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Case Study on Sustainable National Broadband Proliferation: Kenya - Challenges and Opportunities Perspective

Eng. Thomas A. Senaji
ICT Expert/ Consultant
+254 722 77 24 00
Email: tasenaji@gmail.com
Nairobi_ Kenya

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What is Broadband?

- Broadband refers most commonly to a new generation of high-speed transmission services which allows users to access the Internet at significantly higher speeds than traditional modems. It has the potential technical capability to meet consumers' broad communication, entertainment, information, and commercial needs.

- The broadband services should be "affordable, highly advanced and secure," and that competitive market forces, not regulation, should be the principal means of achieving that goal (FCC).

- *Why broadband*
  - To deliver interactive content on real time basis for economic, political and social development in the context of ICT4D
- *Broadband Technologies*
  - Mainly converged core based on NGN including MPLS; and several transport and delivery modes including GSM, WiMAX, FTTB etc

Broadband deployment scenarios

- Evolutionary approach which preserves existing investment such as in GSM
- Enhancement of copper using DSL technologies, e.g. ADSL
- Upgrades of some wireless local loop networks
- Besides upgrading of existing networks and systems to support broadband service delivery, there is also deployment of new wireless broadband technologies such as WiMAX

2.0 OVERVIEW BROADBAND IN KENYA

- Kenyan ICT Policy is perceived to be conducive for broadband proliferation; while the regulatory framework is moderately conducive
- high-speed broadband access is now available within and between major commercial centres, it comes at a high price
- penetration of broadband into rural areas is generally low and infrastructure firms tend to concentrate their activities in major commercial centres

- Broadband diffusion was about 0.05 in 100 compared to world average of 5.34 in 100 (ITU, 2007); i.e. lower than world average by a factor of over 100
- The Kenya Government broadband is playing a significant role in proliferation of broadband in Kenya in partnership with the private sector. This is illustrated by the Government's investment in submarine cable system - the East African submarine system (TEAMS); and in the National Optical Fibre Broadband Network, NOFBI to extent broadband transport infrastructure across the country.

3.0 EXPLORATORY STUDY

- An exploratory study was conducted by the author to find out the status of broadband services in Kenya
- The Study inquired into consumers' perception of the quality of broadband services, ICT policy and regulation, challenges, opportunities; and into what the respondents felt should be done to accelerate the proliferation of broadband in Kenya.

4.0 STATUS OF BROADBAND SERVICES IN KENYA

- **Modes of broadband supply**
- **Challenges; and**
- **Opportunities**

4.1 Modes of Broadband Supply

- Broadband technologies in Kenya include CDMA, GSM, optical fibre cable (OFC) technologies in the core transport and access; WiMAX, enhanced copper cable technologies using xDSL; and Satellite.
- The broadband services are provided over wireless systems such as GSM, CDMA and WiMAX; optical fibre and copper cables; and over satellite.

4.2 Challenges

- **Affordability**
- Lack of well developed local broadband **content;**
- Lack of or inadequate **energy (power) supply;**
- Scarcity of **frequency spectrum** for roll out of new technologies, such as WiMAX;
- **Quality of service**;
- Broadband **standards** as evidenced in the proceedings of the 1st East Africa WiMAX conference in Nairobi, 21st-23rd March, 2009,
- **Cost of ownership**, as well as the monthly **running costs** of broadband systems;
- A significant number of consumers have **difficulty using broadband** services currently available in Kenya;
- **Stimulation of demand** for broadband services

4.3 Broadband Opportunities and Benefits in Kenya

4.3.1 Opportunities of Broadband services

- From an exploratory survey carried out by the author a number of opportunities and benefits have been identified by the respondents in Kenya:
- An **enabling policy framework** that supports broadband diffusion
- Moderately **facilitative regulatory** environment
- Adequate **human capacity** to deploy and operate broadband services
- It can allow proliferation of ICT enabled services especially of Business Process Outsourcing (local and offshore) and provide jobs to thousands of youths
- Arrival of the submarine cables at the port of Mombasa presents opportunity to access global broadband services
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4.3.2 Present and potential benefits of Broadband services

- New job opportunities
- Distant learning and teaching
- Remote entertainment
- Broadband Internet access can give enterprises and *wananchi* (citizens) in general access to new markets, improved business information, efficient data exchange, and e-commerce.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- Affordability and broadband content appear to remain the biggest broadband challenge in Kenya;
- There is a conducive policy and moderately facilitative regulatory framework in Kenya to drive broadband proliferation
- interventions faster deployment of broadband in rural areas are encouraged
- Service providers need to address quality of service
- Integrated infrastructure development and sharing of scarce infrastructure should be encouraged;

- Deliberate community based broadband initiatives such as the digital villages should be intensified;
- there is need to **improve the quality of local networks**
- develop content that will leverage the international broadband infrastructure;
- Creation of **awareness** of the potential of broadband and education on how to use the broadband services is required to stimulate demand for broadband;
- Principles of **open and non-discriminatory access** to broadband infrastructure are encouraged
- There is need **to stimulate the demand side** of broadband;

6.0 IMPLICATIONS FOR STAKEHOLDERS

- **Policy makers** to continue emphasizing principles of universal, equitable , advanced, affordable and secure access to broadband; and to create awareness of the potential of ICTs;
- **Regulators** to continue adopting a facilitative regulatory posture
- **Service providers** to leverage cost effective standards based broadband technologies that are spectrum efficient and secure;
- **Consumers** to continue demanding quality services with service level agreements;
- **ICT4D**: Implementation of broadband ICT in spheres of development including in government, health, education, commerce etc be accelerated;
- A comprehensive national broadband plan needs consideration

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THANK YOU