Internet Development in Africa

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Mobile Stats

Figure 1: Africa – Mobile Subscribers and Penetration (2002-2012)
Figure 4: Africa – Major Mobile Markets (3Q 2007)
IPv6 Deployment

IPv6 Addresses By Country

- South Africa (21)
- Other (19)
- Kenya (6)
- Egypt (5)
- Tanzania (4)
- Mauritius (4)
- Morocco (2)

Source: AfriNIC
Countries with IXPs in Africa

There are 18 IXPs in 16 Countries

Source:
www.nsrg.org
Traffic distribution across 10 African IXPs

Total 364.5 Mbps

- Kenya
- Uganda
- Dar, TZ
- Mozambique
- Cote D'Ivoire
- Angola
- Egypt
- Botswana
- Arusha, TZ
- South Africa
ISPs have **large** Transit capacity links. In Africa costs range from $2,000 per mb/month.

Transit providers have peering agreements amongst themselves.
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ISPs have smaller peering links despite costing less.
ISPs should have smaller Transit links compared to the Peering links.

The peering links will increase in size compared to transit links.

The Telco will be attracted to IXP as a result.
The building blocks

• IXP location **neutrality**
• The **peering policy** – multilateral vs bilateral
• The economics – **pricing, QoS**
• **Stability** and resilience – power, cooling, security,
• Value added services – technical support, Internet resources
The KIXP Case

• A review of the IXP policy to allow non-traditional members i.e. non-ISPs
• **Mandatory Multi-lateral Peering** – aimed at addressing a social peering issue of big vs. small
• Implementation of IXP **Value Added Services** increase resilience and autonomy for participants
• Reduced the entry barrier **fees** to <$400 and monthly at $250
• **Outreach and awareness** processes – This requires resources (full-time staff)
26 KIXP Members

- 16 ISPs networks
- 3 Internet backbone/Gateway providers including the incumbent Telkom
- 1 E-Govt - Kenya Revenue Authority (KRA) - online customs clearing system
- NREN - National Research & Education Network
- Kenyan ccTLD Registry – KENIC
- 1 local loop Voice and data operator (LLO)
- 1 Commercial Bank
- 2 Mobile operators - for 3G/edge/gprs data services
Value Added Services

- **F & J Root** Servers mirror instances
- **.Com & .NET** gTLD Root Server mirror instances
- **.KE & 37 other ccTLDs** – PCH Anycast network
- Public GPS based **Network Time (NTP) Server**
- Public Looking glass - **Route-views**
Growth Rate 77.8%

Growth Rate 137.6%

Growth Rate 110.5%
2007 Valentines day - Free SMS Website
2007-8 National Secondary Schools Examination Results

Internet Development in Africa
22nd January 2009
Google Global Cache and Peering

Google Peering turned off
2008 Stats

[Graph showing internet usage statistics for 2008, with data for daily and monthly usage.]
Thank you!