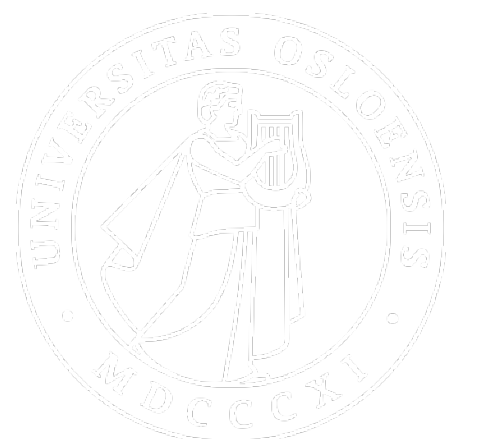**Digital Health Literacy, Seminar, UiA, 6Dec2022**

Access to Digital Health Information - a human right for everyone?

Josef Noll

Professor, Department of Technology Systems (ITS)
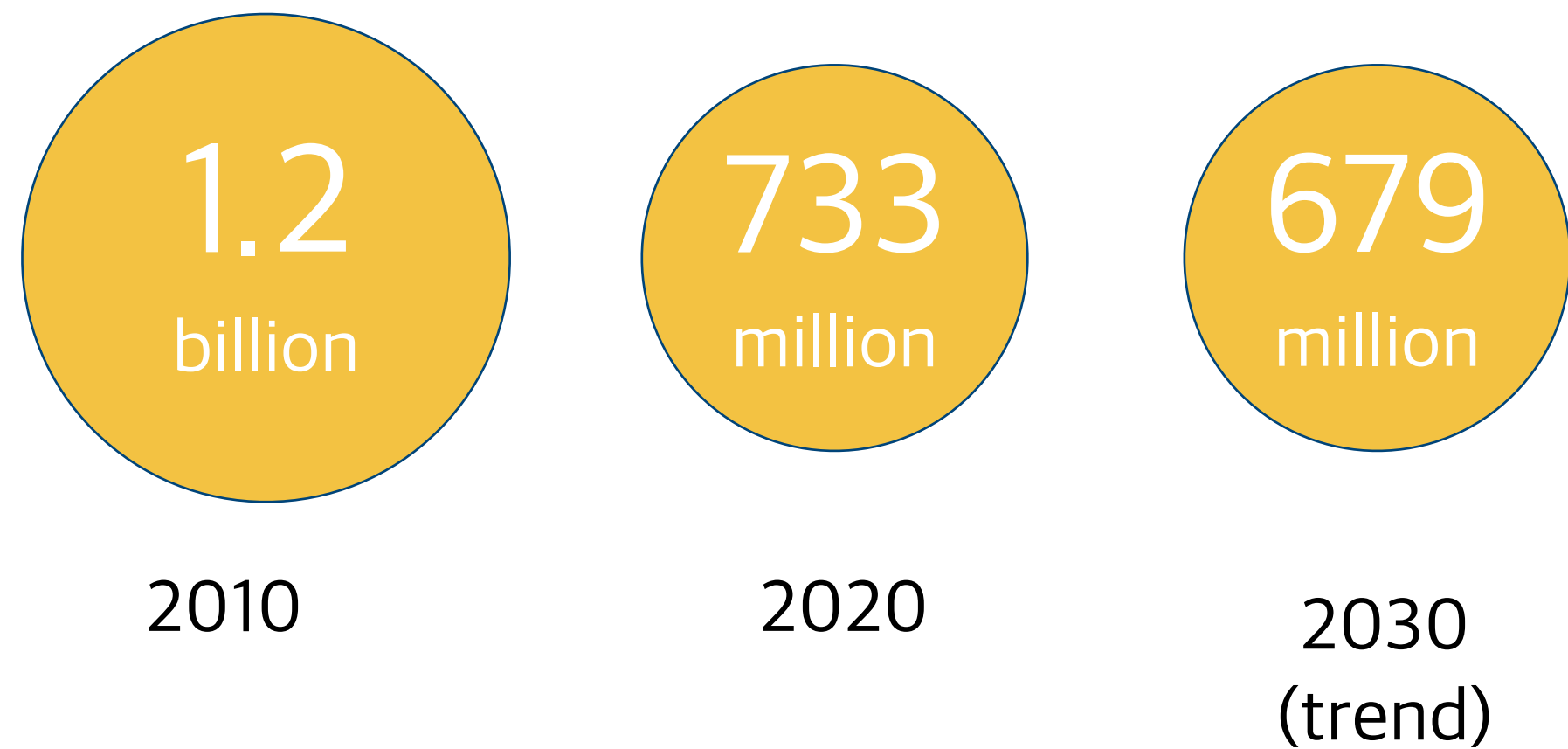Lead Digital Global Health at the Centre for Global Health (CGH)

Energy & Digital, enablers for the SDGs

7 AFFORDABLE AND CLEAN ENERGY

People without electricity

SDG 7.1 calls for universal access to …. energy by 2030

1.2 billion
2010

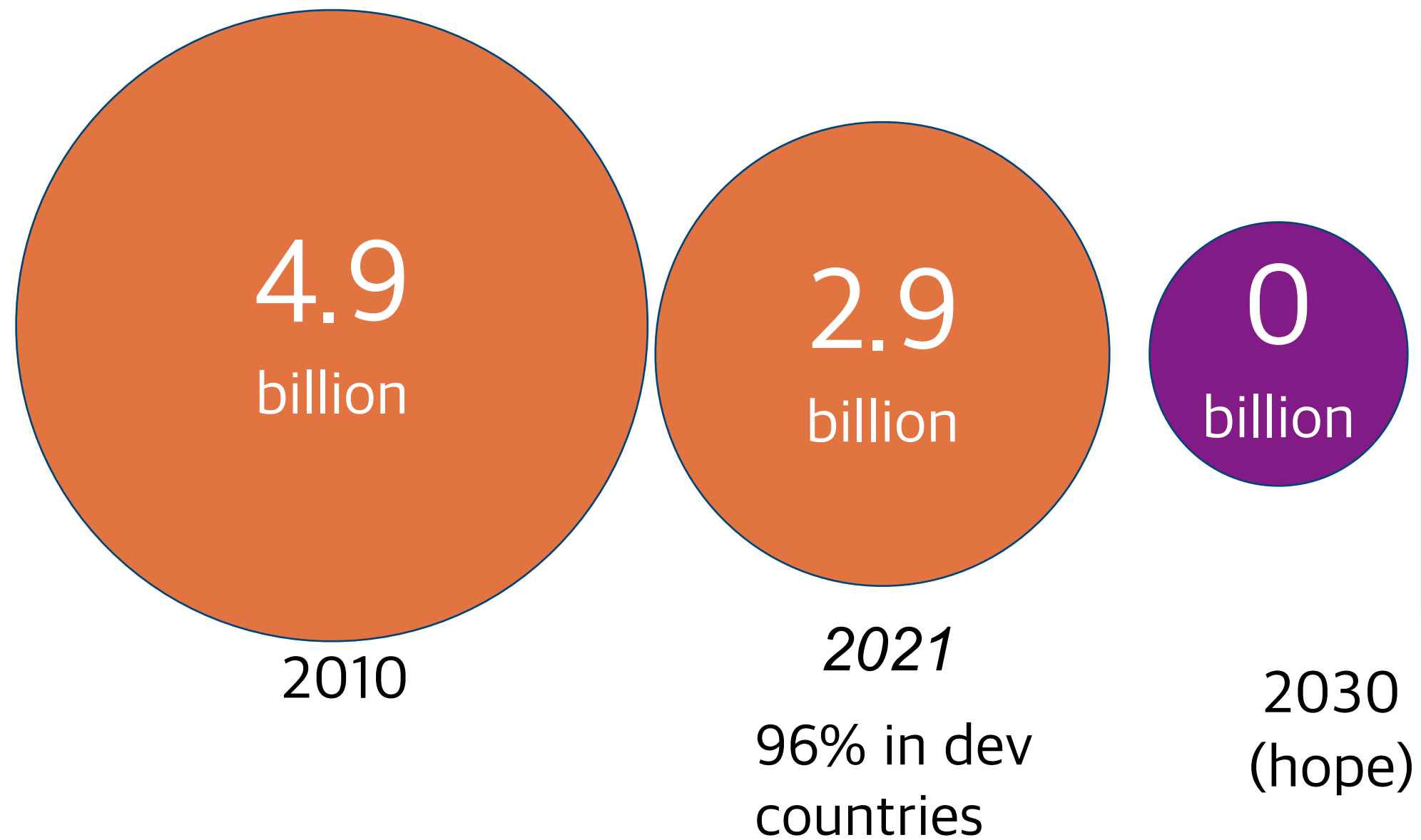733 million
2020

679 million
2030 (trend)

[WorldBank 2021]

https://www.worldbank.org/en/news/press-release/2021/06/07/report-universal-access-to-sustainable-energy-will-remain-elusive-without-addressing-inequalities

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

People not using Internet

SDG 9c calls for universal, affordable internet access by 2020

4.9 billion
2010

2.9 billion
2021
96% in dev countries

0 billion
2030 (hope)

WSIS Forum 2022

[ITU 2010, 2021]

https://www.itu.int/hub/2021/11/facts-and-figures-2021-2-9-billion-people-still-offline/

Inequality in Energy & Digital Access
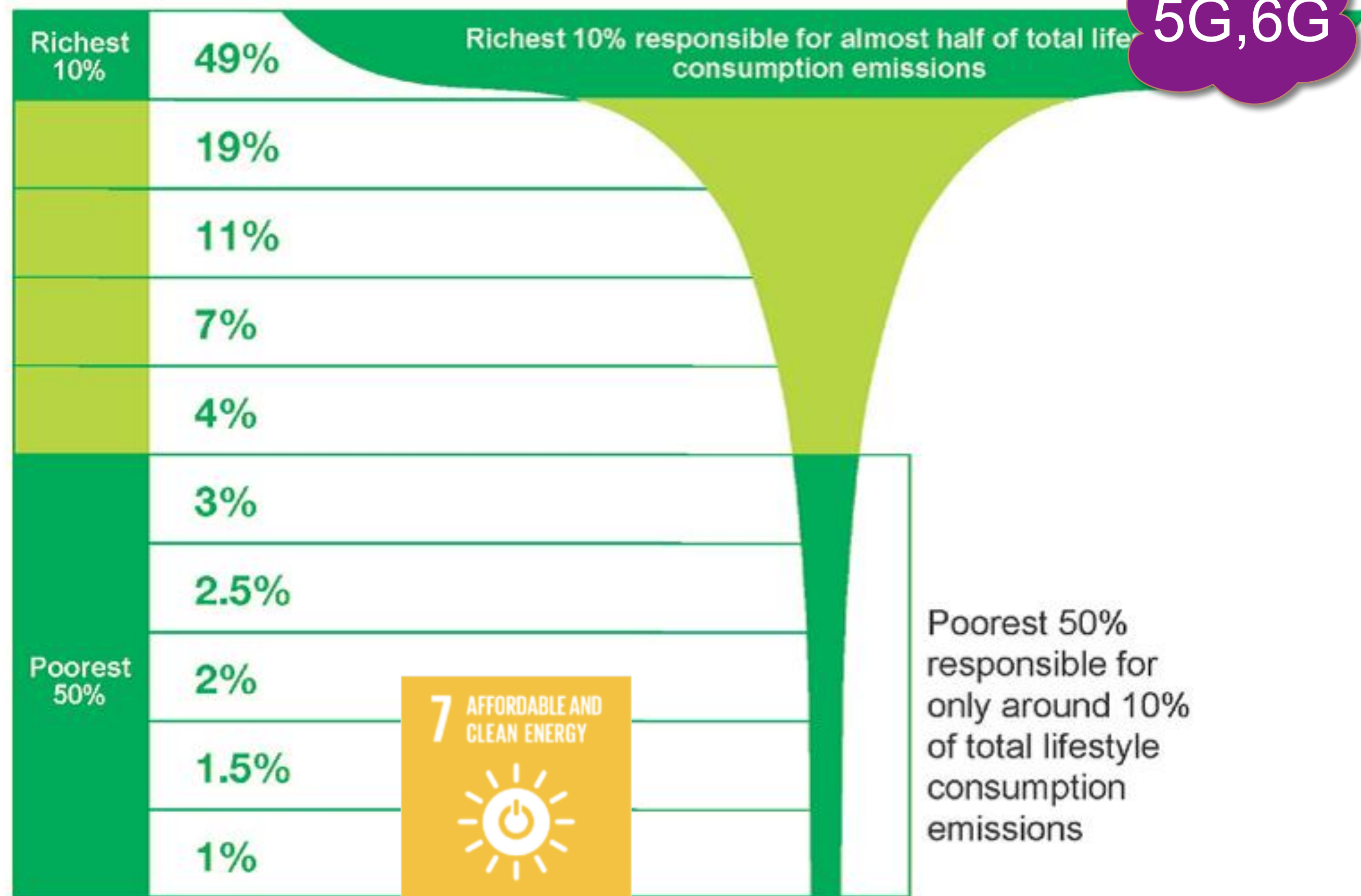

Percentage of CO₂ emissions by world population

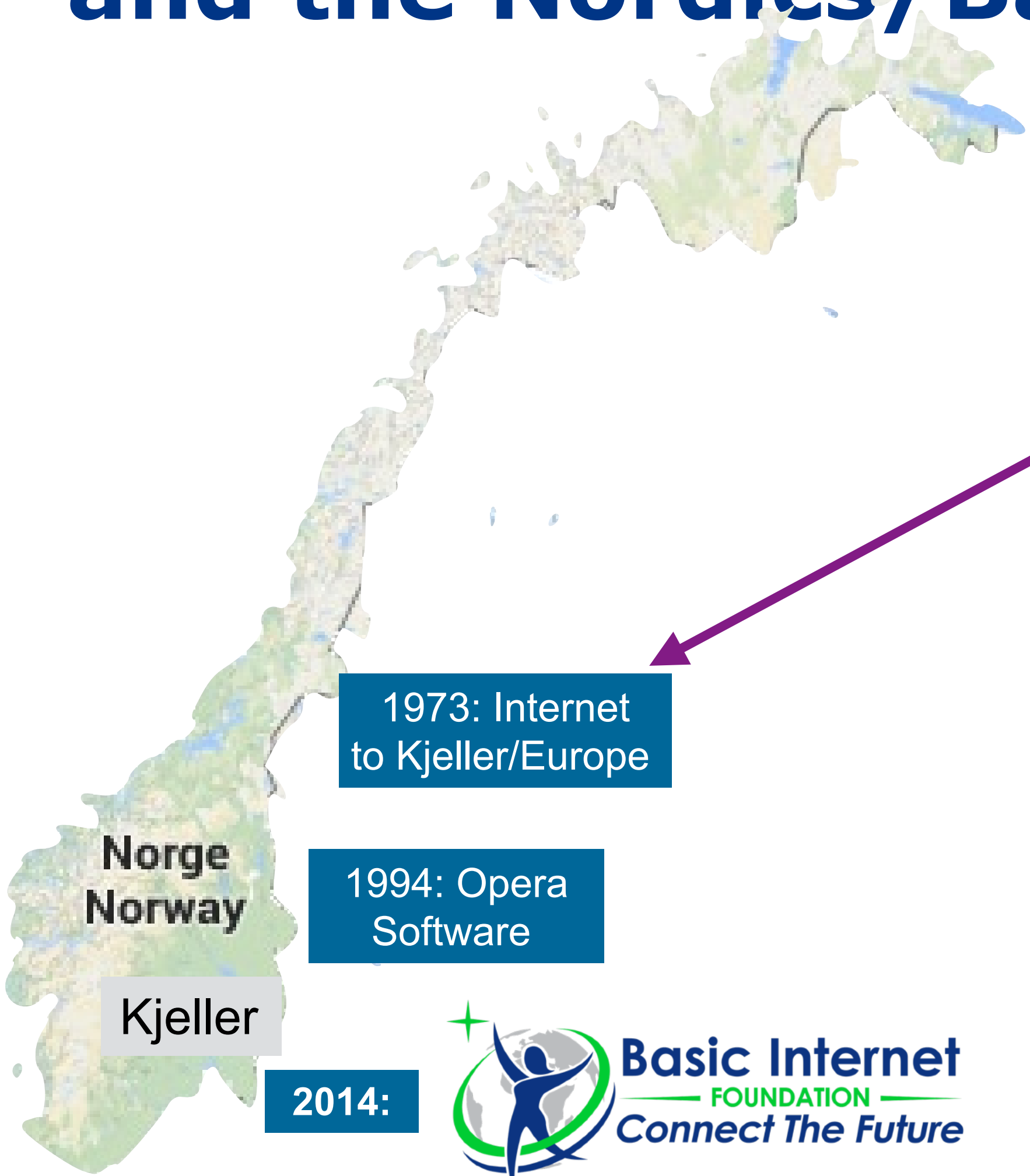World population arranged by income (deciles)

Richest 10%	49%	Richest 10% responsible for almost half of total lifestyle consumption emissions
	19%	
	11%	
	7%	
	4%	
	3%	
	2.5%	
Poorest 50%	2%	
	1.5%	Poorest 50% responsible for only around 10% of total lifestyle consumption emissions
	1%	

5G,6G

7 AFFORDABLE AND CLEAN ENERGY

[Source: Oxfam.org, 2015]

9% NATIONAL ASSESSMENT FOR MEANINGFUL CONNECTIVITY
(2021, BASED ON PILLARS' AVERAGE)

3%
ESTIMATED TO HAVE 4G SPEEDS

15%
ESTIMATED TO OWN A SMARTPHONE

7%
ESTIMATED WITH UNLIMITED ACCESS

10%
ESTIMATED TO HAVE DAILY INTERNET USE

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

[https://webfoundation.org/docs/2022/02/MC_Rwanda_FS_Screen_V1.pdf]

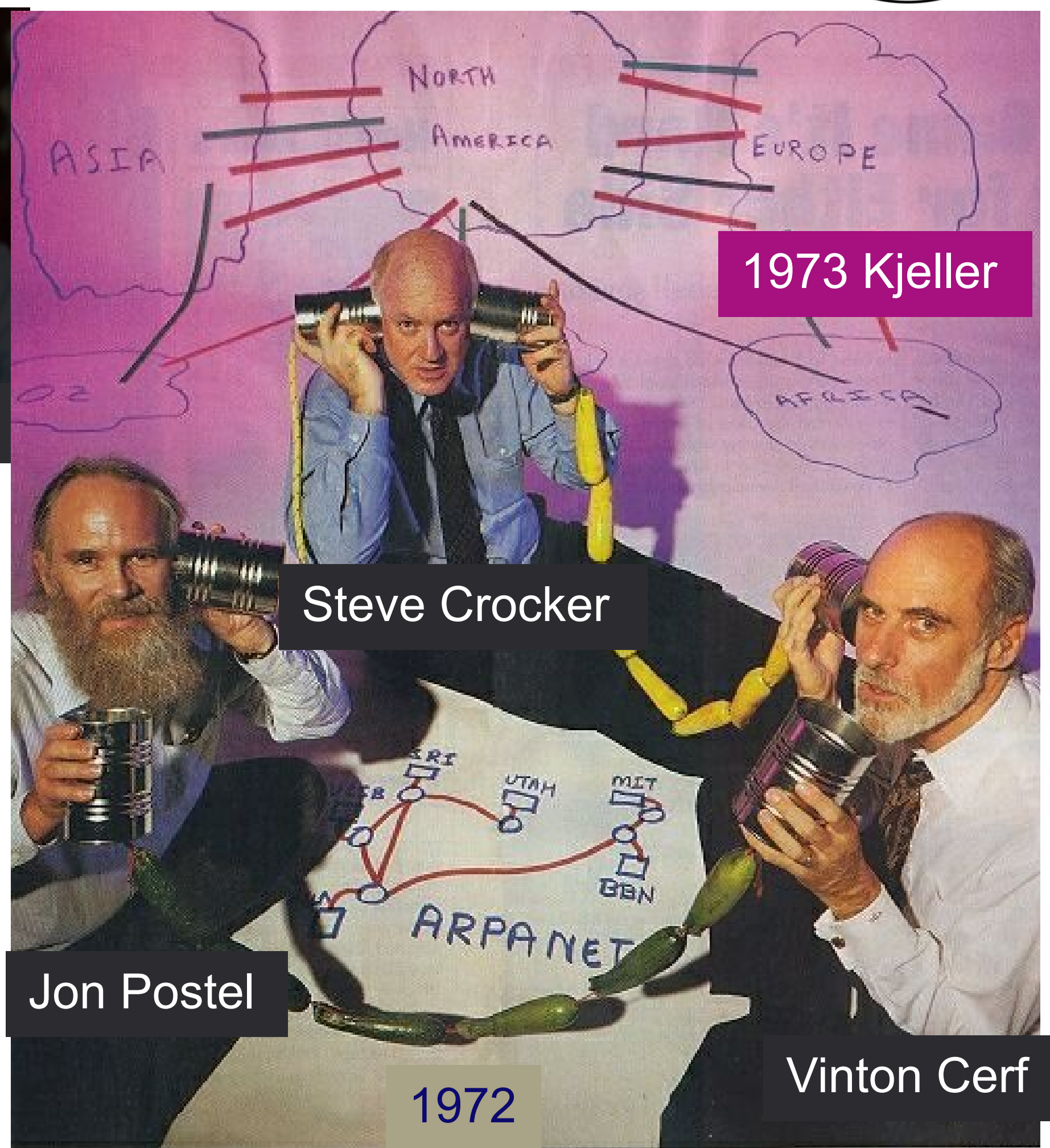# Inclusive digitalisation in Norway and the Nordics/Baltics (N8)

1973 Kjeller

Yngvar Lundh   **Pål Spilling**

Steve Crocker

Jon Postel

Vinton Cerf

1973: Internet to Kjeller/Europe

Norge Norway

1994: Opera Software

Kjeller

2014:

Basic Internet
FOUNDATION
Connect The Future

KJELLER
INNOVASJON

Nordics & Baltics (N8)
- php, OpenSource, Linux, Skype, Spotify
- Opera Software, FAST search
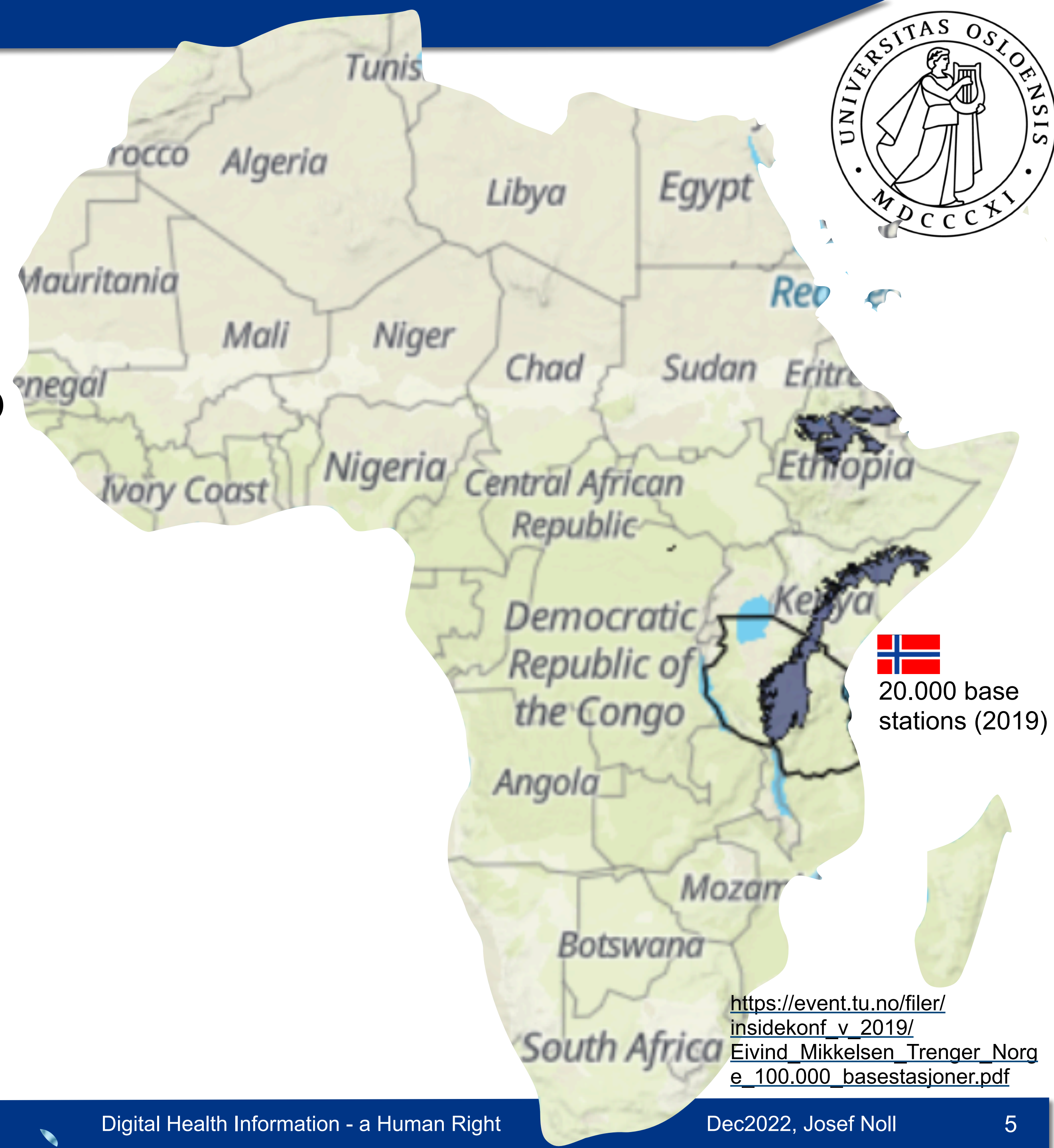- Nokia, Ericsson
- GSM
- GovStack.global, X-Roads

1972

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

The Business Model of access to Internet

➡ Western World
  - fixed access (home, work) - 45 USD
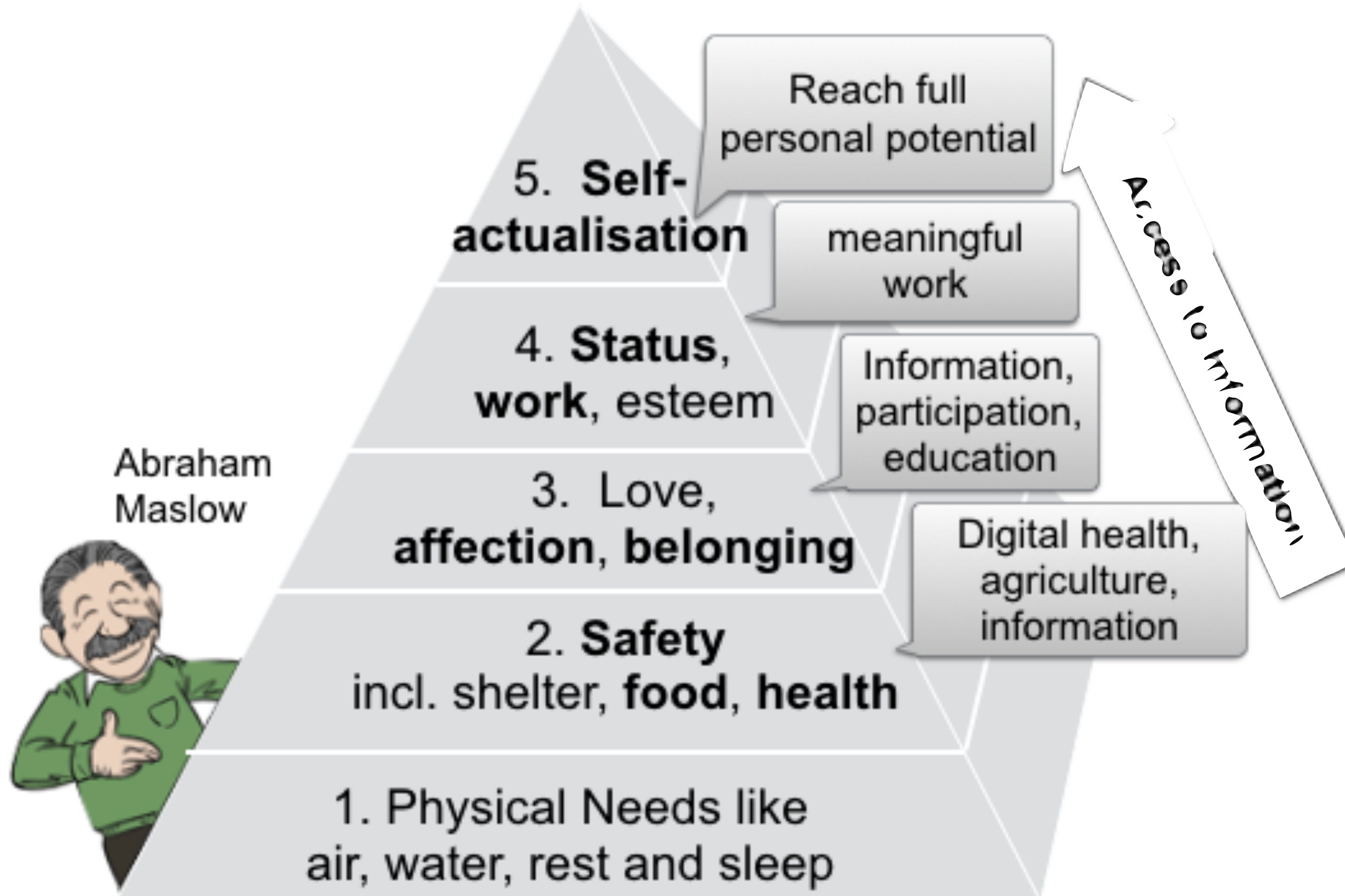 - mobile access - 20-30 USD

➡ Africa
  - large distances
    - expensive access (500 USD for 5 Mbps)
    - negligible fixed broadband
  - ability to pay

20.000 base stations (2019)

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

How to we reach every single human?

[adopted from: https://shift-magazine.net/2015/11/17/the-economics-of-human-need/]

➡ Digital Public Goods (DPGs) & GovStack
- ▪ decentralised DPGs
- ▪ digital transformation
- ▪ GovStack for local governments
- ▪ digital health empowerment

Community involvement
for meaningful access tailored towards the needs & capabilities

➡ WIR vs ICH (*we vs me*)
- ■ **W**erte (*values*)
- ■ **I**nclusivität (*inclusivity*)
- ■ **R**esilience

Self-actualisation
Entertainment

Empowerment, Work
Digital Transformation

Explore, Affection
Opportunities

Value creation
Trust & confidence

The Internet failed

"Internet had the ability to dismantle the divide. Internet failed miserably, the divide is bigger than ever."
Kate Gilmore, Human Rights, UNO

Universal Declaration of Human Rights - digital world perspective

➡️ Article 1. Free and **equal**. ...

➡️ Article 2. Freedom from **discrimination**. ...

➡️ Article 3. Right to **life** and to live in freedom and **safety**

➡️ Article 4. Freedom from slavery. ...

➡️ Article 5. Freedom from torture. ...

➡️ Article 6. Right to recognition before the law. ...

➡️ Article 7. Right to **equality before the law**. ...

➡️ Article 8. Access to **justice**.
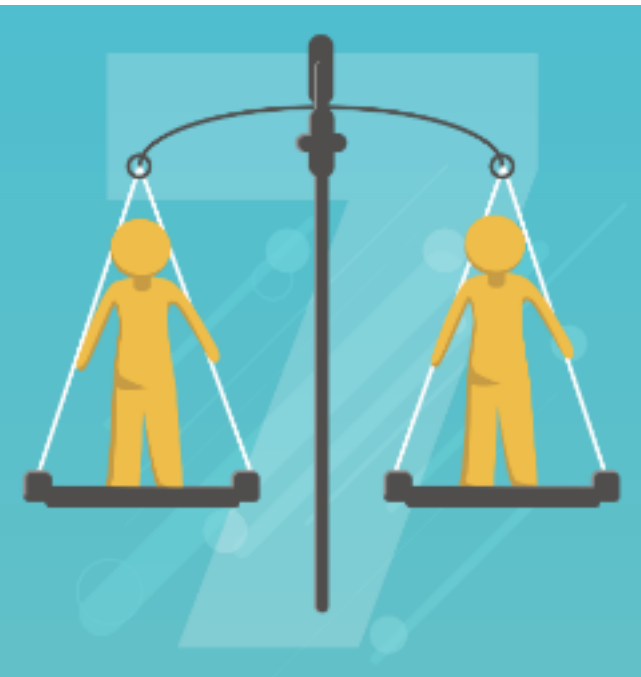
Rights

7.   (1)   This Bill of Rights is a cornerstone of democracy in South Africa. It enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom.

      (2)   The state must respect, protect, promote and fulfil the rights in the Bill of Rights.

I age

Equality

9.   (1)   Everyone is equal before the law and has the right to equal protection and benefit of the law.

Human dignity

10.   Everyone has inherent dignity and the right to have their dignity respected and protected.

digital world

Access to information

32.   (1)   Everyone has the right of access to—
        (a)   any information held by the state; and
        (b)   any information that is held by another person and that is required for the exercise or protection of any rights.
      (2)   National legislation must be enacted to give effect to this right, and may provide for reasonable measures to alleviate the administrative and financial burden on the state.

The Constitution
OF THE REPUBLIC OF SOUTH AFRICA, 1996

As adopted on 8 May 1996 and amended on 11 October 1996 by the Constitutional Assembly

What if …

We revisit access

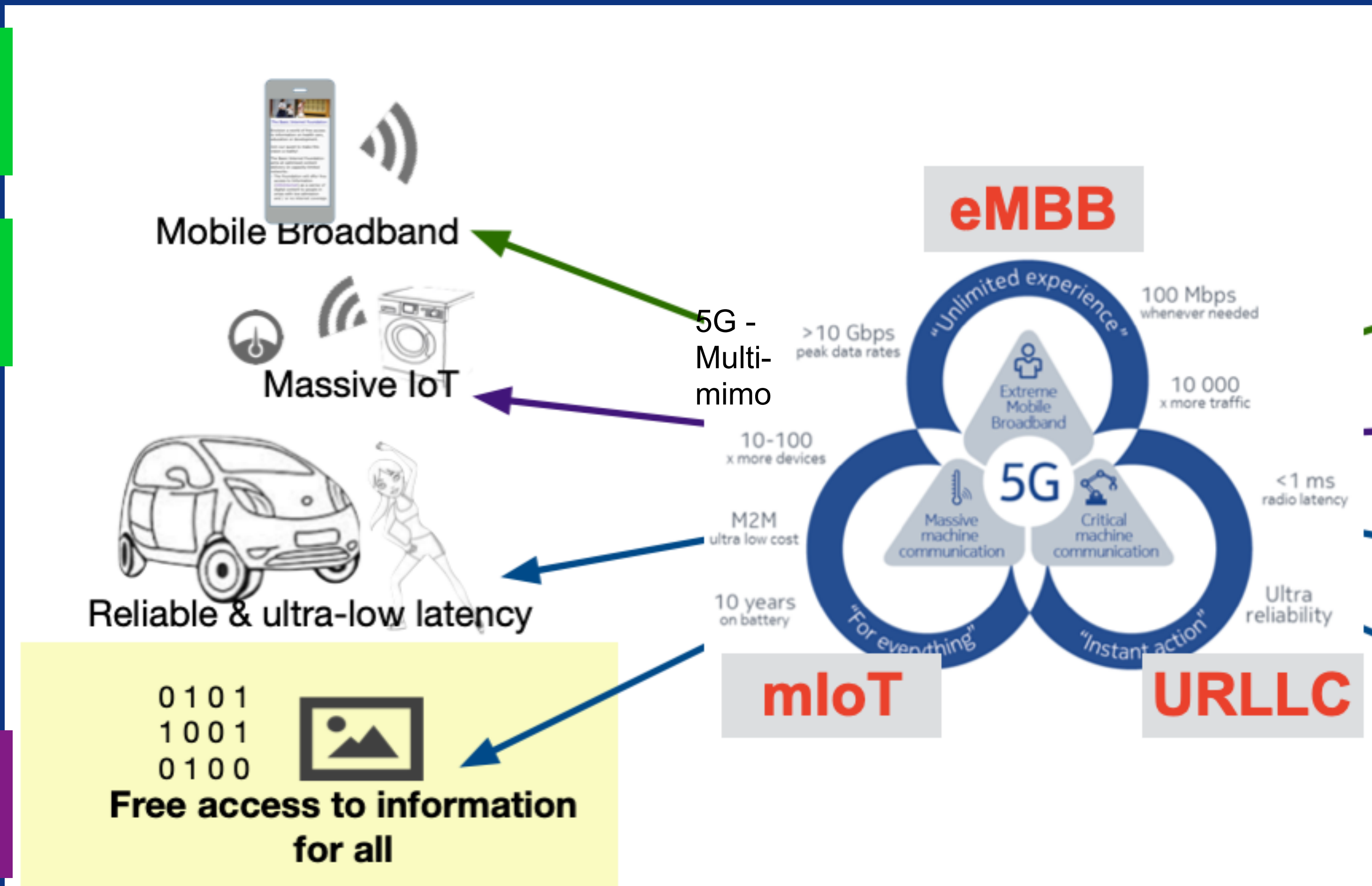**We decentralise the Internet**

We use Universities to connect

Revisit Access

Road model: pedestrians & cyclists

Digital pedestrians, digital cyclists vs digital cars (broadband)

Internet Lite

How can we "Connect The Future"?
Specific focus: Girls & Women

Josef Noll @josefnoll · Jun 2

Amazing opening by @ITU @ITUSecGen Houlin Zhao, setting the scene for connecting every single human by 2030, and @meilinfung, addressing the history of the Internet and #NRENs to connect schools. We're in @CateKimambo @RosalynnMworia @UcsafT @AheriNet @cisskisumu @WSISprocess

Empower my dreams

through Community Learning Living Labs (CL&L)

Digital Health Promotion

DigitalGlobalHealth.no

The role of Universities
"more toys for boys - or societal impact?"

➡ Inclusive and empowered (digital) societies

➡ From NRENs to Schools and Communities

➡ Regional Competence Centres (RCCs) for
  - the Digital Transformation
  - Connect Schools & Communities
  - practical experiences

4G/5G Multi-MIMO

microwave
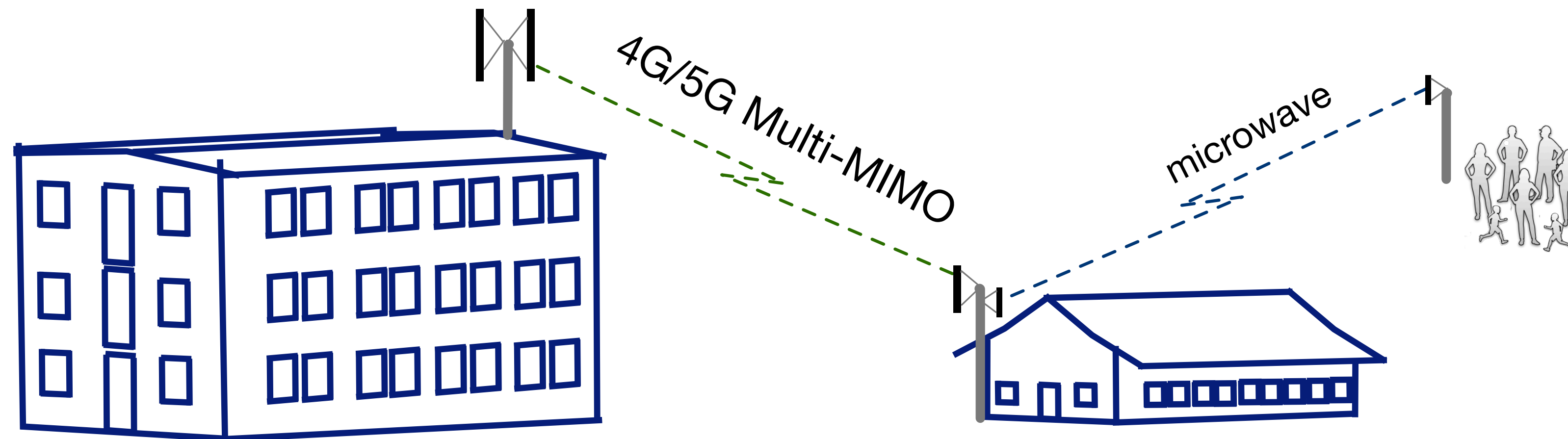
InfoSpots for **CL&L**
Community
**L**earning &
Living
Labs

Conclusions:
What if…

➡ Policy "Information for everyone"
- Freemium Model,
- Internet Lite, AMP, other lightweight

➡ School/Village Communication
- NREN to SchoolConnectivity to CL&L
- 4G/5G MIMO

➡ Community Learning Living Lab (CL&L)
- InfoSpot in every village
- local empowerment

**Access to Health Information -
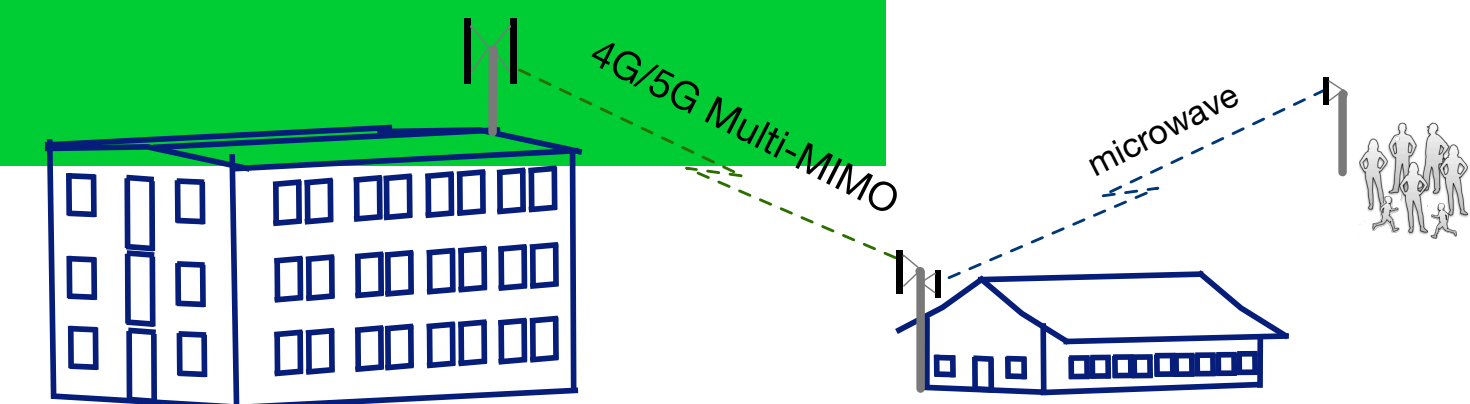a basic Human right**

We revisit access

We decentralise the Internet

We use Universities to connect

4G/5G Multi-MIMO

microwave
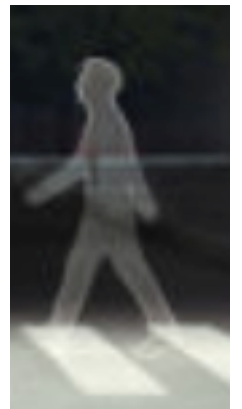
Histories

"My mobile is more important than a weapon"

Head of Mbaash, TZ

Catherine R Kimambo connecting her first village

https://vimeo.com/368147538 - 2020

Mount Kenya - our cultural heritage
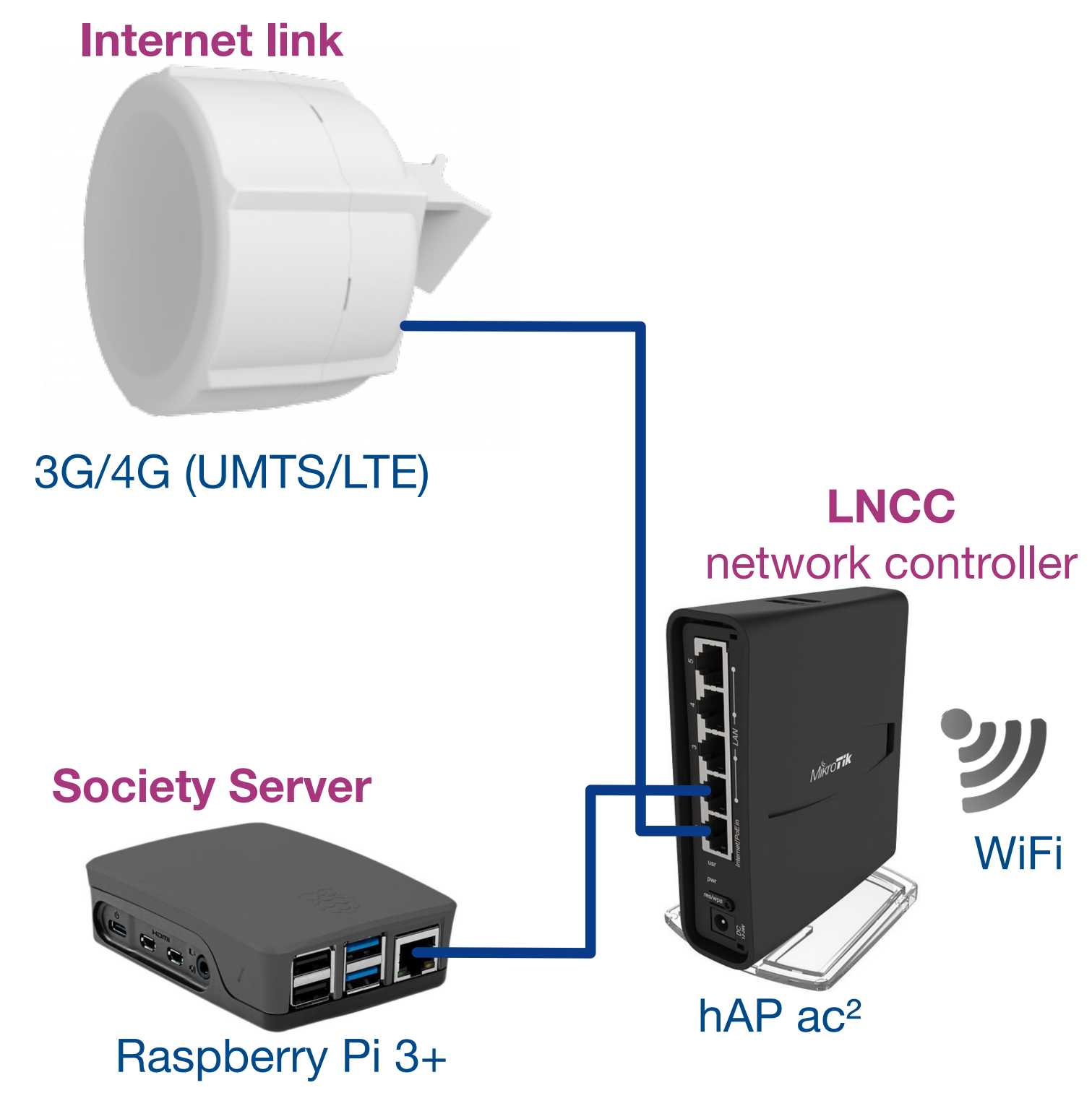
Usingo Secondary School, KE

Solving the challenge of access

→ wireless information spot (InfoSpot)

→ Reaching out >20 km to mobile network

→ Affordable solution: OPEX <20 USD/month

Internet link

3G/4G (UMTS/LTE)

LNCC
network controller

Society Server

WiFi

hAP ac²

Raspberry Pi 3+

#1: Every village needs a wireless Information Spot with free access to information

"Connect the Unconnected"
Izazi

Basic Internet Foundation

Antenna

Village office

Installation time: 1,5 h
catching the signal from the Vodacom
tower in Migoli (~10km away)

45 schools ...ents connected Sep/Oct 2021

Bishop Okoth Girls Mbaga Sec
1 750 girls

Ulafu Mixed Sec
450 girls & boys

Obama Mixed Secondary
550 girls & boys

Malele Mixed Sec
575 girls & boys

Ratta mixed sec
780 girls & boys

Kisumu county

Siaya county

- parallel to GIGIconnect first
- **5 Mbit/s over LTE** (dedicated SIM cards)
- 58 USD/month

Ratta mixed sec
780 girls & boys

sponsored by our premium partner

DENT

Kolweny Kingsway Sec
342 girls & boys

Homebay county

Bishop Linus Okok Girls
High School, 1660 girls

St. Paul Oriang
380 boys & girls