



Protect.
Connect.
Grow.

Future of Africa's iGDP



TERACCO[®]
DATA ENVIRONMENTS

Is Africa still a significant market?

- Africa is the 2nd largest continent, in both size and population.
- More than 1-billion inhabitants and over 240,146,482 Internet users, a penetration rate of 21.3%.
- Over 24Tbps of landed undersea capacity provided by multiple cable companies.
- Multiple peering points are emerging (AXIS), neutral data centres are already available with several more under construction. Currently 41% of the African market is reachable via terrestrial fibre, and this number grows daily.
- ***Why is content distribution still limited in the African market?***

African interconnection

Market Deregulation and interconnection policies:

- **Swaziland:** cross border interconnection controlled by monopoly operator restricting access
 - A 64k p-t-p leased-line circuit (in country) currently costs \$100 p/m and a 2Mbps p-t-p leased-line costs \$1,600 p/m and a 10Mbps costs capacity \$5,400 p/m.
- **Nigeria:** landing station controlled by MTN Nigeria
 - Cost per cross connect \$1000.00, majority of operators forced to route via London offering services at 200ms latency, whereas from South Africa they can achieve 60ms latency
- **Djibouti:** Landing station controlled by monopoly
 - Cross connection to general colocation at \$10,000.00 per 1Gbps

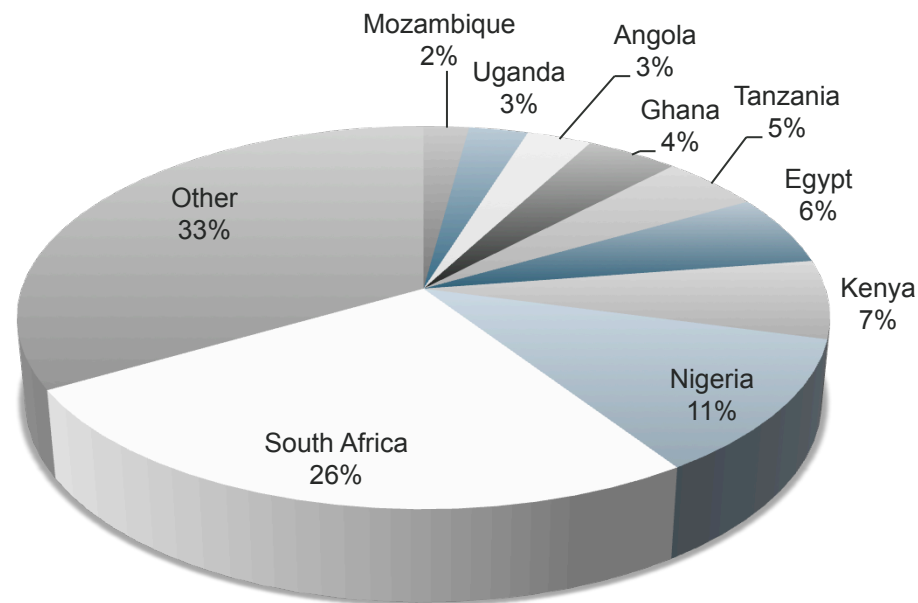
These challenges result in limited growth for regional IXP's



Growing Markets

- 9 out of the 55 African countries have substantial ASN operators
- 2 Neutral Operating Data Centre's
 - South Africa
 - Kenya
- 28 Active IXP's
- Nigeria growth substantial due to market size – huge potential for growth once interconnection polices resolved
- Africa's total inventory of terrestrial transmission networks reached >865 000km

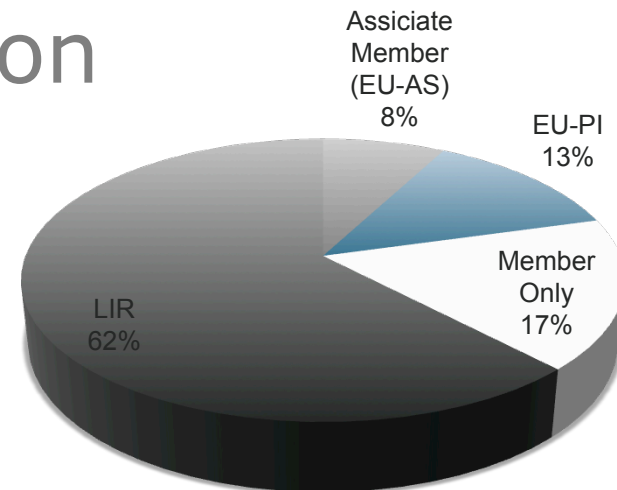
Registered ASNs by Country



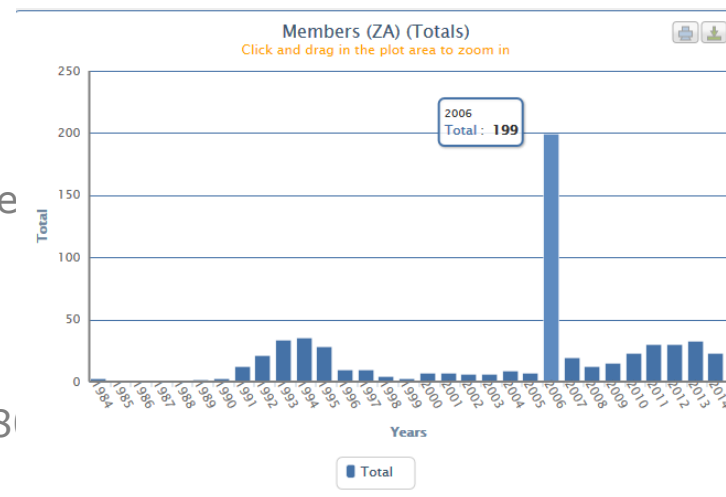
Not all promoted data centres are neutral

South Africa: Deregulation

- Deregulated in 2008, ASN increase as license requirements change.
- Operator landscape: Before 2008, only 7 infrastructure operators. Currently >30 infrastructure operators.
- Operational carrier, cloud and vendor neutral data centre.
- Operational regional Internet exchange: 7 neighbouring countries serviced, 150 members, 16Gbps traffic.
- Content investment: Google, Akamai, Microsoft e
- Consolidation underway:
 - Vodafone/Neotel
 - BCX/Telkom
 - Over 500 registered service providers with 8 operational e.g. LIR stats
- End User ASN growth aggressive

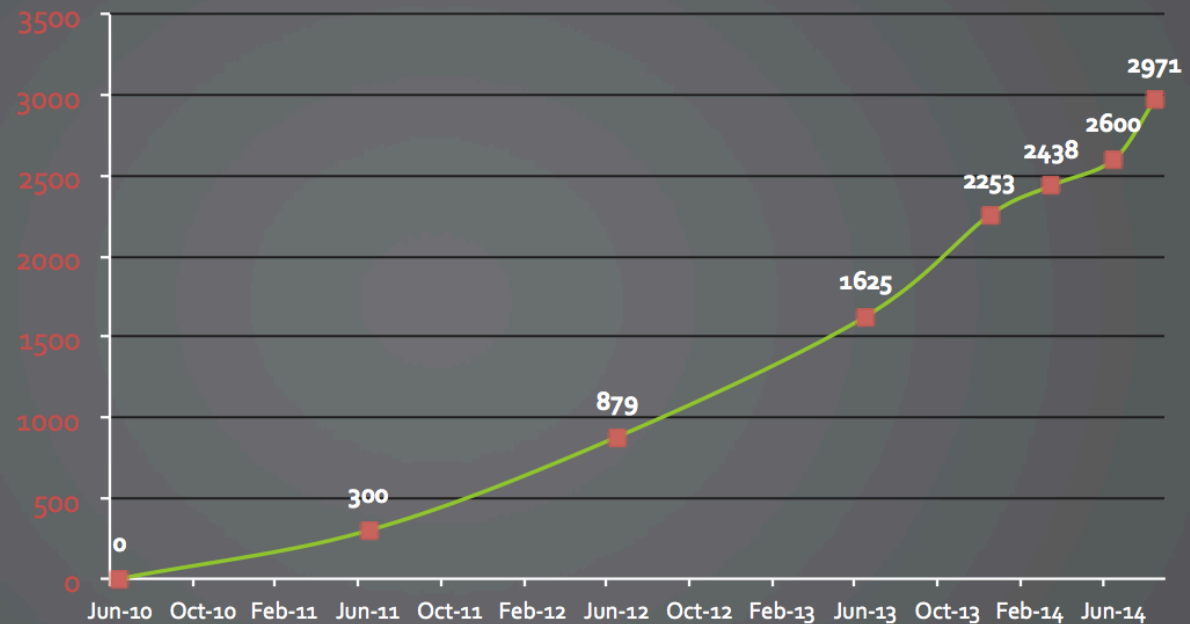


Members by Type (ZA)



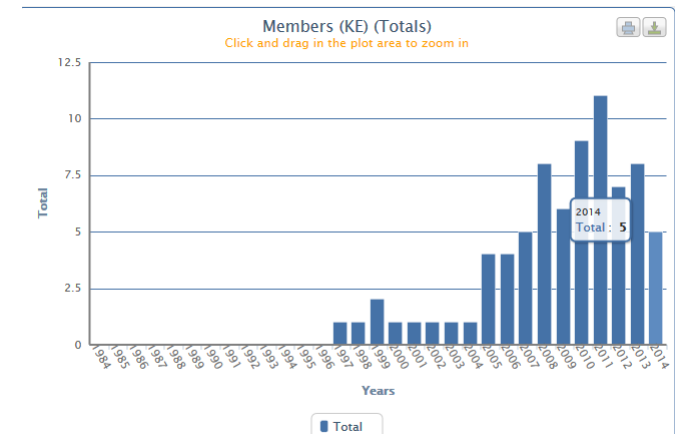
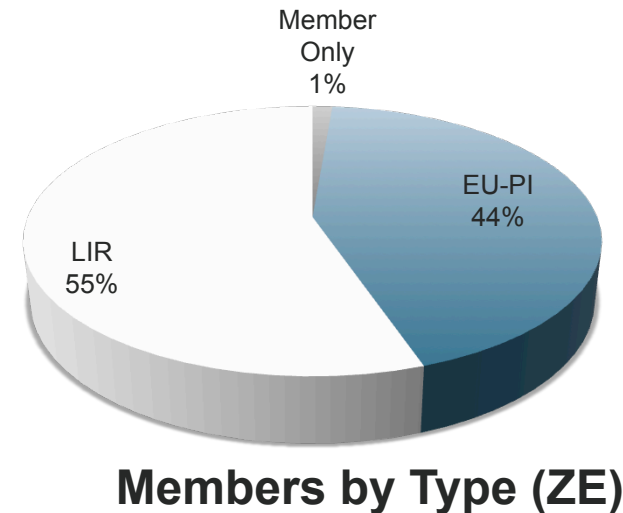
Interconnects & the Marketplace

INTERCONNECTS



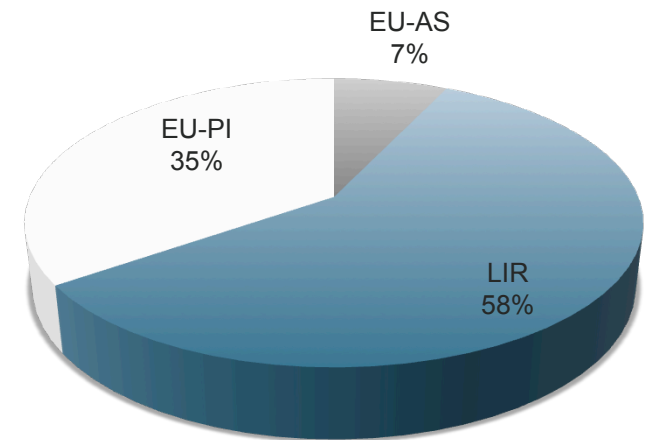
Kenya: Capacity is key

- Deregulated in 1999
- Seacom lands 2011 – ASN requests increase.
- 3 major infrastructure infrastructure operators.
- Operational carrier neutral data centre – investment by Liquid creates competition
- Operational regional Internet exchange: KIXP, 27 members, 1Gbps
- Content investment: Google
- End User ASN growth aggressive

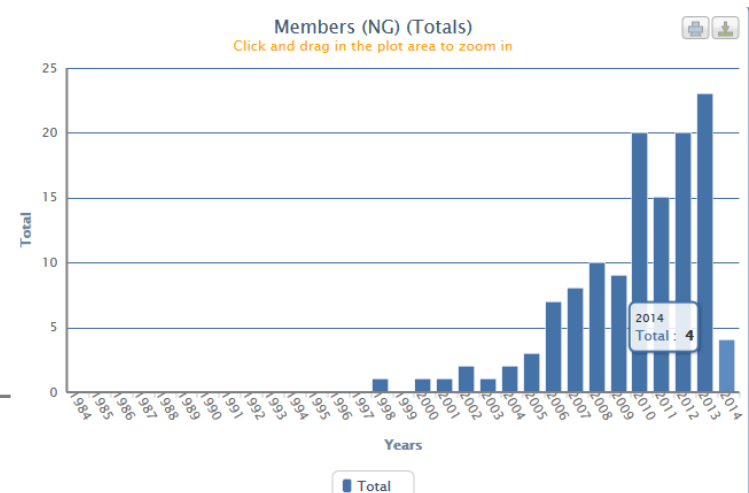


Nigeria: Cable diversity

- Deregulated in 2011
- Glo-1 landed in 2009 and others in 2010, 2012 and 2013 breaking the monopoly
 - MTS closed its operations due to failure to pay interconnection charges to Nitel. M-Tel subsequently emerged as Nitel's mobile service provider.
- Operating Exchange, <http://ixp.net.ng/> - 2Gbps, 38 members
- No neutral data centre
- Access to cable landing station restricted
- Content investment: none at this stage – weary of the wild west?



Members by Type (NG)



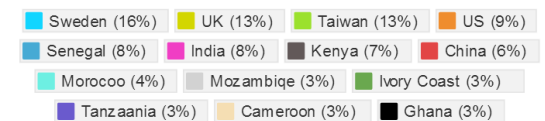
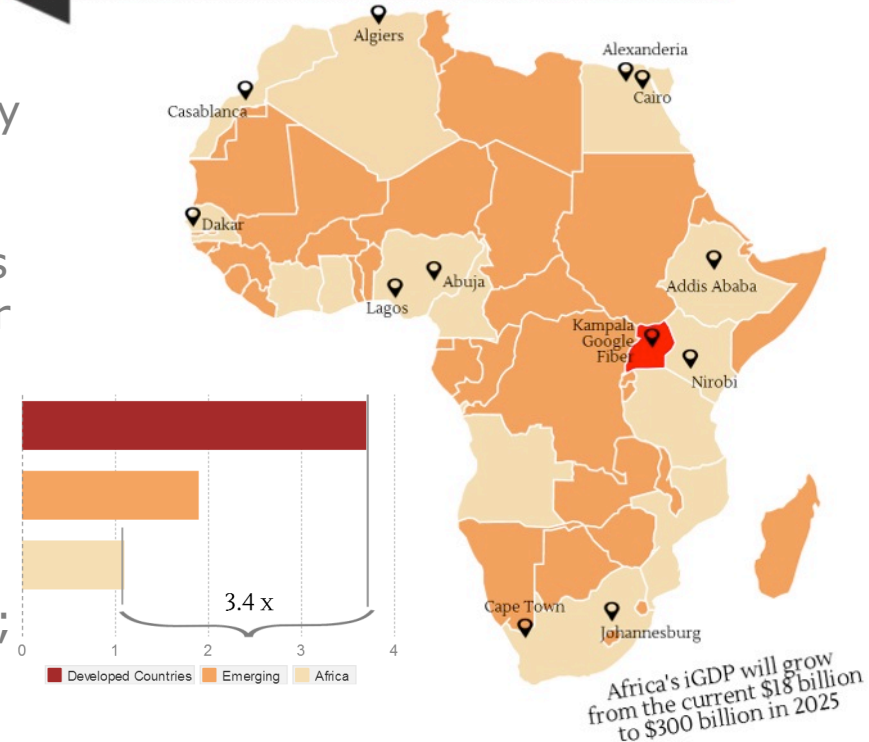
iGDP comparison in deregulated markets...

- Open markets create more opportunity for infrastructure and content investment
 - iGDP >10% in developed markets
 - African markets have potential for x3 growth

Investment Requirements:

- Open, unrestricted marketplace:
 - Cross border assets to be utilised;
 - Colocation and exchange point assets to be utilised;
- Government supportive role not policy makers.
- Established, open, sustainable IXP availability – Global policies and practices important.

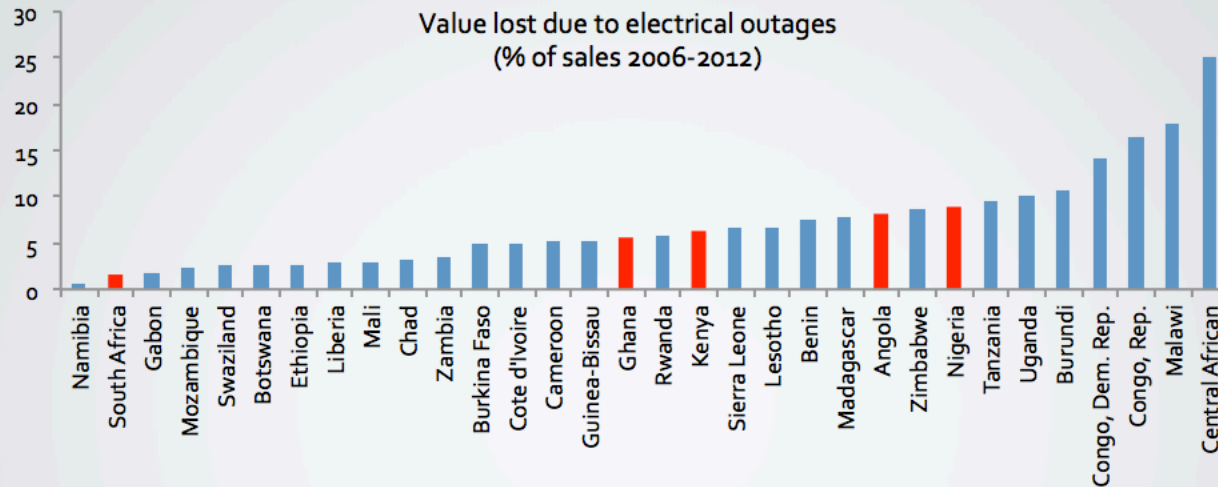
iGDP = Internet's contribution to the GDP of a country



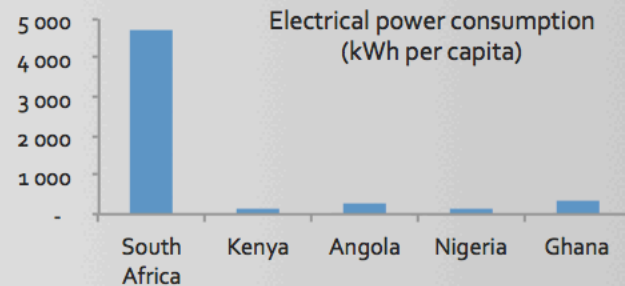
Africa v/s Top iGDP countries

Most reliable infrastructure in Africa

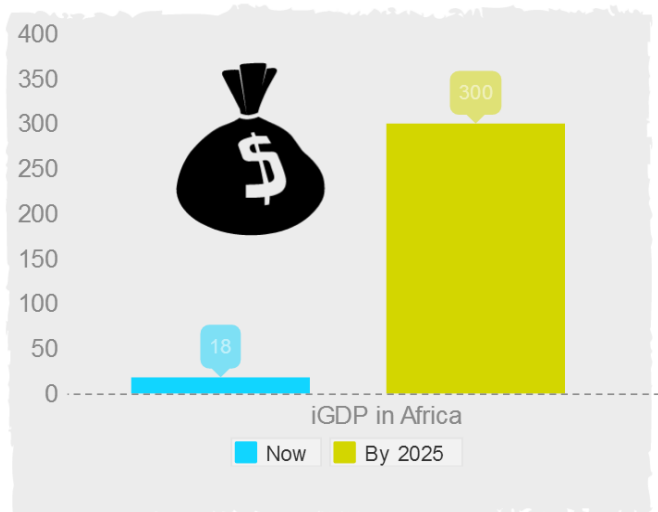
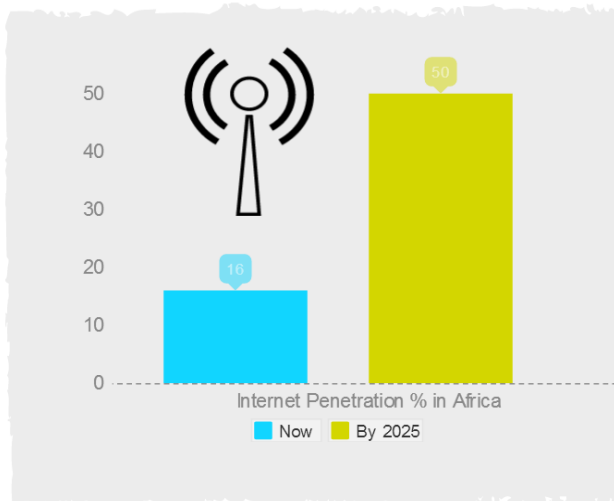
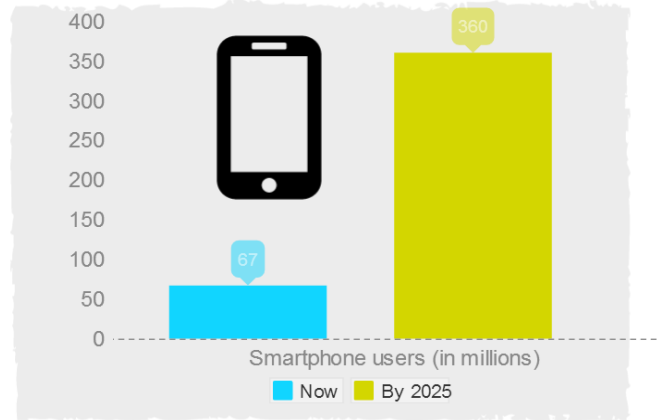
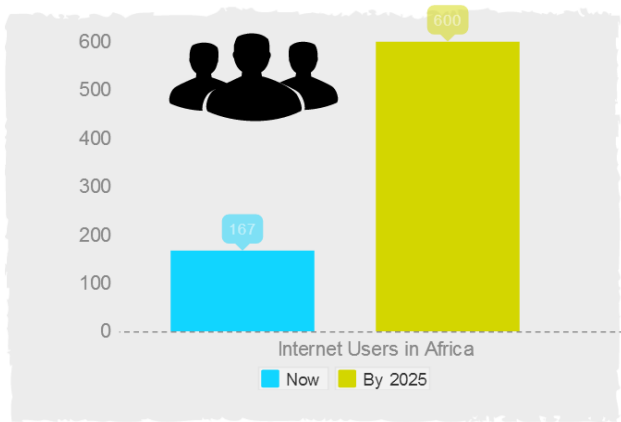
South Africa offers the most reliable infrastructure on the continent



- 5-10 x as much grid outage leads to significant extra cost of power (\$0.14/kWh in SA versus > \$0.30/kWh in Nigeria)
- Substantially greater power capacity and utilisation
- Substantially greater ease of doing business
- *Source: the World Bank (2011)*



What is the future of Africa's iGDP?





Thank you