

**Research and Education Networking in Africa:
*Opportunities for ISP Collaboration***

African Internet Market

- mostly pioneered by the academia
- narrow and clouded
- traffic still substantially constituted by academia
- Generally growing but not at the rate of other technologies (e.g GSM)

Challenges of an African ISP

- unclear regulatory frameworks
- high cost of bandwidth provided by incumbents
- lack of developed backbone infrastructure (national & international connectivity)
- High interest rates
- user base

Challenges of the Academia

- large data sets (e.g MRI scans) from research
- multi-stakeholder, geographically separate sites
- lower public funding to education
- commodity Internet initial tool for collaboration

Rise of Bandwidth Consortia

- play with market forces not budgets!
- business given to large satellite operators
- loss of business for local ISPs (competitors)

NRENs as Bandwidth Consortia

- lack of clear information (articulation)
- lack of action on development of applications
- lack of engagement with key stakeholders (e.g ISPs, regulators, academics etc.)

ISPs as partners in NRENs

- experience in dealing with government bureaucracy
- experience in dealing with infrastructure service providers (who runs what!)
- experience in developing and managing connectivity projects in an African setting

How to Improve Collaboration

The Place of Communication

- part of the problem is lack of good communication
- the main thing as the main thing
- formal contacts with ISPs (seek associate membership of the local ISP body)

Research Collaboration

- ISPs' lack of access to funds (lack of research stifles innovation and development)
- NRENs are basically research networks
- universities funded to do research!
- contribute to the development of the African Internet Society!

Last Mile Connectivity

- difficult to connect areas
- researcher in the field connecting to the NREN grid!
- do not reinvent the wheel!
- unlikely to get license for the last mile!

Education Service Provision (EduSP)

- saturated market calls for diversification
- cost of educational applications sometimes prohibitive
- instead of a single underutilised database license per institution in an NREN, the EduSP shares this among the institutions!
- ISPs have all the qualities (online, skills etc.)!

Private-Public Sector Partnerships

- share risk on infrastructure projects
- NRENs as security for donor/government money
- development national fibre backbone (not enough synergy around this currently, but we believe it is the next big thing)
- government to smoothen the regulatory hurdles?

CERTs and Training

- share security incidents and coordinate response
- collaborate in setting up national, regional etc CERTs.
- provide placement for students
- convene technical workshops, seminars on networking issues and show casing of new technology.
- coordinate training for ISP staff in new technologies

Conclusion

- need for continued collaboration between NRENs and ISPs.
- collaboration needs to depart from the traditional client supplier model

Thank you