



# Nii Quaynor: Bringing the Internet to Africa

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**The story of bringing the Internet to Africa is one of cooperation and collaboration for the common good.**

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**I**n the early 1990s, African countries started upgrading from “store and forward” networks such as FidoNet and uucp to “always on” Internet connections. I spoke with Nii Quaynor, a founding member of the Department of Computer Science at the University of Cape Coast in Ghana, about what it took to build a community around Internet technology in Africa. Visit [www.computer.org/computingconversations](http://www.computer.org/computingconversations) for more of this discussion.

## WITHIN GHANA

As the Internet spread around the world in the late 1980s, the first connections typically were to universities. But for many countries in Africa, interest in the Internet was initially limited to a relatively small group. Quaynor didn't want to wait for the government or his university, so he took the initiative and started working through a small private company to bring the first Internet connection to Ghana:

Government wasn't interested, so the private sector took it up. But the private

sector in this case was me. I realized that I would have had to wait on a university forever because it depends on the government, and I would have had to wait on the government forever because it had no clue. I knew how to do it, so I decided to go for it no matter how small it ended up being just to make the point that it's possible, and in so doing, maybe I could create an avalanche that will carry us forward.

Elsewhere in Africa, different models prevailed for bringing in Internet connections. In Egypt, the government was interested and involved very early on. In South Africa, strong academic leadership made a difference. In West Africa, Quaynor encouraged and helped small private-sector efforts throughout the region:

I allowed Togo and other countries to transit their data through my connection in Ghana, and I sent engineers to install nodes in Gambia. Swaziland brought telephone company staff to me to be trained, and I did consulting services to help Ethiopia. We were helping each other for the common

good because we really felt that we had to pull together or we would fail.

Just like anywhere else in the world, the first step was simply to get connected one way or another. Once people found out about the Internet, they were in a hurry to get there by any means possible:

It was a mad rush, but it was a good community-building activity in the sense that we wanted to help each other. That sense of community across operators continues to this day. I run the African Network Operator's Group [AFNOG], the principle function of which is to help operators support their building capacity in many different areas, mostly in infrastructure-related things such as routing issues or servers for those who want to build information resources.

AFNOG ([www.afnog.org](http://www.afnog.org)) is home to most of the African continent's technical community. The group meets two weeks each year: one week is dedicated to training and workshops, and the following week involves discussions around



governance, research, and other activities. One of the main goals is to continue to grow the community and build network talent across Africa:

Nobody gets paid, but we try to raise money for student participants. Cisco is a regular funding source, and we get funding from the International Development Research Center, the Internet

As the Internet in Africa matured, it was important for Africans to take over this network management task. AfriNIC would be the world's fifth RIR, but it was important that the entire continent be a single registry regardless of country and political boundaries. Operating a regional Internet registry requires a great deal of agreement, technical know-how, and organizational capability:

members would elect their representative and that person would serve on the board for a period of one to three years with staggered reelections.

The effort to create a formal legal structure for AfriNIC continued, but was repeatedly set back as connectivity exploded in the late 1990s. Jon Postel administered the worldwide Internet Assigned Numbers Authority and was a great supporter of AfriNIC's formation. He and Quaynor were close friends:

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Society, Francophonie, Google, and many others. Over time, we've become more self-sustaining. We ask participants from telco operators to pay higher rates so we can raise funds for academic and research participants.

Once initial connectivity was in place for these countries, a whole range of scaling, deployment, and policy issues became the focus. AFNOG functioned from the beginning as an incubator for governance efforts such as the Africa Top Level Domain Organization ([www.aftld.org](http://www.aftld.org)).

## TOWARD AFRINIC

The Internet is built on Internet Protocol addresses. Their careful management and coordination is necessary to make sure that packets are properly routed between systems connected to the Internet anywhere in the world.

The first IP addresses for those early connections on the African continent were managed in an ad hoc manner, with each country getting address blocks from one of the other four Regional Internet Registries (RIRs): North America (ARIN), South and Central America (LACNIC), Europe (RIPE NCC), and Asia-Pacific (APNIC).

The particular case of AfriNIC was interesting. It took us 10 years to get accreditation. Of course, in the beginning, we didn't even know what a "NIC" was, but we knew it was very important, so we started to build consensus around it.

In the mid 1990s, when there were a few connections in each country and most of the operators knew each other, it seemed like a relatively simple matter to create AfriNIC. But as Internet connectivity in Africa expanded, new stakeholders kept joining the discussion. It was clear that more structure was needed, so the people involved in the creation of AfriNIC switched from an informal process to a more formal one in 1998:

The first proposal was made in 1995 and another in 1997, but we realized that we had to move beyond casual meetings. We went to Cotonou, Benin in 1998, to agree on specifics such as, "Who would be on the board?" We decided to do it geographically to avoid questions like, "Why are there so many people from the North and nobody from the South?" We decided that each one of the geographical sub-regions would elect one person. The

Jon told me "just do it—it has to happen," so I invited him to come to a meeting with African engineers. In the middle of the meeting, someone got up and said, "Why don't we just split this up into the individual countries and have us all go our separate ways?" At that point, I thought we were done. And to be honest with you, I've never felt so ashamed because I had been part of the interface between the African technical community and the global community. I knew Jon Postel as a friend and he had come to help me, but my people weren't ready. Jon simply told me, "Get your people ready, and you will have it."

The efforts to build AfriNIC continued, and it was formally recognized as the RIR for the African continent in April 2005. But the struggle wasn't without its consequences:

I realized that over those 10 years, I had upset a lot of people. The other registries had to give something up so that AfriNIC could exist. To me, it was obvious that I couldn't continue in the same capacity as the leader of AfriNIC once it became official.

Quaynor also feared that his leadership might be a barrier to broader involvement of the more recent participants. He felt the need for a fresh start as AfriNIC was being formed:

If I were to continue as the leader, we would get less participation—there would be less motivation for people to make an effort. I felt it was more important for more people to make an effort than to have just one person driving things forward. I knew that the problem space was so large that even if I had nothing to do with AfriNIC, there was plenty for me to do elsewhere.

At the moment when AfriNIC was legally transitioning from its startup board and chairman to its first official board and chair, Quaynor dissolved the board and resigned as chair. He didn't run for election and encouraged many other

long-time leaders in the movement to step aside and allow new leaders to emerge:

A complete fresh start created a certain flow of new entrants who wanted to contribute service and leadership to the community; it continues to this day, and it's been very good for AfriNIC.

**T**he story of bringing the Internet to Africa is one of cooperation and collaboration for the common good. One of the benefits of the Internet is that it crosses political, geographical, business, and legal boundaries and

brings people together to find what they have in common. **C**

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