Strategy Meeting Energy Section, ITS@UiO

Contribution to Energy Strategy

Connect the Unconnected, #IoT4All, #SocietalEmpowerment

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Vision and Mission

- Vision:
  "Transformation to affordable zero-net energy systems for All"
- Mission:
  - ➡ Research for modern and sustainable energy
  - ➡ Create the technology vision for a renewable energy systems
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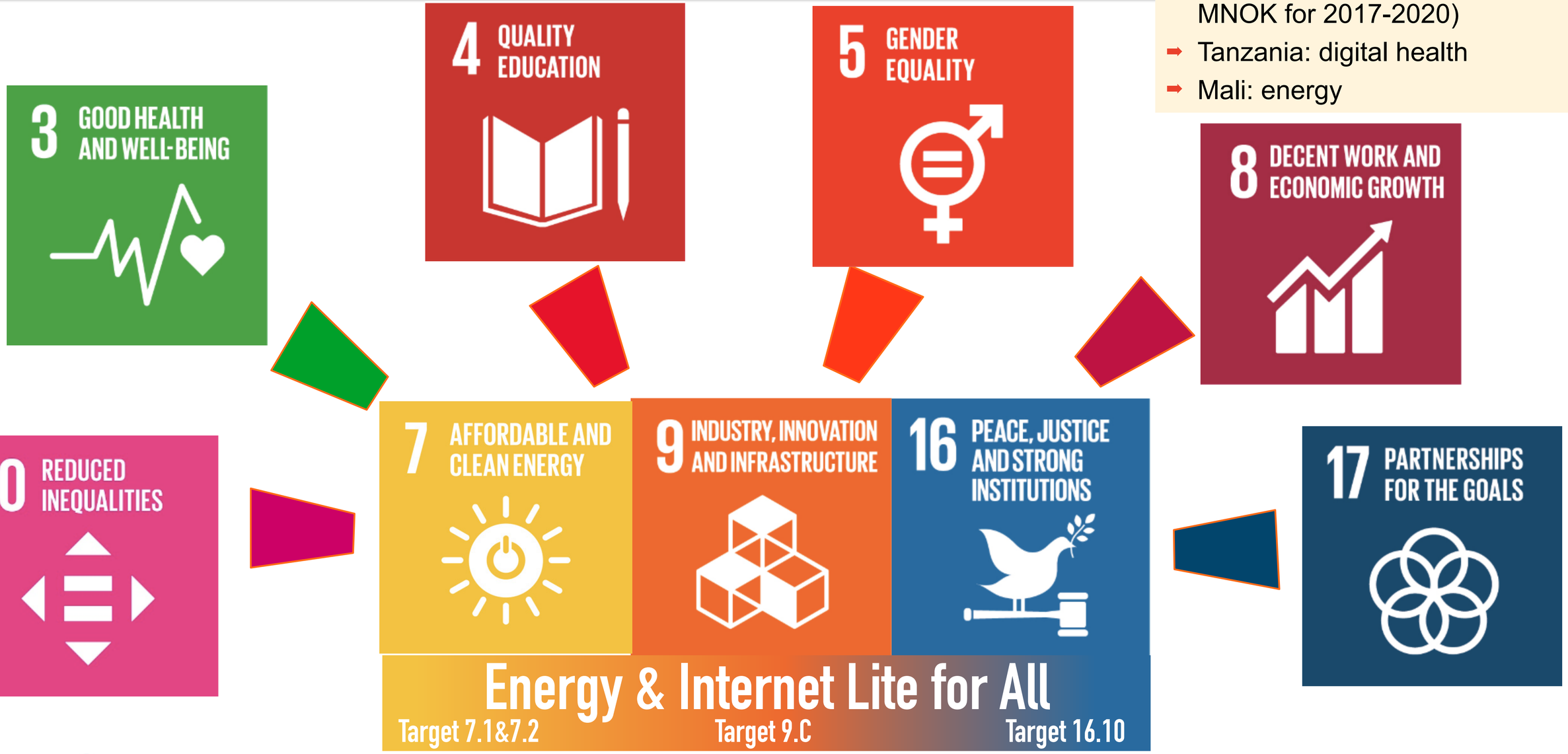
- Answering SDG 7 targets:
- 7.1 By 2030, ensure universal access to affordable, reliable, and modern energy services
- 7.2 Increase substantially the share of renewable energy in the global energy mix by 2030
- 7.3 double the global rate of improvement in energy efficiency by 2030
- 7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies
- 7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, particularly LDCs and SIDS

Affordable Energy & Internet Lite for All
the catalysts for the goals

Showcase
"Non discriminating access" project

- funded by RCN and Mfa/Norad (14.9 MNOK for 2017-2020)
- Tanzania: digital health
- Mali: energy



8 DECENT WORK AND ECONOMIC GROWTH

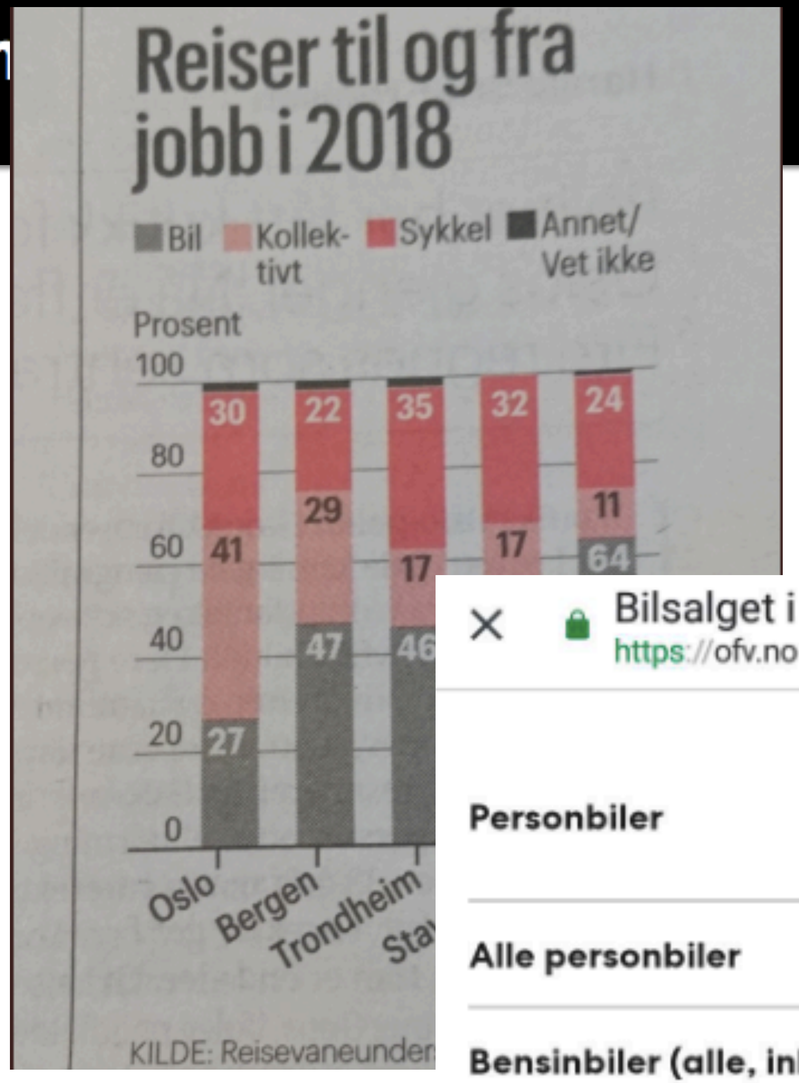
Example: Decent Work

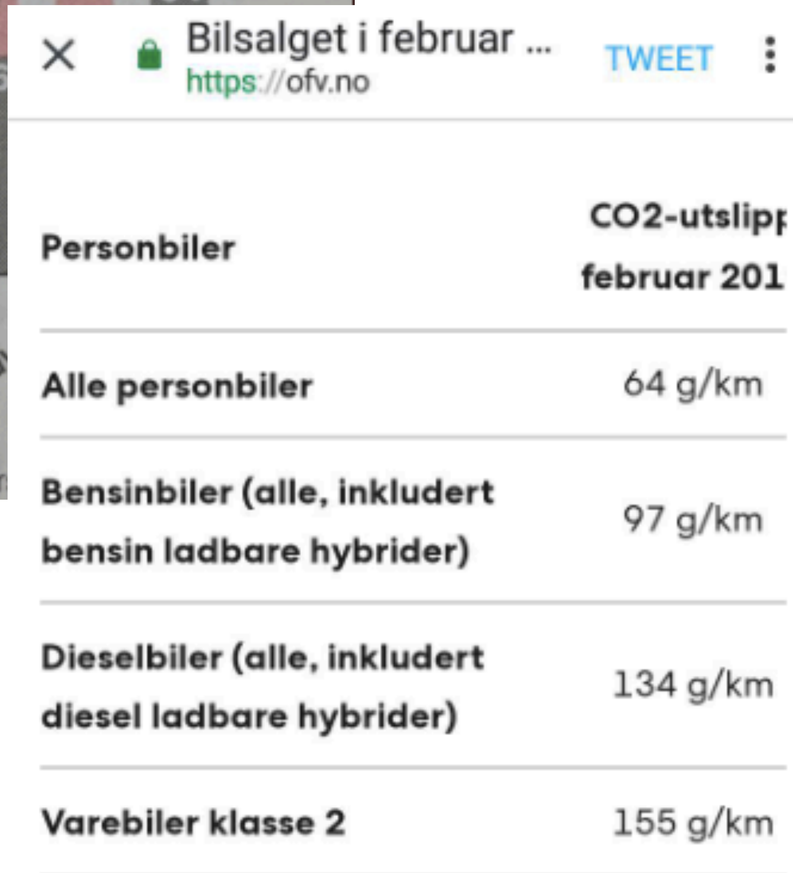
- Centre for Monitoring the Indian Economy:
- 11 Million jobs lost in 2018
  - 9 Million in rural areas
  - 8.8 Million women lost work

- 31 Million look for work
  - most of them in RUrban area
  - from 80/20% Rural/Urban to
  - 70 / 15 / 15% Rural / RUrban / Urban

Challenge: Transport

- Transport (Example Norway, Feb2019):
- Petrol and Diesel **new** cars increased CO2 emission
  - due to ~50% electric cars, total of 64 g/km
  - Mar2019: >50% electric car sales + 18% hybrid
- Oslo: CO2 reduction by 8% (2015-2016)
  - 5% CO2 reduction in transport
  - Climate goals of 2017 reached in 2016
  - Travel to work: 30% bike + 41% public transport (only 27% car)

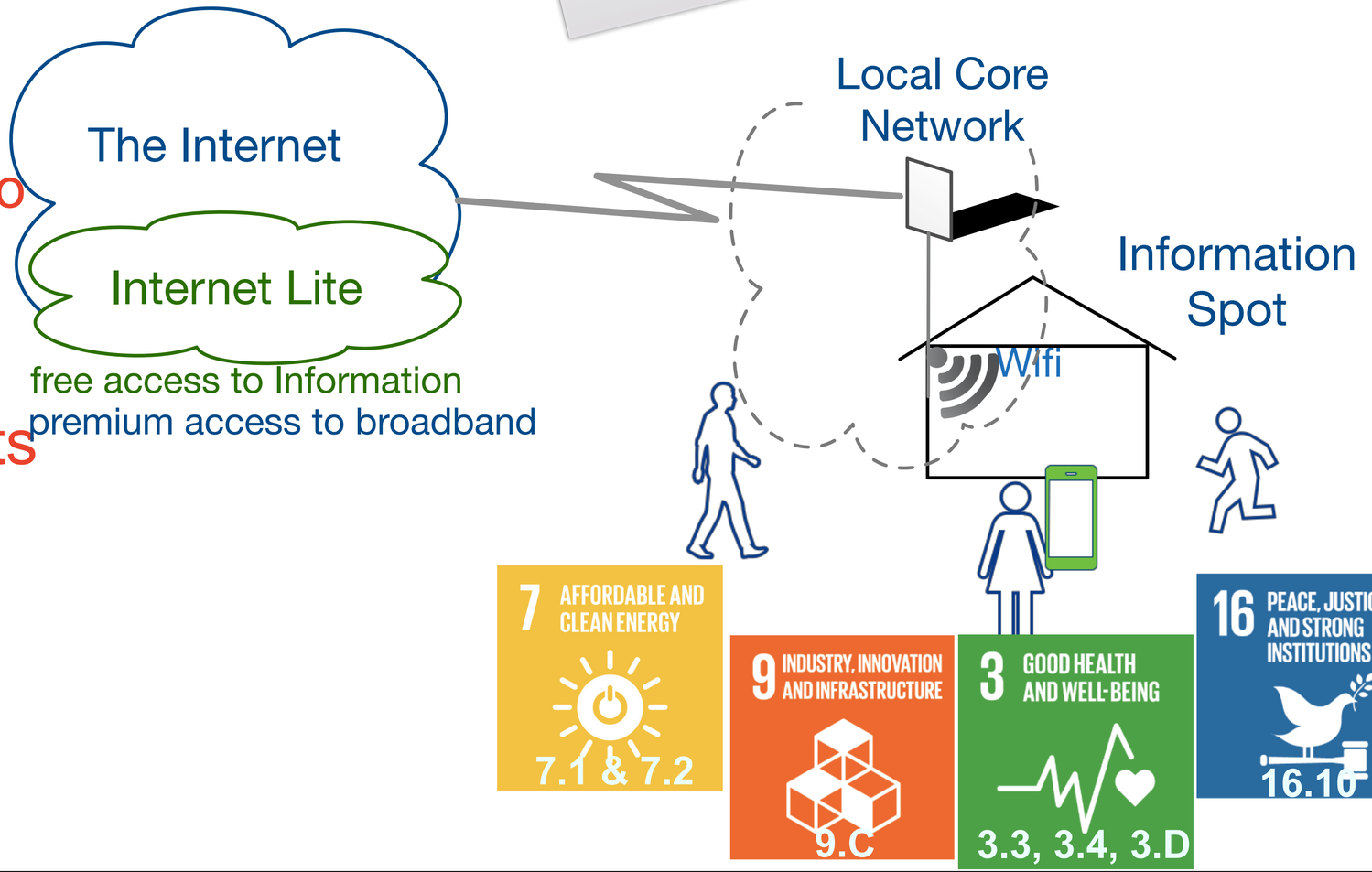




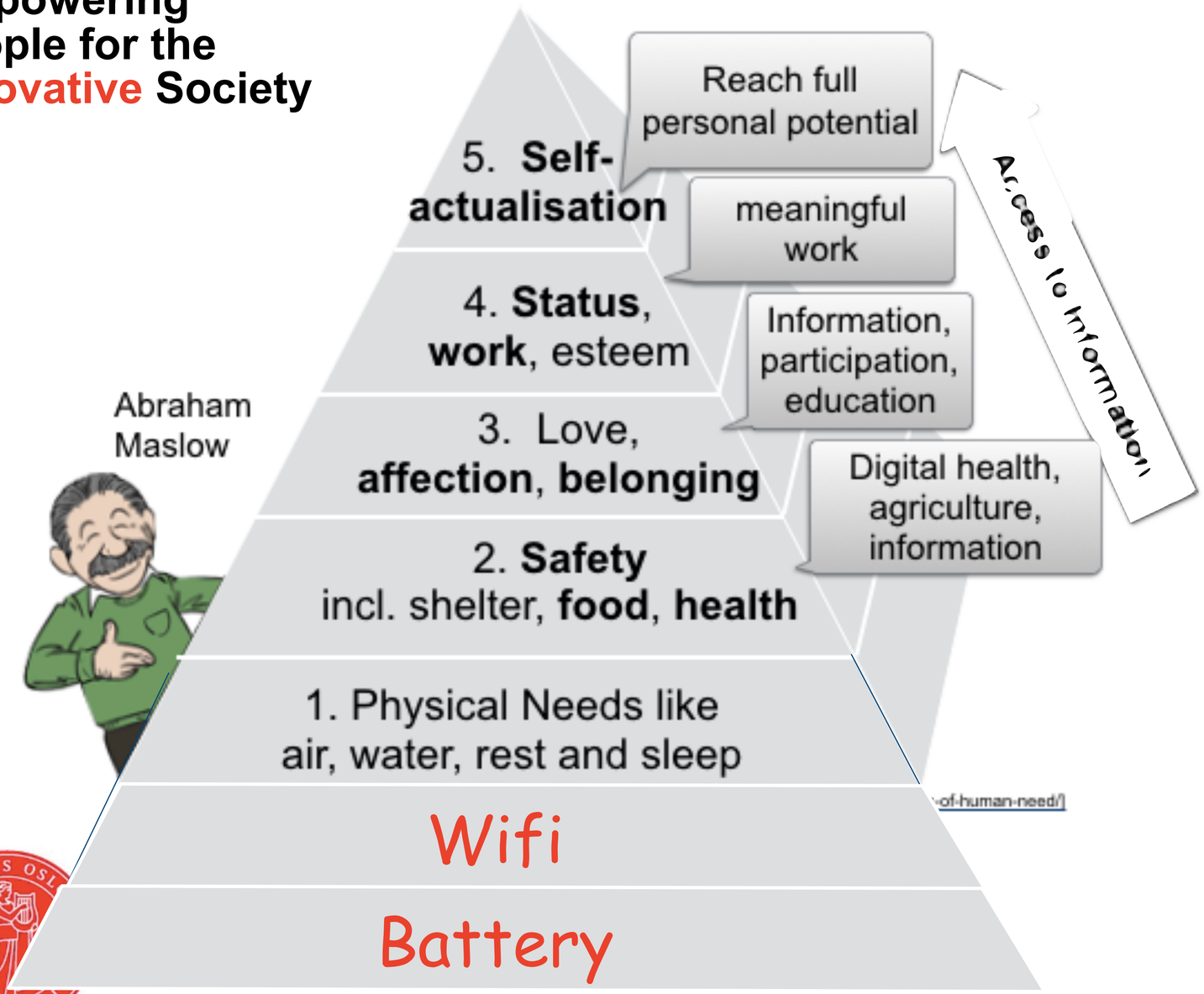
“Internet Lite & Affordable Energy for All”

- Energy, Digital & Health, the building blocks for societal empowerment
- Freemium model for access
  - ➡ Free: text, pictures & local video
  - ➡ Premium: broadband services
- Build Village Information Spots
  - ➡ Free access to information
    - Energy usage
    - Health
    - Education
    - Entrepreneurship, e.g. Agriculture

Starting with one Information Spot per village



Empowering people for the Innovative Society



First Movers

Fast Followers

Mass Adaption

Societal Empowerment

Digital Health Spot for 300 €

Creating digital access for the unconnected

2017

Basic Internet

- Digital society
- Agricultural and rural development
- Education
- Health
- Food, water and shelter

Digital inclusion

The catalyst for sustainable development

300 €	digital health hotspot
60.000 €	connecting a village in TZ
200.000.000 €	connecting all villages in TZ
330.000.000 €	EU border control per year

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

digi.basicinternet.no

Basic Internet

Founded by: UiO : University of Oslo, KJELLER INNOVASJON

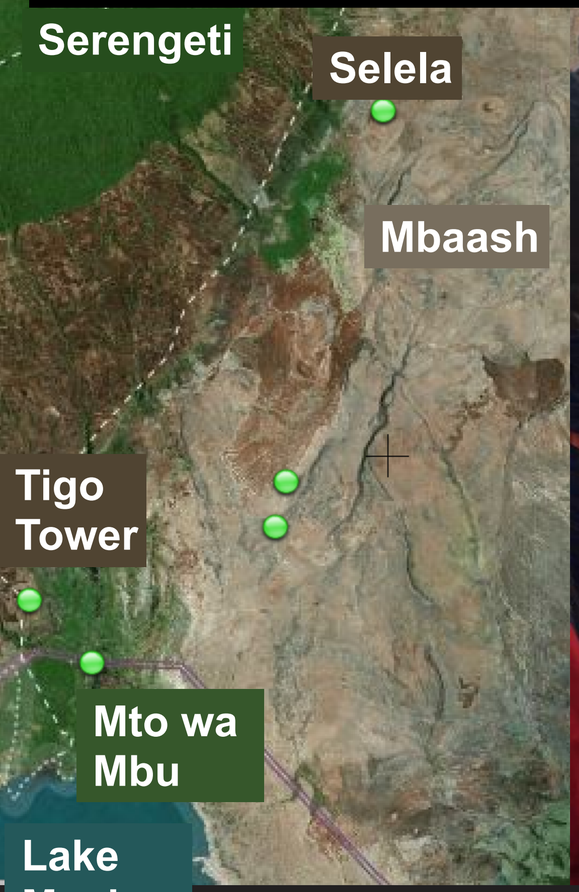
018, Sudhir Dixit, Josef Noll

“Connect the Unconnected”

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

Esilalei

“Connect the Unconnected”
Selela Market Place



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

“Connect the Unconnected”
Izazi

Basic Internet Foundation

Installation time: 90 min
catching the signal from the Vodacom tower in Migoli (~10km away)

“Connecting the Unconnected”
Migoli (Nyerere High School)

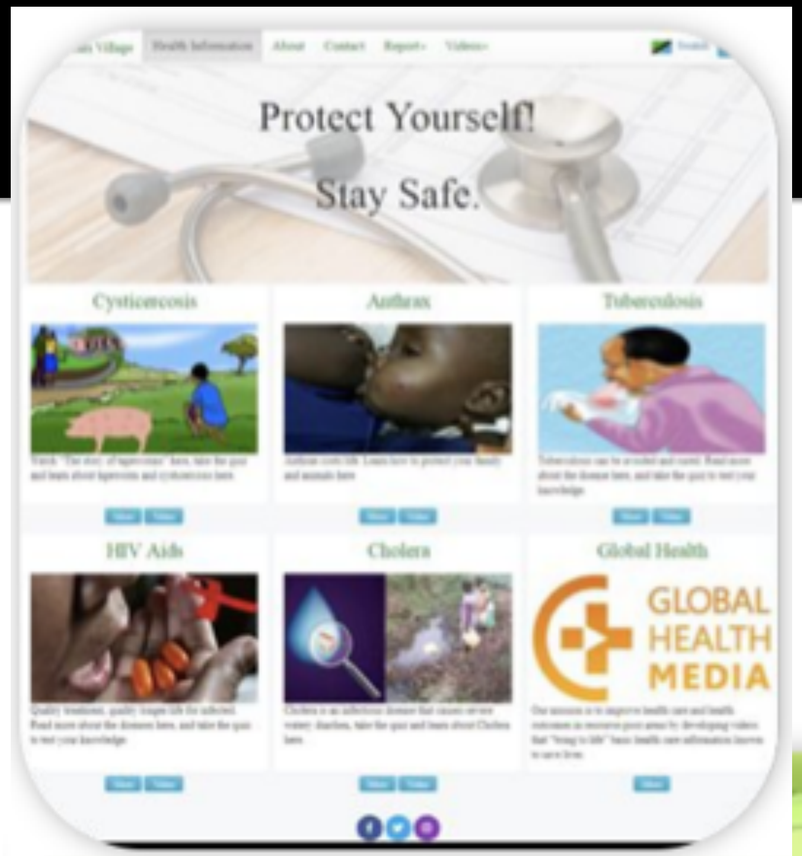
Basic Internet Foundation

1271 pupils, 34 full-time teachers
9 m pole (above trees) base to connect
- Migoli health station
- Migoli village office

Mbaash (Selela)

Village Platform yeboo.com

- Everyone has free access to the village platform yeboo.com
  - ➡ Health Messages
  - ➡ Reporting/Feedback
    - digital Key Performance Indicators
  - ➡ Sustainable Business - Freemium
    - Digital Inclusion (free access)
- Can be expaned to
  - ➡ Education, Agriculture, Entrenpreneurship…



Home Notifications Messages Search Twitter

Basic Internet Foundation

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@Basic4All Follows you

Envision a world of free access to basic information on health care, education or development. Join our quest to make this vision a reality!

Kjeller, Norway

BasicInternet.org

Joined March 2015

Tweet to Message

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@Basic4All

Following

The panel highlights some references to be taken into consideration, including the @Basic4All 's DigI project in Tanzania #SDGs #digitalinclusion #DigitalCooperation @UNSGdigicoop

There has also been considerable private sector activity in this arena. Loon, a project of Google's parent company Alphabet, uses internet-enabled balloons – in the aftermath of Hurricane Maria, they provided connectivity to 200,000 in Puerto Rico.[55] Amazon, OneWeb, Telesat, Space Norway and SpaceX are among companies considering connectivity solutions using low-earth orbit satellites.[56]

Some countries, such as Indonesia, have set targets that treat internet connectivity as a national priority.[57] While finance alone will not achieve universal internet access, it can help if invested wisely: some countries are generating financing from fees on existing communication network providers to help expand systems to those who are currently uncovered, for example through Universal Service Funds.[58]

Advance market commitments deserve further consideration as a possible way to incentivise investment, as they have in other areas such as vaccine developments. They involve a commitment to pay for a future product or service once it exists; the commitment in this case could come from consortia of governments, international organisations or others interested in enabling specific uses in areas such as health or education.[59]

Many local groups are also working on small-scale community solutions: for example, a rural community of 6,000 people in Mankosi, South Africa, built a solar-powered "mesh network" in collaboration with a university.[60] Such community projects are often not just about getting online but building skills and empowering locals to use technology for development and entrepreneurship.[61]

organisations.[66] Init
should start with
deployment and eva

Efforts to improve di
a clear and agreed se
the Organisation for
the Group of Twenty
needs to be broadened
importantly, needs gr
countries.[67] The Panel
and governments to dev
measures of digital incl
about measurements an
issues underlying inclusio

2.2 RETHINKING HOW WE WORK AND LEARN

Many previous waves of technological change have shifted what skills are demanded in the labour market, making some jobs obsolete while creating new ones. But the current wave of change may be the most rapid and unpredictable in history. How to prepare people to earn a livelihood in the digital age – and how to protect those struggling to do so – is a critical question for digital cooperation for governments and other stakeholders who aim to reduce inequality and achieve the SDGs.

Vi trenger:
- tilgang til landsbygda
- politisk forankring
- resurser

Basic Internet Foundation

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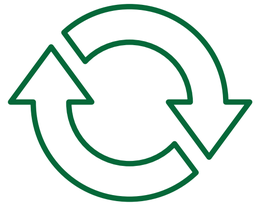
- Next steps:
  - ➡ Identify Scientific Challenges
  - ➡ Clarify Showcases
  - ➡ Partnerships
    - ➡ SWOT - IFE - Energy Systems
  - ➡ Public Attention/Formidling
  - ➡ Teaching/Courses
  - ➡ Meeting plan
    - how often
    - topics
  - ➡ AOB

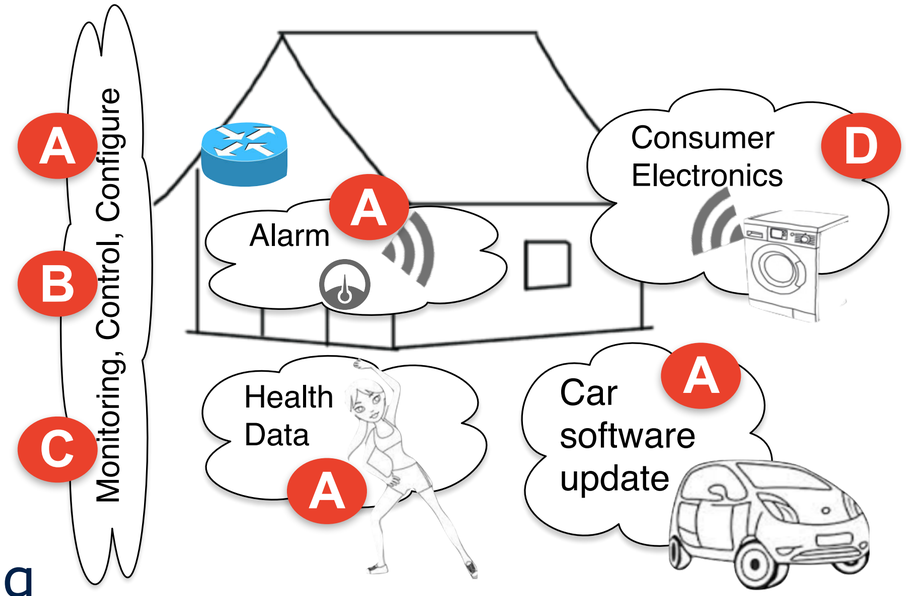
Scientific Challenges

Security Paradigm / Security Classes

- Security classes A B C D
  - Target security goals for design (home alarm = Sec Class A)
  - build the system, security enhancing technologies
    - link data from Class D (consumer electronics) into Class A operation
  - validation, check against threats (“continuous update”)
- Metrics and indicators for different stages of the IoT life-cycle
- Novel Risk Map: Impact over Exposure
  - Common weakness score system
  - Composite security metrics
- Certification methodologies
  - Risk database versus exposure database
- Benefits: quick security evaluation and budget planning



IoT lifecycle

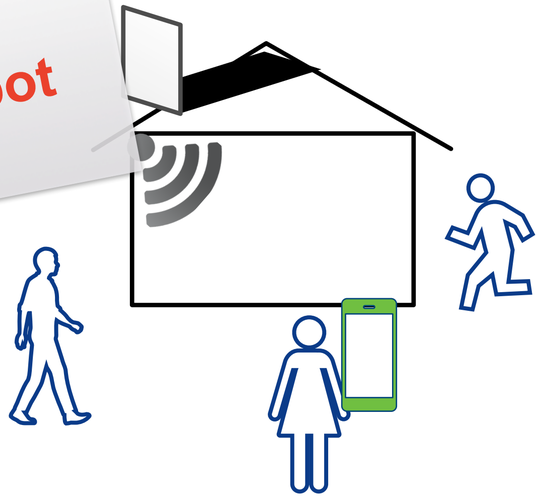


Conclusion

- "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

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