

# ISOC IETF policy workshop 50 years of internet (30 years in Africa)

By

Nii Quaynor

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The Internet arrived in the region at 1991 with two countries and in a decade every capital city in Africa had a connection

There was nothing “Internet” before. Typically the business was with the posts and telecommunications company who was not interested in internet at the time. We had infant computer science education with no networking content. We had monopoly telecom policy environment

with the telco as operator, regulator and policy advisor at a ministry

This was difficult environment to introduce new technology but we had some determined engineers who were conscious of the “digital divide” and with urgency to make the connections

There were both external and internal factors

The internal pressures came from scientists who wanted to reach colleagues overseas. Similarly, there were external pressures with projects and initiatives. The diplomatic community and international organizations were parties

The most important factor of course, was how the internet empowers

We found players who could transcend local policy authority, education and business communities, who influenced policy and forced internet development

The road map was

“African governments proceeded with sector policy reforms, businesses deployed overlaid networks, universities developed workforce and technical community established regional institutions”

Governments started a long policy reform process to separate posts and telecommunications, installing an independent regulator, creating a competitive market recognizing the internet and opened up the countries to attract investment into local infrastructure

We deployed networks in the beginning by layering on top of the telco infrastructure and supplemented by any means. We were allowed to own telephone numbers and positioned ourselves as value added and extended the networks with own cables to nearby locations, microwave radios and satellites.

The initial networks were more to connect to the global directly and establish a point of presence then later on building a nationwide infrastructure which connect to the global.

We transitioned through other networks, communities including x25, decnet, uucp, fidonet, bbs on way to the Internet. Email was the first service and other richer services followed when full connectivity

was attained. Over time we managed to increase the local infrastructure ... including locally managed ccTLD registries, local ISP, National IXPs..., datacenter...and Telco becomes the dominant ISP in the end

Universities were gradually producing computer scientists and electronic engineers for the workforce. Graduates had little hands on experience and local technical community bridged the gap

We had necessities to build regional institutions for the internet and in 1998 it was proposed to establish a group of technical institutions we called af\* to address focused areas. This is reason we have today, Afnog for network technology capacity building, Afrinic numbers registry, Aftld registries forum (cc and gtld ),

AfRegistrars an accredited registrars forum, Afren an NRENs community, Africacert a national CERTs forum and the others

There were International initiatives as well including Leyland initiative, Orstom, Padis, ICTP and ISOC where the ISOC NTW workshops were most helpful. African Union engaged with an eAfrica commission in NEPAD. However, once the UN mainstreamed ICT into development programs, the internet gained public policy attention at WSIS and we were on our way

Africa did well starting from scratch and attaining 30+% penetration in 30 years.

There were challenges:

- policy reform may have inadvertently consolidated market and weakened small

community ISPs. Meanwhile, governments impose taxes on Internet. Governments are keen to operate e-government network and operate ccTLDs

- We never have enough infrastructure making access generally unaffordable and slower
- While workforce grew we also faced brain drain making it difficult to maintain critical mass in some technical areas

In conclusion here are three unfinished work

- The adoption of the multi stakeholder bottom up approach to decision has been sticky in Africa, considered a typically top down environment
- The policy environment is slowly becoming unfavorable again and we need to guard against shutdowns in particular

- The Universities need improvement in curriculum towards networks and have to find sustainable funding models for NRENs in Africa

Africa, as a late comer, has gone its way with the Internet over the 30 years. A lot has been learnt that will help build the future Africa but Africa needs the openness of the internet to develop

Thank you