



The African Peering and Interconnection Forum

Venue: The Westin, Cape Town, South Africa | **Date:** 21st – 23rd August, 2018

CONFERENCE REPORT



Organized by:



Local Host:







The ninth edition of the Africa Peering and Interconnection Forum was successfully hosted in Cape Town in conjunction with iWeek, the annual event held by the South Africa ISP Association.

This was the first time AfPIF was held jointly with other events, a move that brought together greater overall engagement, through more sponsors and more participants, who share and understand similar challenges and opportunities.

This year, there were **413** participants of which **75** were women from **44** countries globally. **63%** of the attendees were from Africa. The remote live stream recorded **422** unique participants with an additional **89** on Facebook live. A total of **34** sponsors supported AfPIF and iWeek making AfPIF 2018 the most sponsored event in its 9 year history.

These are the highlights of this year's event:

Cape to Cairo fiber project is gaining momentum. *Liquid* announced that it's ambitious project to link Cape Town to Cairo via fibre optic network will soon be a reality, with more governments, industry players and regulators appreciating the need for cross border trade and connectivity.

Connectivity costs keep falling. Statistics from *Telegeography* show that connectivity costs in Africa continue falling, as more players peer more and local infrastructure grows. This falling costs will allow more players to set up infrastructure deeper into rural areas and to bring latest technology such as 5G and other IP services.



413

Number of participants who attended the conference



422

Number of unique participants on Livestream with an additional **89** on Facebook live



44

Number of countries globally represented



34

Number of sponsors who supported AfPIF and iWeek making AfPIF 2018 the most sponsored event in its 9 year history

Scalability - For participants wondering how to start, what size is good enough, how many players should there be for an IXP to start, the kind of equipment needed, there was a session that detailed how to grow an IXP from scratch. For the IXPs wondering how to grow, the tools needed and the challenges to look out for, the sessions were there.

Cloud services are growing beyond the big players to the smaller, localised players. This has been anchored by the growing adoption by the enterprise market, power stability, growing workforce and a regulatory environment that is appreciating the role of technology in economic growth.

Growth in more CDNs - with the growth in submarine, terrestrial fiber and cloud infrastructure, global CDNs are eyeing the African market but still not ready to make the plunge and invest. There was a call for global companies to deploy more infrastructure into Africa, and to invest and grow the ecosystem.

Research in Africa ICT is growing. Through concerted efforts from AfPIF, Afrinic, Telegeography and University of Cape Town, there are more statistics about internet in Africa. Whether its pricing or the trace routes of Africa's Internet access, the stastics are growing.

Impact of Over the Top (OTT) services - will provide the forum for the next big debate, as governments, network operators, OTT companies and the public debate on ways to handle data and the best way to provide innovative services.

Good news for IXPs in Africa - Facebook has entered into a partnership with the *Internet Society* to drive the growth of IXPs in the region; supporting Internet ecosystem growth through training and equipment support.

Curious as to where **AfPIF 2019** will be hosted?... Well, read to the end to find out.



DAY ONE SUMMARY

The ninth edition of **Africa Peering and Interconnection Forum** (AfPIF) kicked off on 21st August 2018, at the Westin Hotel, Cape Town, South Africa, with more than **400** tech executives in attendance. This year, the forum was organised and held jointly with *iWeek* - the South Africa ISP Association's premier tech event.

This year's event dubbed AfPIF@iWeek attracted top tech executives, chief technology officers, peering coordinators and business development managers, Internet service providers and operators, telecommunications policymakers and regulators, content providers, Internet Exchange Point (IXP) operators, infrastructure providers, data center managers, National Research and Education Networks (NRENs), carriers, and transit providers.

The sessions started with an introduction by Nishal Goburdhan, programme committee chair, and a veteran of AfPIF, who traced the history of AfPIF, from its conception to the community event it is. The Internet community took over the event's programme three years ago, through a consultative program committee that is responsible for country host selection, developing the conference content and identifying suitable speakers.



>400

Average number of tech executives who attended the ninth edition of Africa Peering and Interconnection Forum (AfPIF).

How can you take advantage of AfPIF?

Nishal suggested that the participants use peering personals sessions; this is like speed dating for networks – members give details of their AS numbers, where they peer, peering policy, contact information, and explain why other participants should peer with them. At the end of every session, participants get a chance to introduce themselves.

The meeting tool allows participants to book meetings with other people and there are long breaks in the schedule, meant to facilitate the meetings. There are six half-hour breaks and 90-minute lunch sessions to allow continuation of discussions.

For the last nine years, it has been clear that most peering agreements are done through a handshake and social sessions. The sessions are meant to facilitate these kind of discussions.

How to start an IXP and how to grow an existing one are probably the major questions for Africa's tech community. Solène Souquet, from Asteroid International, made a presentation on "the big case for a small IXP," noting that one doesn't need a big budget to set up an IXP.

The most important part is a vibrant local community, a gigabit infrastructure that is scalable, **20** or **30** customer ports, website, route server, central location with good connectivity options, and a content carrier as among the peers.

Netflix is one of the major global content carriers and has recently established POPs in Africa and is planning to grow. During the peering and transit tutorial, *Netflix* explained the different consideration in traffic routing. When accessing *Netflix*, traffic is routed to the closest server, which facilitates faster response time.

One of the major issues that ISPs have with *Netflix* is blocking of IPs that are found to have flouted the rules, especially using VPNs to access the content. *Netflix* says that content is geographically licensed and they provide it depending on what the region prefers to watch. In cases of blockage, *Netflix* encourages ISPs to reach out and resolve the matter with their teams.

The last session was on inter-city traffic latencies, and it shows that the latencies are falling, as the region continues to interconnect more-and-more cities. The study showed that the median latencies are at **250ms**.

The study was conducted in collaboration with the University of Cape Town and AFRINIC. It used *Ookla* and *speedchecker* to measure the latencies, **723** probes in **100** cities, **43** countries, and **271** servers.

Northern has lowest city-to-city median delay compared to other regions. Kigali was noted to have high latencies but the team couldn't explain, but promised to continue investigating.

2



DAY TWO SUMMARY

Africa's dream of Cape Town to Cairo fiber connectivity has moved closer, with *Liquid Telecom* announcing that it has made considerable progress in signing agreements with regulatory authorities and partners within the route.

Liquid Telecom has an ambitious plan of reducing network latencies between Cape Town and Cairo. Currently, traffic is routed through Europe, with latencies of **209ms**, and they expect this to be reduced to around **97ms**.

In the keynote speech at the Africa Peering and Interconnection Forum (AfPIF), Ben Roberts, *Liquid* CTO, said that the project will be implemented through existing *Liquid* infrastructure within different countries, partnership with existing infrastructure providers, and regulators. The project is expected to be done by 2020 and to eventually connect East and West Africa.

Liquid is expecting the African Continental Free Trade Area (AfCFTA) agreement, signed and ratified recently, to drive city-to-city interconnectivity, as more countries look for ways to trade with each



97ms

Average network latencies envisaged by the *Liquid Telecom*-planned Cape Town to Cairo Fibre connectivity



other and eventually exchange Internet traffic. The goal to increase intra-Africa broadband traffic.

Roberts projects the infrastructure currently being set up will be highly used by the youth, who have grown up online – through education, social media, and gaming applications. The Internet of Things (IoT) is expected to grow; currently most of IoT deployments are in South Africa, but it is expected to grow in areas such as health, agriculture, smart cities, transport, and logistics.

Cloud infrastructure, combined with IoT is expected to drive utilities, water, sewerage, health, agriculture, smart cities, transport, and financial services.

Growth in data centers and cloud infrastructure has been key to growth in content and fall in connectivity costs. Most

content carriers and distributors depend on the data center growth to determine whether to enter the market or not.

Michele McCann from *Teraco* presented about the growth of their data center space, highlighting the factors they consider before deciding whether to enter a market. Teraco currently has more than 350 AS numbers represented at their facilities and they are growing every month.

Teraco started with networks building structured cabling between each other and peering, cloud services were built and as power and cooling became more reliable, content providers and distributors, financial, and enterprise markets set up services. One of the smaller South African banks was able to gain significant market ground as it focused on its online strategy instead of the traditional brick and mortar approach.



What trends will drive data center growth?

Moving content closer to users is driving CDNs to move into Africa, accelerated migration to the cloud as companies look to reduce capital expenditure, lower connectivity costs, growth in online services, and availability of peering.

Availability of statistics has improved over the years, with *Telegeography* presenting its data on Africa's traffic trends and pricing. *Telegeography* measures international traffic, so if there was an increase in local traffic, it is not likely to reflect on the *Telegeography* statistics. The goal of AfPIF is for local traffic to be exchanged locally, however, **82%** of capacity from Africa is still going through Europe.

It is projected that as latencies fall, more CDNs will be attracted to Africa and in areas like Latin America. CDNs have ended up investing in four submarine cables, as they seek to lower connectivity costs and reach more users.

The growth of cloud infrastructure in Africa has been credited with the growth of local content in many regions, and it holds the key for Africa's ability to attract content carriers and distribution networks.



82%

Estimated percentage of local internet traffic exchanged through Europe. The goal of AfPIF is for local traffic to be exchanged locally.

3



DAY THREE SUMMARY

Cloud Infrastructure, Local Content, and more

The growth of cloud infrastructure in Africa has been credited with the growth of local content in many regions, and it holds the key for Africa's ability to attract content carriers and distribution networks

The first panel of day three at the Africa Peering and Interconnection Forum (AfPIF) was dedicated to discussing the current scenario of cloud infrastructure and what it will take to grow the sector further, get the market interested, and eventually grow the level of content hosted locally.

South Africa has the most extensive cloud market, compared to other African countries, and it took concerted efforts

from the different players, spearheaded by the ISP Association, for the market to be deregulated. Deregulation can take time, and industry players agree that light touch legislation and independent regulation are vital to investments in the market.

Although the industry may be small in Africa, **cybersecurity** is key, as businesses are susceptible to cybercrime, just like other global operators. That means the enactment of cybersecurity laws in the different countries, and continued training and awareness by industry players.

Power and **cooling** is another vital part, with many countries enjoying monopoly of power distribution, and power production through

non-green techniques. Angus Hay, of *Liquid* estimates that only 15% of South Africa's power is produced through renewable means, whereas an amazing 70% of Kenya's power is renewable.

In discussions with the power companies, *Liquid* challenges them to evaluate the importance of power stability and availability as a determining factor for international companies determining whether to set up data centers in a particular country or not.

Pricing is key for the market, for enterprises to shift from hosting abroad to local the cost must make sense. If the cost is the same when hosting locally, compared to U.S. or European companies, companies will make the right decisions. The pricing also has to be accompanied by stable power and cooling, well-trained engineers and overall security and privacy.

The debate of Over The Top (OTT) services has gained momentum in Africa for the last two years, as disruptive services like WhatsApp, Uber, AirBnB, and Netflix among others have entered the markets.

The debate is on whether these services should be taxed or not, whether they should be licensed like traditional services or not, and whether governments and ICT industry

operators should go back to the drawing board and come up with a new way of operating that doesn't kill the existing market while at the same time promoting innovation.

A study by the Commonwealth Telecommunications Union found that OTT services had led to a rise in bandwidth usage and growth in infrastructure, with operators expanding 3G and 4G coverage to meet the growing demand.

The majority of African governments are grappling with how to handle Internet services, as online advertising revenues continue growing compared to traditional advertising. Most of them are looking for ways to get new tax revenue sources and at the same time grow the economy.

The research was presented at the 5th council of African regulators in Lome, Togo in July 2018, and is expected to form the basis of conversations with the government, network operators, OTTs, and the public.

Hosted by *Rogers Capital*, **AfPIF 2019** will be in **Mauritius**, voted the best place for doing business and most competitive economy in Africa by the World Economic Forum's Annual Global Competitiveness Report 2017-2018.



15%
Estimated percentage of South Africa's power produced through renewable means, compared to Kenya's 75%.

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