Digital Inclusion and Empowerment

The killer app for 6G

Josef Noll
University of Oslo & Basic Internet Foundation
Kjeller, Norway
josef@jnoll.net, m: 9083 8066
Background for BasicInternet Main Message

- **Grand Challenges**
  - Climate
  - Resources (radio, minerals)
    - Kobald (East - DR Congo)
  - Divide

- **Digitisation**
  - Mobile Networks
  - IoT
  - Automation
  - …

- Will enhance
  - the digital divide

**Basic Internet Focus**

- How are we going to address the challenges?

- Digital Inclusion and Empowerment
  - Specific Solution:
    - Internet Lite for All
    - Freemium Model for Access
“Internet had the ability to dismantle the divide. Internet failed miserably, the divide is bigger than ever.”
Kate Gilmore, Human Rights, UNO

Additional information in form of chart World individuals using the Internet as percent of population to 2016 according @worldbankdata by web app ERC (Economic RESTful Client) #OpenData #dataviz #webapp
The challenge of area coverage

- Land area Norway, 385.178 km²
  7500 basestasjons

- 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

~50% 2G in 2020
Digital Inclusion of everyone

- **Business aspects**
  - OPEX, CAPEX
  - Income models?

- **Traditional business** models are too slow
  - Mobile broadband roll-out dominated by return on investment
  - Premier league, Bollywood *outranges* non-profit content

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Telecom view on 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]
6G (#5GforAll) for digital inclusion

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

- "Internet Lite for All" is the catalyst for the SDGs
  - free access to information for everyone
    - "walking and cycling on the Internet"
  - Digital Inclusion and Empowerment

- Freemium model for access
  - free access to information for all
  - premium access to broadband
  - sustainable solution

"Providing Internet to the basic of the pyramid isn't a question of affordability, but rather a question of sustainability”

Internet Governance Forum, Panel,

At least one Information Spot per village
Internet lite for all
the catalyst for the goals

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

Target 9.C
Target 16.10

"Key Message - Internet lite for all"
Nov2018, Josef Noll
Strategic Goals

1. Get the message “Internet lite for all” across

2. Establish the Sustainable Business Model for Freemium Access

3. Demonstrate the proof of concept
1. Get the message across - “Internet lite for all”

- as part of the framework: health, energy & information as building blocks for enabling the society
- Norwegian Government, Governments in Africa
- United Nations, Internet Governance Forum (IGF), ITU
- Strong partnerships
  - Aid organisations
  - Digital health as enabler for better health and digital literacy
  - Industrial partners in need for communication
  - Energy suppliers (micro-grids) as partners
  - Telecom providers (Orange in Mali agreed)
  - 6G for All: “Digital Inclusion is the killer app for 6G”
Estimation
Cost of ICT development

Comparison - societal costs

- local Wifi spots
- based on Satellite connectivity

Half a dollar is enough*

Source: UK GOVERNMENT UNIT COST DATABASE
www.data.gov.uk/sib_knowledge_box/toolkit
G20: Compact with Africa

Call for Contribution

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

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

Partnership for Digital Africa


G20 can therefore help the companies and international organizations use their resources more efficiently and treat growth and job creation.

3. Health and education.

Norway has long had a heavy international involvement. Education and health are associated with economic growth.
Digl.BasicInternet.no

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

Society Platform - Yeboo.com

Information Spot
Freemium Access
How to reach the Strategic Goal 2

2. Establish the **Sustainable Business Model** for Freemium Access

- Selling of vouchers
- Sponsored content
- Banking, online-shopping
- Governmental:
  - health
  - education
- Costs of non-delivery
  - UK:
- Local entrepreneurship
  - mobile charging
How to reach the Strategic Goal 3

- **3. Demonstrate the proof of concept**
  - Pilot demonstrations & Operational Excellency
    - Technology works already, more than 4 years of operation
      - Germany: Caritas Kinderdorf
      - Norway: Health Stations
  
- Support with strong partners
  - Tanzania: Digital Global Health as Enabler
  - Orange Mali: Empowerment of the Society
  - Caritas Kinderdorf: Proof of concept with 100+ devices
  - India: Governmental Support of Grand Panchayats
Internet light: Demand for information only

- Average Web Pages
  - growth: 1 to 3 MB within 5 years
  - images: ~3x
  - video: ~5x

- Web page growth counteracts network development

Growth of Web Pages

[Source: httpArchive.org]
Impact of Web Page size

- 100 Web pages/month
- using 1 Mbit/s satellite link

[derived from: httpArchive.org]
The Network Responsive Web

- Network responsive Web
  - through InfoInternet Standard
  - Adapt to network capabilities
    - Car queue in remote areas
    - Mobile tethering (Wifi)
  - Server-side adaption of content

- Examples
  - Opera Mini (proxy)
  - Chrome (compression)
Infointernet Standard

- **Guidelines Infointernet Standard**
  - Internet Neutrality, “all content”
    - free information (text, pictures, local video)
    - paid entertainment (broadband, download)
  - 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

- Konzept: free

- Pilot: mobile modem and LNCC

- Standard: www.basicinternet.org&network=infointernet

- Add voucher to see the movie 5qhx9

- “Key Message - Internet Lite for all” Nov 2018, Josef Noll
Pilot activities

- Caritas Kinderdorf (Germany) - 9 buildings to connect with Basic Internet
  ➔ upgraded platform with measurement of traffic
- GravidPluss
  ➔ 3 hospitals running with Internet Lite
- Reducing Violence (Trygt Svangerskap)
  ➔ HiOA project med 21 helsestasjoner
- India
  ➔ Pilot with BSNL (statens operatør) in 2 Panchayats
- Søknader:
  ➔ NORGLOBAL 2019
  ➔ ....
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”
India pilot

- Two 90 degree antennas (feeding 1-2 hot spots)
- One Wi-Fi access point for the village Panchayat
- Two Wi-Fi access points for the areas
- One Mikrotik router (Local network control center)
- One local server (?)

- Costs of the equipment by Basic Internet Foundation
- BSNL to provide fibre backhaul (capacity of about 100 Mbps)
Conclusions: Using Internet Lite to empower 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 Internet lite**
  - 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