Mobile Broadband Technology & Services: Sustainability Factors

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DWF workshop: Low cost Broadband Access & Infrastructure
Sustainability Factors

- Broadband Technology Choice
- Entrepreneurship & Local Service Provision
- Indigenous local content & Social Networks
- Network Resource utilization or Sharing
Getting Lost in the Wireless Technology Jungle

- Voice
  - Data, SMS, MMS, e-mail
  - Multimedia Games, GPS Web Services

- Terminals
  - NMT, AMPS
  - 4G/UMA
  - Content CODECs DRM

- Digital Systems
  - AXE, GSM MSC, GPRS

- Multimedia
  - Voice

- PSTN
  - Terminals
  - NMT, AMPS

- FMC/IMS
  - PSTN
  - PSTN

- Time
  - 1980
  - 1985
  - 2002
  - 2008

- Convergence
  - Multi-Service
  - Multi-Mode

- ABC Terminals
  - Mobile Broadband

- Cognitive Radio

- M-Health
  - M-AGRI
  - M-Pay/bank

- WiFi
  - WIMAX
  - NFC
Choice of Mobile Broadband Technology:

3G+HSA &/or WiMAX/WiFi &/or DVB-H?

- 3G + HSA + IMS – Mobile Broadband
  - Multi-Radio & Common Core
  - Use Enterprise Mobile Broadband Development
- WiMAX is new technology + WiFi
  - Extending broadband services to areas without DSL & DSL service with mobility (IEEE802.16e,m)
  - Multi-hop Cellular Networks
- 3G- MBMS & DVB-H Broadcasting services
  - Mobile-TV

.................... ACM Mobicom-08, San Francisco.
An iterative model for Guaranteeing Sustainability

Innovative Mobile Broadband Services (IMBS)
M-Health, M-AGRM-EDU...

Wireless Technology Performance
QoS

Service Usability, Cost, Energy efficiency, Sustainability.

Optimization
Rural Community, Context, Best fit
Innovative Mobile Broadband Services

Defn.: An innovative mobile broadband service is a new mobile service which guarantees successful launch, and is motivated by real need of users. The service should be able to use low power and low cost network architecture and devices. With respect to customers, the service must be affordable, fulfill a requirement, provide a benefit, and promotes the creation of an echo system of stakeholders to sustain economic and social development of the community, technology and services.

- Mobile Applications (Apps. Store Frenzy)
Education, Research & Capacity Building
Mobile Computing & Appl. Software Development

Sustainability Factor 1

1. Masters Curriculum in MCASD

- Innovative Mobile Services /
- Entrepreneurship

Research on Mobile Technology Content & Services

www.cit.ac.ug/MCC

MCASD

1. Mobile Usability, Research, Prototype Lab.

Incubation & Greenhouse

Local Content & Services

www.csir.co.za
Sustainability Factor-2: Echo System & Local content

- Creation of an Echo System of R/USN
  - Promote dev. Indigenous Local Content (ILC)
  - A bottom –up mobile business model
  - Promoting dynamic content based mobile services

- HEI Research support in the creation of ILCs
- Network Operators & MVNOs use of ILCs
- ILCs+ Mobile Adverts as a cost reduction tool
  - Location Information and Intelligence in ILCs
Mobile Social network and services.

RSN - Rural Social Networks
LC - Local Content
USN - Urban Social

Empowerment

Advertisement Agent/Portal Locations based Services

Public Organizations

Farmers COOPs RSN

NGOs Religious Organizations RSN

Rural Markets & Businesses RSN

SMEs
- Schools
- Restaurants
- Supermarkets
- Financial Services

U/RSN
Sustainability Factor 3: Network Sharing

Reason: Broadband – high CAPEX & OPEX

- A new Techno-Economic Model
  - Competing operators: collaborating on RAN Access

- Implications and Long term sustainability
  - Lower Mobile Broadband CAPEX & OPEX
  - Reduction of Mobile Service Costs
  - Lower Energy Requirement
  - Environmental Sustainability

- An Appropriate model for Developing Countries.

- Regulatory incentives ?!

- Only European Operators Going for RAN sharing
  - T-Mobile & 3UK: ~ 2 Billion Euros, ~ 5000 BS sites, less OPEX

- Why not RAN/Core/transport sharing in Africa?
Conclusion

- Choice of Mobile Broadband Technology
  - EDU & Research Capacity Building: MCASD
  - Next Generation Network Technology Strategy

- Research on Innovative Mobile services:
  - M-Health, M-banking, M-ATM, M-E-Gov
  - Security & Reliability of mobile services

- Large Market in Affordable Mobile Services
  - Promote Local Content & Service Providers
  - RAN sharing for improved Affordability

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The Future is Looking Back at Us!

Thank You