Asteroid
The Big case for the small IXP

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IXPs – a success story

- IXPs have played a fundamental role in the Internet worldwide
- The IXP model has proven to be hugely successful
  - IXPs started out as small, local solutions
  - Focusing on local interconnection

- Current IXP paradigm:
  - IXP presence in several datacenters to increase reach
  - Metro networks with transport across a larger region
  - Additional value-added services
  - Cloud services, remote peering etc.
More IXPs to the world!

- Not just in highly developed markets - even more so in developing markets
  - It also needs those exchanges to be inclusive, cost effective and automated
  - Getting all those aspects right is why it usually takes a long time to establish an IXP

- But is big really better?

- Do all IXPs need to be 100GE, multi-site, with transport over long distances, additional cloud services, remote peering etc?
The IDI looks at:
- ICT readiness (infrastructure and access)
- ICT intensity (Usage, broadband subscriptions)
- ICT capability or skills (literacy, education etc)
Africa – submarine cables

https://www.submarinecablemap.com
African Population

http://afrographique.tumblr.com
African Mobile Subscriptions

http://afrographique.tumblr.com
Global – ALL IXPs

54th percentile

20 Gbps
44 active IXPs in 32 countries
African IXPs according to AF-IX

- No traffic data-sets are fully comprehensive
- Not all IXPs have and/or publish traffic statistics
- Inconsistent accounting of peak traffic statistics (e.g. monthly vs. daily)
- Some IXPs carry significant transit traffic
Requirements List to get you started

- Capable of 20Gbps peak, 8Gbps average traffic
- 20-30 customer ports
- 10Mbps, 100Mbps, 1Gbps, multiple 1Gbps, 10Gbps
- Portal/website
- Quarantine VLAN
- Route server
- Arpwatch
- Central location with good connectivity options
IXP Benefit - ISOC Policy briefing

• IXPs provide important benefits such as:
  • Lowering Internet access costs for end users
  • Decreasing ISP operating costs
  • Cheap local connections
  • Improve access for end users

• IXPs can be instrumental in developing the local Internet ecosystem of stability and continuity of access
  • Attract out-of-country service operators
  • Keep local traffic flowing within the country
  • Encourage local service hosting and local content development and applications
  • Attract a variety of other services, (domain name servers, root-server mirrors, time servers, content and Web caches)

“Build it and we will come”

- Getting content providers adds enormous value to your IXP
- But it comes at a price – which is a separate business case!
- Typical requirements:
  - free IP transit, free space & power
- The upside:
  - total IP transit cost for the community goes down
- Much improved user experience
Some thoughts

• You don’t need a huge budget

• You DO need a solid community (inclusive, pragmatic, neutral)

• Don’t be afraid to upgrade

• Just about everything else is more important than the IXP hardware

• If you want resilience, build more IXPs
The Asteroid mission

To provide modern, local, cost-effective Internet exchange points,
wherever there is a need
Bringing back local interconnection!

• Asteroid set out to go back to the origin of IXPs

• But built to modern standards, on 15+ years of experience in the interconnection industry

• Complete package: right-sized hardware, our softwares and support

• As a result, IXPs become easier to establish, reach more markets and provide a better and more predictable platform for all sizes of networks
One platform – two products

Asteroid IXP
Managed, marketed, and run by
Asteroid
under the Asteroid brand
(Amsterdam, Mombasa)

White label IXP
Managed, marketed, and run by
a third party (existing IXP, launching IXP, datacenter…)

We believe in automation

01 Fast
Built for speed. Port provisioning in a matter of seconds

02 Secure
Reduced risk for human error. Security is built into the tech solution

03 Scalable
The Asteroid management system can easily handle a multitude of IXPs around the world

04 Replicable
Asteroid is an IXP platform. Full automation allows for rapid, easy, straightforward replication
Facilitates management of your IXP
• Lists your sites and exchange
• Automates IP addressing and configuration

Manage customer relationships
• Add peers, store all necessary information to connect them
• Manage relationships & contacts (tech, legal, admin, accounting)
• List one or several entities, ASNs for each organisation
• Send quotes and contracts

Provision ports
• Simple, straightforward, automated - anyone in the organisation can provision ports

Manage statistics
• Monitor the overall traffic statistics for your IXP
• Monitor traffic per peer

Get control over your IXP
• Get a picture of the peering jobs to be done (connection, troubleshooting, …)
Conclusions

• Start small
  • First, grow to scale. Then, scale to grow
  • You don’t need an over dimensioned solution
• Small doesn’t mean it’s not state-of-the-art
  • You should have route servers, statistics, basic toolset, a good portal on Day 1
  • Automation is king
• Costs matter!
  • Keep fees low
  • Think long term – free is not sustainable!
  • Power consumption matters - power is always a recurring cost!
• Build your community
  • Get the local community on board
  • Build your international reach
• Start your own, get an Asteroid IXP, or partner with us
Thank you for your attention

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