

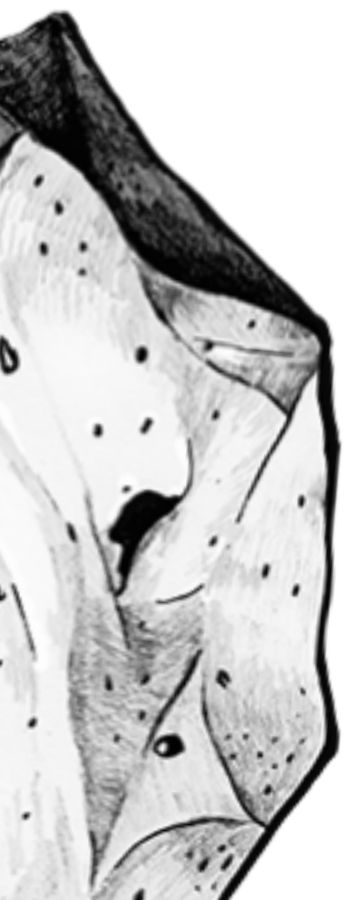


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The Big case for the small IXP

Cape Town, 21 August 2018

Solène Souquet, Business development

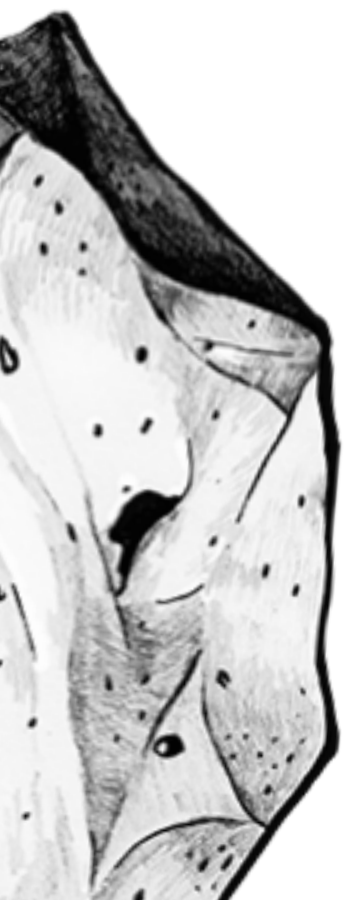


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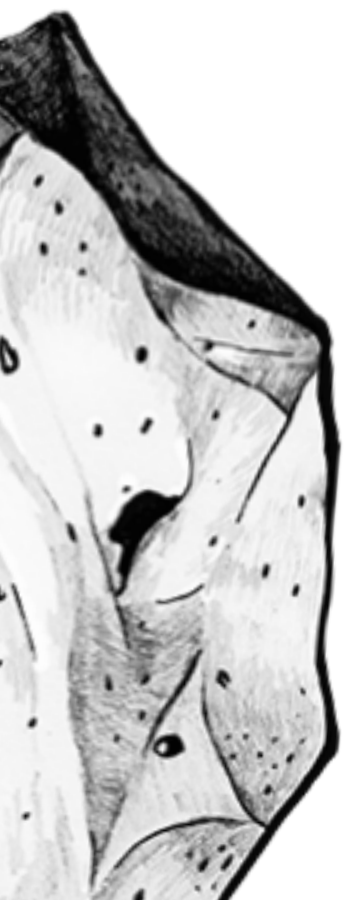
IXPs – a success story

- 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?



ITU ICT Development Index (IDI)

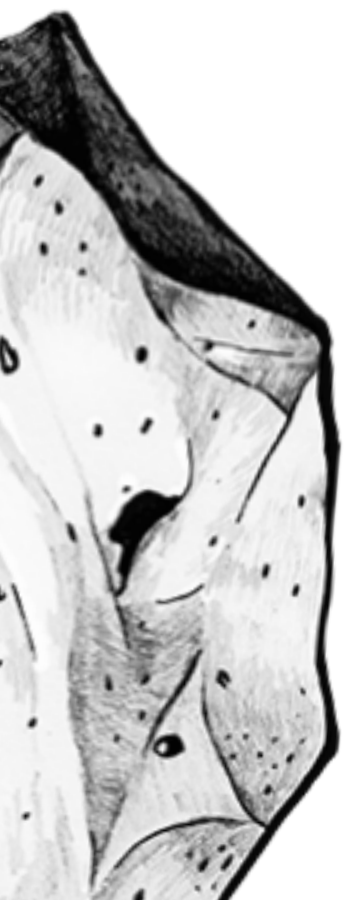
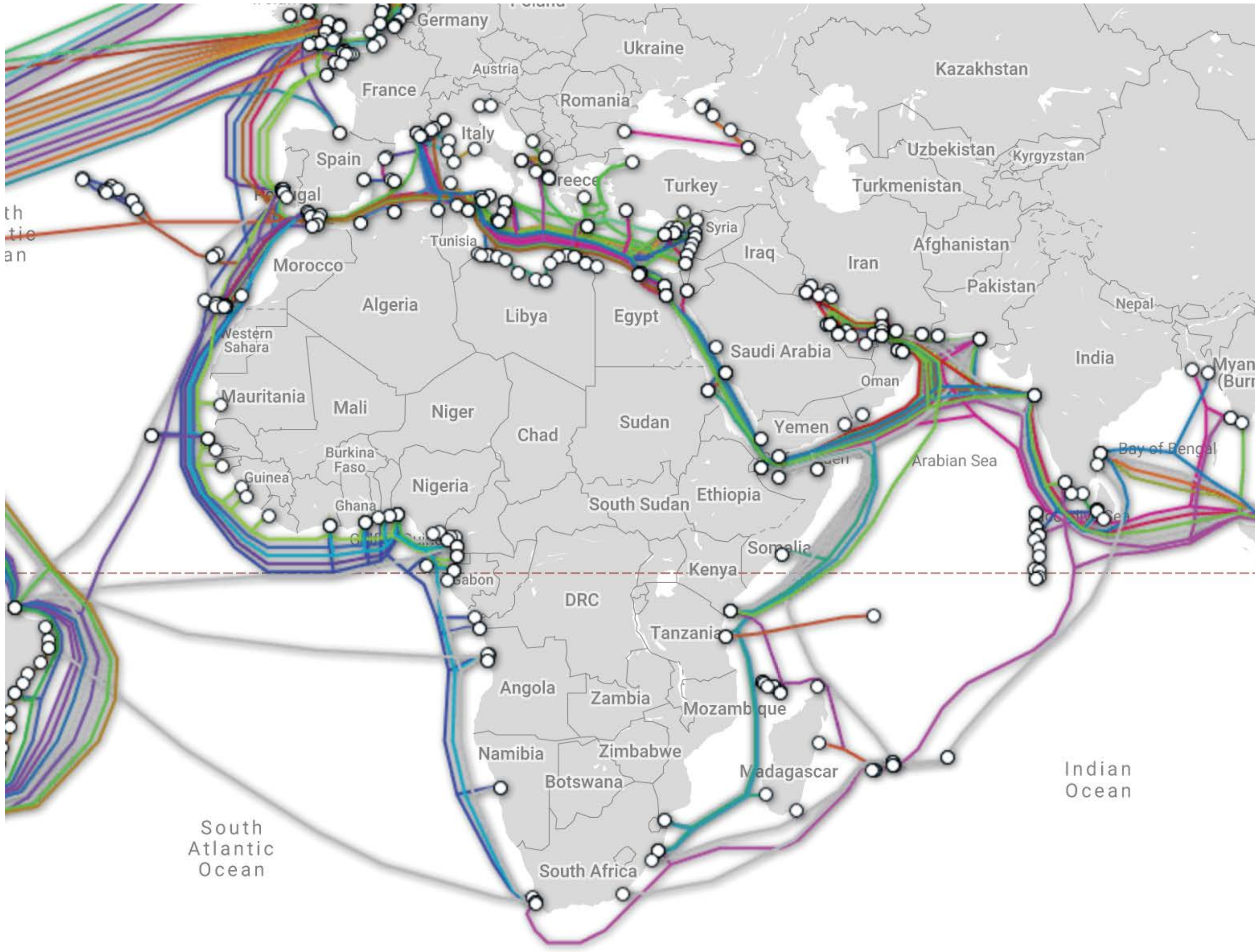


The IDI looks at:

- ICT readiness (infrastructure and access)
- ICT intensity (Usage, broadband subscriptions)
- ICT capability or skills (literacy, education etc)

<http://www.itu.int/net4/ITU-D/idi/2017/>

Africa – submarine cables

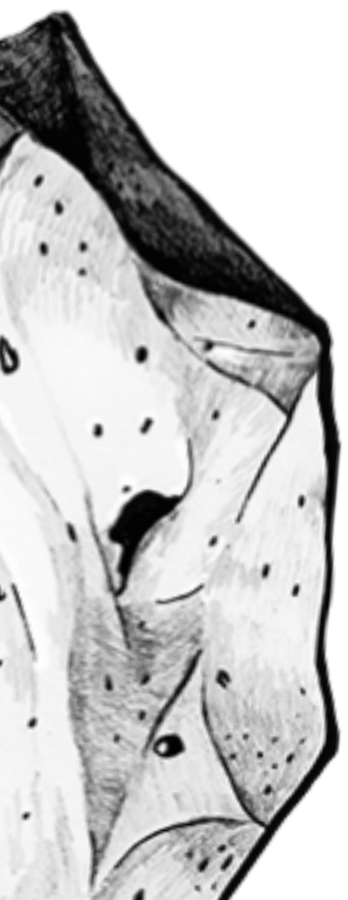
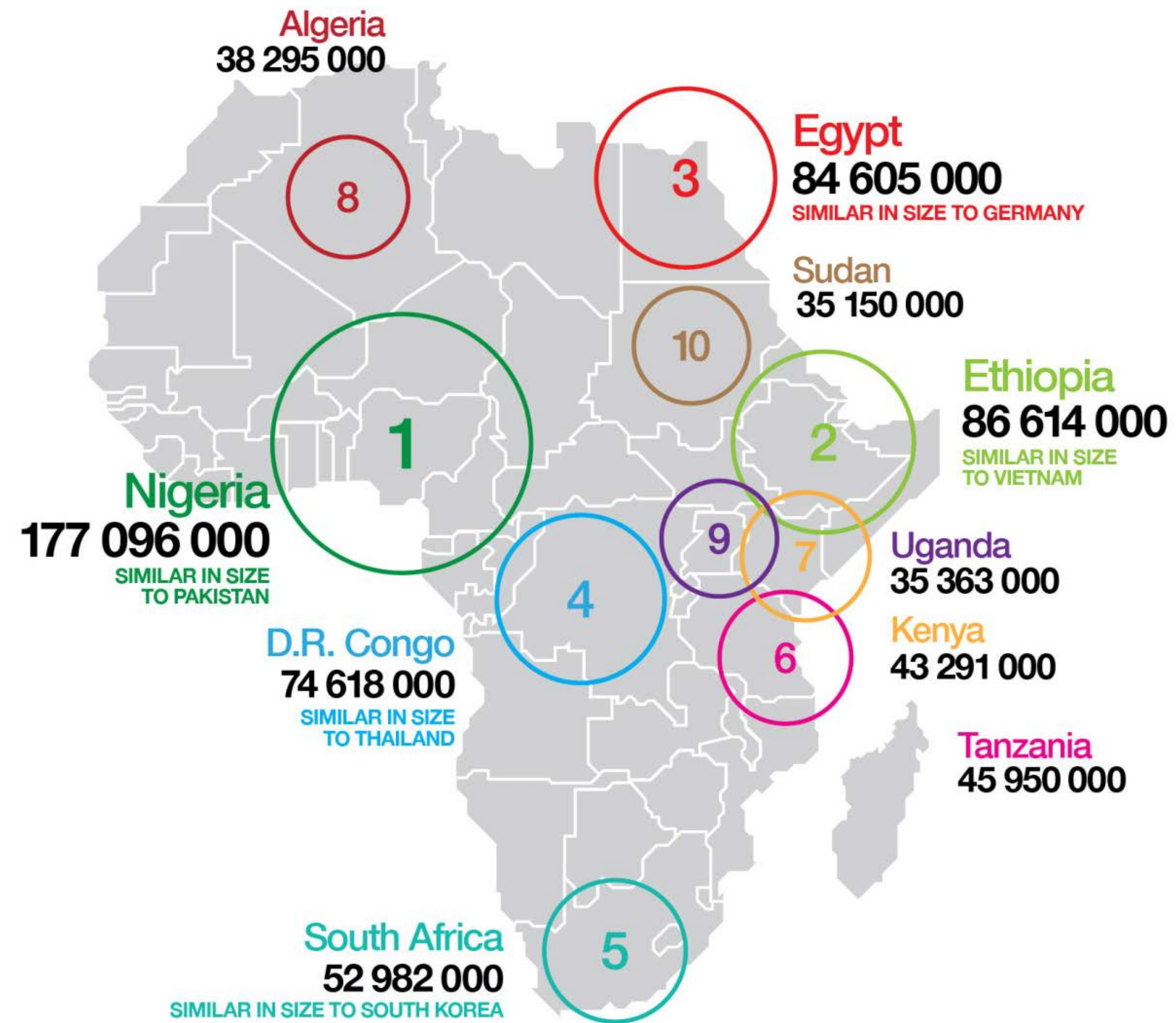


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<https://www.submarinecablemap.com>

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African Population

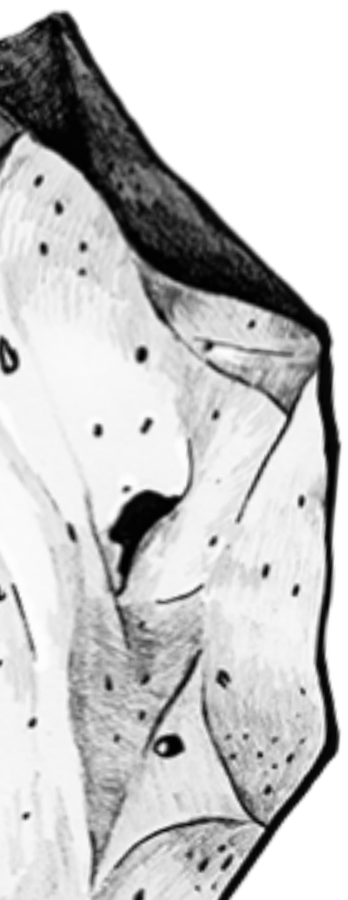
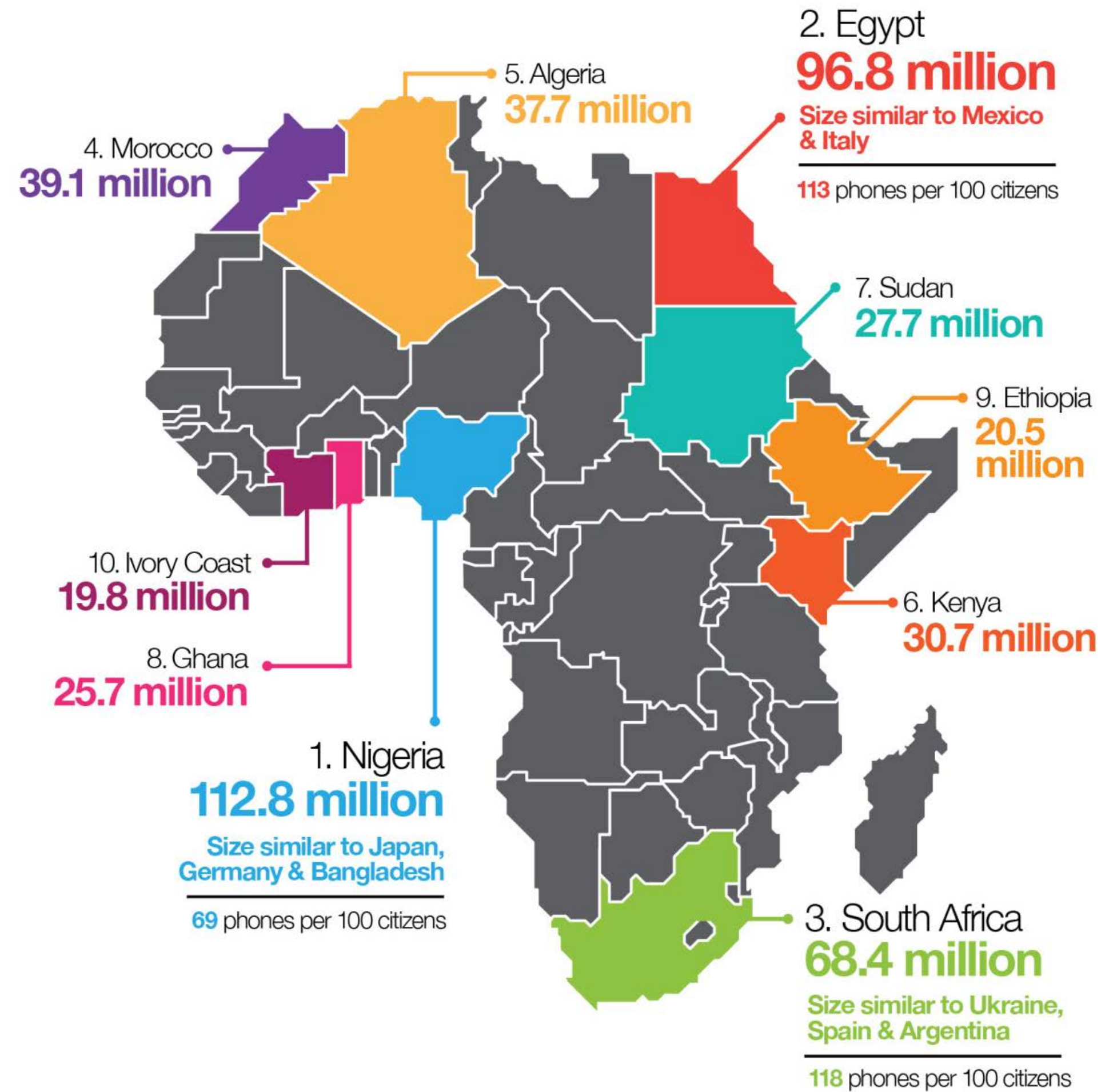


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<http://afrographique.tumblr.com>

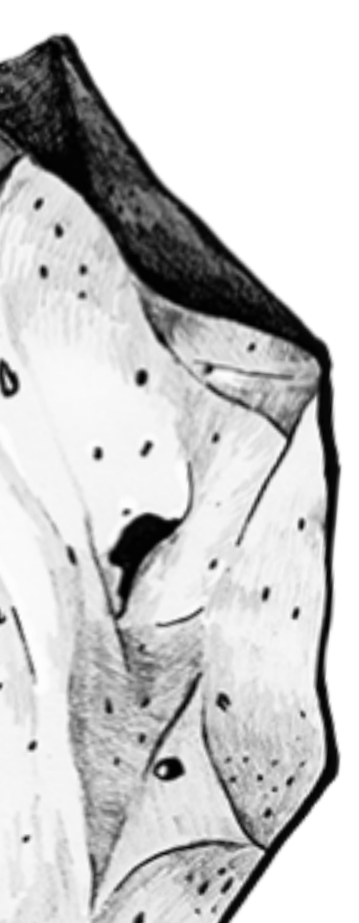
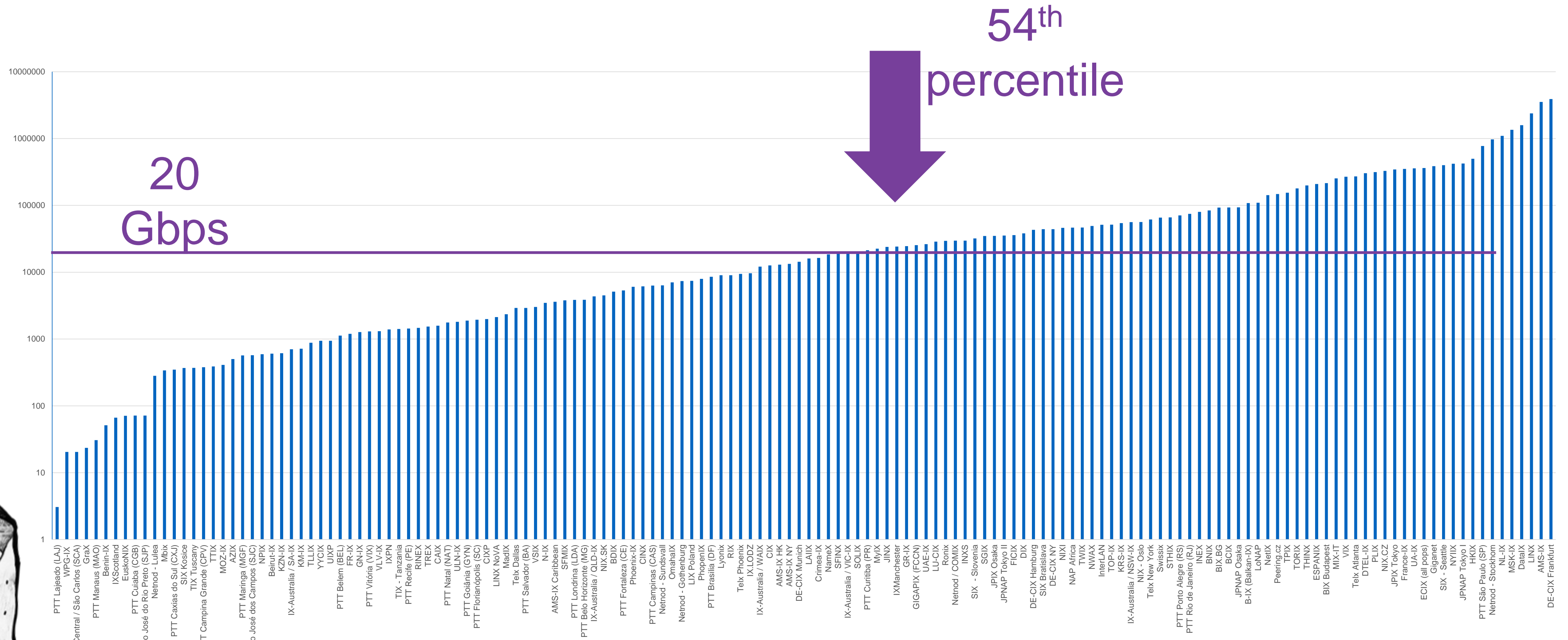
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African Mobile Subscriptions



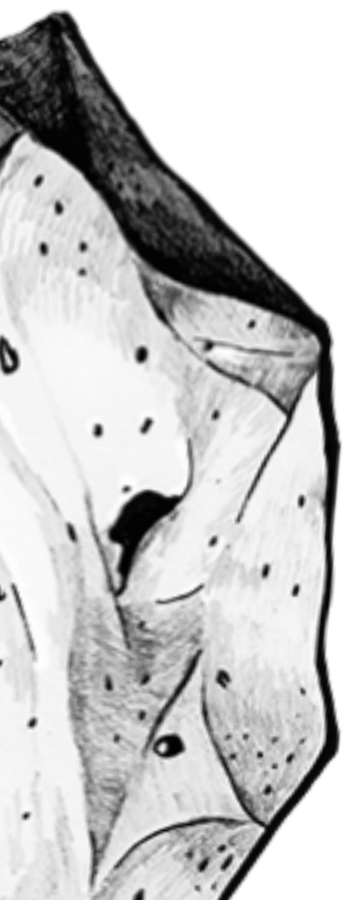
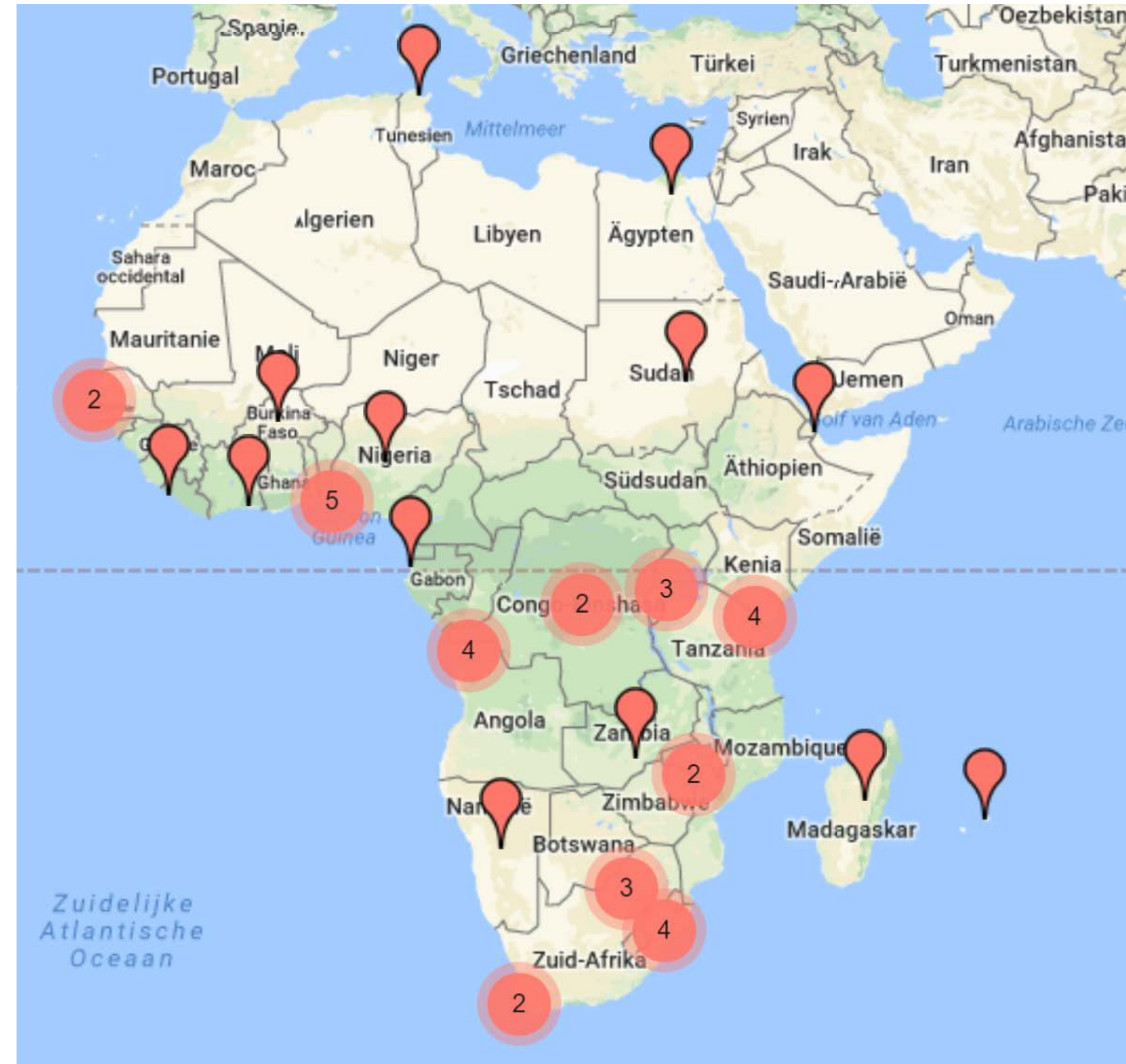
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Global – ALL IXPs



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44 active IXPs in 32 countries

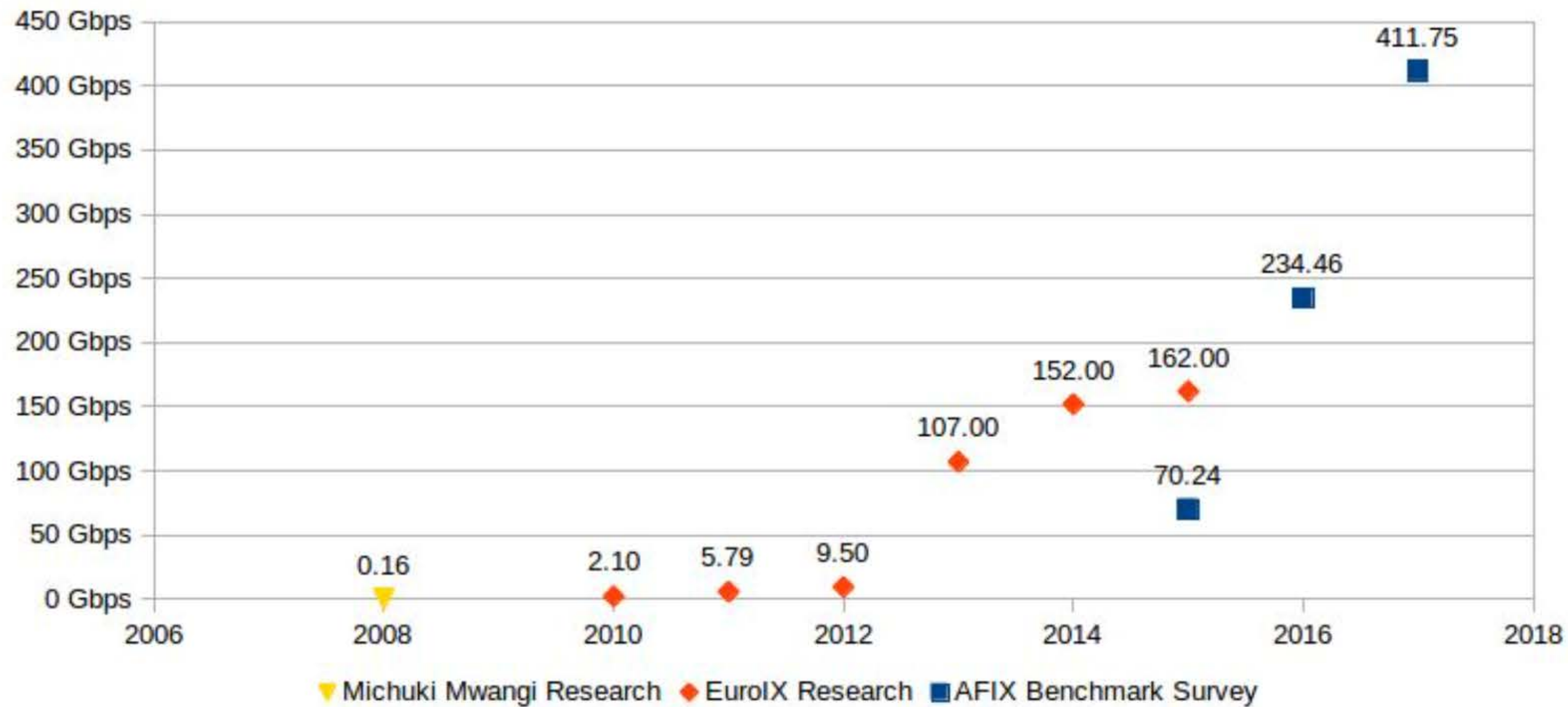


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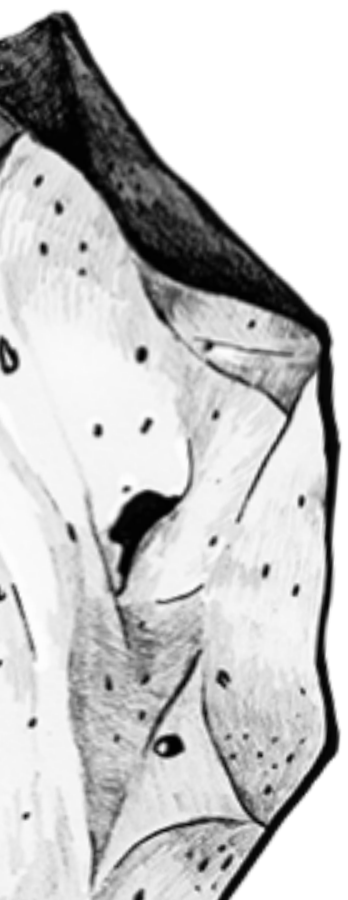
African IXPs according to AF-IX

African IXPs: Aggregate Regional Peak Traffic

Source: African IXP Association (2017)



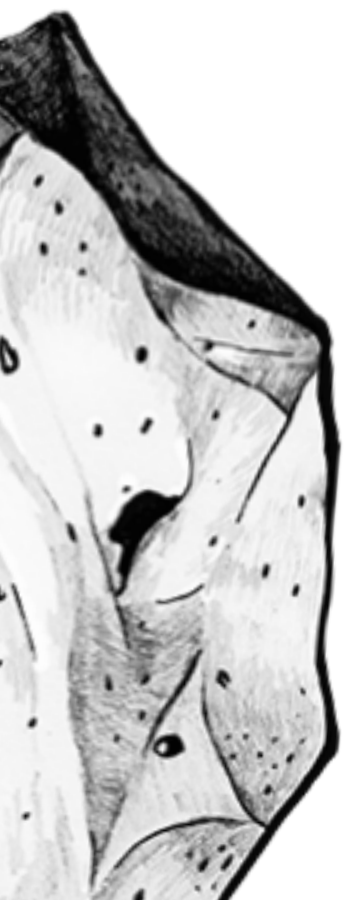
- No traffic data-sets are fully comprehensive
- Not all IXPs have and/or publish traffic statistics
- Inconsistent accounting of peak traffic statistics (e.g. monthly vs. daily)
- Some IXPs carry significant transit traffic



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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



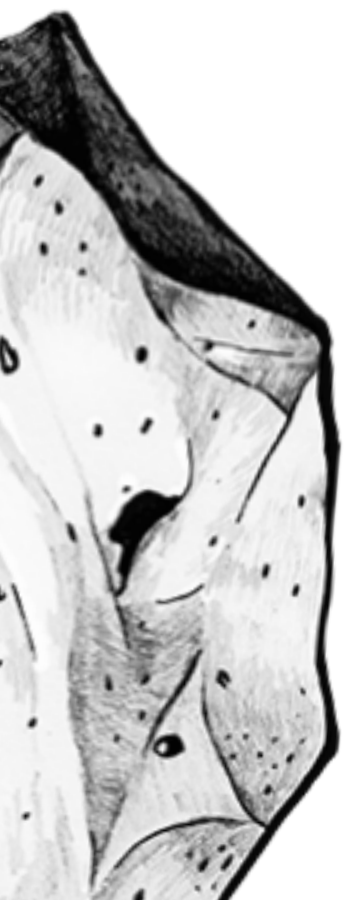
IXP Benefit - ISOC Policy briefing

- 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)

https://cdn.prod.internetsociety.org/wp-content/uploads/2015/10/ISOC-PolicyBrief-IXPs-20151030_nb.pdf

“Build it and we will come”

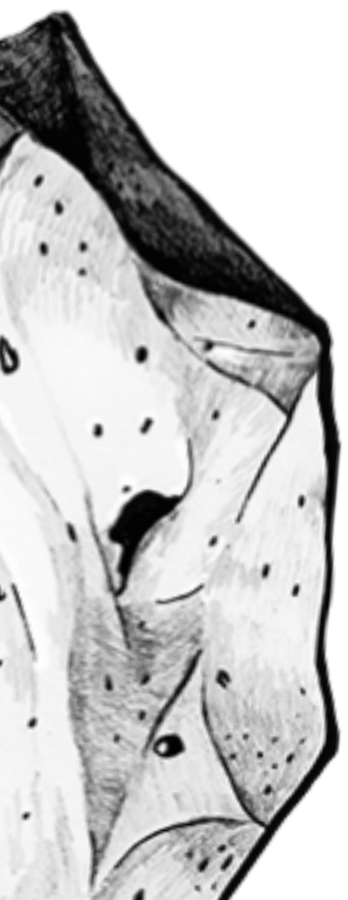
- Getting content providers adds enormous value to your IXP
- But it comes at a price – which is a separate business case!
- Typical requirements:
 - free IP transit, free space & power
- The upside:
 - total IP transit cost for the community goes down
- Much improved user experience



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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



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The Asteroid mission

To provide modern, local, cost-effective

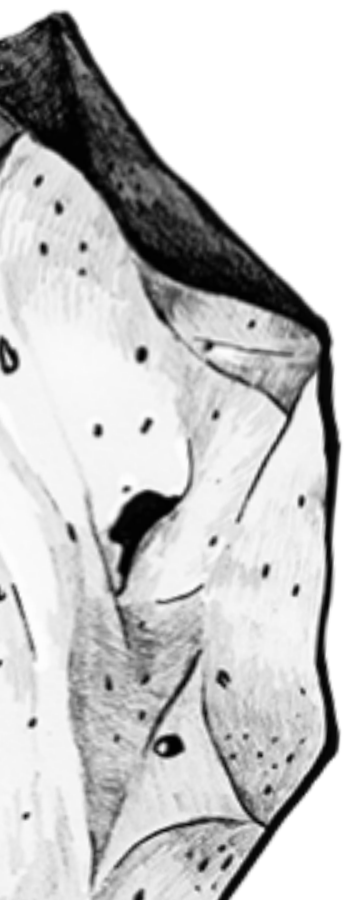
Internet exchange points,

wherever there is a need

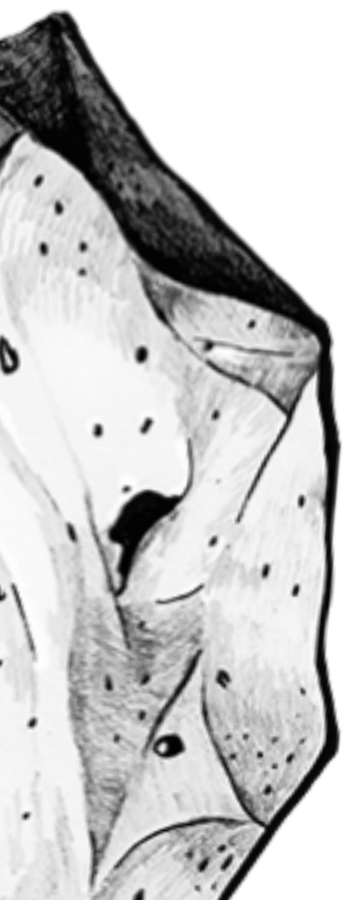
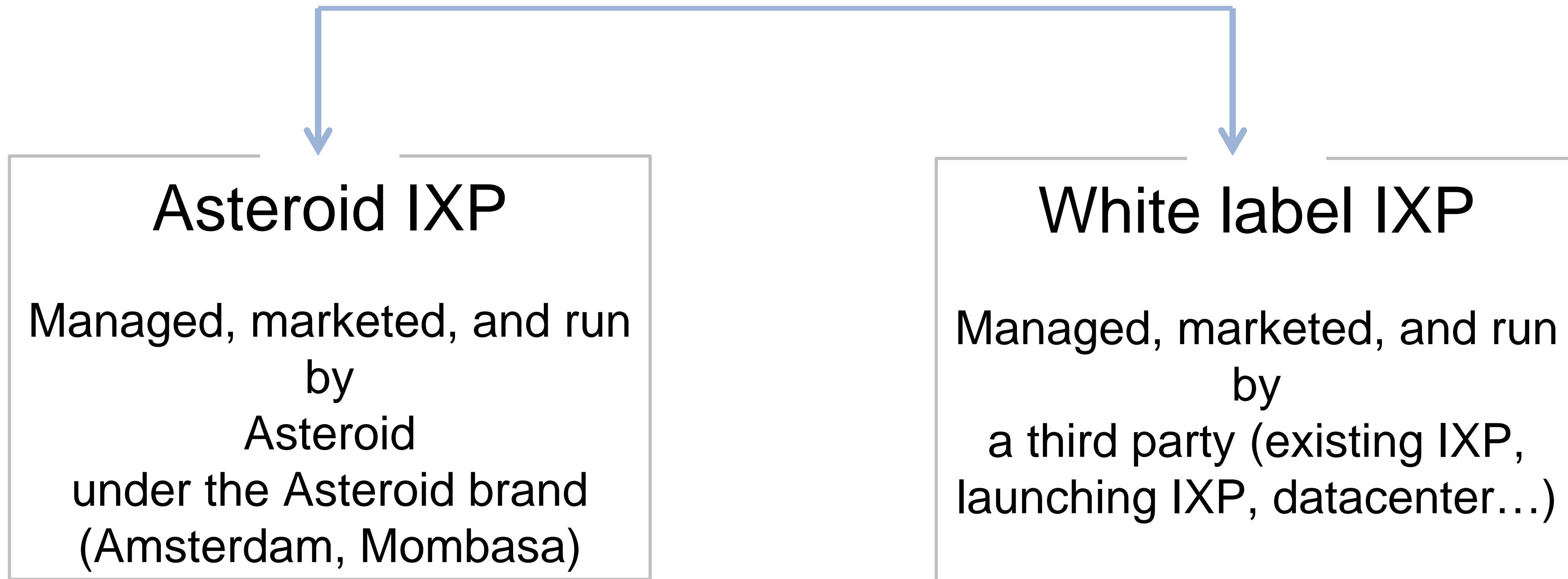


Bringing back local interconnection!

- 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



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

Automation at the core

Scalable

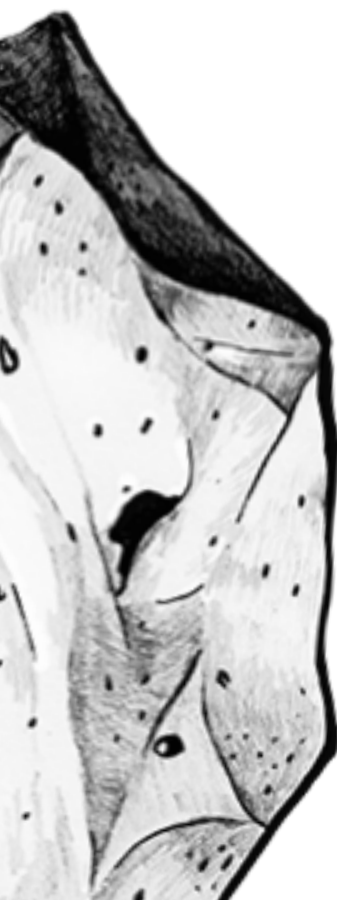
The Asteroid management system can easily handle a multitude of IXPs around the world

Replicable

Asteroid is an IXP platform. Full automation allows for rapid, easy, straightforward replication

03

04



Asteroid's IXP software suite

01

Facilitates management of your IXP

- Lists your sites and exchange
- Automates IP addressing and configuration

02

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

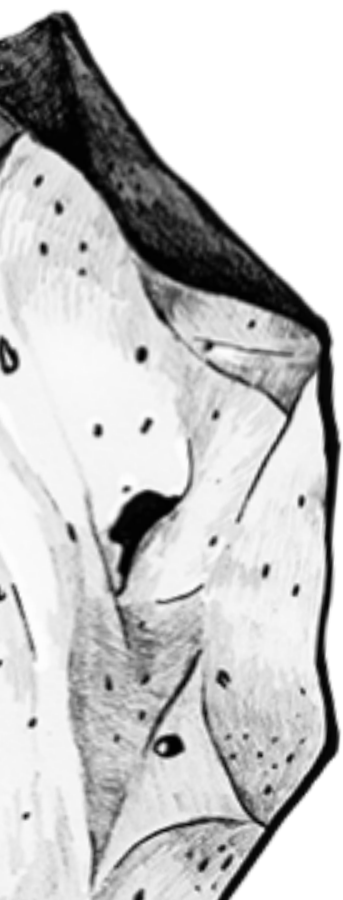
Get control over your IXP

- Get a picture of the peering jobs to be done (connection, troubleshooting, ...)

03

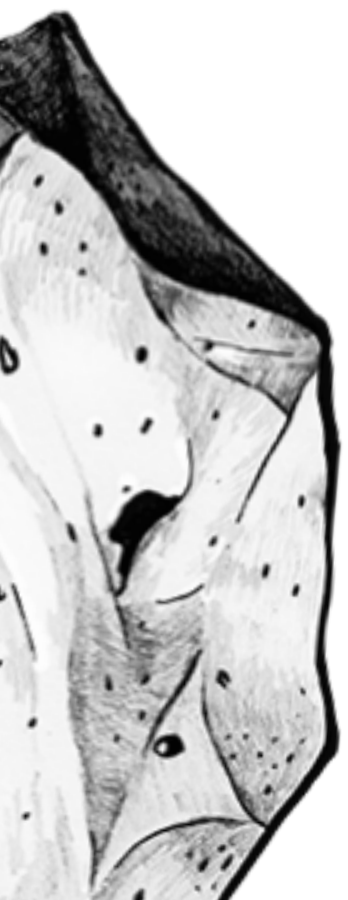
04

05



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



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Local interconnection,
where you need it.

*Thank you for
your attention*



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