

Next generation internet: a global south perspective v.2

Speech by
Nii Quaynor
November 2025
Wuzhen

Your Excellencies, Ladies and
Gentlemen, thank you for
opportunity to speak at the Next
Generation Internet Forum, and
forum theme “Security as the
Foundation, Intelligence as the
Wings: Towards a Secure,

Trusted, Open, and Inclusive Next Generation Internet”

It’s an honor to share a perspective on next generation internet, as we mobilize attention on connecting the unconnected in the global south. The digital divide, has systemic issues that impede efforts to address

I’ll introduce the community Internet ecosystem in the Africa region, comment on

consideration of next generation Internet, raise some questions emanating from lessons learned of today's Internet, address possible principles of the next generation internet and conclude with some must haves

These regional technical organizations include resource management numbers registry (Afrinic), network operators capacity building (AfNOG), research and education networks (Afren), name

registries (Aftld), Dotafrika registry, registrars (Aftregistrar), and emergency response teams (Aftcert) all of whom seek to deepen digital cooperation.

These organizations share common practices and have objective of connecting Africa and to connect Africa to global. They follow bottom up multi stakeholder approaches to governance. They coordinate their activities to build better Internet in the region through a

coordination body known as
af*.

We developing the cyber space
from name and number
identifiers voluntarily adopted
by users and providers creating
a Domain Name System. These
identifiers belong to community
and are used to serve a large
continental area. These
resources are not assets and do
not belong to end users,
providers nor to registries.

Emerging Internet communities like in Africa, have found that the open practices give us a chance to be globally involved. The open standards, open documentation and open participation have been particularly helpful in building capacity and networks.

We find the theme very interesting as security brings peace as well promotes the deepening of intelligence in

society by avoiding
misrepresentations

I'll be speaking on “a
perspective from global south
on next generation internet”

Here are some considerations
for next generation internet

- the attributes of the desired
network of “secure”, “trusted”,
"open", “inclusive” may
sometimes conflict with each
other both in design or usage.

To unpack this will need a deep understanding of contexts, foundation of needs and what minimal requirements

- the core of the next generation internet (medium/addressing/routing/transmission) should be agile and flexible enough to accommodate any technologies and evolve easily.

- for next generation internet a Better-than-best-effort delivery is desirable. Lossless, ultra-low

latency, and intelligent traffic prioritization will be required. AI-driven automation will be the norm

Some valuable questions from lessons of today's internet include

- should future internet core protocols go through "creation" "extension" or evolution"

- Is IPv6 still the solution for the future ? The transition from

v4 to v6 is ongoing, but v4 traffic still dominant. IPv6 as evolution from IPv4 with dual stack deployment as transition mechanisms did not happen as predicted, involving some backward compatibility works

- Which solution for a scalable routing architecture? The current routing based on destination address with “network” and then “host” may not scale to the level of a new Internet. The debate is open

after years of discussing
analysis and tests of several
solutions

- Still numbering + naming or
naming only ?

Named Data Networking meant
to promote content-centric
networking as opposed to the
current host-centric networking

What are principles for next
generation internet

- the principle of "keep the core simple and innovation at the edge" will still be valid

-The core should accommodate and admit "not-always connected", environment and resources constrained devices wherever they are. Technology like DTN Delay/Disruption Tolerant Network should be built-in

-It is likely that the core will have native security feature like

integrity(quantum transmission)
which can enable key exchange
and encryption and other
feature, enabling trust and
intrinsic security .

- multilingualism and
interoperability may be
facilitated with AI.

- One Internet to connect many
Nets ? Or many networks? we
seek “ One world, one Internet”

- how to make it more inclusive with the new digital divide in front us ?

- How can the global South participate equally ? Despite the challenges, infrastructure has improved in many places, the Research and Education community maturing. There may be opportunities for global south researchers to participate and global south to participate in test beds and evaluations of options for future Internet

Let me conclude with some
must haves

- * Must be open, permissionless,
incremental and rewarding *

- * Possibly shifting from this
existing US-centric
infrastructure to international-
centric infrastructure *

It is our hope that next
generation internet will avoid
the rapid consolidation of

services associated with the
current internet's adoption

Thank you very much for your
attention