Africa and the Internet - let’s revisit reality

Josef Noll
Professor
Department of Technology Systems
From Academia to Mobile Broadband
understanding the business

Jun1973: NO (Kjeller) & GB connected
Jun1986: RARE/TERENA...GEANT (NRENs in Europe)

1993 - **privatisation** of 2G (GSM)
1999 - 3G (UMTS): 3 x ROI expectation, Uni co-dev
2004 - 4G (LTE): 120 km range, Supplier dev

Aug2003: Reykjavik “Cybersecurity”

Mar2023: “Societal Security” - Digital Equity - #ConnectTheFuture

Source: [http://www.michaelkaul.de/history/history.htm](http://www.michaelkaul.de/history/history.htm)

“The mobile Internet is purely commercial”
The Business Model

Mobile Internet in SSA

- Western World
  - fixed & mobile & work - about 100-200 USD/family
  - 17,000 base stations, EU: 421,000 towers [Statista]

- Example: Tanzania
  - large distances (3 x size of Norway)
  - expensive access
  - negligible fixed broadband
  - ability to pay: 10-20 USD/family

- Europe vs Africa
  - 6.8% vs 20% of land area
  - 746 million vs 1.3 billion (2018)
  - 112 vs 43 people/km² [Worldbank, Statista]

“RoI in Africa is 3% of RoI in Europe”

https://event.tu.no/filer/insidekonf_v_2019/Eivind_Mikkelsen_Trenger_Norge_100.000basesstationer.pdf
How can we “Connect The Future”? and what are the roles of the Universities

“Internet had the ability to dismantle the divide. Internet failed miserably, the divide is bigger than ever.”
Kate Gilmore, Human Rights, UNOG, 2017
What if …

We revisit access

We decentralise the Internet

We use Universities to connect
Revisit Access

Road model: pedestrians & cyclists

Digital pedestrians, digital cyclists vs digital cars (broadband)

Internet Lite as a Digital Public Good (DPG)?

& 5G large cells
The ESGs and fundamental values

- The Rome Communique defined fundamental values as important elements of the EHEA:
  - Institutional autonomy
  - Academic freedom & integrity
  - Participation of students & staff in governance
  - Public responsibility for and of HE

- Exception for academic freedom no definition and even academic freedom not fully agreed upon
The role of Universities
Societal impact & non-profit services

- Inclusive societies
- Access to GovStack and Digital Public Goods
- Regional Competence Centres (RCCs)

- Connect Schools & Communities
- Non-profitable content at School-/ Community-Centres

National Research & Education Networks (NRENs)

4G/5G Multi-MIMO
Conclusions

- “Revisit the access to Internet” in SSA
  - Decentralised (as the Internet)
  - Local knowledge

- Community Learning & Living Labs (CL3)
  - from NRENs to Schools to CL3

- Collaboration
  - 5G Multi-MIMO for School Connectivity
  - Internet Lite, 5G large cells
  - Framework conditions
Join us & “Connect The Future”

10 schools
10 131 students
Q1.2021

55 schools
37 632 students
Q4.2021

1800 USD/installation
2500 USD/installation
4 $/student

BasicInternet.org

105 schools
77 632 students
Q4.2022

1100 USD/installation
0.6 $/student

2 000 schools
1 820 000 students
Q4.2024