INTERNET in BOTSWANA

Problems and constraints

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INTERNET IN BOTSWANA

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- Bandwidth
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Bandwidth Definitions and Units

Device	Upstream (kbps)	Downstream (kbps)
• Dialup modem analog line	33.6	56
• Dialup modem digital line	56	56
• ISDN single channel	64	64
• ISDN 2 channels	128	128
• Cable Modem	768	10,000
• T1 Leased line	1,544	1,544
• ADSL	640	9,000

Bandwidth Units

- 1 kilobit (kb) = 1,024 bits
- 1 Megabit (Mb) = 1024 kb
- 1 Gigabit (Gb) = 1024 Mb
- 1 Terabit (Tb) = 1024 Gb
- 1 Petabit (Pb) = 1024 Tb

BANDWIDTH

- Water Pipe Analogy
- The Botswana Hotel
- Ireland vs Botswana - Bandwidth (1 Tbps 20 Mbps)
- Ireland vs Botswana - Costs (P80, P8000)
- Broadband P128,000

THE PRESENT SITUATION

- Internet / email users - roughly 44,000
- Dialup users - even more roughly 8,000
- Number of ISPs - 22, maybe 8 active inc Botsnet
- Connection media:
  - Dialup - POPs, VPOPs, ISDN,
  - Leased lines
  - Radio / Wireless ;-)
  - VSAT

REGULATORY ENVIRONMENT

- Market Power of Incumbent
- BTC Leased Line Fiasco
- Active vs Reactive Regulation

PROBLEMS

- Anomalous status of BTC
  - Acting as an ISP (licence ?)
  - Wholesaler and retailer
  - Vehicle of national investment but competitor
- Lack of transparency in planning eg Mega
- Delays in providing service - helps wireless
- Unresponsive to the market - eg b/w pricing
- Incoherent leased line pricing structure
- 78% increase in leased line costs
- Hardware, Software, Vapourware

PROBLEMS non-BTC

- No local Peering
- Rebalancing

RESTRAINTS ON GROWTH

"Prosperous economies have a glut of fibre-optic capacity" (Wigglesworth, W., 2005)

- Bandwidth costs - Supplier. International/national
- Bandwidth costs - End user
- Migration to Mobile (9600 kbps @ present)
- Fixed line availability
- No national service with a local tariff (except VPOPs)

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Thank you