



**Digital Oxygen Meet-up, 10May2019, München**

# **Basic Internet - Bridging the Digital Divide**

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# Meet-up - good to be back

- “The last time we were connected by wire was at birth!” [Motorola]
- Digital Inclusion and Societal Empowerment
  - ➔ my journey from DE and NL to NO
  - ➔ Digital in Norway, Germany and Worldwide
  - ➔ From IoT-Security to Societal Security
- Internet Lite for All - your help & support
  - ➔ InfoInternet Standard
  - ➔ Village Platform
  - ➔ Publicity, Political support.....





Starting Point:

**JOSEPH E. STIGLITZ**  
WINNER OF THE NOBEL PRIZE IN ECONOMICS



# THE PRICE OF ~~INEQUALITY~~

HOW TODAY'S DIVIDED SOCIETY  
ENDANGERS OUR FUTURE

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





# Kjeller: Internet, 2G, 3G, ...



## 1973: Internet (Arpanet) reached Europe (Kjeller)

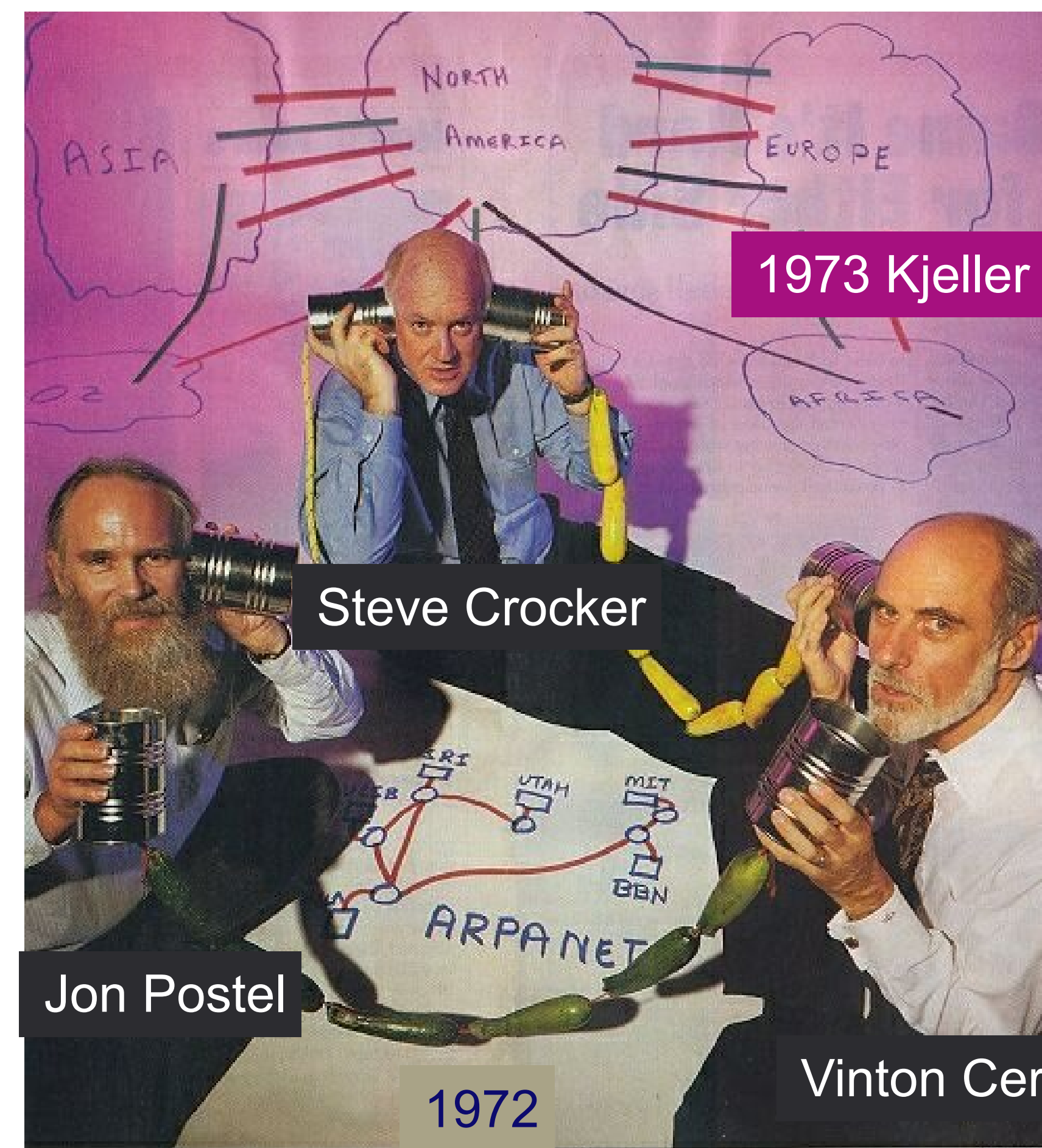
1973: Internet to Kjeller/Europe

1994: Opera Software

2014: Basic Internet «half a dollar is enough»

Norge  
Norway

Kjeller

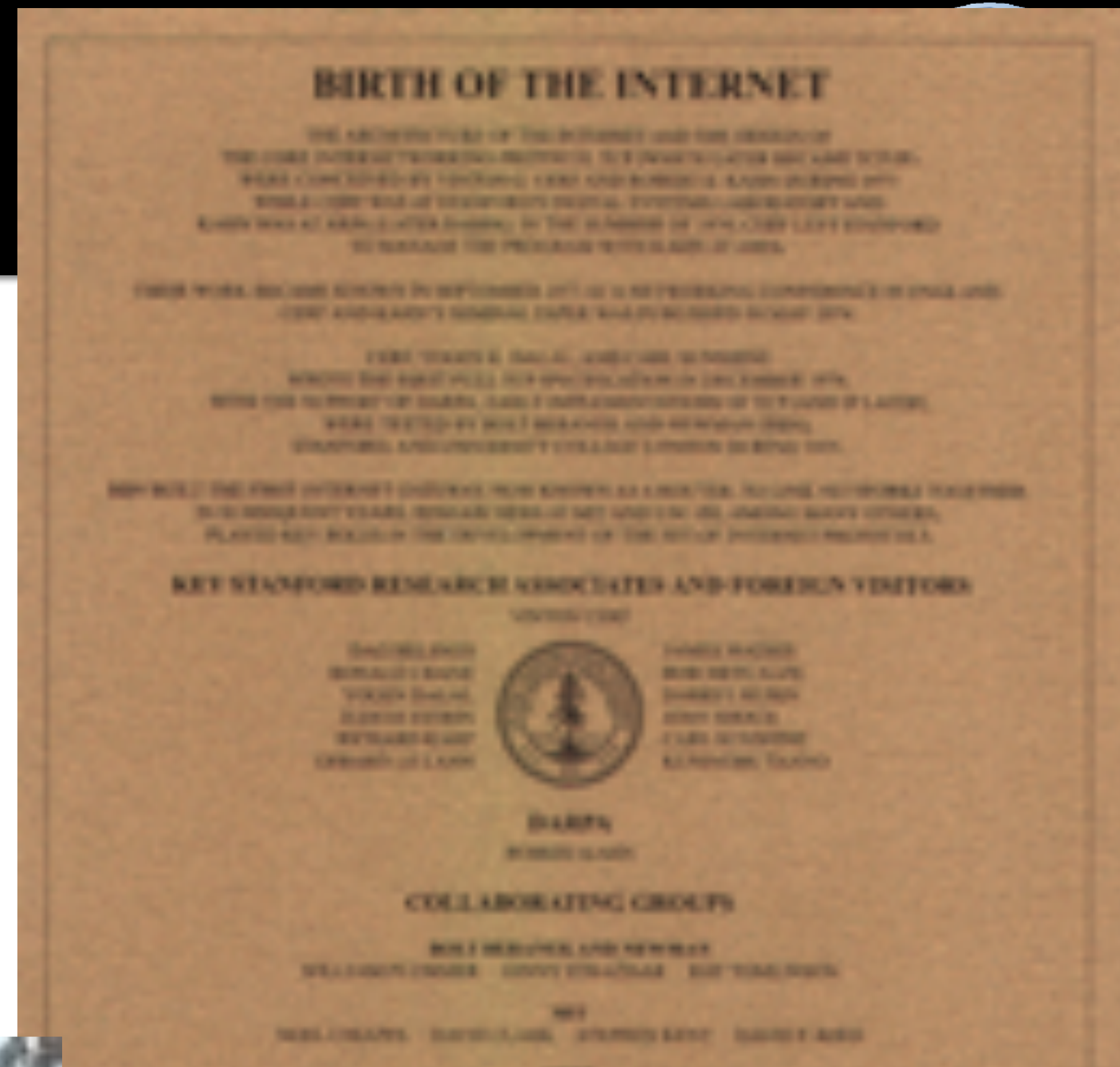


Source: <http://www.michaelkaul.de/History/history.html>



# The Internet and Scandinavia

- Internet: June 1973
- List\_of\_Internet\_pioneers [Wikipedia]
  - Yngvar Lundh, **Paal Spilling**
- Application development
  - .php, OpenSource, Linux, Skype, Spotify
  - OperaSoftware, FAST Search
  - Nokia, Ericsson
  - Telenor, Telia
- Mobile Internet:
  - GSM
  - Service adaptation



Vint Cerf

Sigrid Cerf



Yngvar Lundh

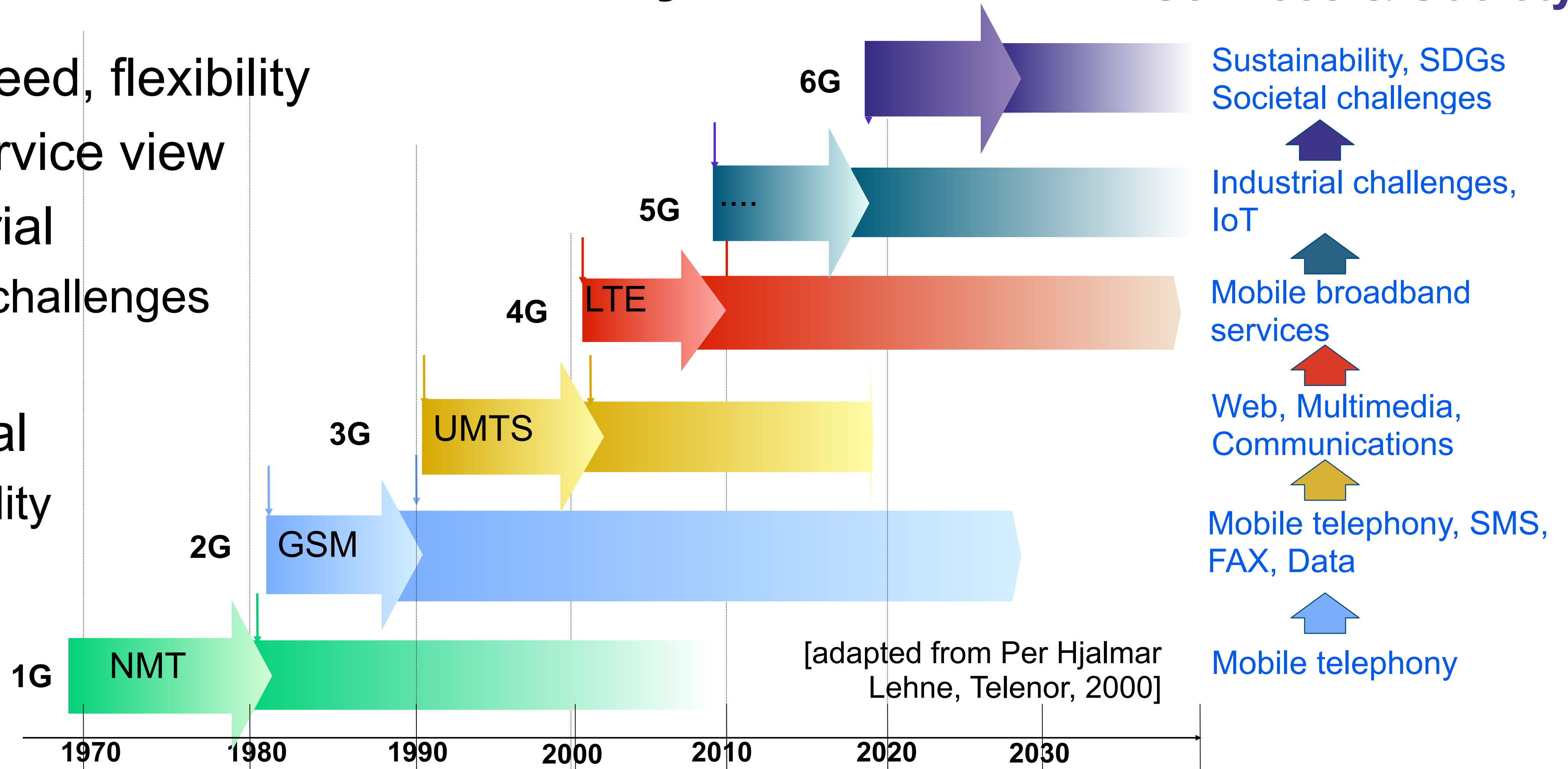
Pål Spilling



## 6G: Digitisation of the Society

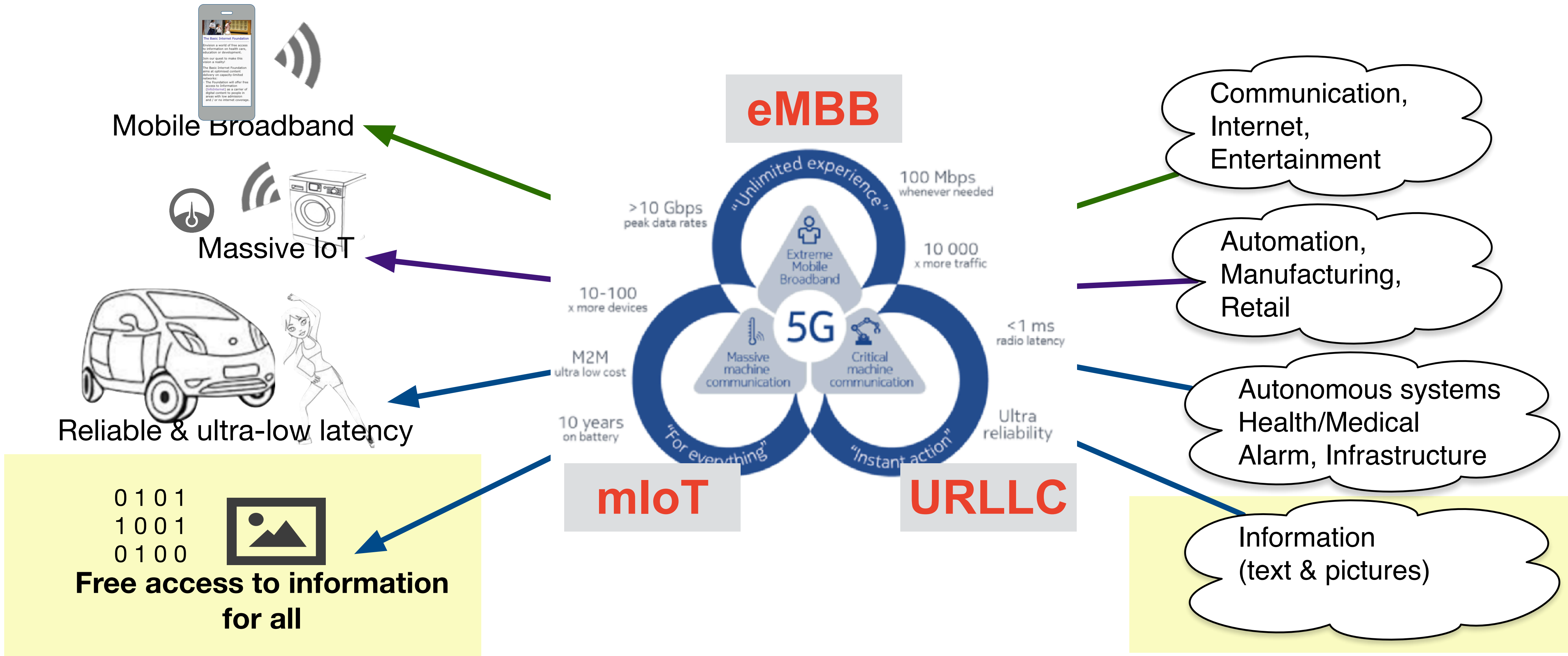
### Services & Society

- 1G-3G: Speed, flexibility
- 3G-4G: Service view
- 5G: Industrial
  - ➔ Business challenges
  - ➔ ownership
- 6G: Societal
  - ➔ sustainability



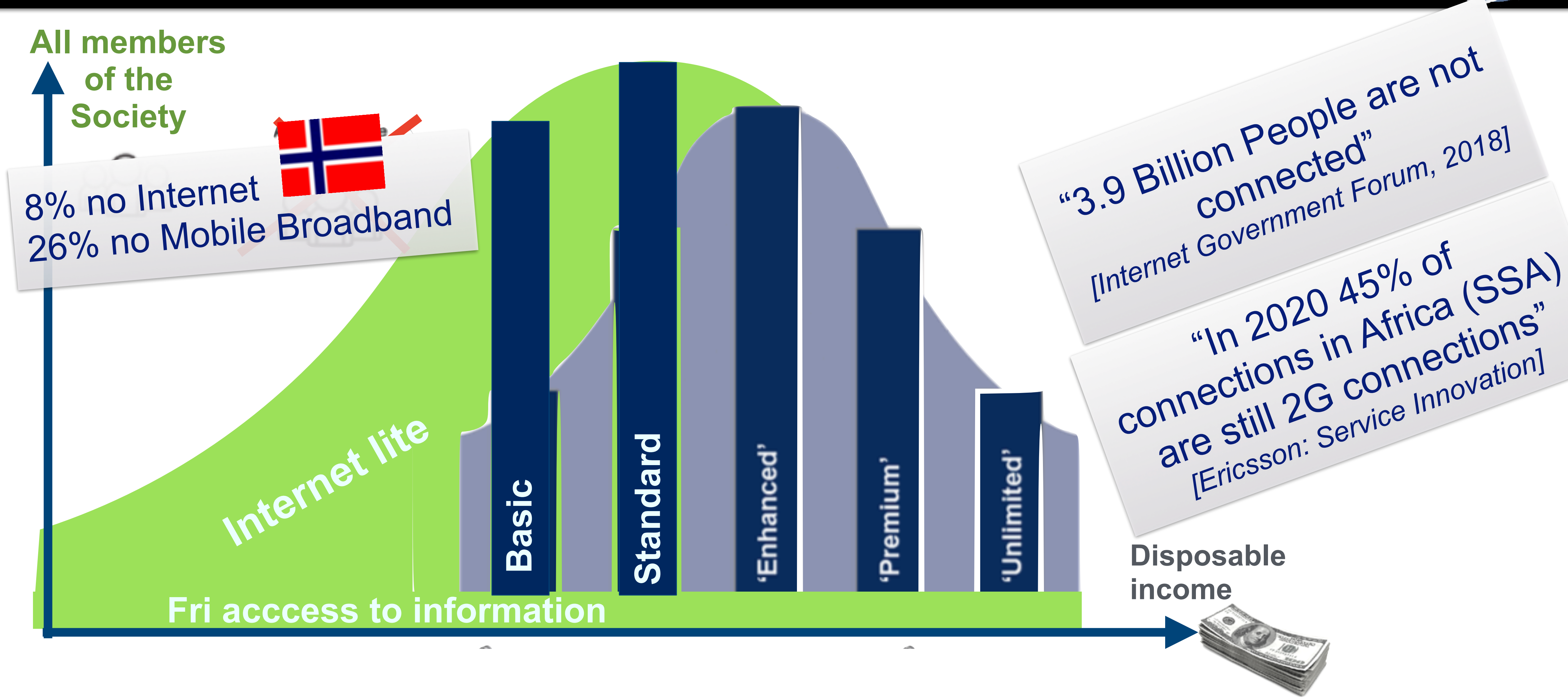


# 5G network slicing for Free Access to Information for All





# 6G (#5GforAll) for digital inclusion

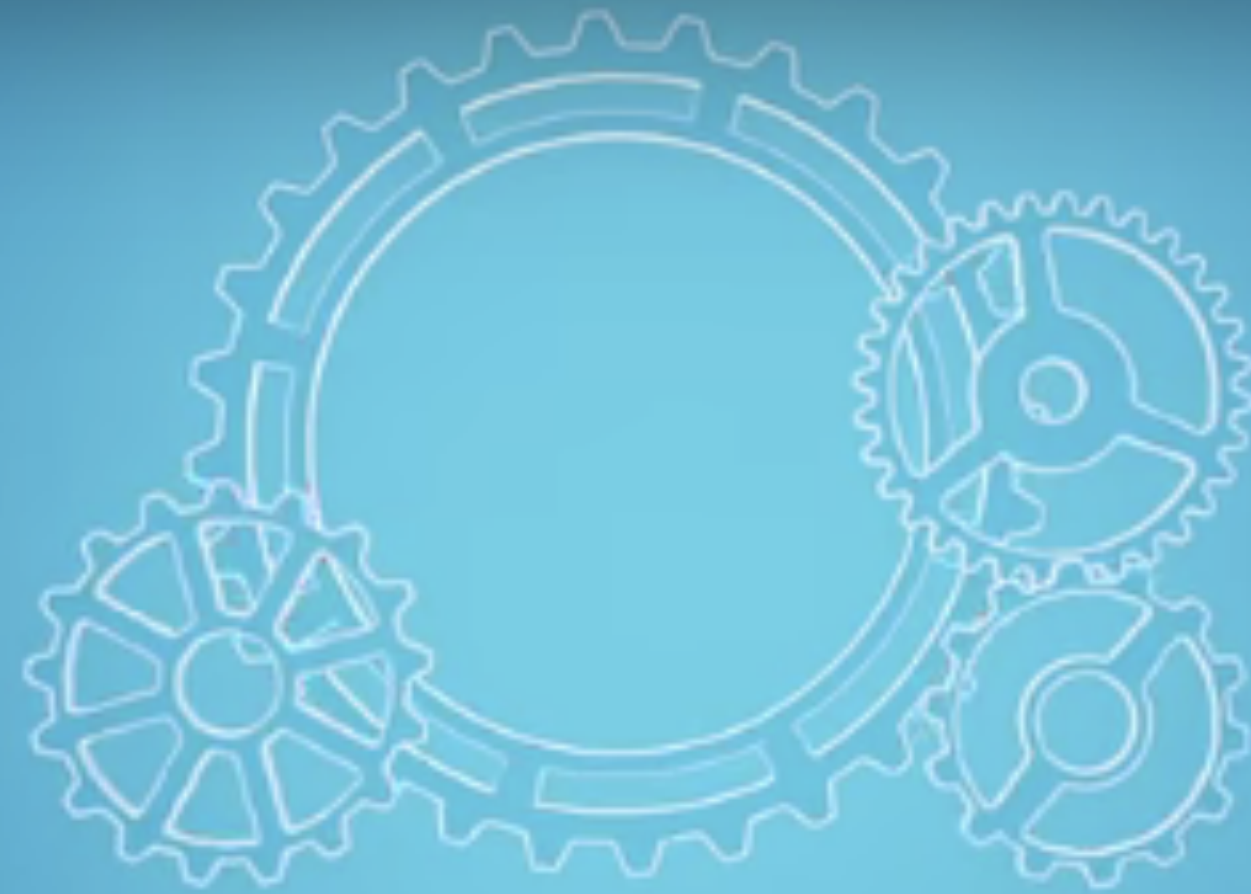


[Adapted from: Service Innovation through Smart Networks, Ericsson, 2018]





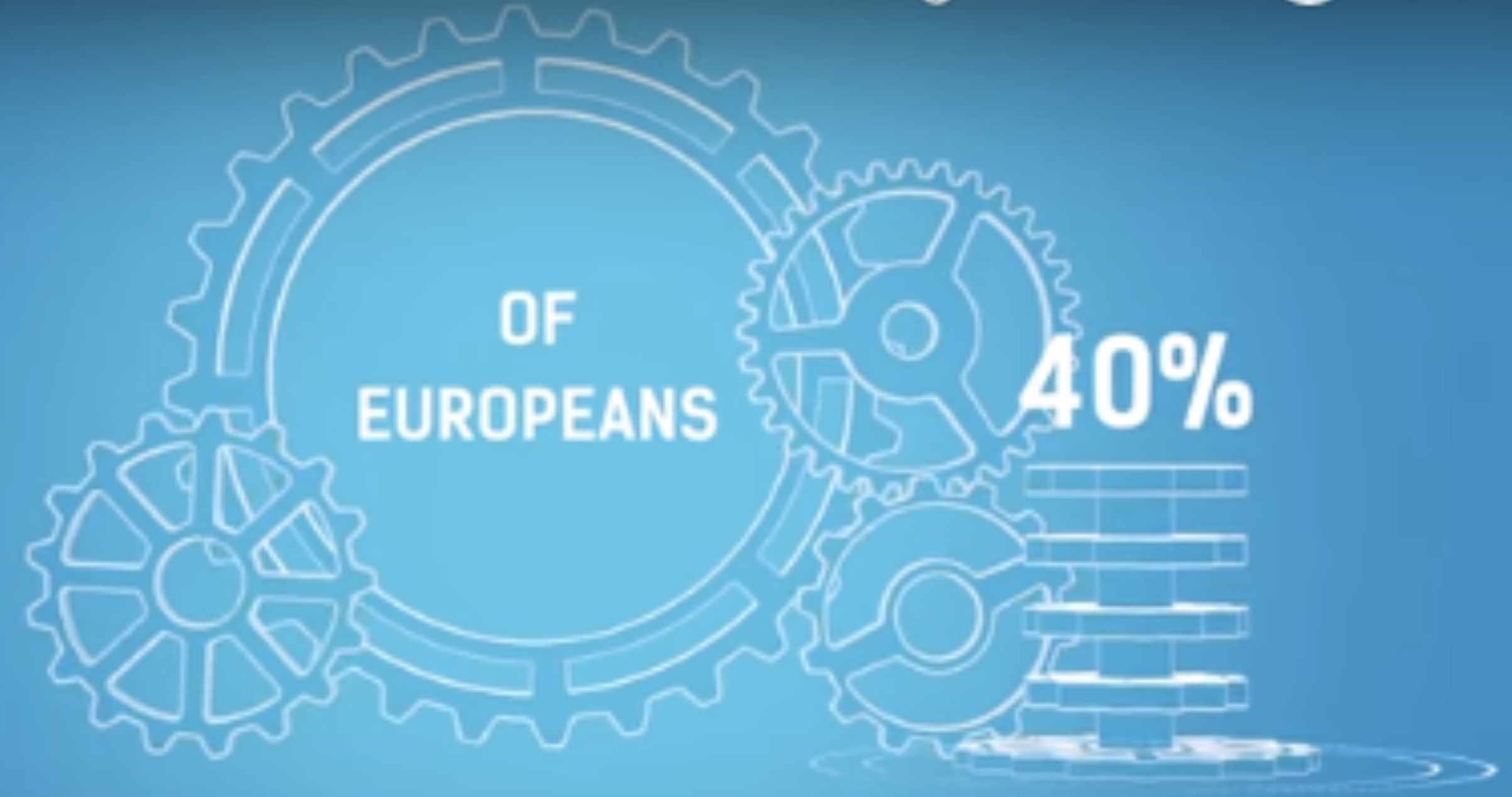
Digital Agenda Scoreboard 2015: Strengthenin... ⌚ ↗



A DIGITAL SOCIETY IS MADE OF  
DIGITALLY-SKILLED CITIZENS

**Demand for  
Free Access to  
Information for All**

Digital Agenda Scoreboard 2015: Strengthenin... ⌚ ↗



DON'T EVEN HAVE BASIC DIGITAL SKILLS



Source: EU commission(2015)



## Global Outreach

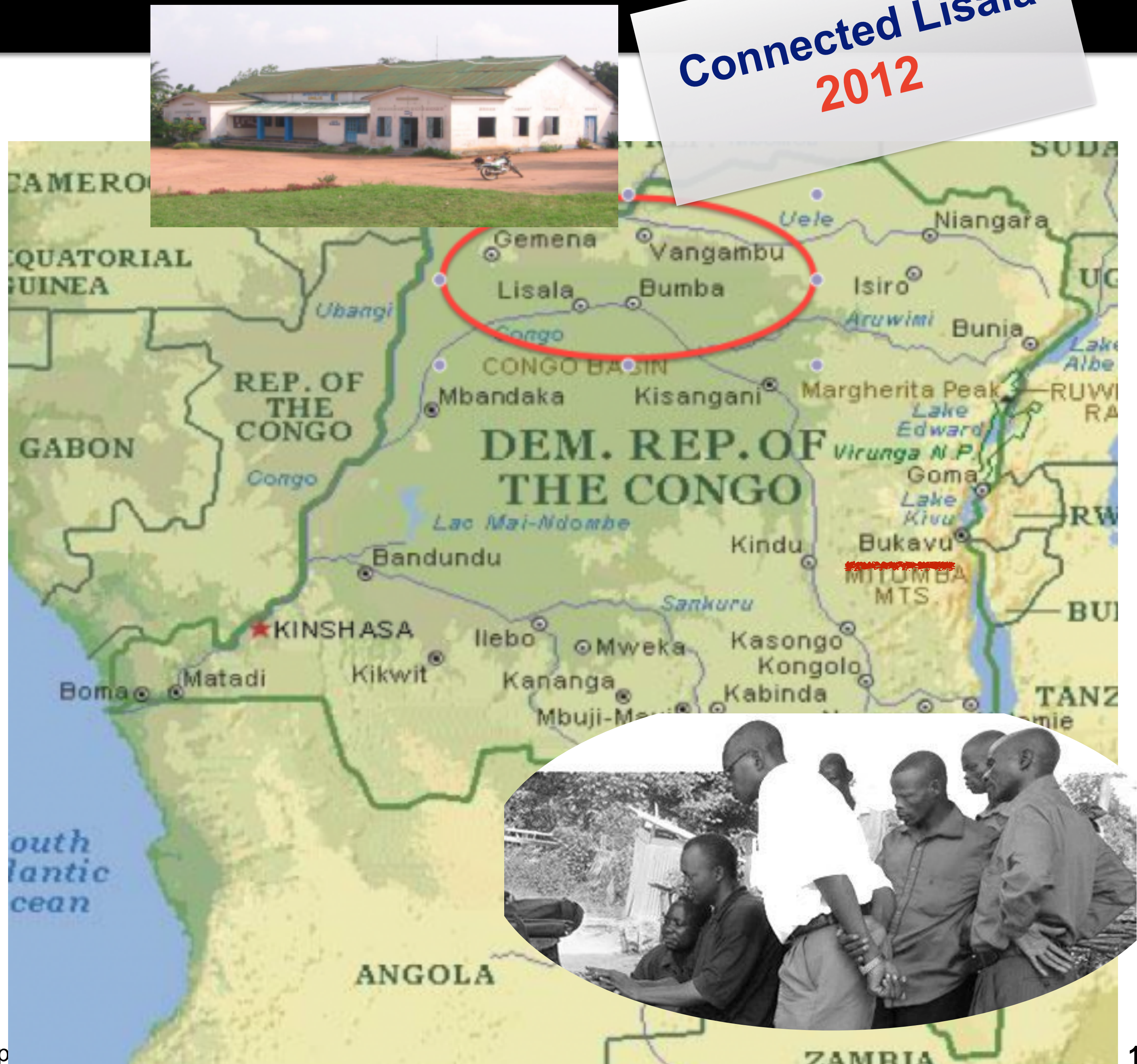




Connected Lisala  
2012

## Societal: Digital Society

- Combat the Digital Divide
  - ➔ Lisala: 2 x size (NL+BE)
  - ➔ no Internet (2010)
- Expensive access:
  - ➔ 2000 US\$/month for 1 Mbit/s
  - ➔ Note: 80 Mbit/s for 66 US\$ (NO), factor: 2.420 or 0.04%





# Internet light for All - the “walk on the Internet”

## Road Infrastructure

- Basic infrastructure

- free usage for pedestrians & cyclists
- authentication for cars
- Pay for use model when a license plate is required



- Highways & toll roads

- speed & comfort
- often privately managed



## Internet Lite Infrastructure

- Basic Access

- free access of information
- text, pictures and local video



- Broadband and Mobile services

- Voice, video & games
- speed & comfort
- privately managed





# Partnership for Digital Africa



**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.



1. UN sustainability goals and Agenda 2030

2. Migration and partnership with Africa

3. Health and Education



# Internet Lite for All

*the catalyst for the goals*

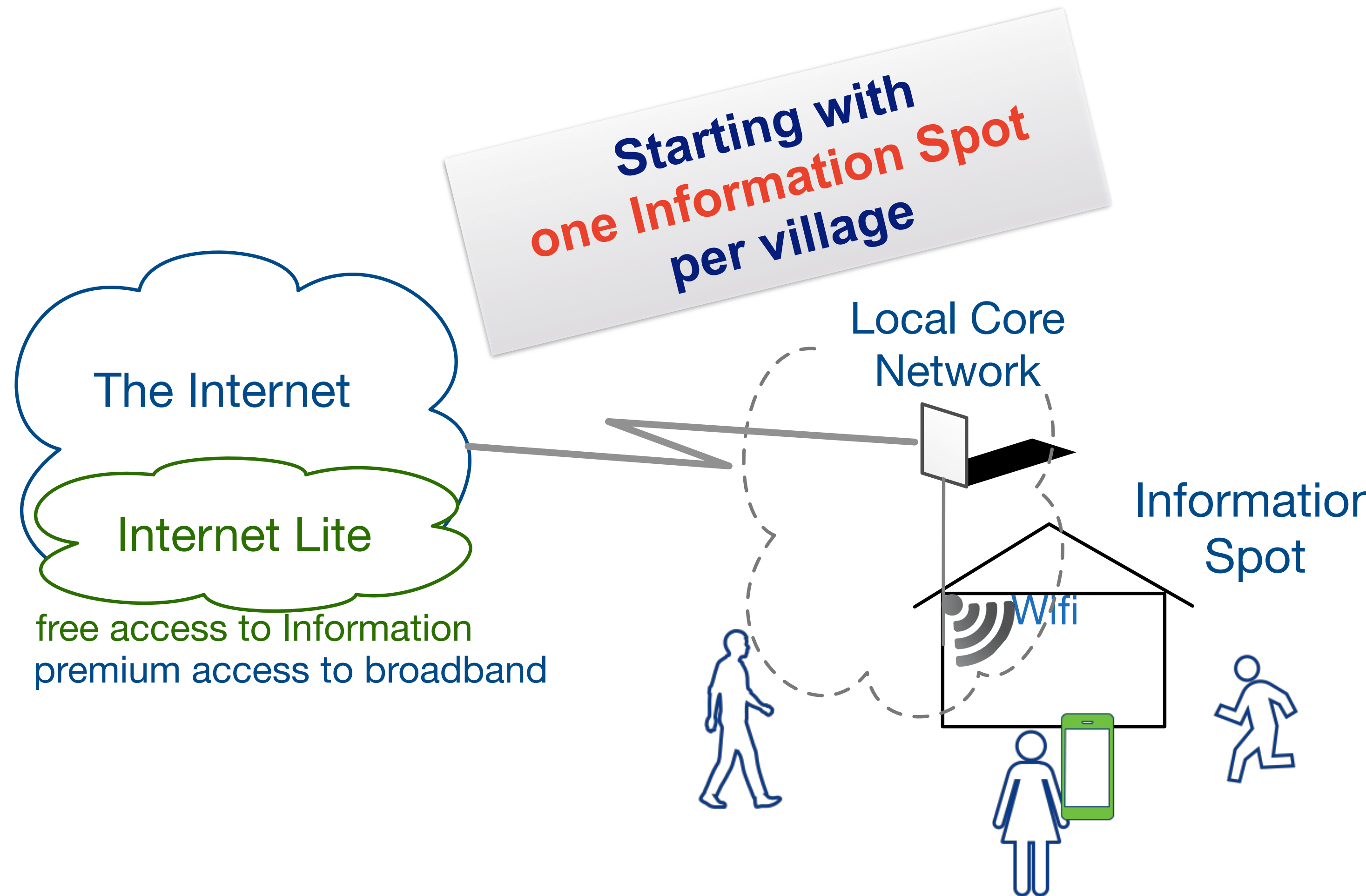




# “Internet Lite for All”

## the walk on the Internet

- **Freemium** model for access
  - ➔ Free: text, pictures & local video
  - ➔ Premium: broadband services
- Ensure **Network Neutrality**
  - ➔ Content type filtering
- **1 premium** pays for **300 free**
  - ➔ “**10 months** of Information, or **10 min** of video”?





**#Digital Inclusion**  
**#Societal Empowerment**  
**#Digital Health**  
**#Women and Girls**



# Esilalei



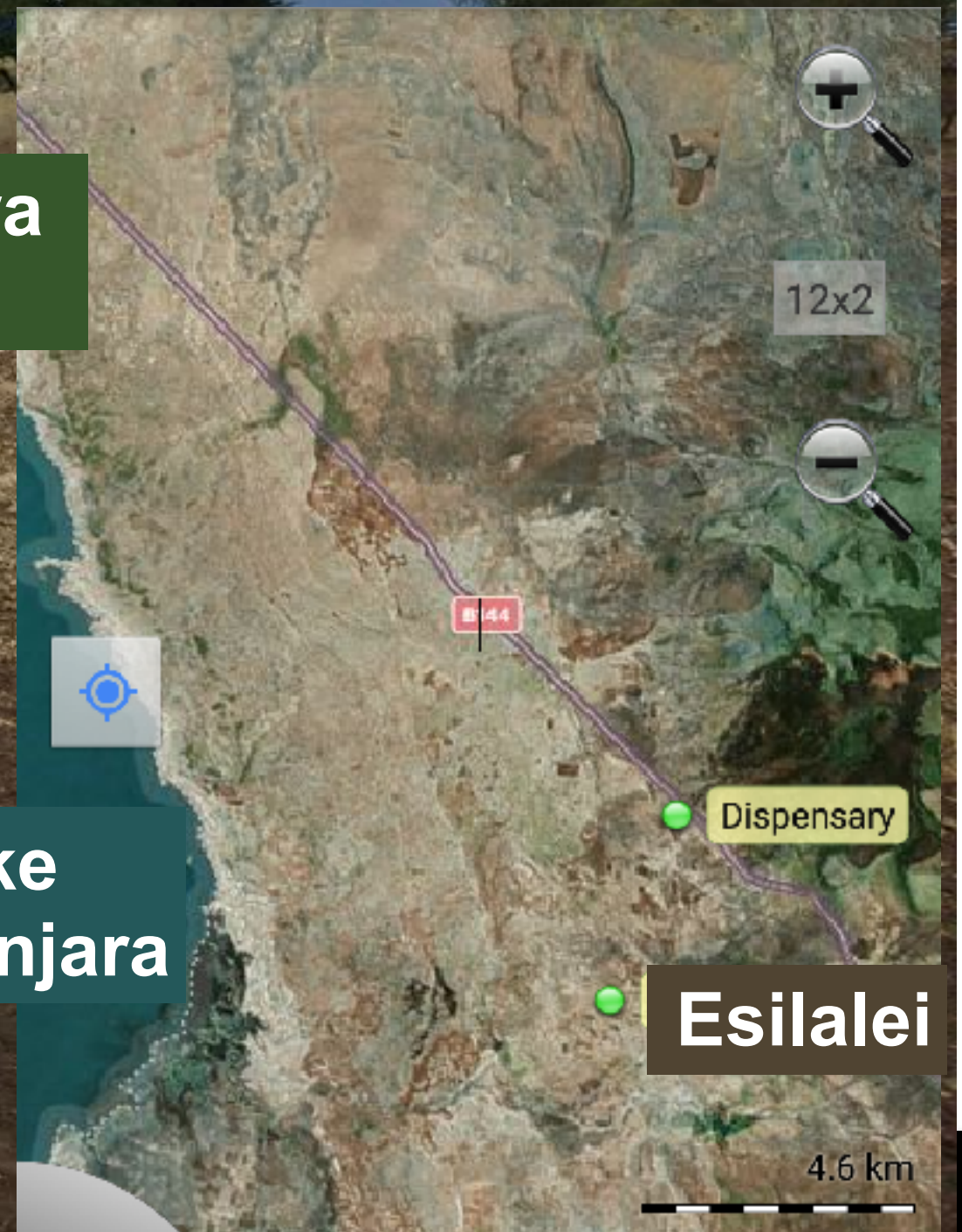
Mto wa Mbu

Lake Manjara

Esilalei

Dispensary

4.6 km





# Esilalei (Arusha)





# Mbaash (Selela)





# Selela Market Place



- Antenna in 6 m height
- Reaches Tigo tower  $> 20$  km away







# Migoli (Nyerere High School)

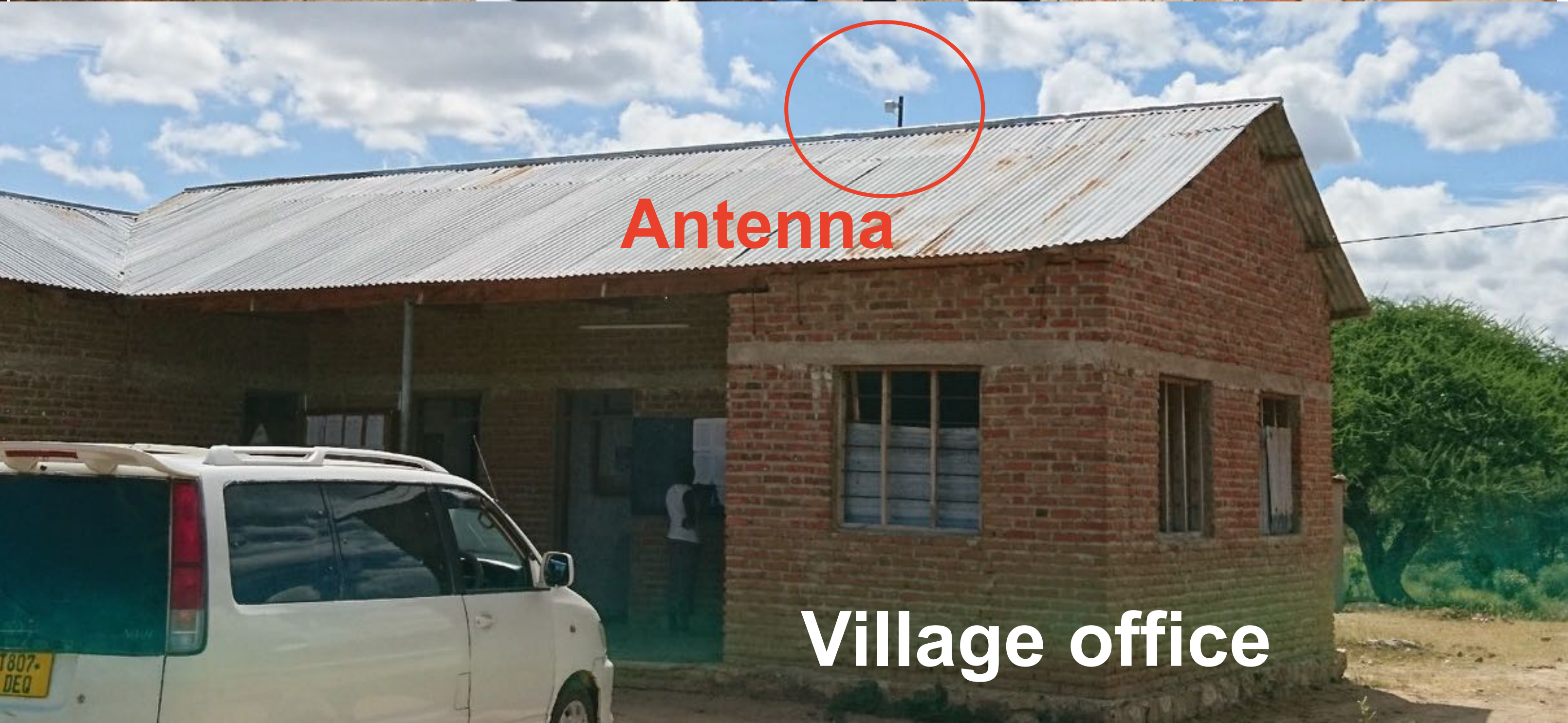


1000 pupils, 34 full-time teachers  
Aerial cable (above trees) base to connect  
Migoli health station  
Migoli village office





# Izazi



Time: 1,5 h  
Signal from the Vodacom  
li (~10km away)

Antenna

Village office



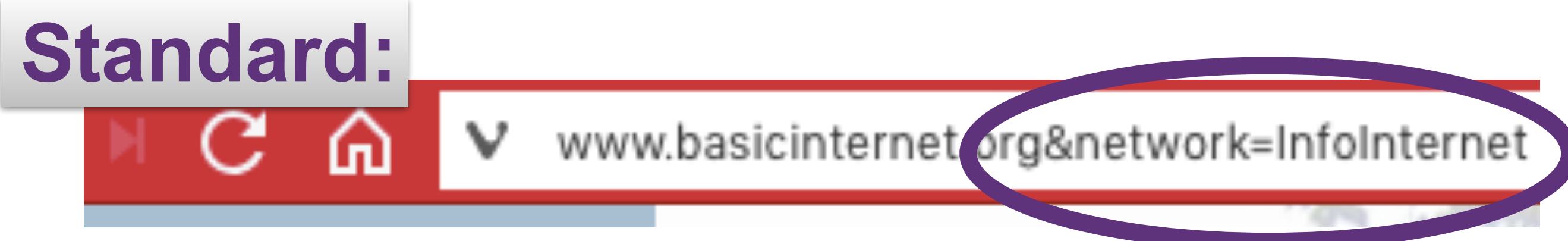
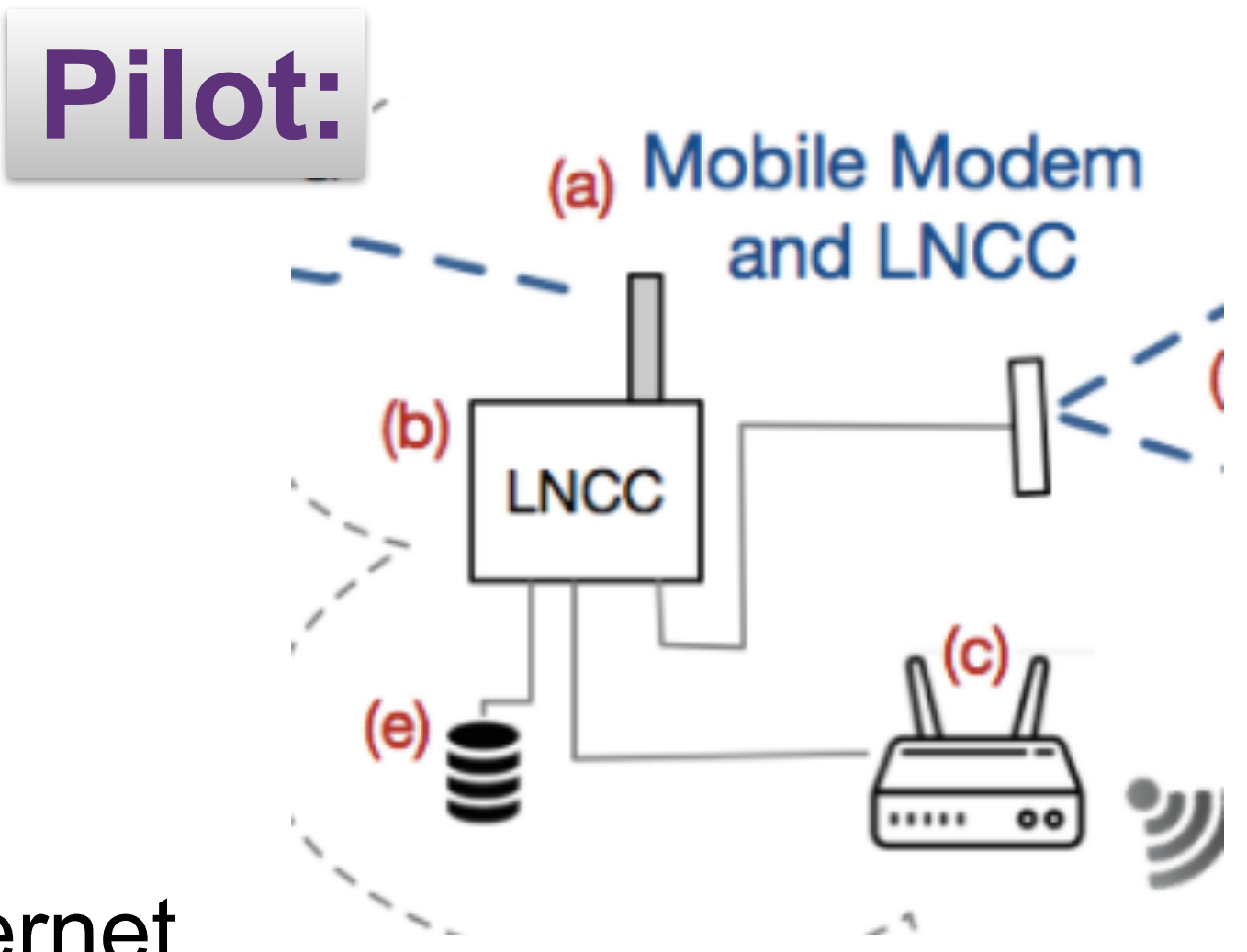
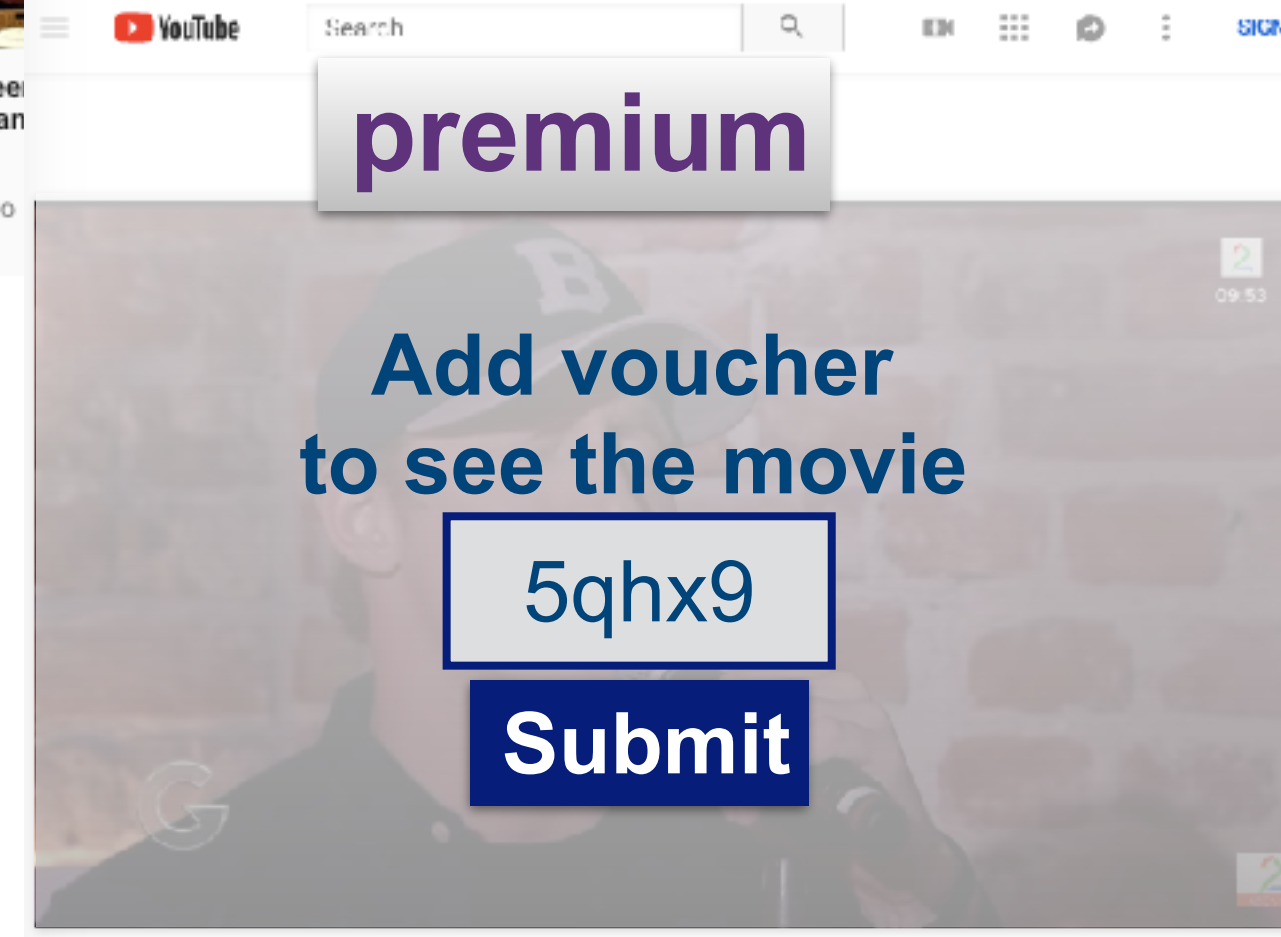
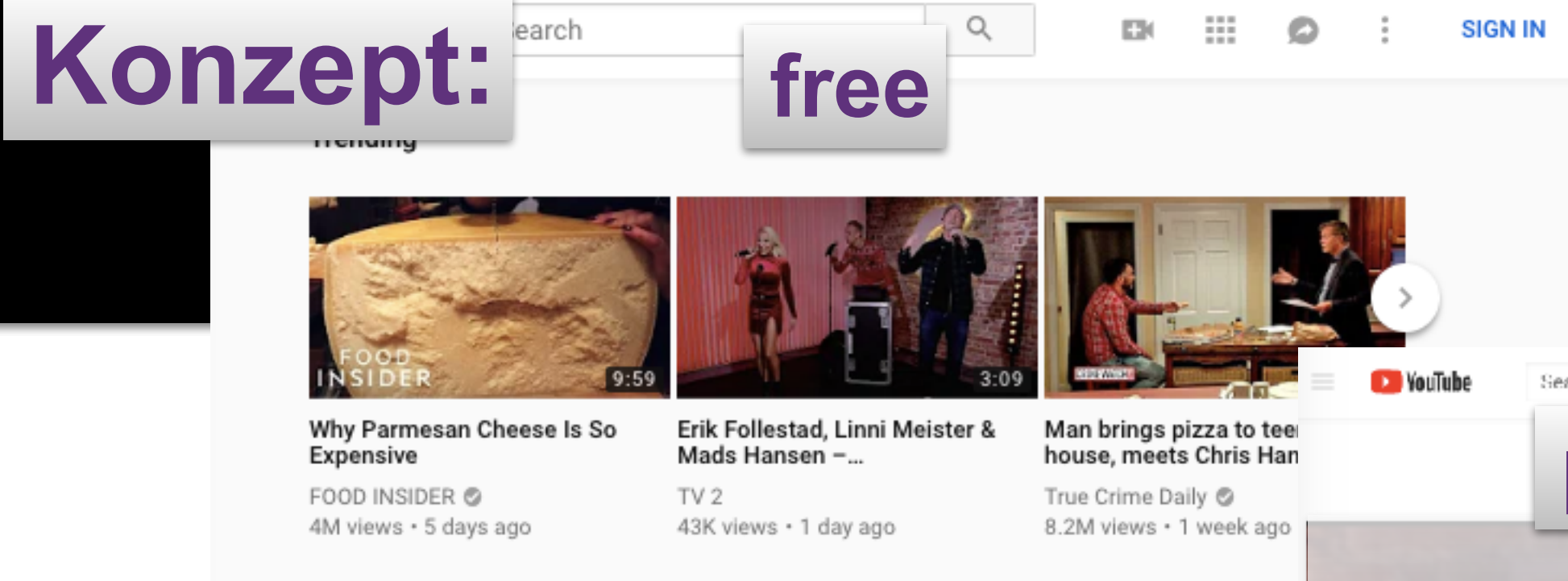
## Your help





# InfoInternet Standard

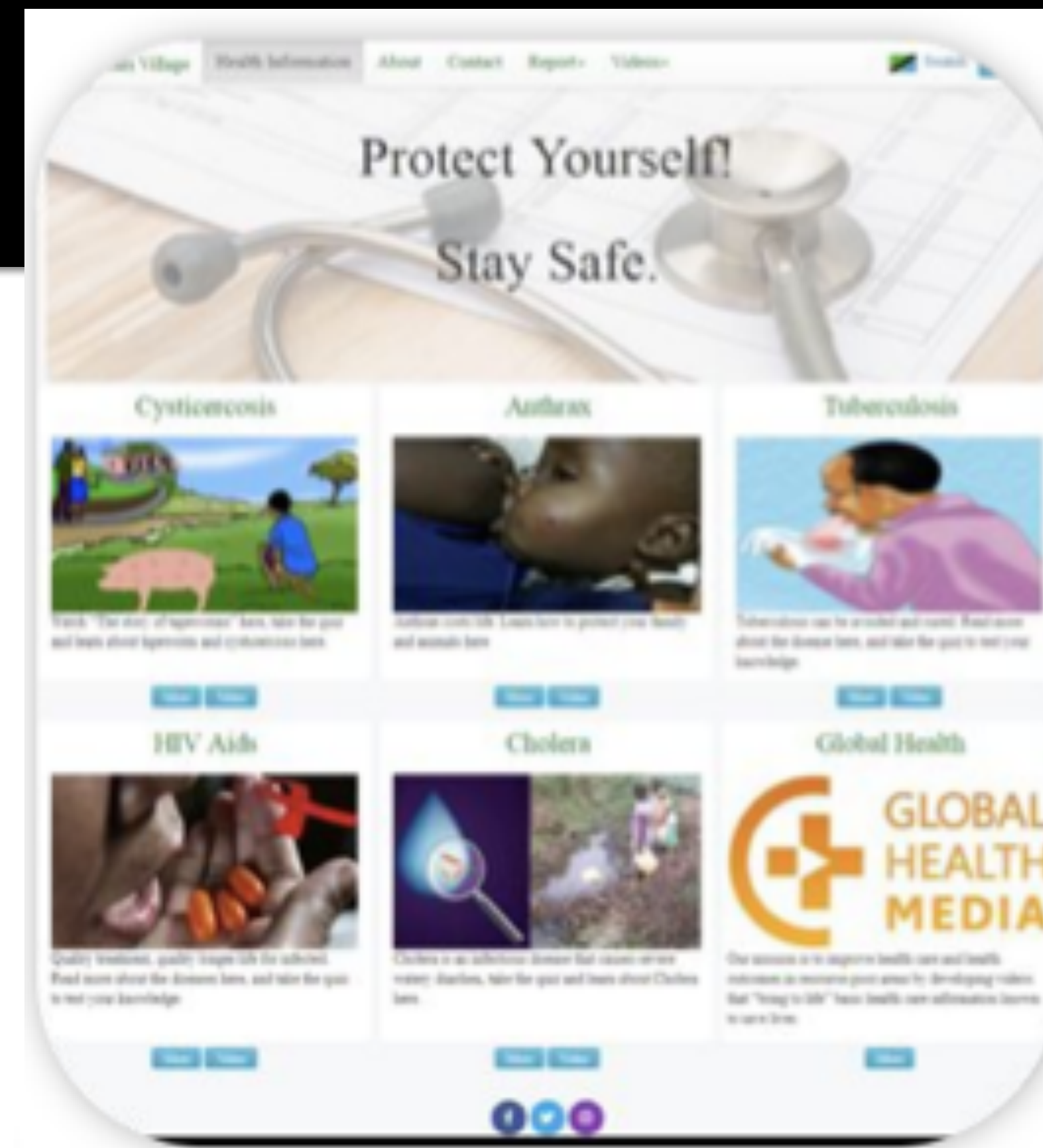
- Network responsiveness
- InfoInternet Standard development
  - **Konzept:** www-filtering
    - free: text & picture, premium: video
  - **Pilot:** www metadata & inspection
    - address, port & deep packet analysis
  - **Standard:** proxy & html5 standard,
    - <http://BasicInternet.org&standard=InfoInternet>





# Village Platform [yeboo.com](http://yeboo.com)

- Everyone has free access to the village platform [yeboo.com](http://yeboo.com)
  - Health Messages
  - Reporting/Feedback
  - Sustainable Business





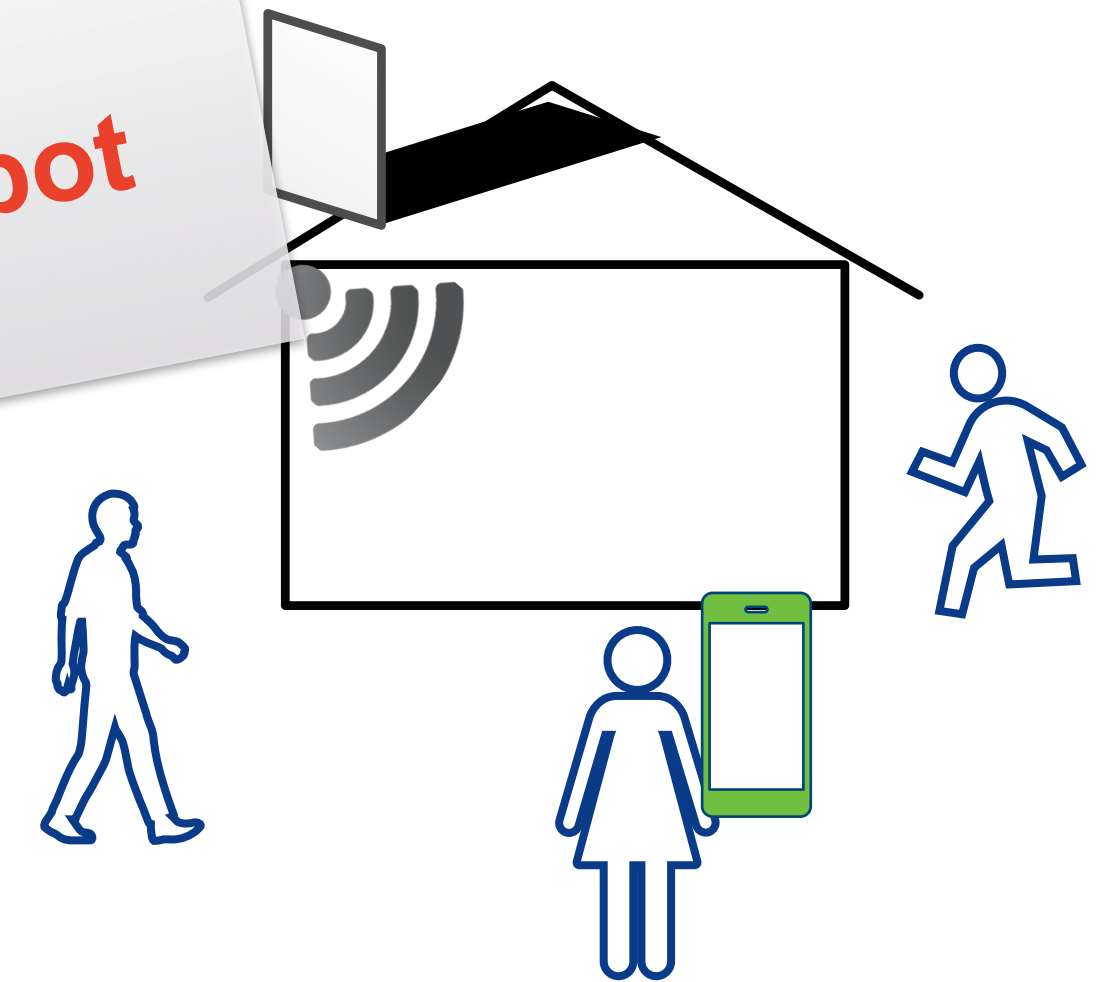
# Conclusion



- “Internet Lite for All”
  - Freemium model for access
  - at Home, in the Mobile Network, World-Wide
- Framework for Sustainable Development
  - Convergence: Energy & Health & Digital
  - #ReturnOnSDGs instead of #ROI
- Information Spot(s) in each village
  - basis: free access to information for everyone
  - add-on: Health, Education, Decent Work Financial Inclusion, ...

“Providing Internet to the basic of the pyramid isn't a question of affordability, but rather a question of sustainability”  
Internet Governance Forum, Panel

Starting with one Information Spot per village







**Inclusiveness - Trust - Capacity**  
United Nations High Level Panel on Digital Cooperation 2019





# Partners - Hope I'll see you here ...



FR



ES



Ministry of Health, TZ



UiO



DE



TZ



USA



UK

