WiMax to reduce digital divide

PLAN OF PRESENTATION

Issues on digital divide in Africa

Presentation of WiMax as solution

Business plan model
Issues on digital divide in Africa

Definition

The digital divide shows the gap that exists between developed and developing countries in access to information and communication technologies.

This gap also exists in telecommunication infrastructure availability and in access to those infrastructures.
Issues on digital divide in Africa

For example, a computer costs twice as much in Lome as it does in Brussels, while the minimum wage in Brussels is 40 times higher than in Lome.

This gap in telecommunication infrastructure availability can also exist in the same country.

In many African capitals, there is better telecommunication infrastructure availability than in the countryside.
Issues on digital divide in Africa

Likewise in the suburbs of those capitals it is not easy to get fixed line and then get access to broadband.

Costs in deployment of fixed lines, weakness of purchasing power and low demand do not encourage operators to invest.
Issues on digital divide in Africa

Microwave is the only way which, due to its cost and quick deployment, provides a satisfactory solution for access to broadband.

This microwave broadband can be accessed through CDMA or WiMax on which we will focus in the second part.
III - Presentation of WiMax as solution

II.1 - Definition

II.2 - Architecture

II.3 - Services offered
Presentation of WiMax as solution

Definition

WiMax (Worldwide Interoperability for Microwave Access) is worldwide multipoint transmission standard by microwave.

It was originally standardized by IEEE 802.16. It is recognized by ITU standard IMT 2000.
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Presentation of WiMax as solution

Definition

WiMax permits broadcasting up to 8 km in town, 15 km in the countryside, and more than 20 km in rural areas.
Presentation of WiMax as solution

Architecture

A WiMax network is made up of three parts:

- Radio Access Network
- IP Core Network
- CPE (Customer Premises Equipment)
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Architecture

The radio access network is made up of:

- Base Station (BS)
- WiMax Access Controller (WAC)
- Operating and Maintenance Centre (OMC)
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Architecture

The IP core network is made up of:

- ASN (Access Service Network) gateway
- CSN (Connectivity Service Network)
- Home Agent server
- AAA server
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Architecture

- ASN Gateway
- Home Agent
- AAA
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There are three types of CPE:

- CPE indoor
- CPE outdoor
- CPE mobiles
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Presentation of WiMax solution

Services offered are:

- Internet Access
- Voice service
- Leased line
- Public WiFi
Presentation of WiMax solution

Target customers can be classified as follows:

Residential

Small office / home office

Small and medium enterprises
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Business plan model

The business plan is made for an operator who set up six base stations of which two in rural areas do not have the necessary infrastructure (energy, pylons, buildings)

Investment costs for the operator comprise the cost of WiMax equipment, site provisioning costs (power, pylons, buildings) and licence costs.
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Business plan model

Management costs comprise maintenance and operational costs, commercial costs, and frequency allocation and bandwidth fees.

Services offered are Internet service, voice service, leased line and public WiFi. Target customers are residential, small home offices, small and medium enterprises.

The operator charges connection fees and monthly rental fees.
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Business plan model

Tariffs applied for different services and type of customer are in the table below.
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Business plan model

The operator can expect a return on investment after two years.
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THANK YOU FOR YOUR ATTENTION