Freemium Model for Smart Network Access

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Outlook

- 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]
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)
High-level vision for each domain

- Home/Infrastructures: Cost-efficient monitoring and management for trusted services
- Mobile: Configurable networks providing reliable services
- Automotive: Security architecture for accident-free transport
- Rail: Highly flexible train composition
- Aeronautics: Security-Safety
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 ekommarkedet 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

- **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

- **Will enhance**
  - the digital divide
The challenge of area coverage

- Land area Norway, 385.178 km\(^2\)
  7500 basestasjons

- Tanzania 947.303 km\(^2\) = 3 \times\) Norway,
- Mali 1.240.000 km\(^2\) = 4 \times\) Norway
- DR Congo 2.345.000 km\(^2\) = 8 \times\) 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
Comment: As a guest at the G20 summit, we must change the world.

In July last year, Erna Solberg invited 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.

G20 can then do help try to use their resources more effectively and orient towards growth and job creation.

3. Health and education.

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

"Freemium Model for Smart Networks" Okt2018, Josef Noll


G20: Compact with Africa

Partnership for Digital Africa
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

"Non discriminating access" project

- funded by RCN and Mfa/Norad (14.9 MNOK for 2017-2020)
- Tanzania: digital health
• Providing Free Information
  ➤ through Information spots
  ➤ Freemium model for access

Society Platform - Yeboo.com

Information Spot
Freemium Access
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