

WiMAX as the Broadband Wireless Technology for today and tomorrow

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What is WiMAX?



WiMAX is a standards-based wireless technology that provides high throughput broadband connections over long distances.

ACCRONYMS



WiMAX - Worldwide Interoperability for Microwave Access, a certification mark for products that pass conformity interoperability tests for the IEEE 802.16 and ETSI HiperMAN standards.

IEEE- Institute of Electrical and Electronics Engineers, Inc.

ETSI -European Telecommunications Standard Institute

HiperMAN -High Performance Radio Metropolitan Area Network

OFDMA- Orthogonal Frequency Divisional Multiplexing Access

What is the WiMAX forum?



www.wimaxforum.org

The WiMAX Forum is an industry-led, non-profit corporation formed to promote and certify compatibility and interoperability of broadband wireless products.

Our member companies support the industry-wide acceptance of the IEEE 802.16 and ETSI Hiper MAN wireless standards.

What this means for you:

For network operators this means equipment interoperability across vendors

For component vendors this means fewer product variations and higher volumes

For end-users this means faster and cheaper access that is more widely available

Leading members of the WiMAX forum



Board

- Airspan Networks
- Alvarion
- Aperto Networks
- AT&T
- British Telecom
- Fujitsu
- Intel Corporation
- KT Corp
- Motorola
- Samsung
- Sprint Nextel
- Wi-LAN
- ZTE Corporation

Principal

- Adaptix
- Airvana
- Beceem
- BelAir Networks
- Bell Canada
- Cisco Systems

Regular

- France Telecom
- ACCA
- Adesta
- Advance Data Technology Corporation
- Aeroflex
- Aeronix Inc

Key Benefits of the WiMAX Standard



For Equipment Vendors

- Standards-based, common platform encourages innovation.
- Concentrate on specialization (i.e. Base Stations or CPEs) - no longer need to create an entire end-to-end solution as in proprietary model.

For Consumers

- Consumers can receive services in areas with little infrastructure, developed countries, rural & hard-to-service areas.
- Increased number of players in the market which means options.
- Quick “trickle down” effect of cost savings to consumers.

Key Benefits of the WiMAX Standard...



For Service Providers

- Enables a lower initial CAPEX investment.
- Eliminates commitment to a single vendor, a typical by-product of the proprietary technology model.
- Wireless systems significantly reduce operator investment risk.

For Component Makers

- Standardization creates a volume opportunity for chip set vendors.



Components of a WiMAX Network

Base Station

- Macro (Multi Sector) Vs. Micro (Single Sector)

Antennas

- Omni Directional
- 90 Degrees Panel
- 60 Degrees Panel

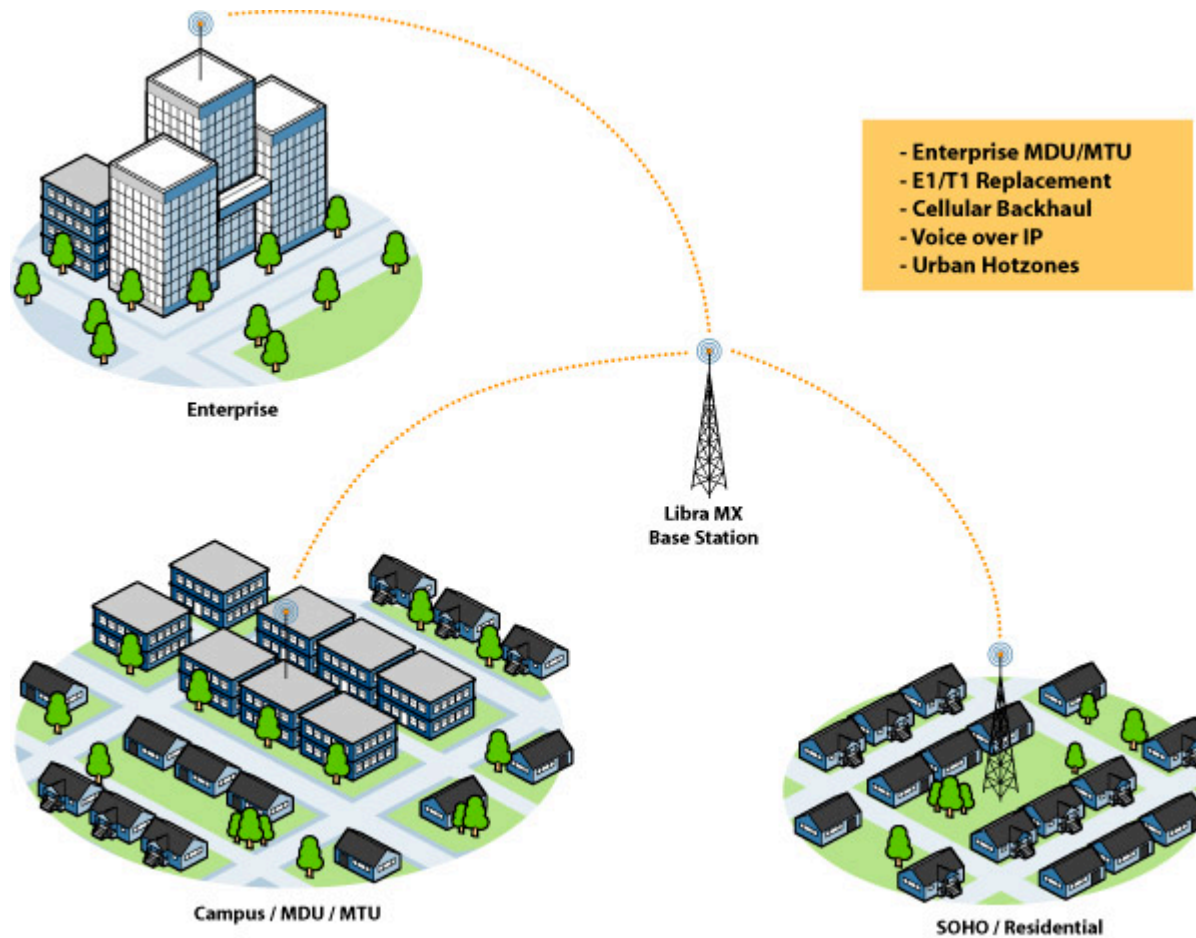
CPE

- ODU
- IDU

Cables (Pigtails + Power Cables + Ethernet)

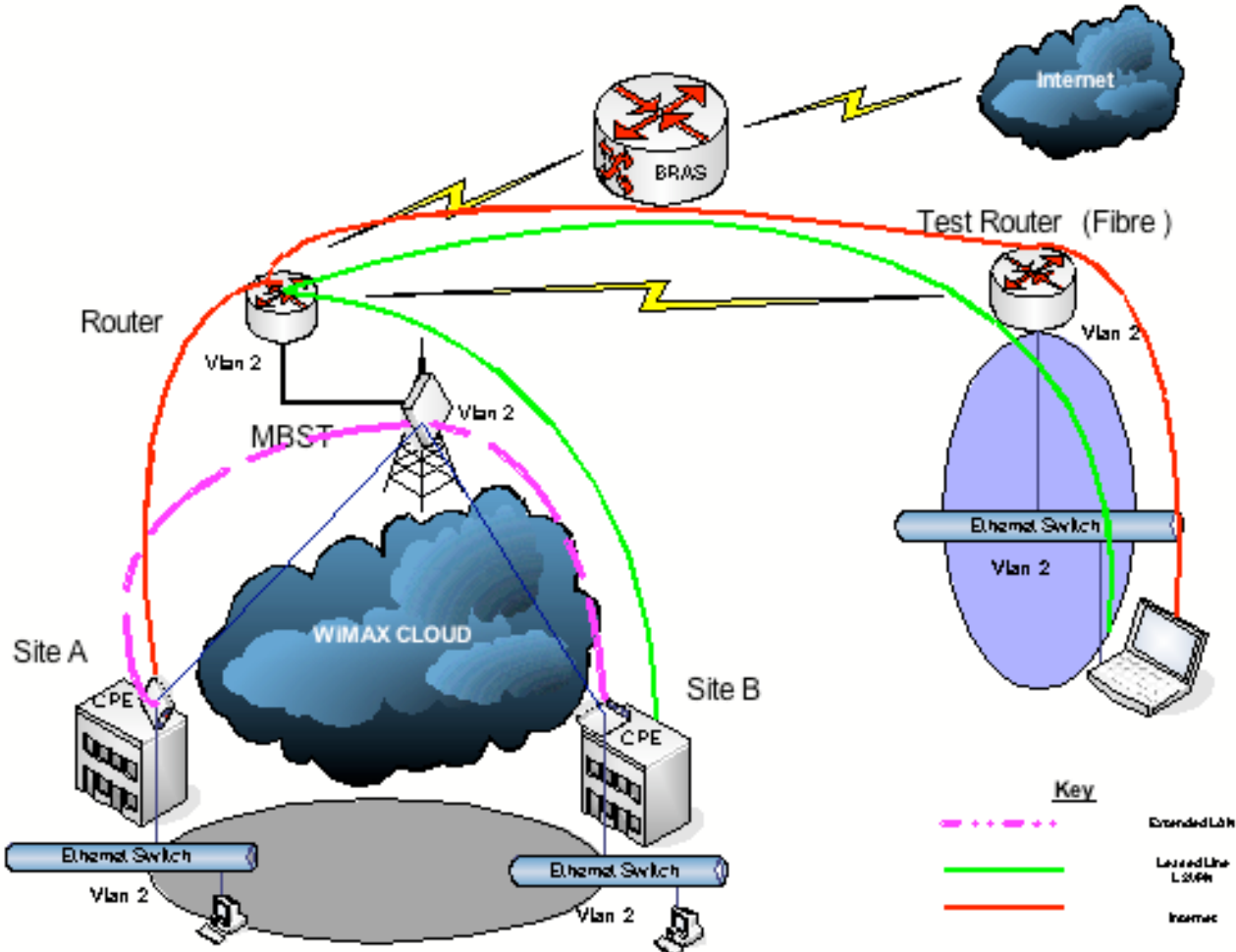
Network Management System

Conceptual Network Diagrams





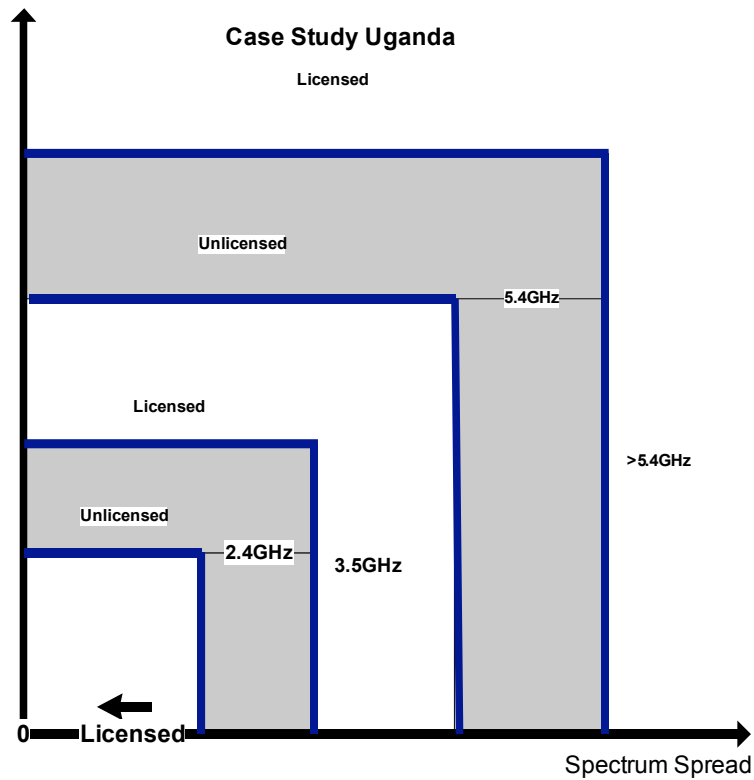
Conceptual Network Diagrams



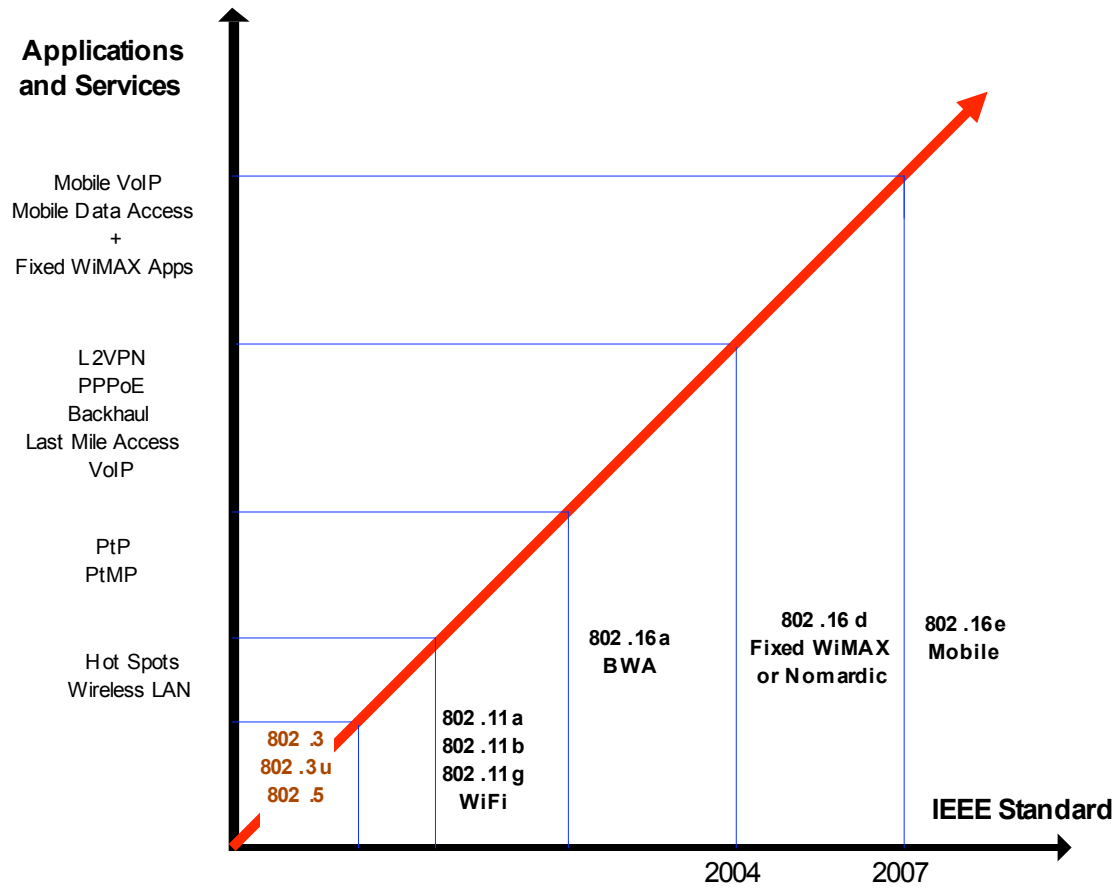


Standards, Spectrum and Frequency

Licensed vs. Un Licensed frequencies



WIRELESS EVOLUTION PATH



Coverage



Clear Line of Site (Rural Areas)

- Average distance of 30km claimed by most vendors

Near Line of Site (Semi- Urban)

- Average Distance of 10km claimed by most vendors.

Non Line of Site (Urban and Hilly areas)

- Average Distance of 4Km claimed by most vendors

These Distances depend on factors like Antenna gain, Congestion (Noise) Geographical factors and Interference.

Application of WiMAX Today and Tomorrow for an African Entrepreneur.



- Last mile Solution
- Backhaul Solution
- Rural Connectivity Solutions
- Urban Connectivity Solutions.

Applications Of WiMAX Today



WiMAX Backhaul

- WiFi Hot Spots .
- Metro E Solutions .
- Cellular backhaul
- Inter BST Communication

WiMAX Last Mile in Urban Areas

- Corporate Internet Solutions
- Corporate VPNs (L2VPN)
- VoIP Solutions (Inter - Branch)
- PPPoE Solutions
- Hybrid Solutions

WiMAX Last Mile in Rural Areas

- Telecentres
- Cyber Cafes
- Tele Cottages
- SOHO solutions (NGO, Branch Office , MFI)
- Schools, Hospitals
- Government Offices & Agric Institutions

Client Set Up and Provisioning on WiMAX



Bandwidth Management.

Monitoring (Availability, Usage, Latency etc)

Management of a WiMAX network.

Billing and SLA Management

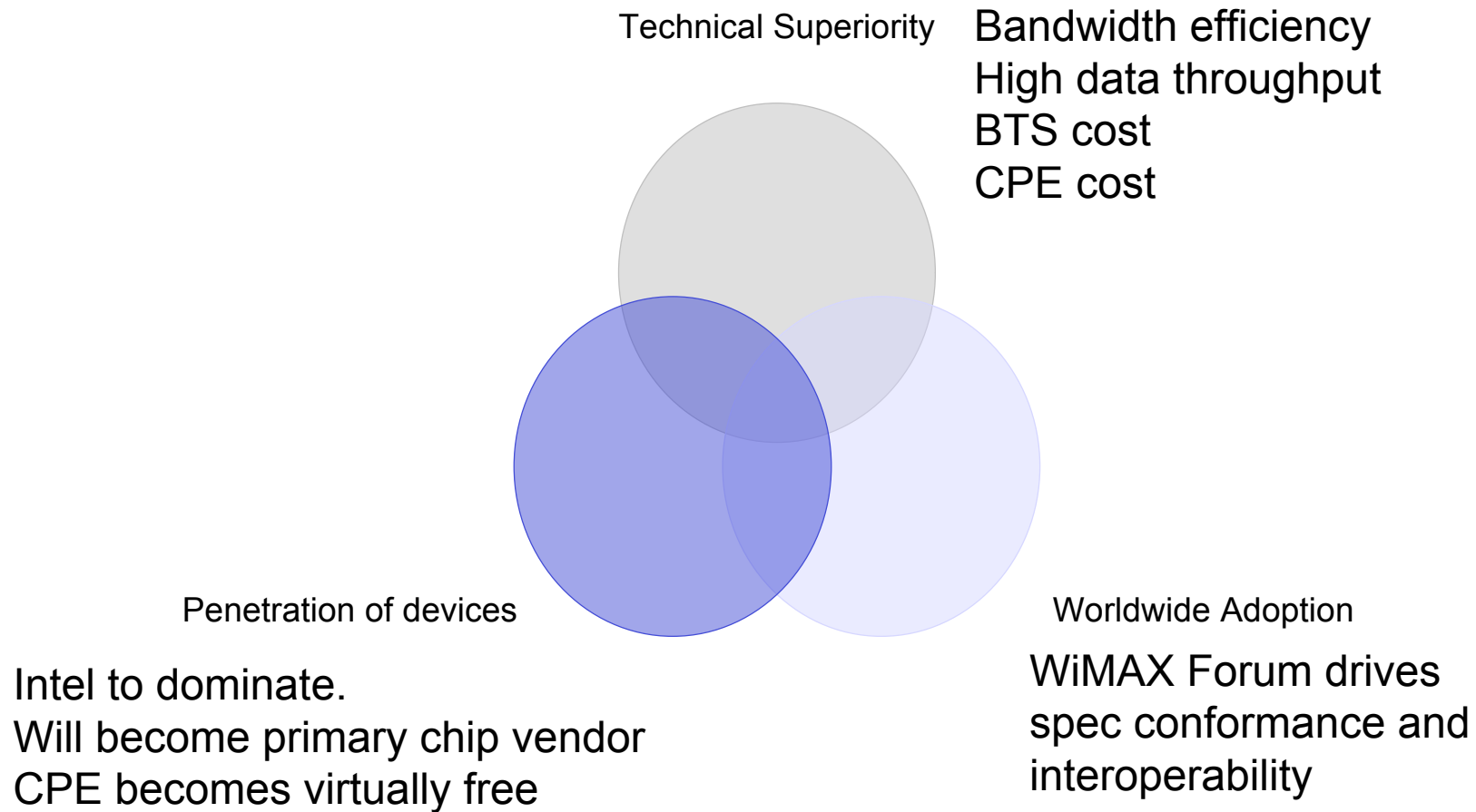
QoS Management and PPPoE Provisioning

Business Case for WiMAX

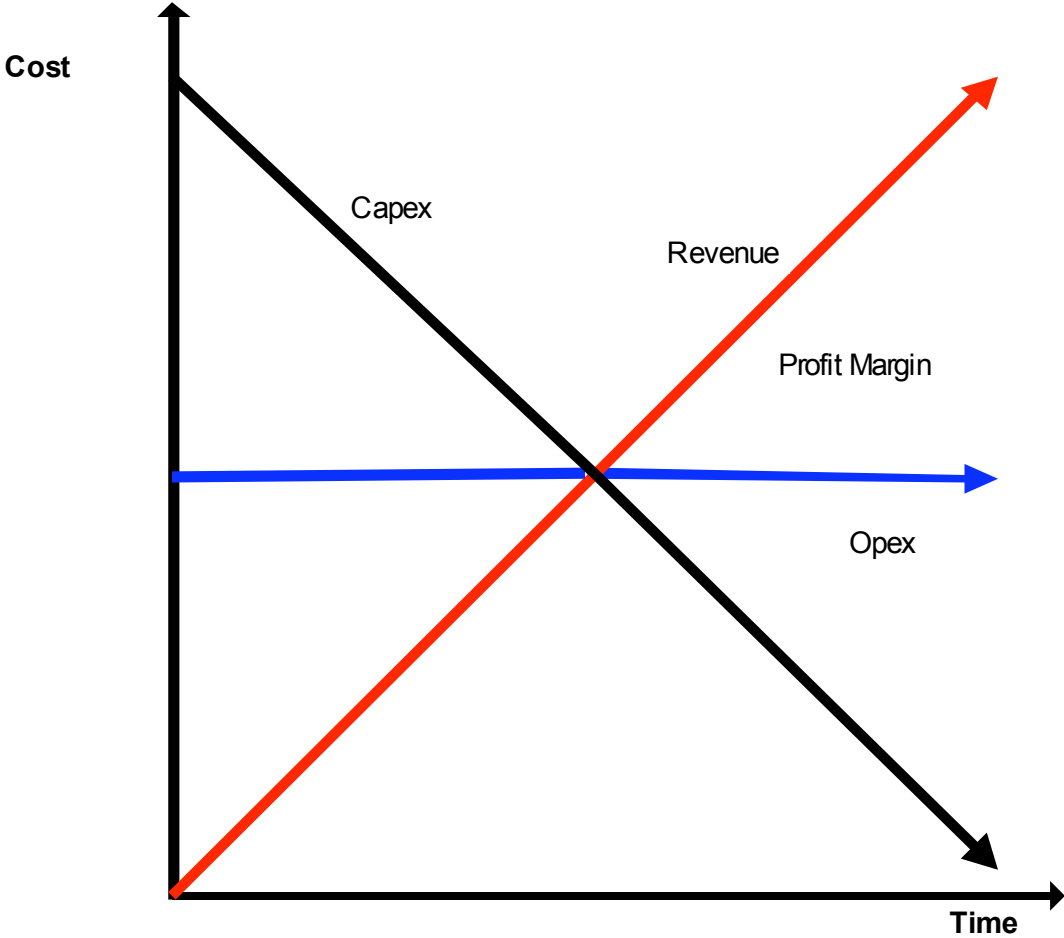


- WiMAX can give you a long range (>20Km) without wires.
- WiMAX can give you broadband speeds without cable.(20Mbps)
- WiMAX promises affordable equipment.
- WiMAX promises Scalability with future services.
- WiMAX promises Integration with NGN networks.

Rationale for WiMAX



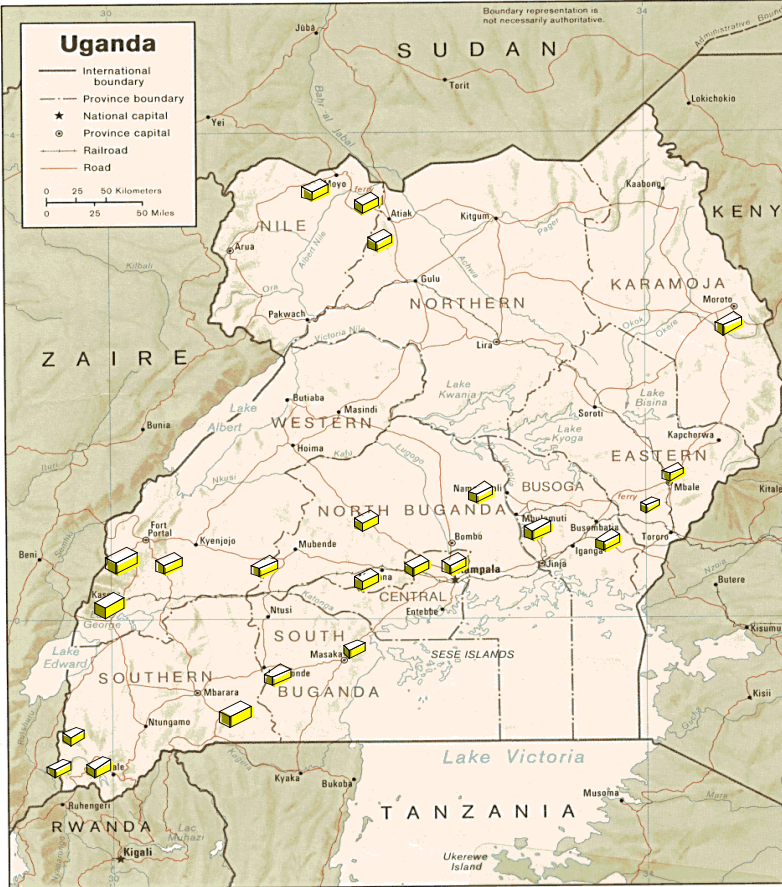
Revenue, Expenditure & Depreciation



Case Studies



MTN Uganda 23 Districts.



Other Case Studies



MICROCOM, Congo – BreezeMAX (Kinshasa)

- High Speed Internet and VoIP

Telkom SA, RSA-BreezeMAX(2 sites in Pretoria)

- High Speed Internet and VoIP tested

Arobase Telecom, Ivory Coast-BreezeMAX (Abidjan)

- High Speed Internet

MTN SA- Tested BreezeMAX and ASMax

- VoIP and Data Transmission tested

Questions

