



Wireless World Research Forum #41, Herning, 30Oct-1Nov2018

Freemium Model for Smart Network Access

Prof. Josef Noll

University of Oslo

Basic Internet Foundation

josef.noll@its.uio.no, m: +47 9083 8066

Diql.BasicInternet.no

- Smart Networks - for whom?
 - ➔ Industry (secured wireless, Industry 4.0)
 - ➔ Consumer (IoT, Entertainment)
 - ➔ Individuals and Societies (...)
- Addressing the Grand Challenges
 - ➔ Climate
 - ➔ Resources
 - ➔ Societal Gap
- Freemium Network Access “Internet lite for all”
 - ➔ Application specific routing
 - ➔ Digital Empowerment

Smart Networks for Industry

- Core demand
- Edge intelligence
 - ➔ Edge/fog computing
- End-to-end QoS and isolation
 - ➔ network slicing
 - ➔ heterogeneity(?)

- 1 5G may be disruptive for the manufacturing industry
- 2 Edge computing for shifting intelligence to the network
- 3 Network slicing for providing end-to-end QoS & isolation
- 4 Many industrial requirements not fully addressed yet
- 5 Close interaction of the whole ecosystem needed
- 6 Industry 4.0 may become THE killer application for 5G 😊

[Source: Andreas Mueller, Bosch, 2018]

largest security
project in EU

58 partners from
12 countries

80 M€ budget
35 M€ EU & national

Secured Connected Trustable Things (SCOTT)

SECURITY



PRIVACY

TRUSTABILITY



USABILITY



SAFETY

Automotive

Home

Rail

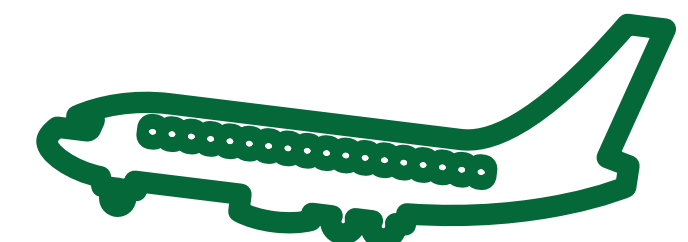
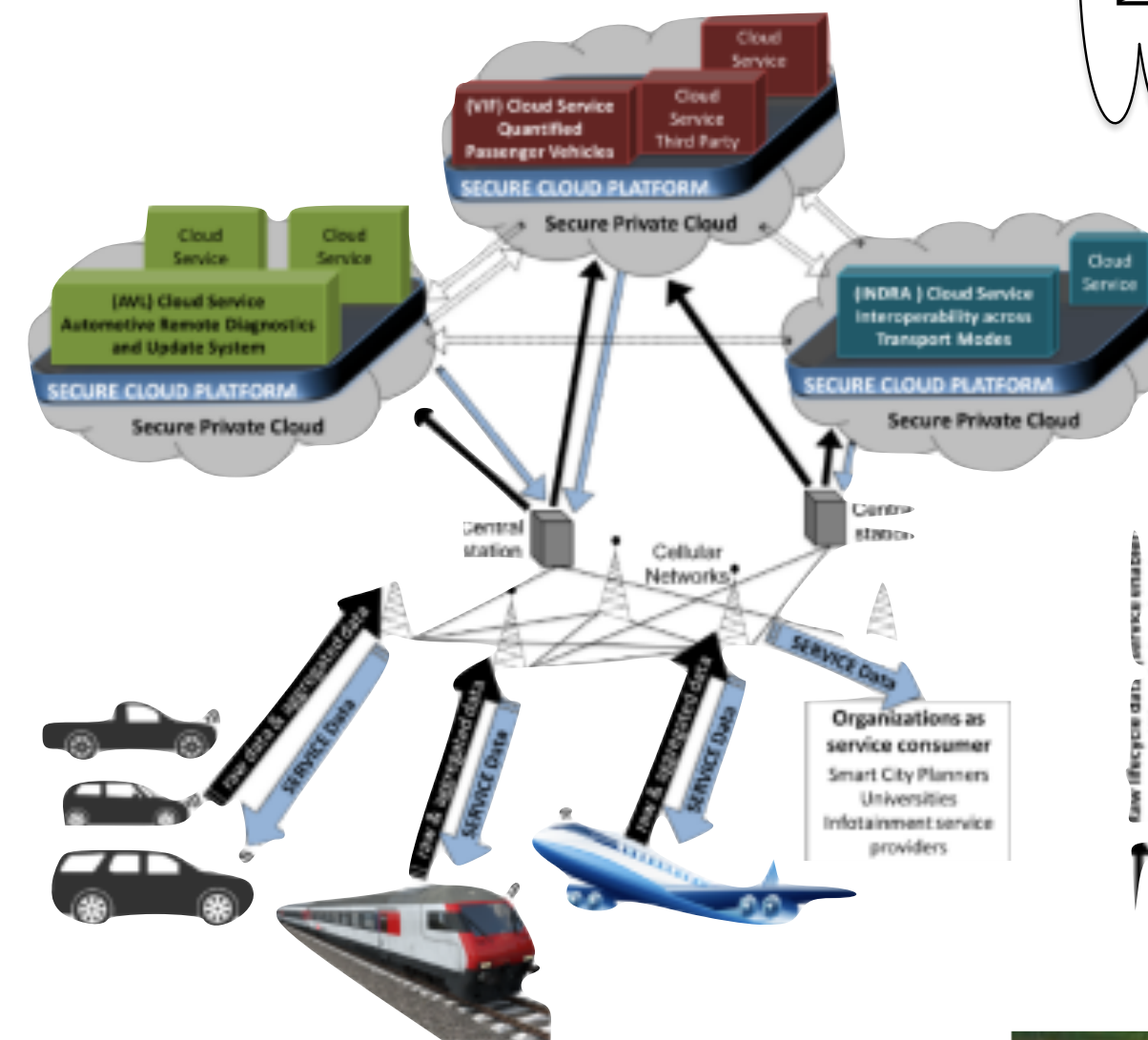
5G

Avionics

- 15 industry-driven Use Cases (TRL 6-7)
- 40 Technology Building Blocks
- 25 Demonstrators
- 5 Domains: Automotive, Aeronautics, Home/Building, Rail, Healthcare, - truly "cross-disciplinary"
- 2017 – 2020 (started in May 2017)

Consumer Electronics

-
- Monitoring, Control, Configure
- Alarm
- Consumer Electronics
- Health Data
- Car software update
- GOTT
Gathering Us Together



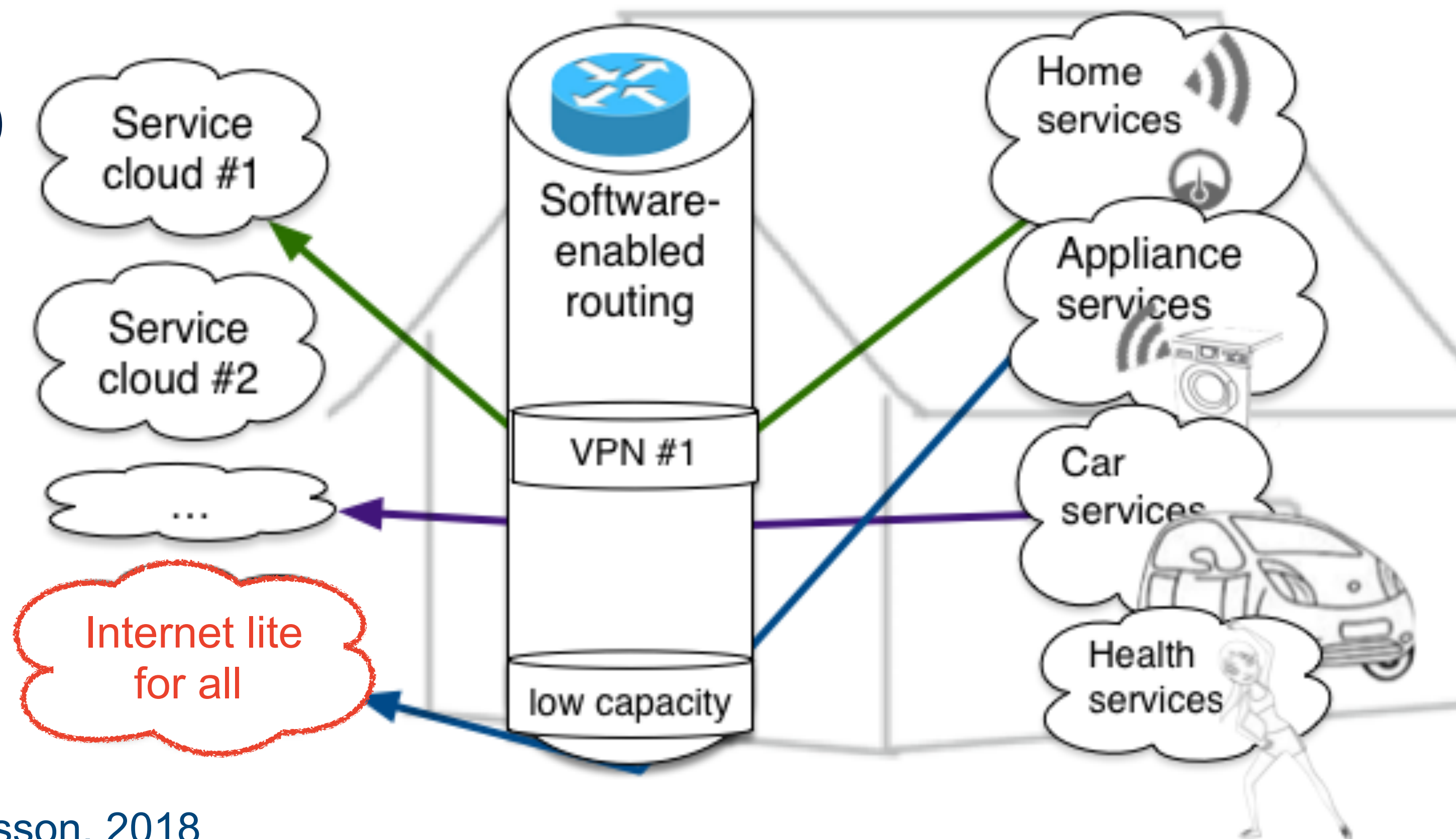
Smart Networks - the home domain

- **Cost-efficient monitoring and management** for trusted services

- Wireless **management**
- **Security** monitoring
- Service harmonisation (**5G@home**)

- The digital Divide

- **10x increase** in Mobile Broadband (2013-2019) [1]
- Netflix, YouTube, Hulu
- **26%** of NO-subscribers **don't have** [2]
- 8% (400.000) NO not connected to the Internet [3]



[1] Service Innovation through Smart Networks, Ericsson, 2018

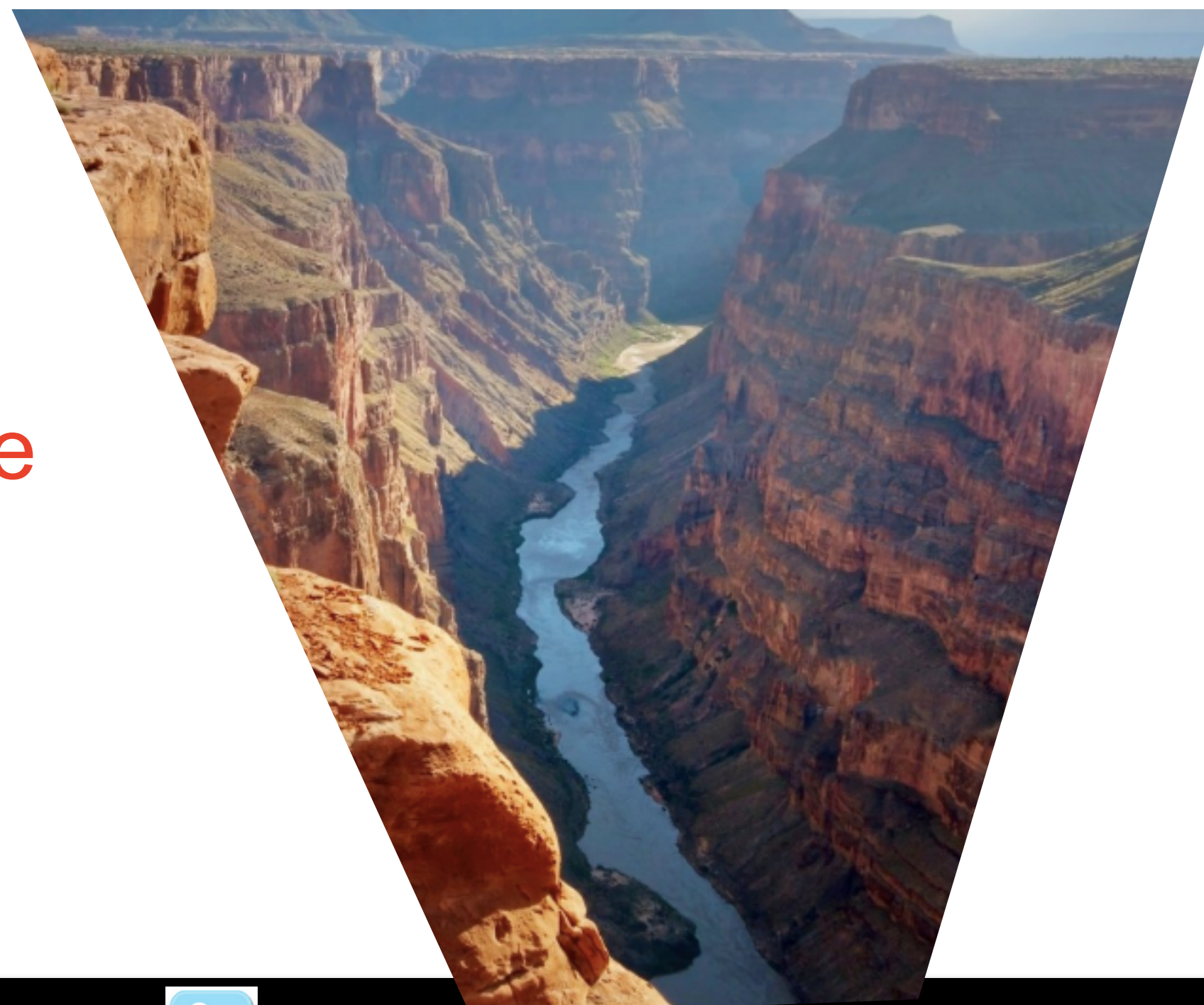
[2] Det norske ekomarkedet 2017, NKOM.no, 2018

[3] "Sauebonden som aldri...", aftenposten.no, 7Okt2018

Smart Networks in a changing world

- Smart networks
 - ➔ End-to-end service quality
 - ➔ Security and Privacy
 - ➔ Application specific routing
 - ➔ Service differentiation
 - ➔ 5G@Home

- Will enhance
 - ➔ the **digital divide**



- **Grand Challenges**
 - ➔ Climate
 - ➔ Resources (radio, minerals)
 - Kobald (East - DR Congo)
 - ➔ Divide
- How are **we** going to **address the challenges**?
 - ➔ Smart Networks for border control
 - or -
 - ➔ Digital Inclusion through **Freemium** Model for **Access**
#5GforAll

The challenge of area coverage

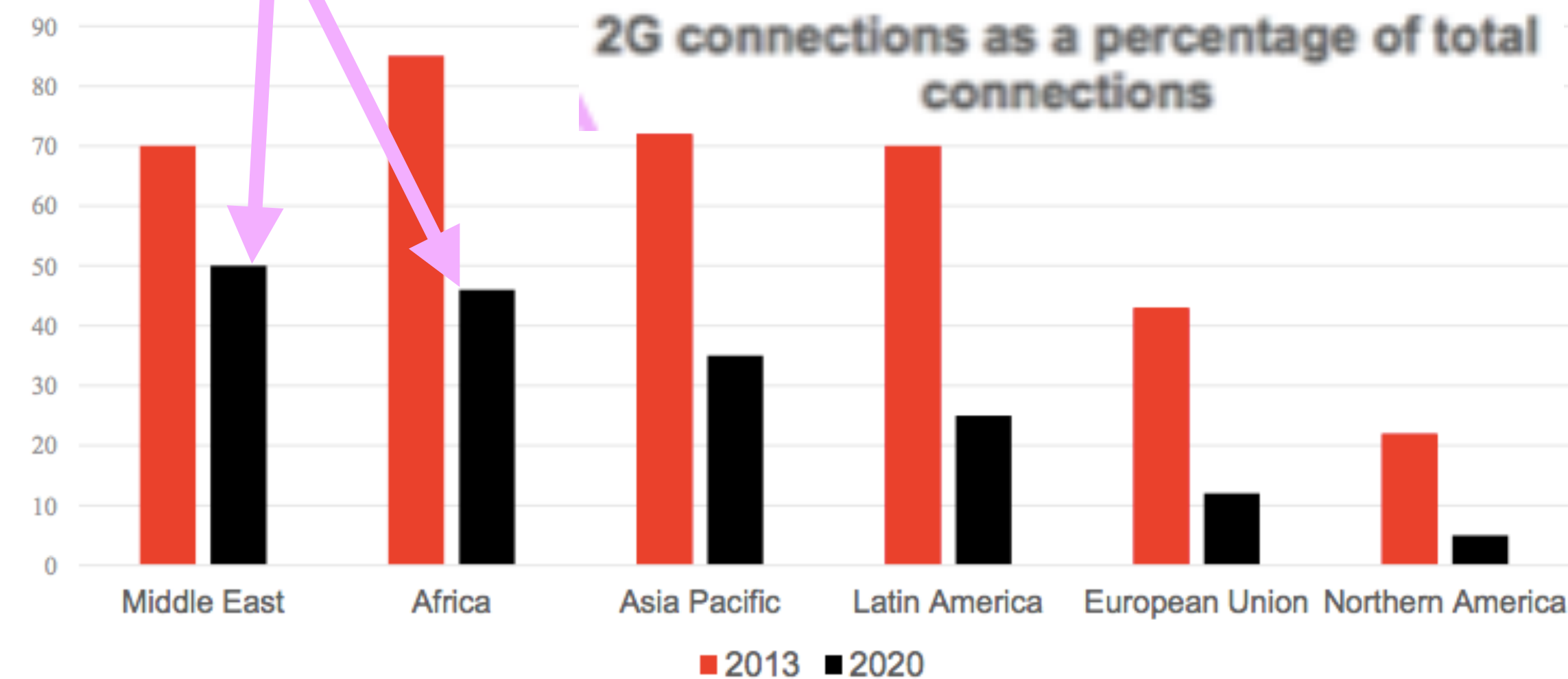
- Land area Norway, 385.178 km²
7500 basestasjons
- <http://www.mynewsdesk.com/no/telenor/pressreleases/sjekk-naar-du-faar-4g-der-du-bor-1399662>
- Tanzania 947.303 km² = **3 x** Norway,
- Mali 1.240.000 km² = **4 x** Norway
- DR Congo 2.345.000 km² = **8 x** Norway
- Economy in building Wireless Broadband

#5GforAll



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

~50% 2G in 2020



Partnership for Digital Africa

<http://www.aftenposten.no/meninger/debatt/Kronikk-Som-gjesteland-pa-G20-toppmotet-ma-vi-bidra-til-a-endre-verden--Erna->

Basic Internet

Comment: As a guest country at the G20 summit, we must change the world. Erna Solberg

G20:
Compact with Africa



In July last year was Erna Solberg invited by Angela Merkel for this year's G20 meeting. Here from a meeting between the German Chancellor and the Norwegian Prime Minister in Berlin in November, where Norway's participation as guest country at the economic summit were among issues discussed.

Secretary-General's High-level Panel on Digital Cooperation



PANEL DOCUMENT

- Press release
- Terms of reference
- Panel member bios

Call for Contribution

G20 can therefore help the economies and international organizations use their resources more effectively to create growth and job creation.

3. Health and education.

Norway has long had a heavy international involvement. Education and health are associated with economic growth.

Internet lite for All - the “walk on the Internet”

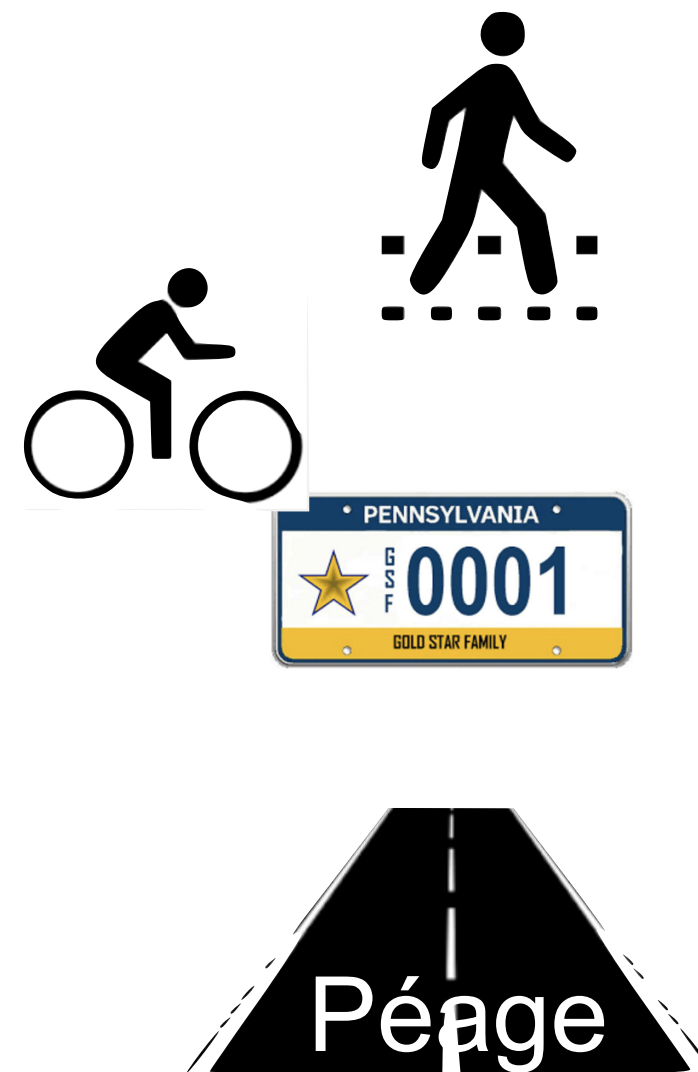
Road Infrastructure

- 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



Freemium Model “Internet Lite for All”

- Free Access

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



- Premium Access

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



multimedia++

Internet lite for all *the catalyst for the goals*



- *“Non discriminating access” project*
 - funded by RCN and Mfa/Norad (14.9 MNOK for 2017-2020)
 - Tanzania: digital health

Digi.BasicInternet.no

- Providing Free Information
 - ➔ through Information spots
 - ➔ Freemium model for access



Information Spot
Freemium Access

Society Platform
- Yeboo.com

Basic
Internet
Foundation

A screenshot of the Izazi Social website interface. The top navigation bar includes a home icon, 'Izazi Village', 'Information', 'Report', 'Videos', a settings icon, and a 'LOGIN' button. The main content area features a large image of a group of people sitting under a large tree, with the text 'Izazi-Social' overlaid. Below this image are three columns: 'Izazi Information' with a sunset image and text about the village's history and population; 'Izazi Health' with a photo of three children and text about a digital health intervention; and 'Izazi Social' with a photo of people under a tree and text about community life. Each column has a 'MORE' button at the bottom.

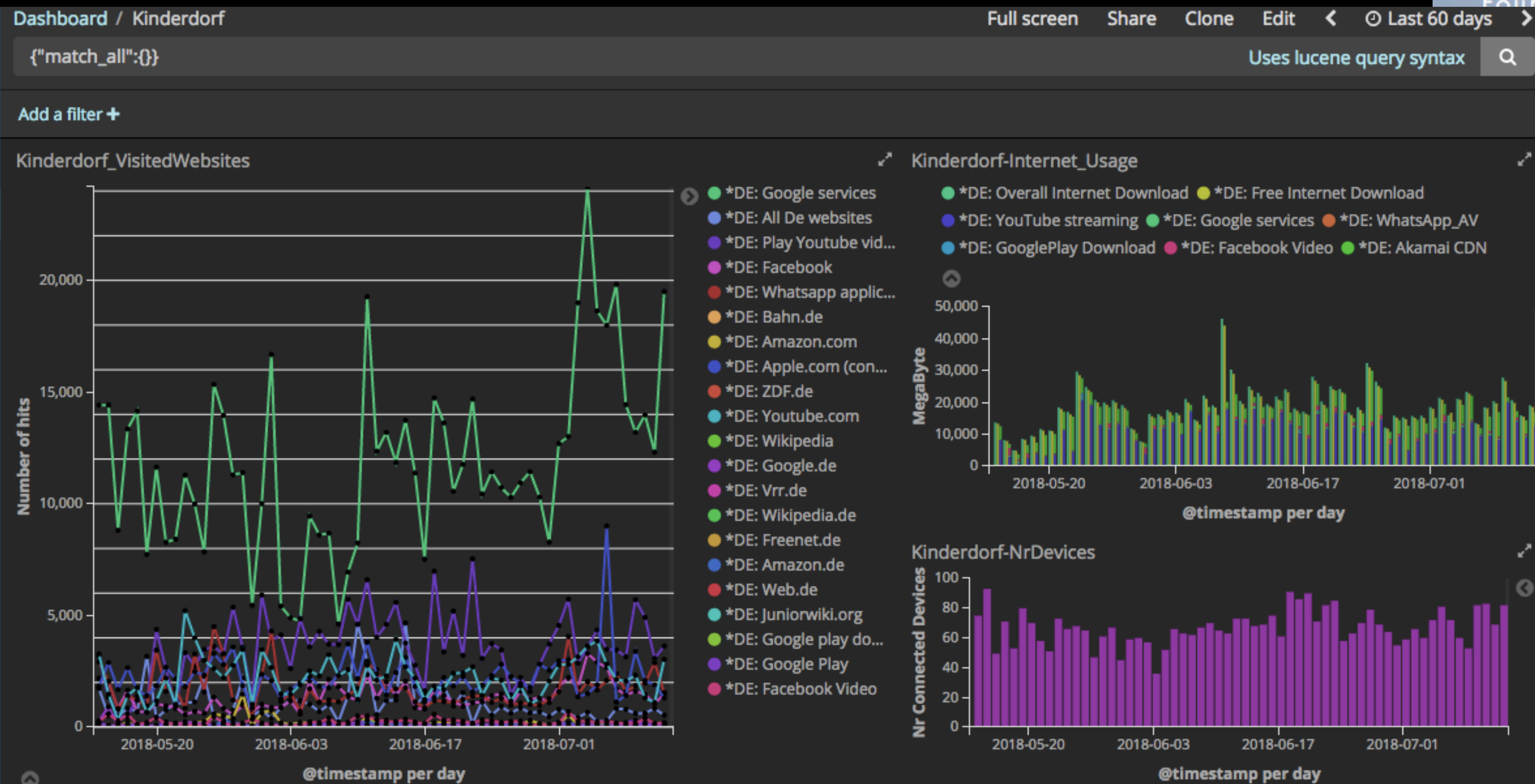
Collaboration: Caritas - Basic Internet Foundation

- Internet lite in the Caritas Kinderdorf (Bottrop, DE)
 - ➔ Free information access for 60 children/youngsters
 - ➔ Pedagogical concepts including the children

- Partnership with Caritas (Diozöse Essen)
 - ➔ Digital Participation for all
 - ➔ Social Innovation “Social Digital Hubs”
 - ➔ Free Information access “Internet lite for all”

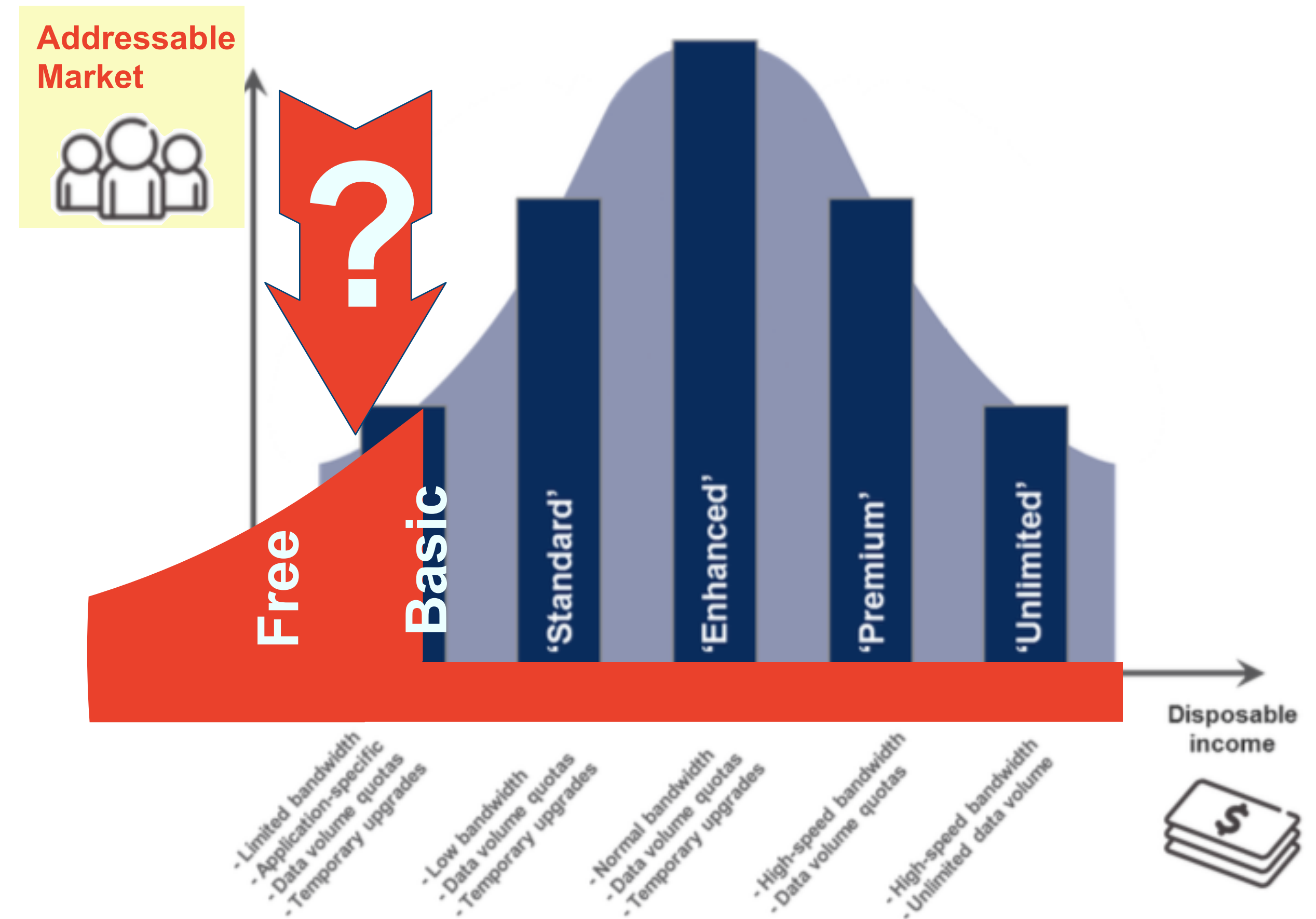


Overview service offers & Network Management



Smart Network contribution for digital inclusion

- Traffic categorization
 - text, pictures & local video
 - broadband services
- Service-aware charging & control
 - **Freemium** model for access
 - free information
 - premium broadband
 - 1 premium pays for 300 free



[Source: Service Innovation through Smart Networks, Ericsson, 2018]

Conclusions: Using Smart Networks to reach the society

- **Internet lite** for **all**
 - ➔ “Nobody should be left out from the Digital Society”
 - ➔ Give everyone **access to digital information**
- **Traditional business** models are too slow
 - ➔ Mobile broadband roll-out dominated by return on investment
 - ➔ Premier league, Bollywood **outranges non-profit content**
- Address the Digital Divide through Smart Networks
 - ➔ Provide at least **one Information Spot** in each village
 - ➔ **Internet lite for all** - the freemium model for access
 - ➔ **Premium** access to profitable content - **sustainable** solution

