Effective broadband development in Africa

AGENDA

- Introduction to broadband.
- Broadband and convergence.
- Initiatives for broadband development
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INTRODUCTION TO BROADBAND

- Broadband definition
- Broadband technologies
Broadband definition.

A broadband network is defined as a network able to transmit signals with a high bit rate.

In opposition to a base band network, which uses only one channel for transmission, a broadband network uses several channels.

A transmission channel being equal to 64 Kbps, any network transmitting to 128 Kbps is a broadband network. This is an ITU definition.
Broadband definition.

Some countries have other definitions, the FCC establishes broadband from 200 Kbps. In Sweden for example, one speaks about 2 Mbps. In fact the definition of broadband depends on the aims of the decision-makers and the services which are provided to the customers.

In countries of sub-Saharan Africa, one can define broadband as any network transmitting at a bit rate of 256 Kbps.
Broadband technologies

Technologies can be in cable, microwave systems or satellite.

Technologies in cable include copper pair, electric cable, optical fibre and hybrid technology cable optical fibre.

Microwave includes 2,5 and 3G networks. Satellite technology uses VSAT.
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Broadband technologies

• **Copper pair.** Many known technologies are used including ADSL (up to 8 Mbps. and 3 Kms.), ADSL2 (12 Mbps.), ADSL2+ (24 Mbps.).

• **Broadband on electric cable.** This technology allows a bit rate from 2 to 80 Mbps. It is not yet widespread.
Broadband technologies

• Optical fibre. Up to 100 Mbps with VDSL. In this case, the fibre is extended towards the equipment of the subscriber. Fibre in buildings and Fibre at home (FTTB, FTTH).

• Hybrid Fibre Cable (HFC). It is an extension which uses the network of Cable TV through the use of cable modems. This technology is very developed in North America.
Broadband microwave technologies.

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1. **Fix and mobile**
   - WiMax 802.16 2004
   - WiMax 802.16e, mobile
   - WiFi 802.11 a, b, g

2. **Mobile PHS**

3. **3G Mobiles**
   - CDMA 450 - fix
   - TD-SCDMA
   - CDMA2000
   - 1xRTT
   - W/CDMA
   - EDGE
   - 1x EV-DO
   - HSDPA
   - 1x EV-DV
   - HSUPA
   - 1x EV-DO
   - LTE
   - UMB

4. **Evolution**
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Figure 1.7: Répartition des plates-formes large bande (par région), 2004
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BROADBAND AND CONVERGENCE

■ Concept of convergence.

■ New business model and legal framework.
BROADBAND AND CONVERGENCE

Concept of convergence

The development of broadband has involved an integration of technologies (fixed and mobile), of services (voice, data and images) and a change in the business model.

This integration is made possible by the transmission capacities offered by broadband.
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BROADBAND AND CONVERGENCE

- New business model and legal framework

The telecommunication market becomes global, it brings together traditional telecommunication operators, content providers, television operators.

In the same way, on the same medium, one offers all the possible services taking into account the customers’ need for mobility.
Economists in the field estimate that, on the chain of value of broadband, there are more than ten industries and over twenty types of users.

This new business model involves regulatory convergence. Traditional telecoms operators offer television on their medium.
BROADBAND AND CONVERGENCE

- New business model and legal framework

Cable operators offer voice and Internet on their networks.

Fixed operators can offer mobility on new radio systems.
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BROADBAND AND CONVERGENCE

- New business model and legal framework

It is necessary to correctly manage frequency spectrum in order to be able to face the competition involved in new requests.

Management must take into account tariff aspects in order not to penalize the end-user.
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Initiatives for broadband development

- Infrastructure development
- Initiatives towards consumer access
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Initiatives for broadband development

Infrastructure development

Major initiatives for the development of infrastructure have been successful.

WASC/SAF project has laid an undersea cable from Malaysia to Portugal via South Africa.

WAFS project which has laid an undersea cable in West Africa.
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Initiatives for broadband development

- Infrastructure development

  Interconnection of the optical fibre networks of West Africa (Benin - Burkina - Ghana - Mali - Senegal etc.)

  Appearance of radio technologies offering broadband in various countries (Benin, Tanzania, Uganda, Togo, Kenya etc.)
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Initiatives for broadband development

- Political initiatives

  World Summit on the Information Society (I & II)

  Kigali Summit on Connection in Africa

  Project for the harmonisation of the ICT market within ECOWAS

Despite these efforts, broadband remains little developed in Africa
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Abonnés au large bande par région, 2004

- Asie-Pacifique: 41.6%
- Europe: 27.8%
- Amérique du Nord: 27.9%
- Amérique Latine et les Caraïbes: 2.4%
- Afrique: 0.2%
- États arabes: 0.1%
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Proposed solutions

Stimulate competition in the broadband segment.

Accelerate the process of liberalization of the telecommunication sector

Reduce the cost of international band-width.
Develop ICT industry at a regional level.

Reinforce the capacity of Ministries and other regulatory bodies as far as definition and implementation of ICT policies is concerned.
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Proposed solutions

First and foremost it is necessary to be very familiar with this market in Africa.
Proposed solutions

Knowledge of this market would require a country-by-country study comprising:
- Status of broadband
- Broadband deployment costs by technology and bandwidth
- Potential market depending on the purchasing power of the various populations
- Definition of policies encouraging the effective deployment of broadband
Proposed solutions

This study could be done with the assistance of the BDT within the framework of Resolution 17 (rev. Doha 2006)

“Implementation of regionally approved initiatives at the national, regional, interregional and global levels”, includes the section 3 “Support to the administrations in the policies and programs design and implementation for the large scale development of broadband access, with the purpose of comply with the Universal Service targets
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Proposed solutions

The ITU regional office or the Centre of Excellence of ESMT could be the support for this study.

The major actors will be the regulatory bodies or any other person having the necessary competences in this field.
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THANK YOU FOR YOUR ATTENTION