



Digital Health Platform Meeting, 1Apr2020, TU Munich

Digital Health Platforms - Complexity and the Need for Policy

Josef Noll

University of Oslo & Basic Internet Foundation

Kjeller, Norway

josef@jnoll.net, m: +47 9083 8066

Overview

- The Nordic Model
 - ➔ Internet and the “Nordics”
 - ➔ Digitisation, Society and Welfare
- Digital Health
 - ➔ National Knowledge Portal
 - ➔ [HelseNorge.no](https://helse Norge.no) - Digitales Portal
- Digital Health Promotion
 - ➔ Health Information for All
 - ➔ Business Model



Internet and the Nordics

- 1. Arpanet Connection to **Kjeller** (June 1973)
- List_of_Internet_pioneers [Wikipedia]
 - Yngvar Lundh, **Paal Spilling**
- Application development
 - .php, OpenSource, Linux, Skype, Spotify
 - **OperaSoftware**, FAST Search
 - Nokia, Ericsson
 - **Telenor**, TeliaSonera
- Mobile Internet



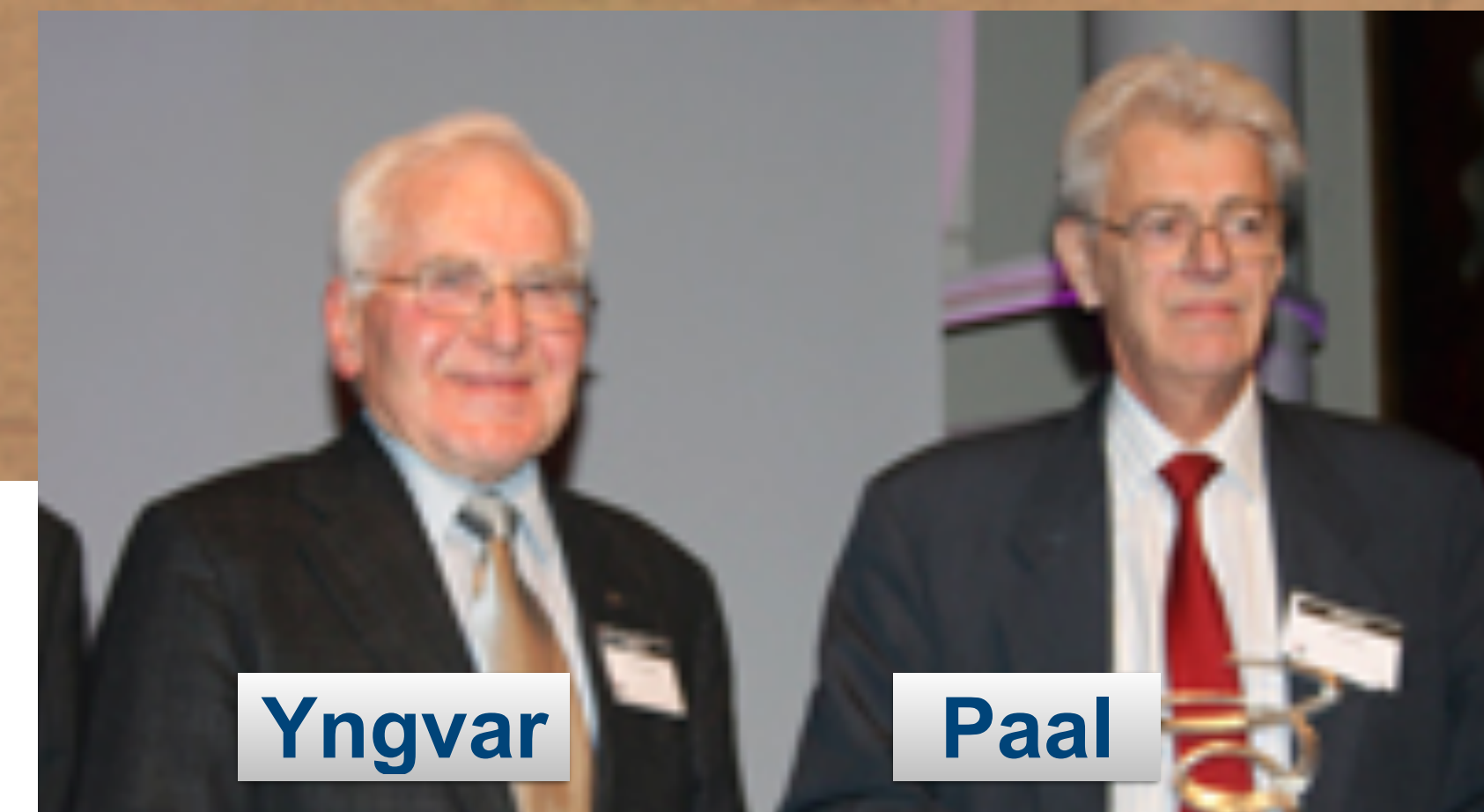
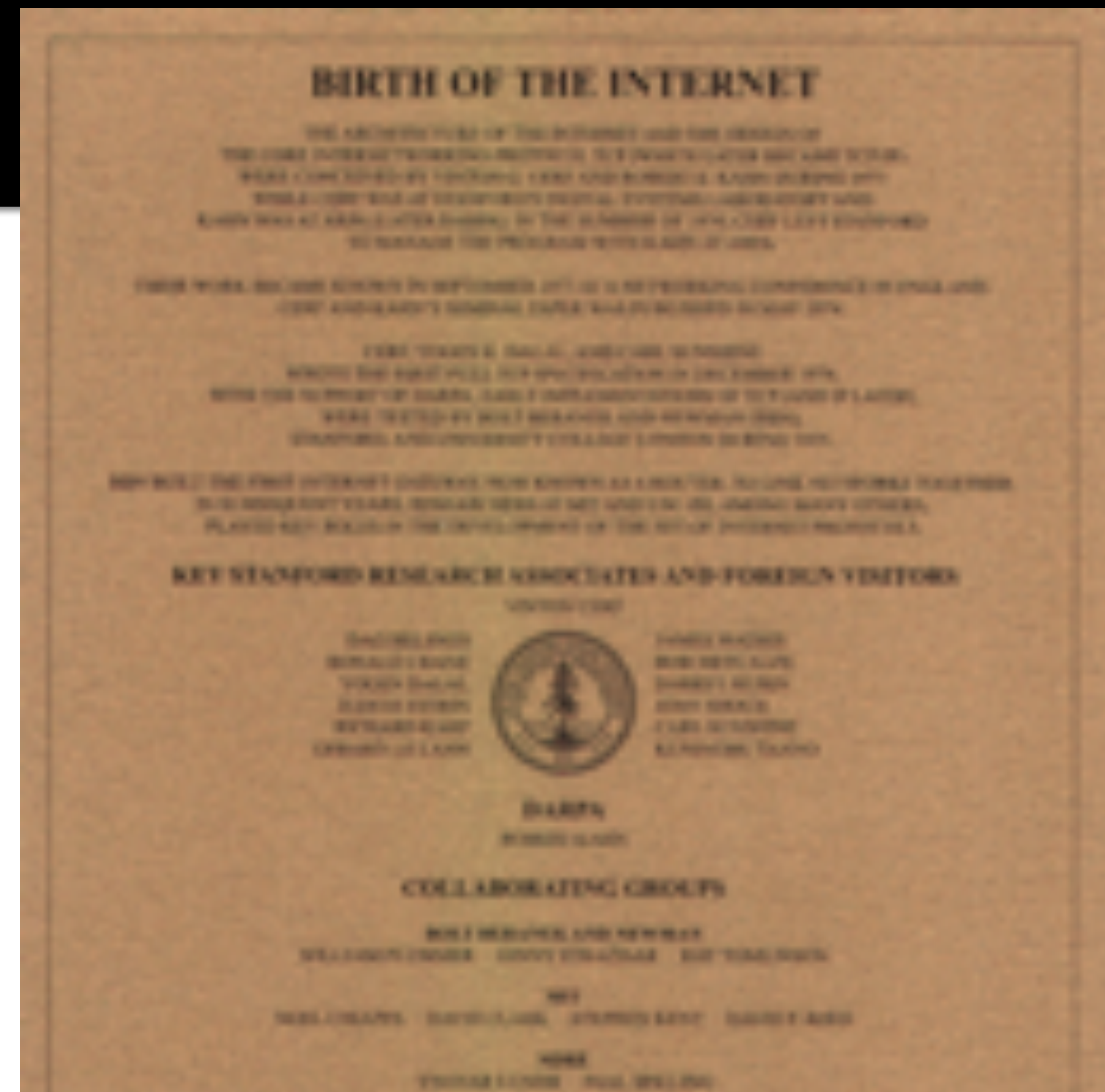
GSM

Mobile Applications



Vint

Sigrid



Yngvar

Paal

*co-funded by Kjeller Innovasjon
and University of Oslo*

- Internet (1973), Opera (1994),
Basic Internet (2014)
- focus on digital inclusion

Our vision is

to improve **the life of **every** human**

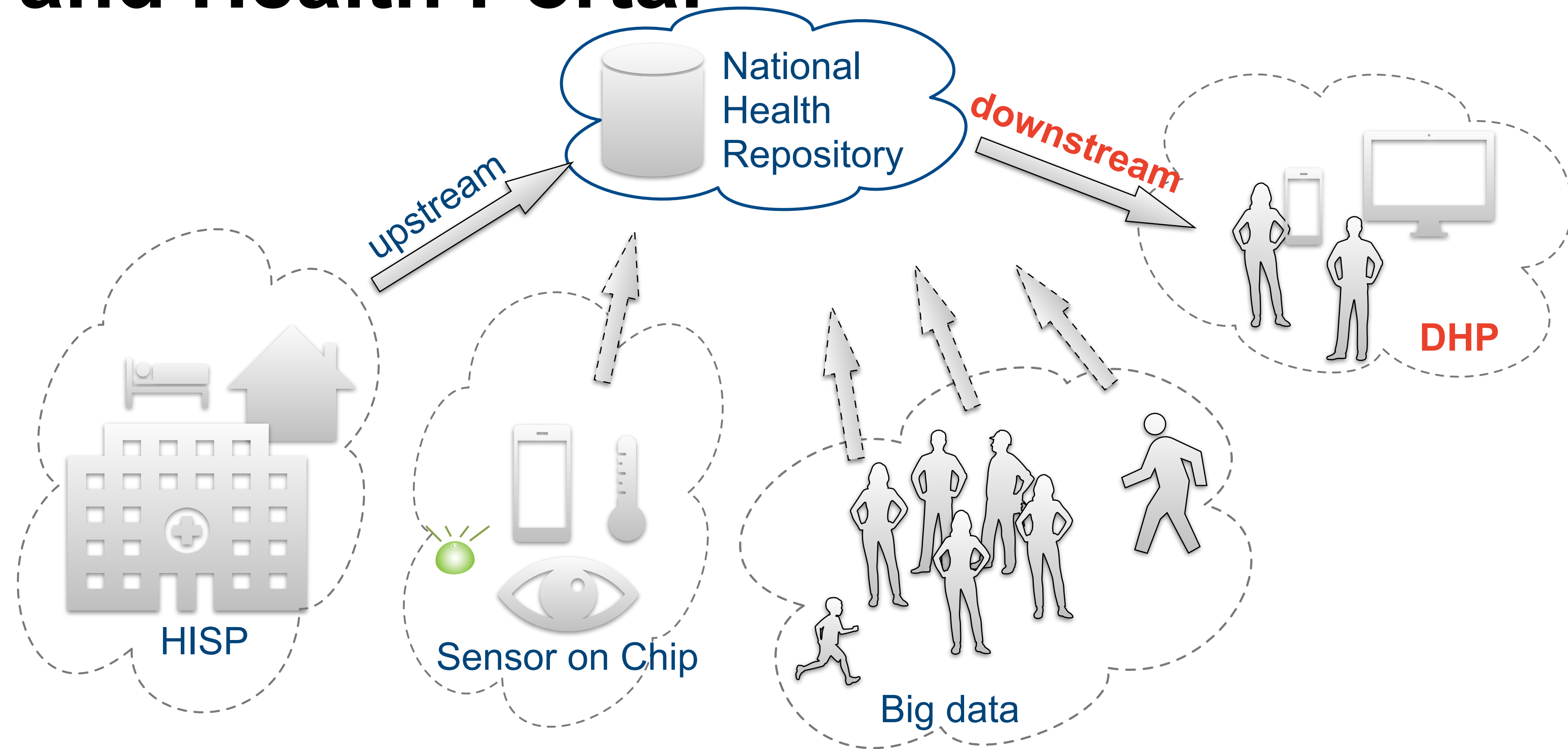
through free **access to **information****

on the **Internet**

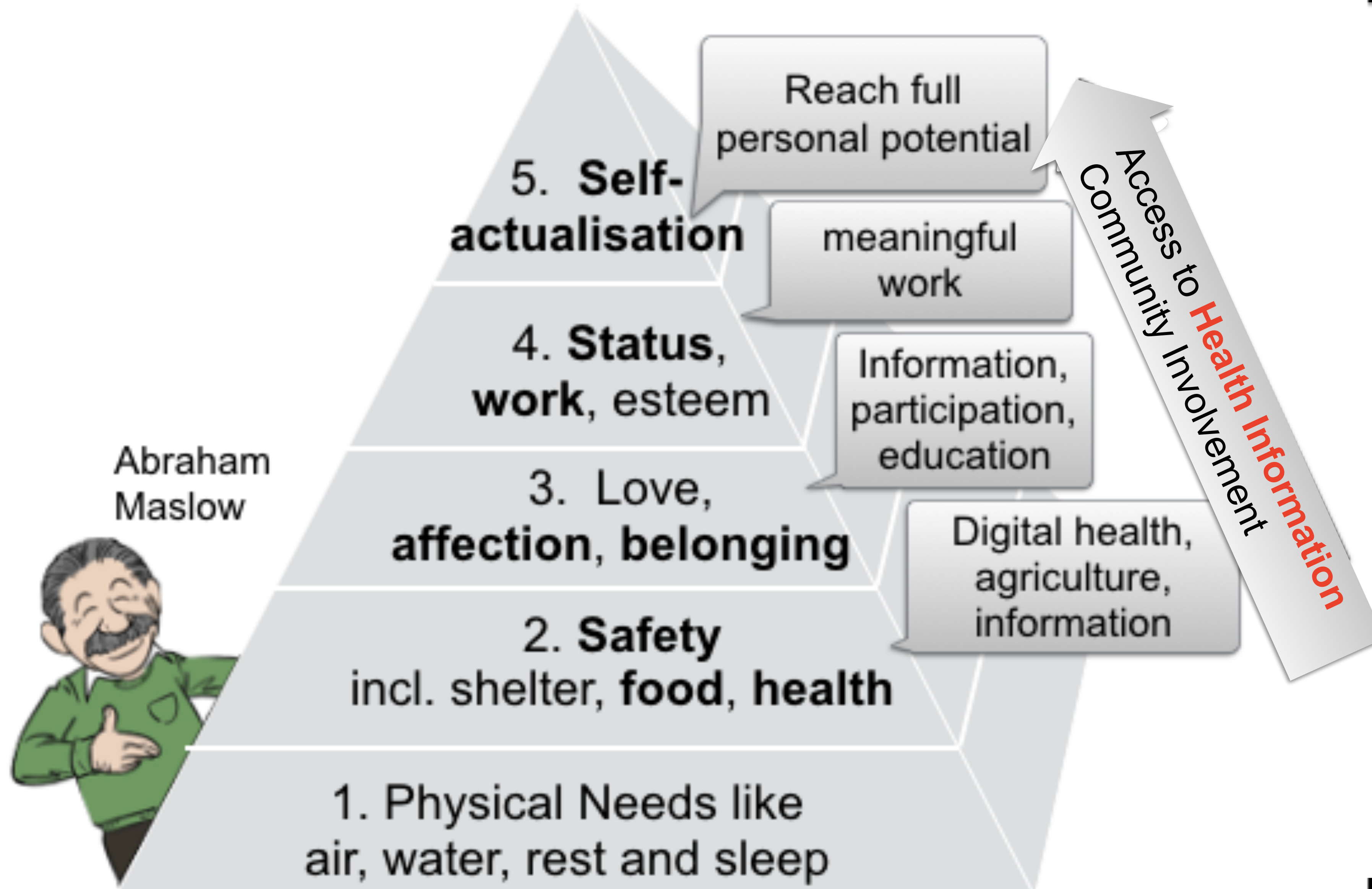
- How to bring Health Information and other non-profit content to everyone in the society?

Health Platforms and Health Portal

- Upstream
 - Health Information Systems Platform (HISP)
 - Sensor on Chip
 - Bio-sensor
 - integrated analysis
 - Big Data
 - Epidemiology
 - Artificial Intelligence (AI)
 - Downstream
 - **Digital Health Promotion (DHP)**
- Community Health



Empowering people for the **Digital** Society



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

helsenorge.no

Health - Norway . no

The National Health Portal in NO, DK, ...

HELSEHJELP OG RETTIGHETER

Health &
Lifestyle

HELSE OG LIVSSTIL

Illness &
Diagnosis

SYKDOM/DIAGNOSE

ENGLISH

ALT INNHOLD A-Å

MIN HELSE

my Health

Betaling og egenandeler

Payments and own contrib

Frikort og egenandeler

Refusion og støtteordninger

Reimbursement, fin. support

Pasientreiser

Blå resept, hvit resept og
bidragsordningen

Rettigheter

Rights

Bytte av fastlege

Change your
doctor

Dine rettigheter

Fristbrudd

Klage og erstatning

Complains &
refund

Her får du hjelp

Hjelpetilbud i kommunen

Pasient- og brukerombudet

Behandlere

United Nations High Level Panel on Digital Cooperation

- Jun2019 report: Recommendations
 - ➔ Inclusiveness
 - ➔ Digital Public Goods (DPGs)

1A: We recommend that by 2030, **every adult** should have **affordable access** to digital networks, as well as **digitally-enabled financial and health services**, as a means to make a substantial contribution to achieving the **SDGs**...



Nikolai
Astrup

Melinda
Gates

Jack
Ma

Bogolo
Kenewendo

Nanjira
Sambuli

Akaliza
Keza Ntwari

Vint Cerf

1B: We recommend that a broad, multi-stakeholder alliance, involving the UN, create a **platform** for **sharing digital public goods**, ...

EAC:

- Akaliza (RW)
- Nanjira (KY)
- Bogolo (BW)

Recommendations for EAC from East Africa Health conference (2018)

- Recommendations 1-9, digital health:
- 5. Formulation of regional and partner states policies that govern integration of the **digital health initiative** into **health system**.
- 6. Develop a **platform for digital inclusion** where **communities** have **full access to information** to surveillance and disease management
- 9. East African member state to promote **digital health**



[Source: Bernard Ngowi (NIMR)]

Challenges

- Costs of Access
 - ➔ School connectivity (SDG indicator 4.A.1)
 - ➔ Digital Health for primary health facilities
 - ➔ Community involvement/digital transformation
- Digital Content
 - ➔ Health information
 - ➔ Education/Community info
 - ➔ Digital Public Goods (UN, UNICEF)
- **Free access to National Knowledge Portal**
 - ➔ Access to information - a human right



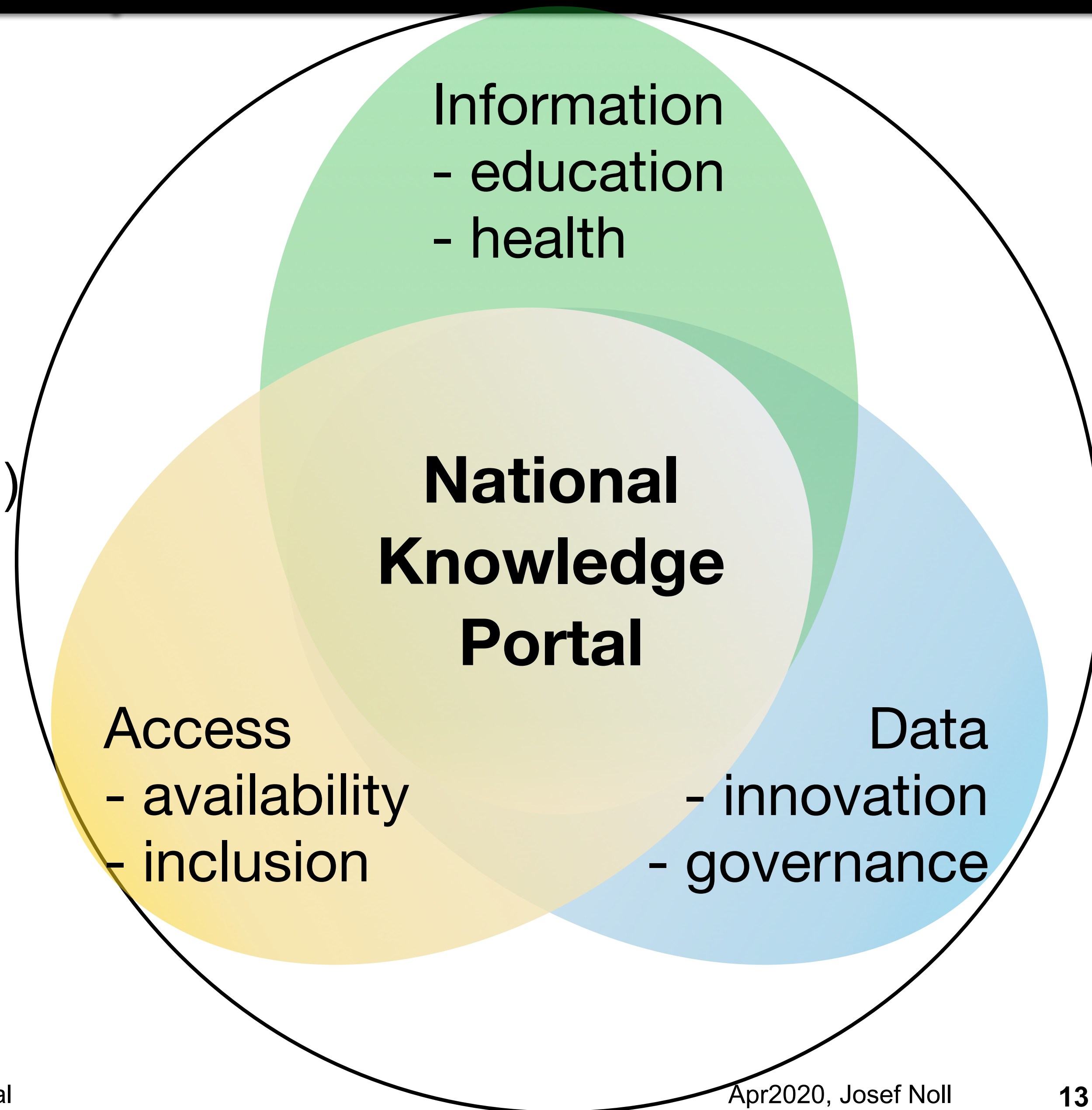
Target Groups in Digital Empowerment

- We bring Internet access to rural villages with **high rates of illiteracy**.
- People of all ages and genders
 - ➔ Simple solution for everyone
 - ➔ primary focus on the **young generation, especially girls and women**.
- Further stakeholders are **governmental institutions** (e.g. ministries of education, health, agriculture, rural development), **village chiefs** and other **local authorities** like school directors.



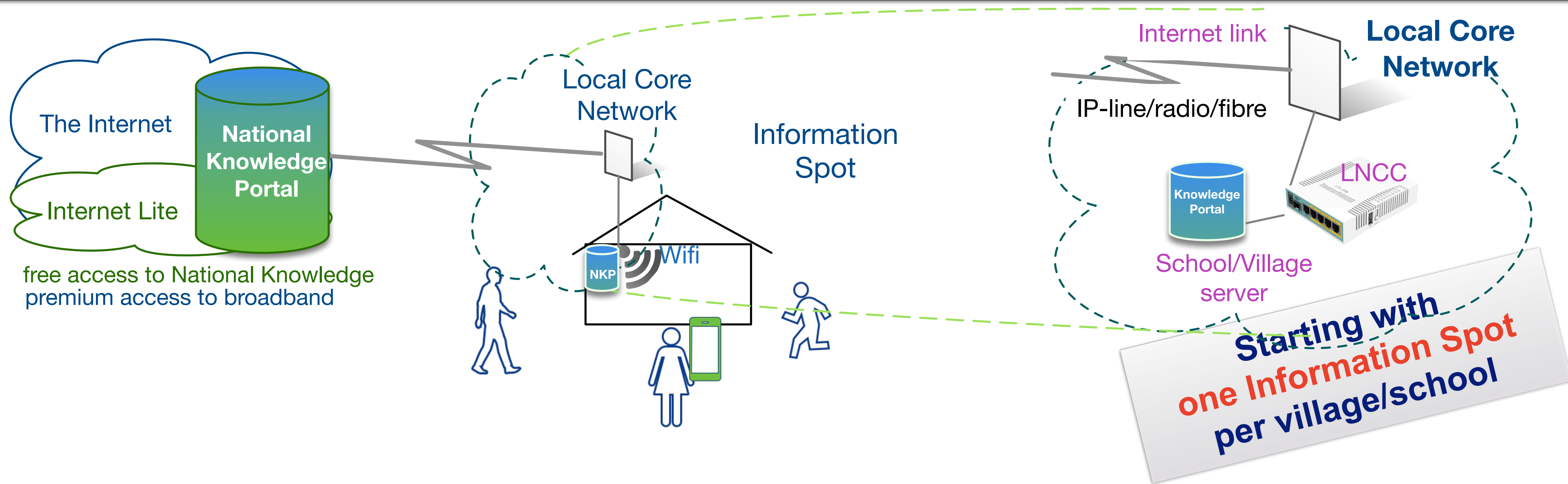
National Knowledge Portal

- Repository for Health Data
- Trustworthy Health Information
 - ➔ Source for Digital Health Promotion (DHP)
 - ➔ Education, Digital Public Goods (DPGs)
- Regulatory Framework
 - ➔ Free access to Knowledge Portal



Digital Inclusion

Free Access to the National KnowledgePortal



- Free access to the **National Knowledge Portal (NKP)**
 - ➔ Architecture with lightweight and heavy content
- Ensure: digital inclusion
- Ensure **Network Neutrality**
 - ➔ Content type filtering
 - ➔ text, picture vs broadband, streaming

Local presence - Village Platform

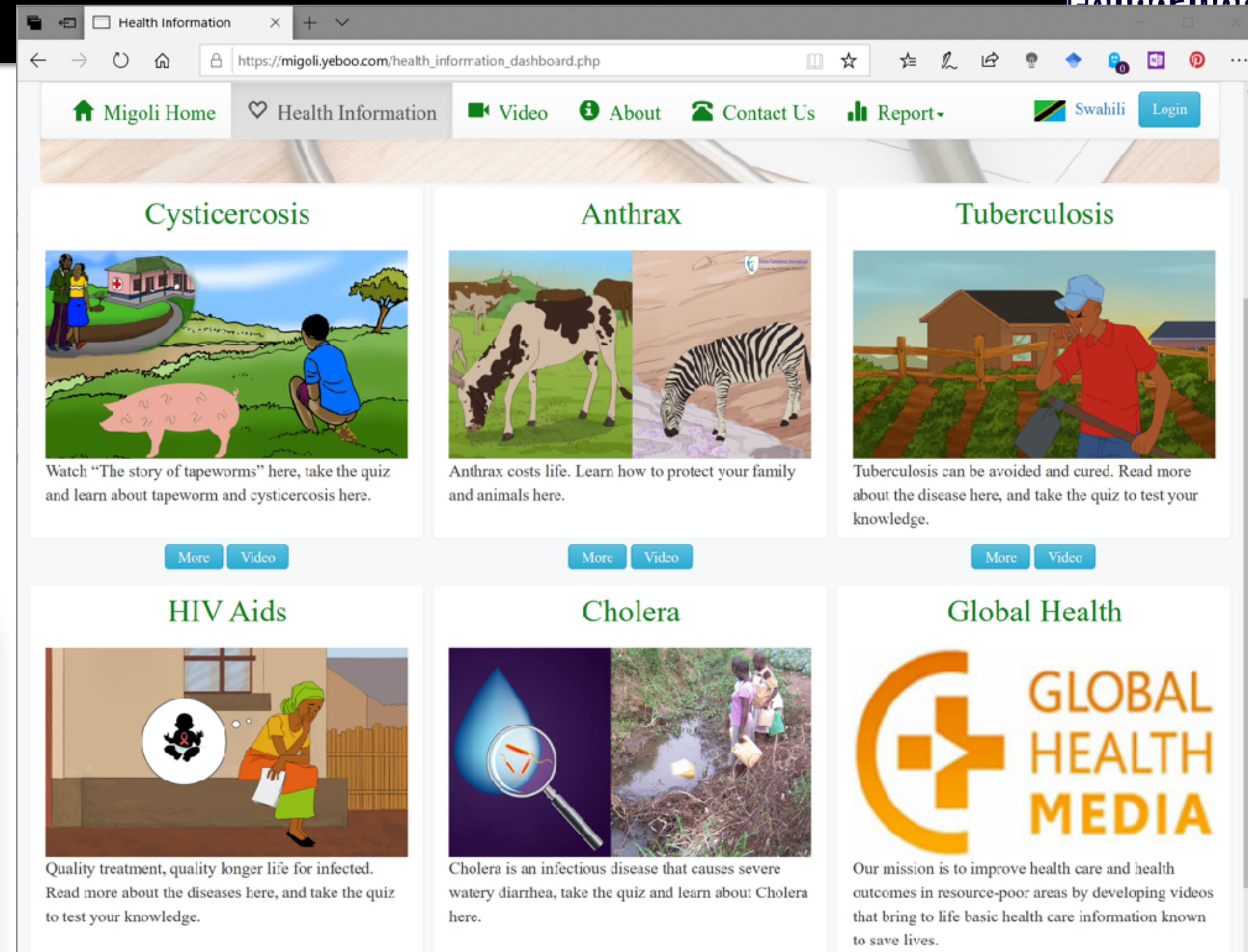
<http://Yeboo.com>



**Village server
with locally stored
information on
health care etc.**

**The website will
contain locally stored
information on**

- Health
- Entrepreneurship
- Education
- Agriculture
- Financial inclusion
(e.g. via Women
Community Centers)

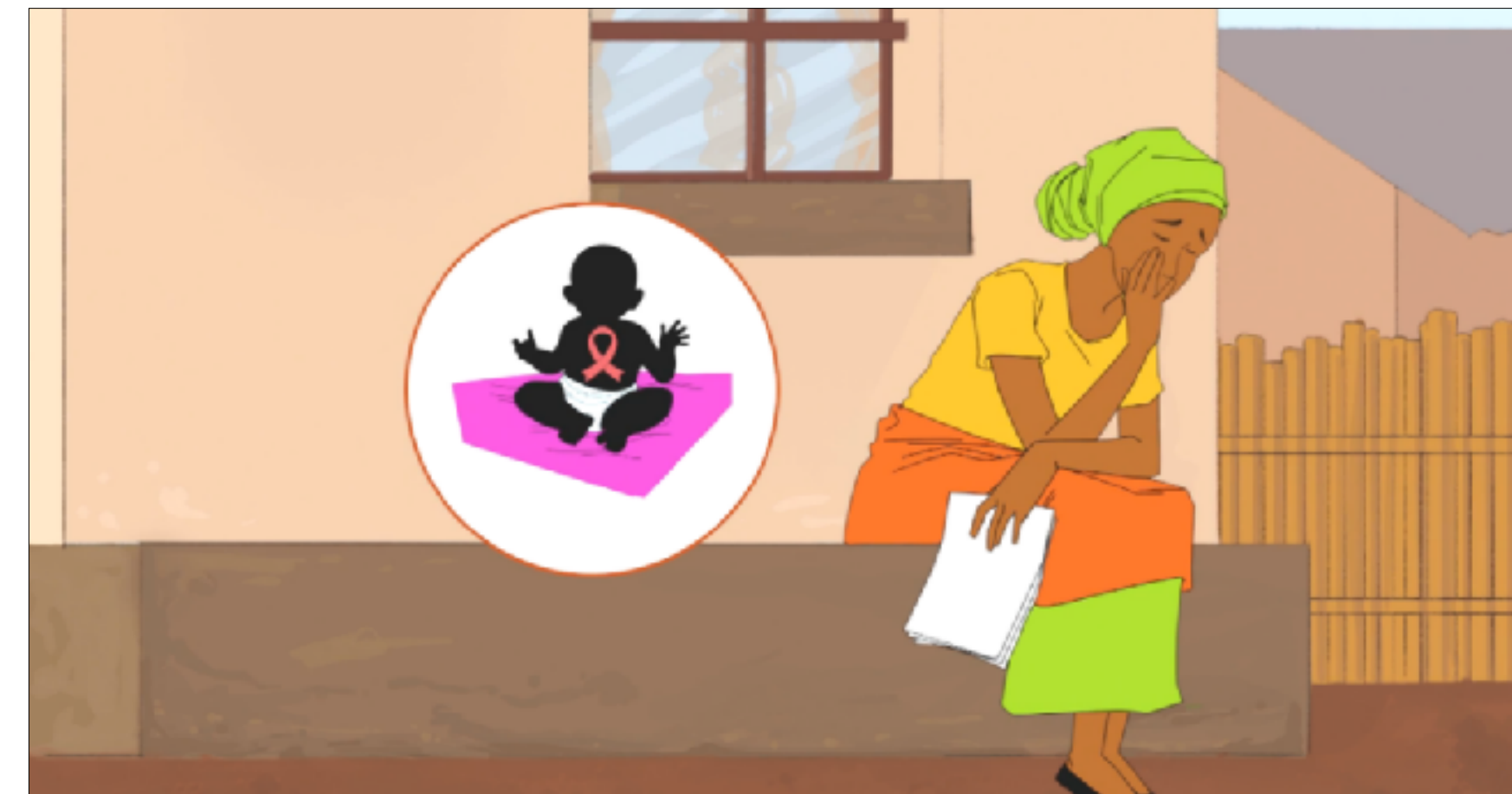


Exemplary: Digital Health Information

Snapshots from website, HIV and Cysticercosis animations



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



[Source: Christine Holst, UiO (Nov2019)]

Success story: Selela Market Place



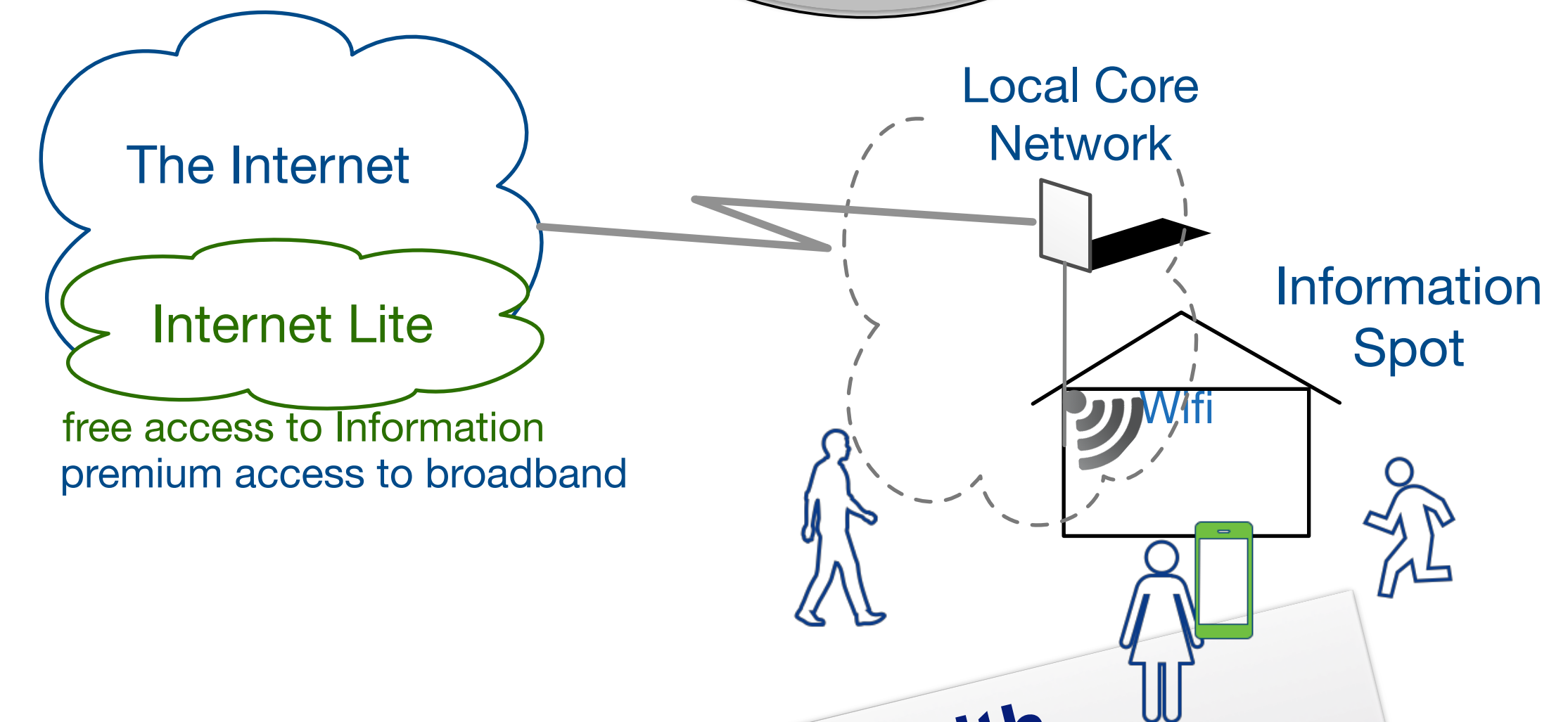
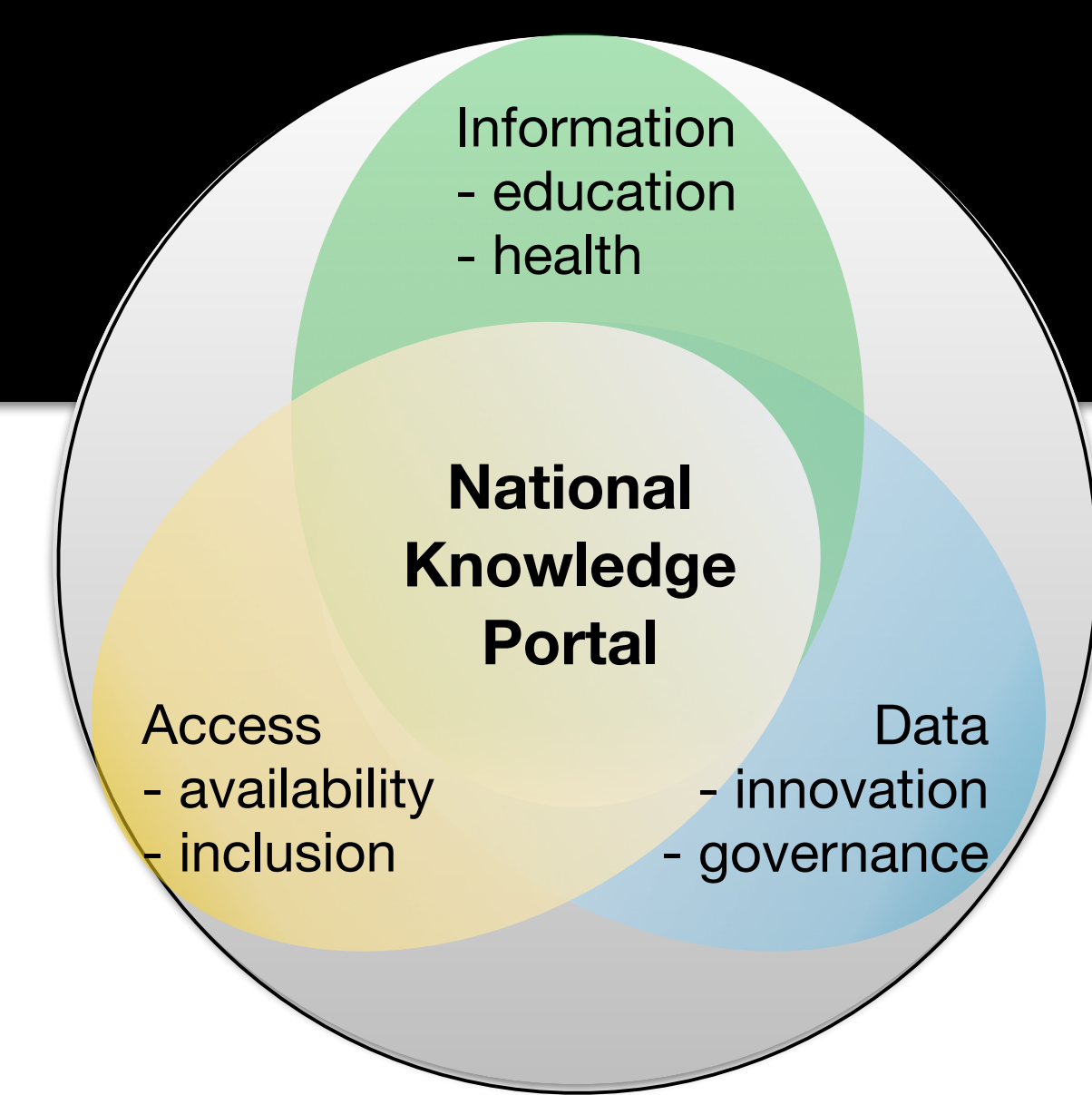
- Antenna in 6 m height
- Reaches Tigo tower > 20 km away

Conclusion

“Digital Health Promotion for All”



- Health Platforms
 - ➔ Upstream, Sensor-on-chip, Big Data
 - ➔ Downstream, Digital Health Promotion
- National Knowledge Portal (NKP)
 - ➔ Freemium Model for Access
 - ➔ Free: text, pictures & Knowledge Portal
 - ➔ Premium: broadband services
- School/Village/Health Information Spots
 - ➔ Free access to National Knowledge Portal
 - ➔ Health, Education, Entrepreneurship



Starting with
one Information Spot
per school/health facility/
village

7.1 & 7.2
9.9
16.10
3.3, 3.4, 3.D



Core people of our DigI team (11 partners from 9 countries)



Christine Holst
UiO - Norway



Dr. Bernard Ngowi
NIMR - Tanzania



Prof. Josef Noll
BasicInternet
UiO - Norway



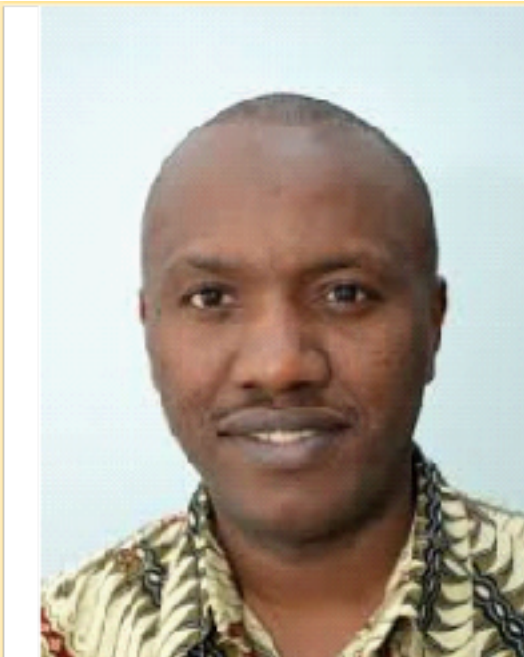
Prof. Andrea Winkler
UiO - Norway



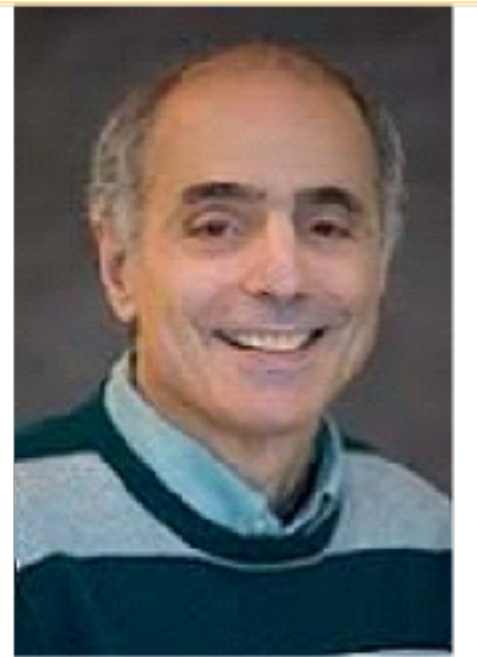
Prof. Helena Ngowi
SUA - Tanzania



Mr. Erwan Le Quentrec
Orange - France



Dr. Maurice Isabwe
FCI - Rwanda



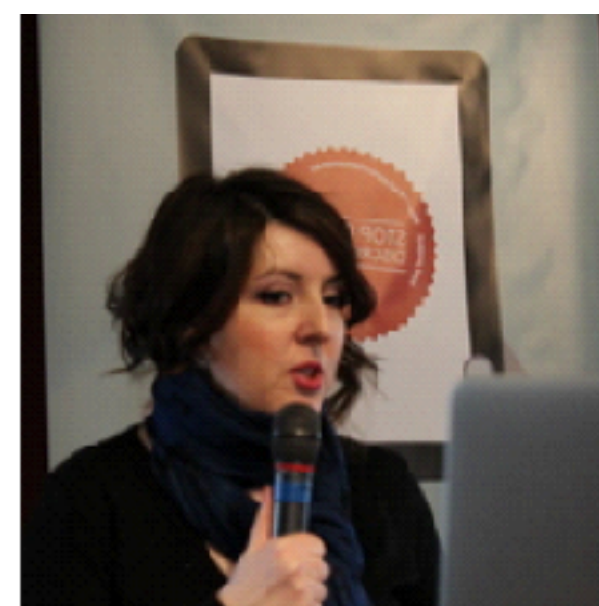
Dr. Peter Cardellichio
Global Health Media - USA



Mrs. Flora Kajuna
SUA - Tanzania



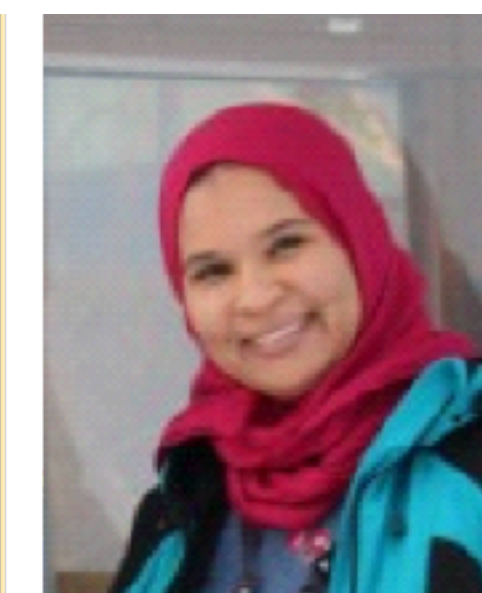
Dr. Felix Sukums,
Muhas - Tanzania



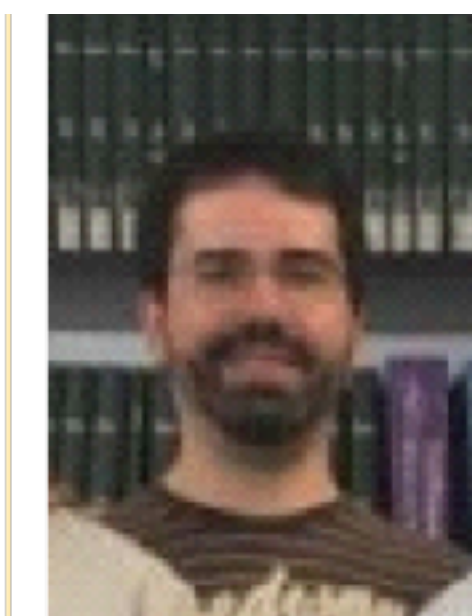
Dr. Danica Radovanovic
BasicInternet - Serbia



Dr. Elibariki Mwakapeje
MoH - Tanzania



Mrs. WisamA. Mansour
BasicInternet - Norway



Dr. Inaki Garritano
Mondragon University - Spain



Dr. Sudhir Dixit
BasicInternet - USA