

| The benefits of peering in Africa

The way **Internet Exchange Points (IXPs)** enable networks to peer – connecting and exchanging traffic directly – is enormously beneficial to Internet Service Providers (ISPs), businesses, end-users and all the people of the continent.

Asteroid, a global IXP provider, recently announced the launch of an Internet Exchange Point at Africa Data Centres' East African carrier-neutral facility in Nairobi, Kenya (NBO1).

This complements Africa Data Centres' existing partnership with Kenya Internet Exchange Point - KIXP and **enhances connectivity** for Internet users in East Africa, with Africa Data Centres opening its rich ecosystem to Asteroid.



But what types of benefits are these, how are such benefits obtained and how does peering improve not only Internet usage regionally but also of the Internet as a whole?

To begin with, the definition of an IXP is an infrastructure that is leveraged by Internet Service Providers (ISPs) as a means of exchanging traffic between each other, rather than through third-party networks.

Peering with an IXP assists significantly in improving user experience since it helps to establish shorter connectivity paths and reduces the round-trip delay experienced by African ISPs, who without such peering platforms often find even local traffic routed via lengthy and expensive international links. In other words, by connecting and exchanging their traffic more directly, both costs and latency are reduced, leading to a better quality of service for Internet end-users.



The kind of cost reduction that can be gained through peering initiatives is provided by the international non-profit organisation, the Internet Society – ISOC, in a paper produced in June 2020:

A typical IXP port charge in Kenya is **US\$0.45** per month per Mbps (for a 1 Gbps port), considerably less costly than using international IP transit at more than **US\$25** per Mbps (for 1 Gbps capacity). The result is an **overall saving** of at least **US\$6 million** per year across all the networks that peer locally in Nairobi. This saving is at least four times greater than it was in 2012, despite the far lower cost of today's international capacity.

Latency is the time it takes for data to be transmitted from one point to another – essentially a measure of the delay in delivery time – and is materially higher when local traffic is routed via an international link, before sending it back to the country of origin. With two local networks directly connected via peering, traffic is engineered to use the shortest and direct path thereby reducing latency from seconds to milliseconds.



The result is faster response times from local web sites and additionally means that more advanced local services, of the kind that may require low-latency connections - such as multimedia streaming, virtual private networks, and voice over IP - can be accessed quicker.

The reduced operating costs will ultimately benefit the end-user, through lower Internet access prices. It also helps to improve choice, since peering leads to greater cooperation amongst providers and encourages price competition – further driving down costs for access providers and end-users.

The Internet Society outlines how, before the launch of the original IXP in Kenya, all the country's Internet traffic was **exchanged internationally**, despite around **30%** of it being local. By 2020, with the growth of peering and hosting of content locally, that ratio had grown to **70% of traffic being local**, and that local traffic has a latency below 10 ms, compared to 200 – 600 ms for international traffic. Another example is a recent announcement on social media by a Kenyan ISP that claimed that since it signed up with Asteroid's Mombasa IXP, it has **improved load times** for more than half its traffic.

At this point, it should be noted that not only is there room for more than one IXP in a country, it is considered ideal to have multiple peering partners. This offers customers hosted in a data centre that hosts multiple IXPs - such as Africa Data Centres' environment - increased network resilience and redundancy.



Peering via multiple IXPs is highly achievable if a data centre is carrier neutral. Such neutrality is equally vital since it means the data centre undertaking the peering allows interconnection between many technology services and interconnection providers.

Most importantly, by not being tied to a single service provider, they offer diversity and flexibility for the customers within the data centre. From the customer perspective, it means they can avoid falling prey to high prices, limited bandwidth and lack of competition, which is always a possibility if they are tied to one specific carrier.

For the end-customers, the cost savings are derived through the multiple connection options to colocation data centre customers, and the fact that due to the strong competition, ISPs are incentivised to keep their prices low and consistently provide better services. From a reliability point of view, carrier-neutral data centres offer a level of redundancy that is not possible with a single carrier, while their flexibility is also improved.

In short, peering delivers an impressive set of advantages, as it:

- Raises revenue
- Decreases costs
- Lowers latency
- Increases throughput to other networks
- Improves connections to major international hyperscalers
- Increases network stability
- Improves the user experience in terms of speed and stability
- Means being part of an interconnection ecosystem

For too long, Africa has been held back from accessing the true benefits of the digital world, due to the high cost of Internet access and the latency and reliability challenges local data centres and ISPs have faced.

Now, thanks to a growing number of IXPs and the impetus created by major data centre operators like Africa Data Centres hosting them, the continent's youthful and growing population of digital natives has a platform from which to begin accessing and leveraging the digital economy.