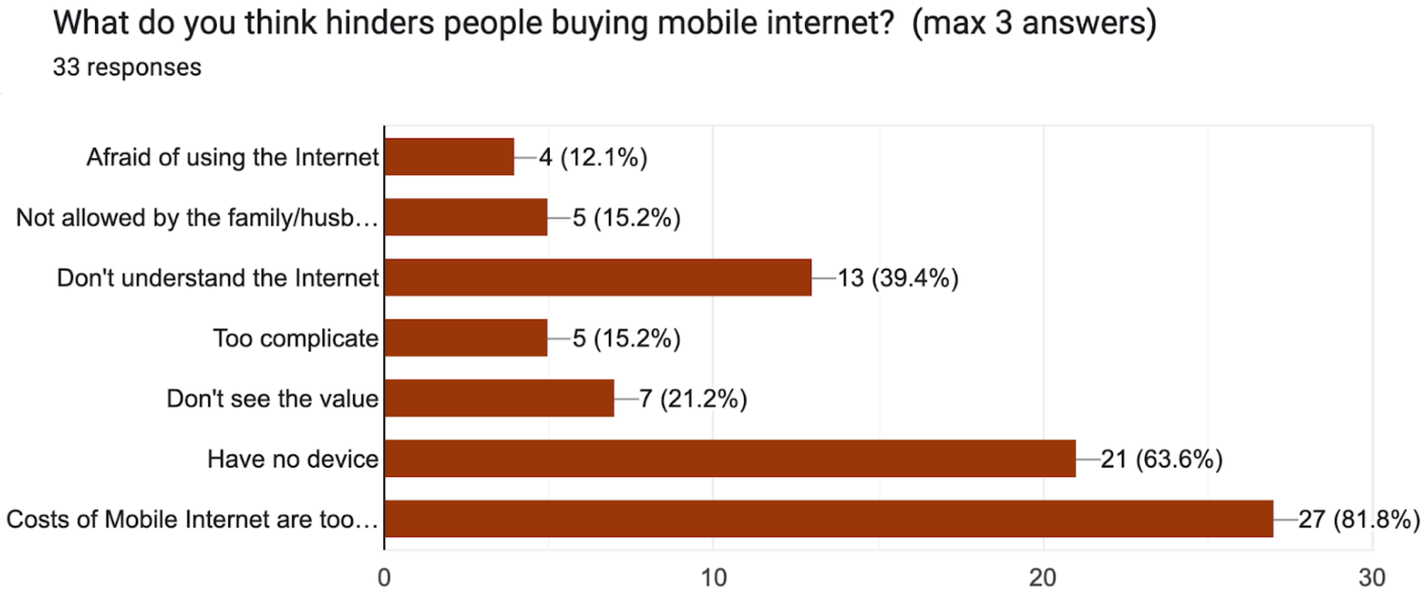
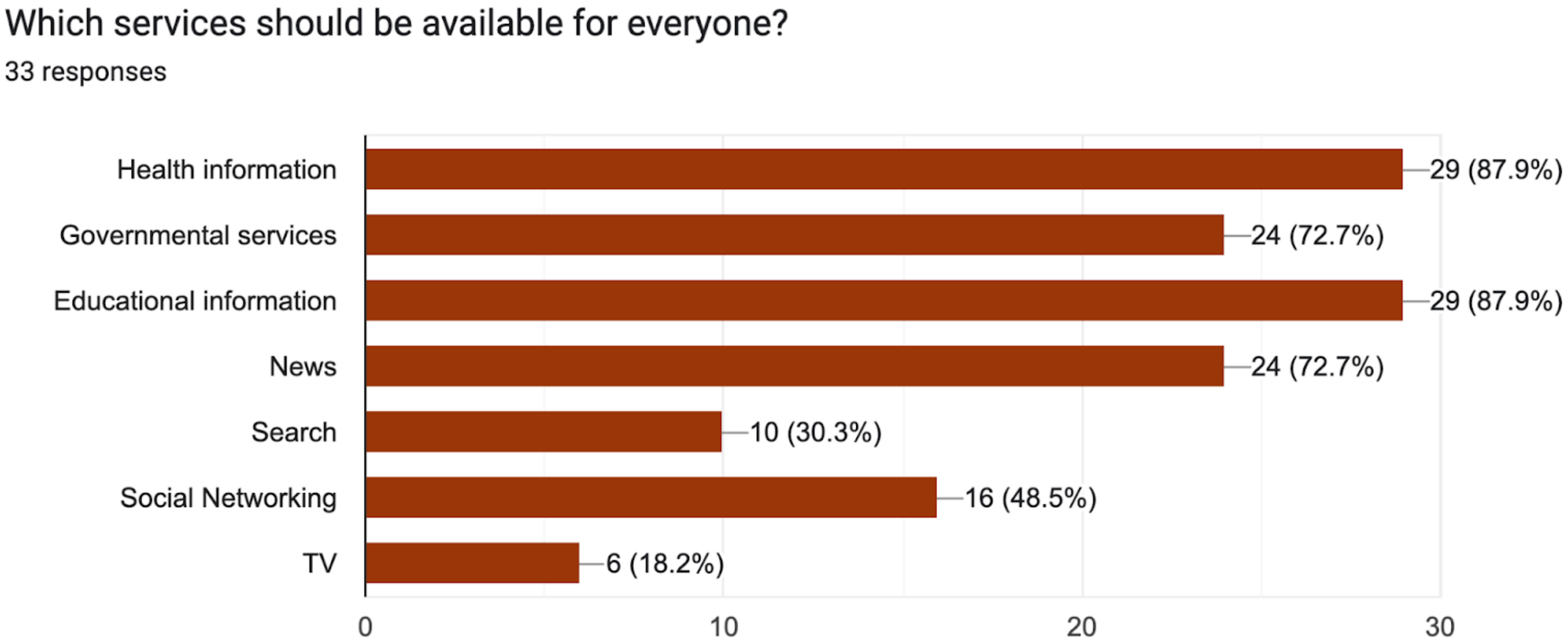


Expectations towards access
Digital Public Infrastructure (DPI)



“Internet had the ability to dismantle the divide.
Internet failed miserably, the divide is bigger than ever.”
Kate Gilmore, Human Rights, UNOG, 2017

Titan.uio.no
Forskningsnyheter om realfag og teknologi

Digitaliseringsminister Nikolai Astrup (H) og direktør Jenny K. Lindqvist i Ericsson under en pressekonferanse om 5G-teknologi i Telias lokaler i Nydalen i Oslo i oktober 2019. Foto: Håkon [illegible] Ampix

–5G-nettet er til fordel for teleoperatørene, ikke forbrukerne

29Apr2020

https://basicinternet.org/5g-is-for-the-benefit-of-telecomm-operators-not-us-as-consumers/

The Business Model
Mobile Internet in SSA

- Western World
  - fixed & mobile & work - about 100-200 USD/family
  - 17.000 base stations, EU: 421.000 towers [Statista]
- Example: Tanzania
  - large distances (3 x size of Norway)
    - expensive access
    - negligible fixed broadband
  - ability to pay: 10-20 USD/family
- Europe vs Africa
  - 6.8% vs 20% of land area
  - 746 million vs 1.3 billion (2018)
  - 112 vs 43 people/km² [Worldbank, Statista]

"RoI in Africa is 3% of RoI in Europe"

17.000 base stations (2022)

https://event.tu.no/filer/insidekonf_v_2019/Eivind_Mikkelsen_Trenger_Norge_100.000_basestasjoner.pdf

How can we “Connect The Future”?
and what are the roles of the Universities

“Universities have a vital role in shaping the future of the society” (Session 369)

“Connect the Unconnected - how can we achieve it?”
Prof Josef Noll, University of Oslo, 2023

Doreen Bogdan-Martin, Secretary-General ITU

What if …

We revisit access

We decentralise the Internet

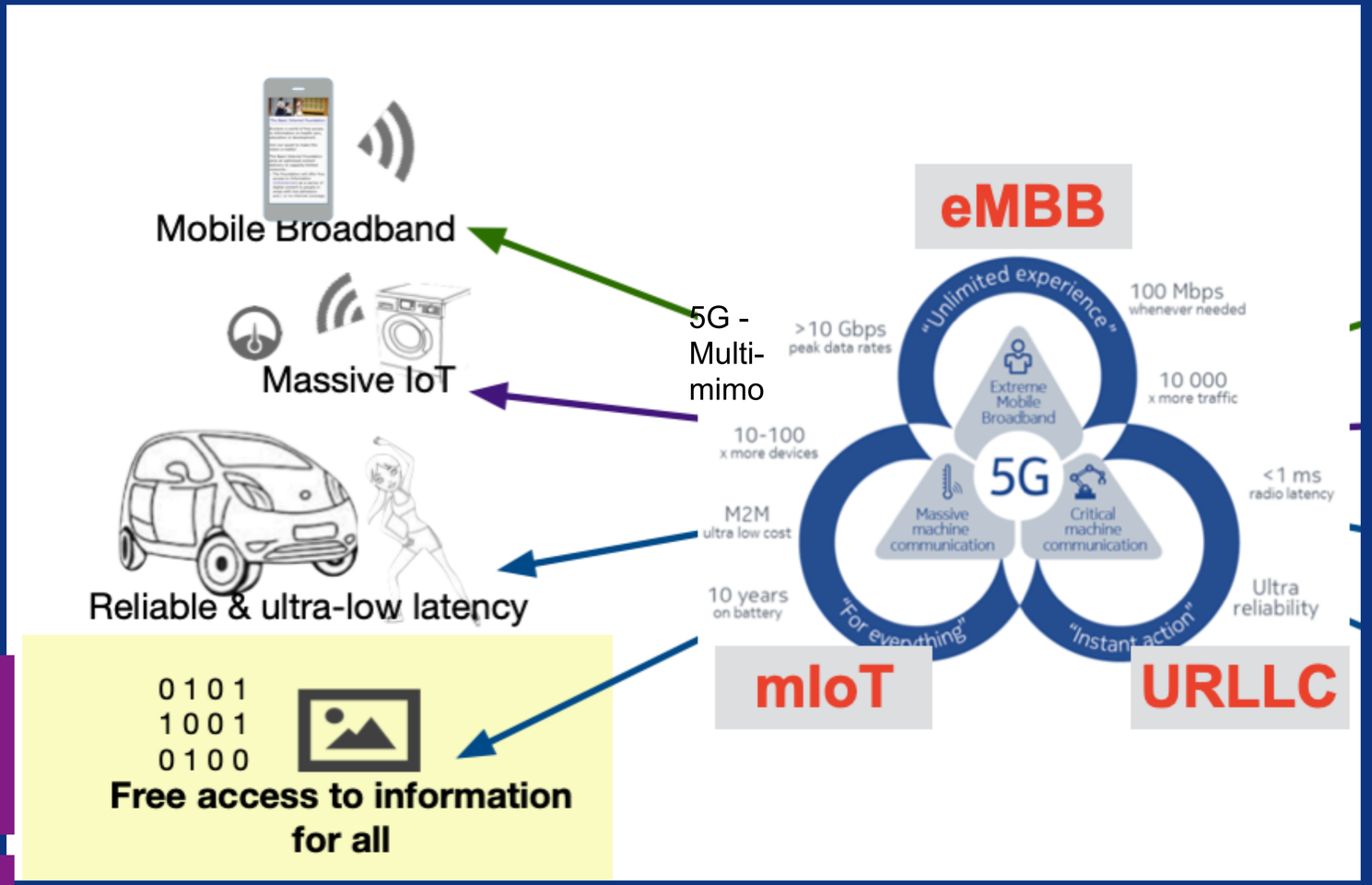
We use Universities to connect

Revisit Access

5G lacks digital inclusion

Road model: pedestrians & cyclists

Digital pedestrians, digital cyclists vs digital cars (broadband)



Internet Lite

as a Digital Public Infrastructure (DPI)

& 6G large cells

Digital Public Infrastructure (DPI)

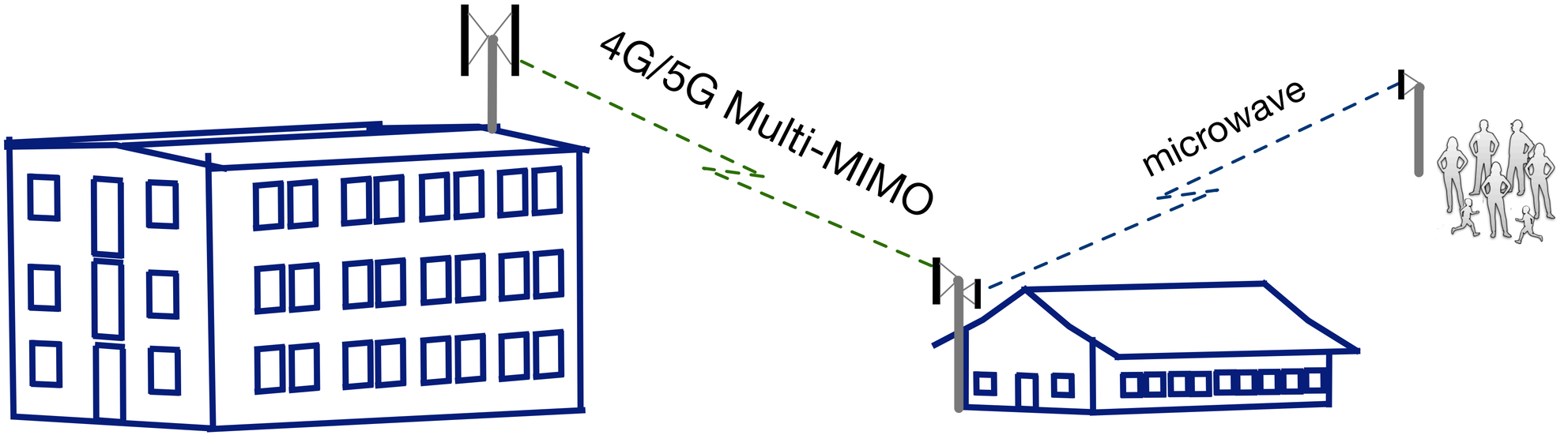
Step 1:

[Source: https://www.gatesfoundation.org/ideas/digital-public-infrastructure]

Step 2:

Instantiation of Digital Public Infrastructure

- build: Regional Competence Centres (RCCs)
- connect: Schools & Communities (CL3)
- provide: Non-profitable content



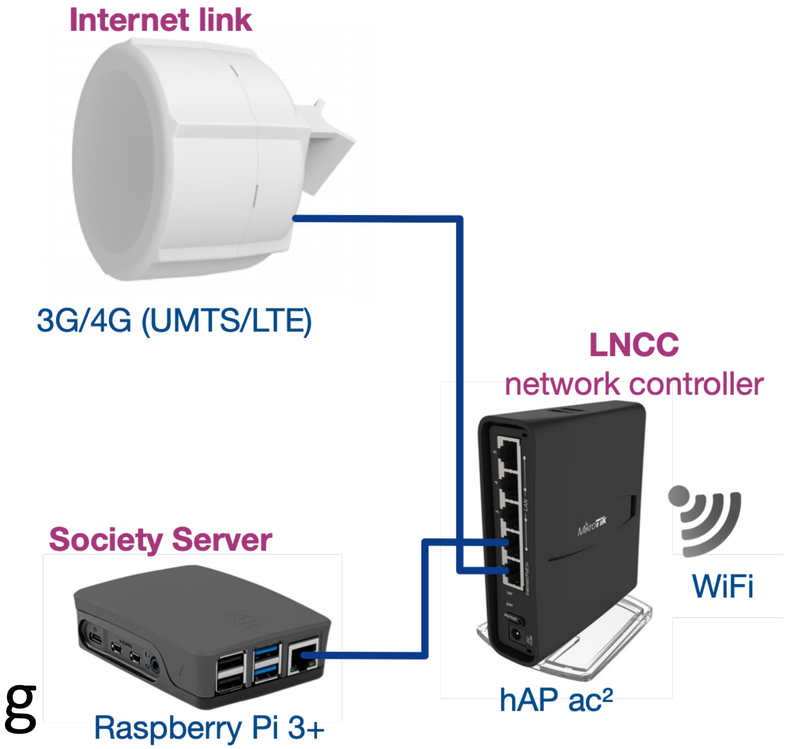
National Research & Education Networks (NRENs)

InfoSpots for **CL3**
Community
Learning &
Living
Labs

Step 1:
Configure & Connect

Rural Internet Access:
The InfoSpot

- Reaching out 20+ km to mobile network
- Affordable solution
  - OPEX <20 USD/month
  - CAPEX
    - 420 USD equipment
    - 1200 USD install & training



Regional Competence Centres (RCC)

- University Collaboration for Connectivity & Digital Transformation


Bure

Step 2:
Create Content &
Involve the users

Digital Health Promotion

foster Digital Health Education
DigitalGlobalHealth.eu

Scene from Antimicrobial resistance (AMR) animation

UiO : Global Health

DigitalGlobalHealth.no

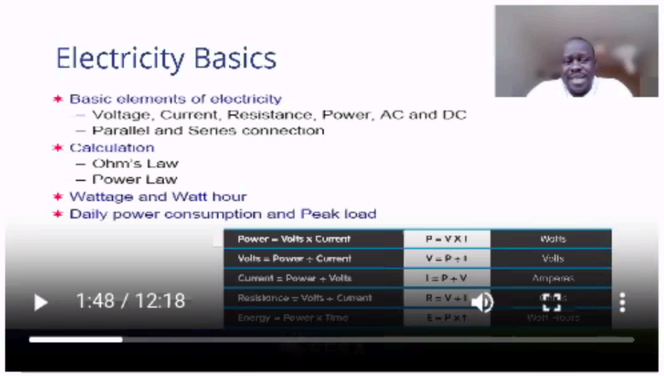
2) Providing the information through animations
Snapshots from platform, HIV and Cysticercosis animations

Results: **Knowledge increase** in
Cysticercosis (TSCT) 60%
Tuberculosis 30%
HIV/AIDS 13%

[Source: Christine Holst, UiO (Nov2019)]

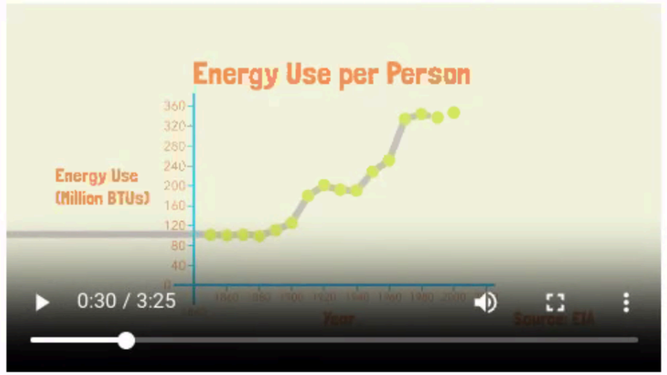
EU project sesa-euafrica.eu

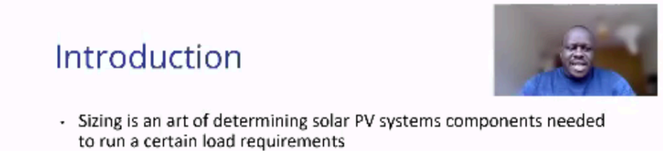
SESA – Smart Energy Solutions for Africa is a collaborative project between the European Union and nine African countries (Ghana, Kenya, Malawi, Morocco, Namibia, Nigeria, Rwanda, South Africa and Tanzania) that aims at providing energy access technologies and business models that are easily replicable and generate local opportunities for economic development and social cohesion in Africa.



01-Basics of Solar Systems

To kick off this course, we start from the very basics. This video will provide you with a better understanding of how electricity is measured, an overview of the solar energy technologies existing, what to consider about sun power, the key component of a PV system (including batteries) to finally touch upon the pros and cons of solar PV technology.
See the slides (.pdf)

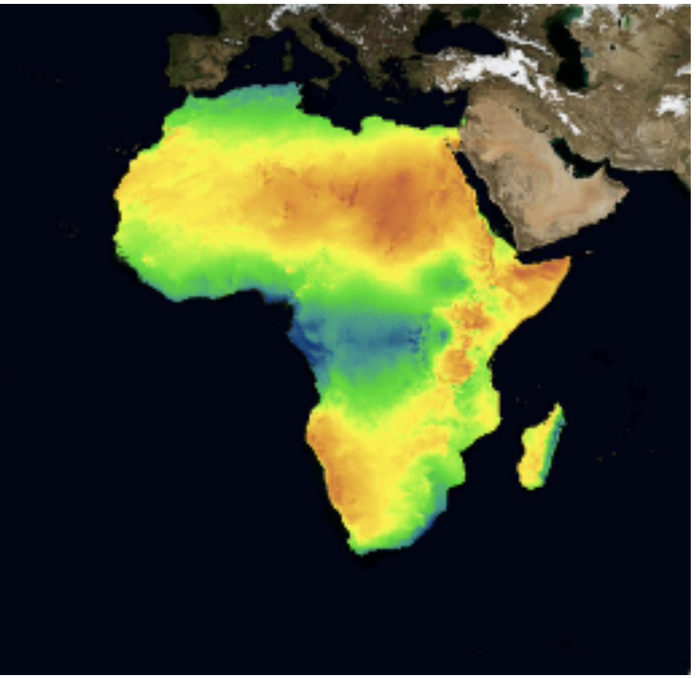




02-Sizing Solar PV Systems

How much power would you need for your site and what size of equipment (batteries, module/panel, charger controller, inverter) would you need for that? The answer is in the video.

Suitable Conditions, and Examples of Solar Power installations



Suitable conditions for Solar Power

Calculations of electricity needs

A house has the following electrical appliance usage:

- Two 15 W lamp used 5 hours per day.
- Two 40 W fan used for 4 hours per day.
- One 68 W 19-in TV used 5 hours per day
- One 17 W satellite used 5 hours per day.

→ Design a solar PV standalone system to meet the load requirement

Assumptions:

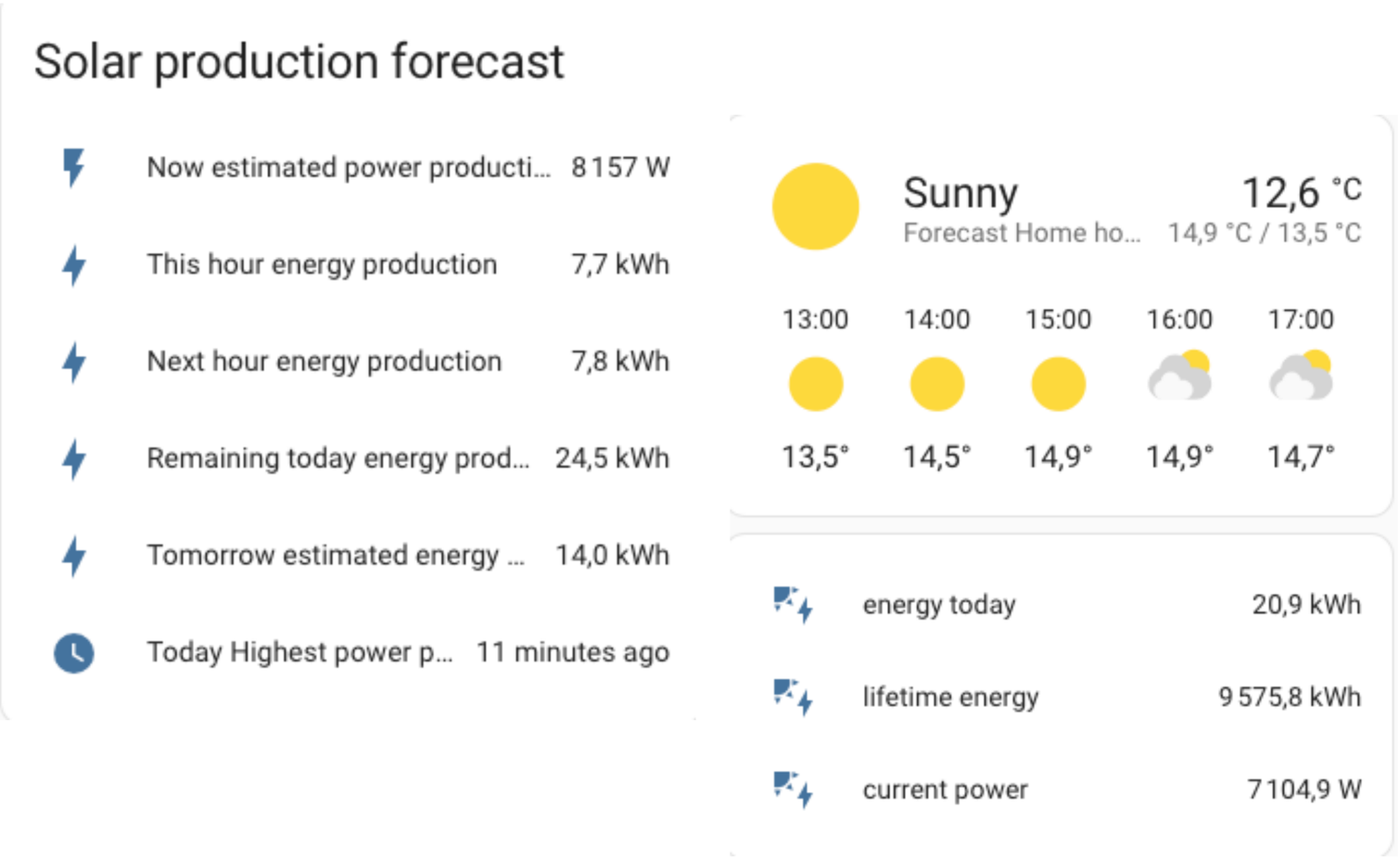
- Location: Kumasi, Ghana
- PV module specification: Pm = 110 Wp; Vm = 16.7 Vdc;
- I_m = 6.6 A; V_{oc} = 20.7 A; I_{sc} = 7.5 A

[Source: toolbox.SESA-euafrica.eu]

From Energy Information to Energy Monitoring & Control

- Models for solar production forecast
- Weather forecast
- Energy Monitoring

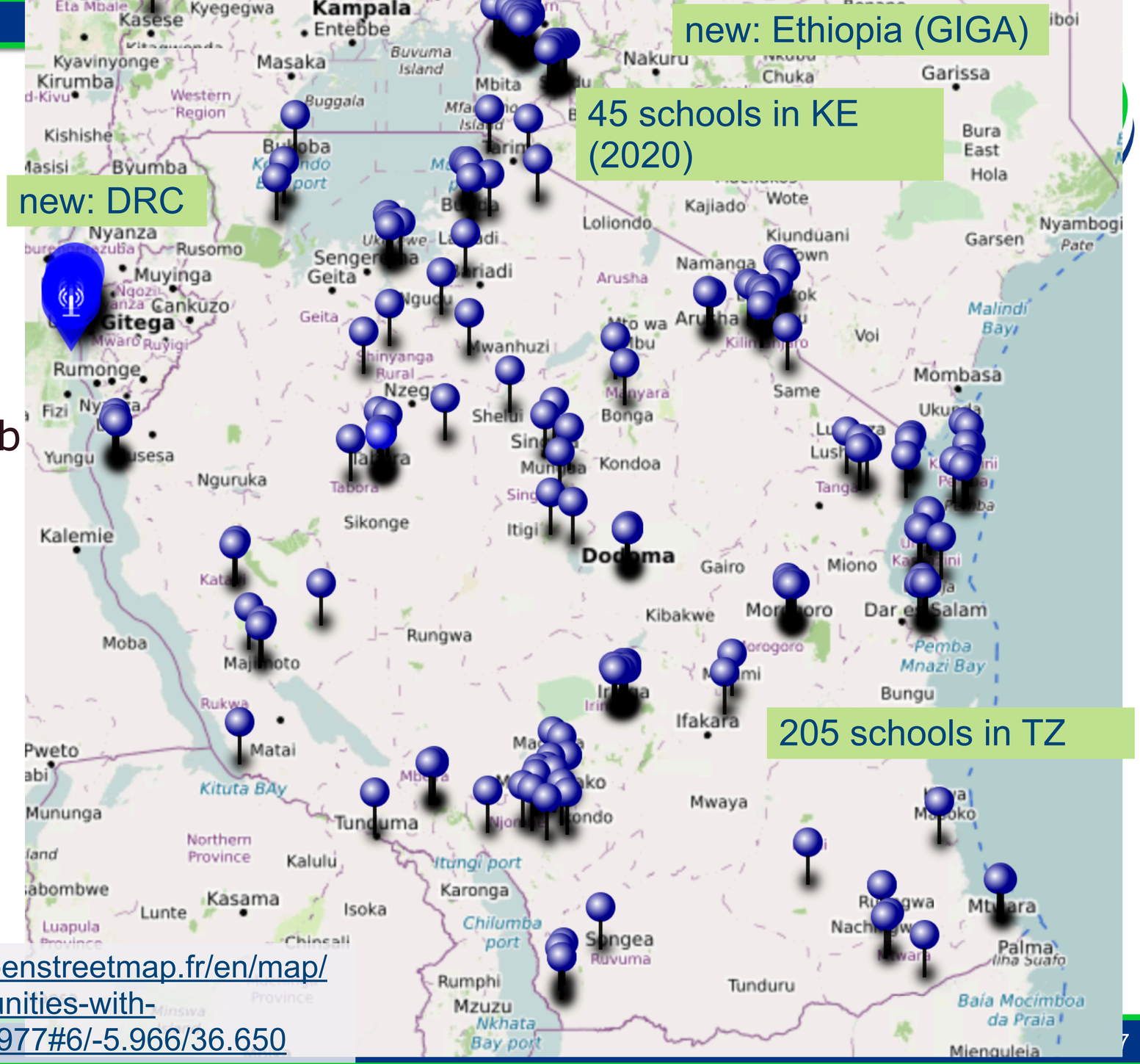
- Empower through knowledge



6G societal vision

- Connectivity everywhere
  - ★every school (GIGA)
  - ★Community Learning & Living Lab (CL3)
- Affordable access
  - ★“5 for 50” (5 Mbps for 50 kTZS = 20 USD)
- Digital Public Infrastructure (DPI)

- Join us: BasicInternet.org



https://umap.openstreetmap.fr/en/map/schools-communities-with-infospots_1011977#6/-5.966/36.650