Lessons Learnt from Peering

Building Africa’s digital future

26 August 2015
An overview of Liquid Telecom
Where we are

- One Network.
- The largest cross-border single fibre network in Africa – 18,000 km
- Fully redundant routes.
- Open-access – the carriers carrier.
- Active connections to 5 sub sea cables.
We love peering!
Present at more African IXPs than most
NAP, JINX and KIXP most significant
Also present at ZINX, BINX, ZIXP, UIXP, RINEX and CINX
We support IXPs and participate in them actively
We peer in Europe at LINX, AMSIX, DECIX
London – strategic hub because of subsea cable routes
Peering Points used by Liquid Telecom Over 5 Years

2010: ZIX, LINX
2011: ZIX, ZIX, Jinx, LINX
2012: BINX, ZIX, ZIX, Jinx, LINX
2013: UIXP, RINEX, KIXP, BINX, ZIX, ZIX, Jinx, LINX
2014: AMSIX, DECIX, NAP, UIXP, RINEX, KIXP, BINX, ZIX, ZIX, Jinx, LINX
2015: CIX, SMARTHUB, AMSIX, DECIX, NAP, UIXP, RINEX, KIXP, BINX, ZIX, ZIX, Jinx, LINX
Highest Ranked by Renesys Peering Index

- Top 100 Globally
- Highest Ranked in Africa by far
Challenges of Peering At Multiple POPs
Traffic Challenges

• Routing Problems when Peers advertise different prefixes at each IXP

• uRPF – some Peers need symmetric traffic flows

• Cross-border Capacity Management

• Issues with CDN routing
Benefits of Peering
In Africa Sometimes Elephants take a long time to come to the party. But they enjoy the benefits when they get there.
Latency - Example

Peering Established

216 ms

8 ms

median rtt: 77.3 ms avg 210.0 ms max 7.2 ms min 10.6 ms now 89.7 ms sd 861.1 m am/s
packet loss: 24.58 % avg 99.01 % max 0.00 % min 82.53 % now
loss color: 0 1/20 2/20 3/20 4/20 10/20 19/20
probe: 20 ICMP Echo Pings (56 Bytes) every 300s end: Wed Aug 19 10:26:31 2015
Lessons Learnt Along the Way
Growth in Intra- African Transit Capacity is Consistently higher than Africa-Europe!

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![Graph of International Bandwidth By Region - Source Telegeography](image_url)
Increase in Throughput

- When latency is lowered, throughput increases.
- Local traffic volume increases
Inbound Traffic Sources

- Transit: 22%
- Africa CDN: 31%
- Africa Peering: 25%
- Other Peering: 22%
Peering Vs Transit

Inbound Traffic

- Transit: 46%
- Africa Peering: 54%
Peering+ CDN Vs Transit

Inbound Traffic

- Peering + CDN: 72%
- Transit: 28%
Traffic Balance

- Traffic balancing surprises:
- Difficult Peers do not always have more traffic to offer!
Some customers are using VPN to access content they are restricted from – so bypassing peering

Lack of enforcement on Intellectual Property Laws - hindrance to those interested in streaming business
Thank You,
Peer On …