

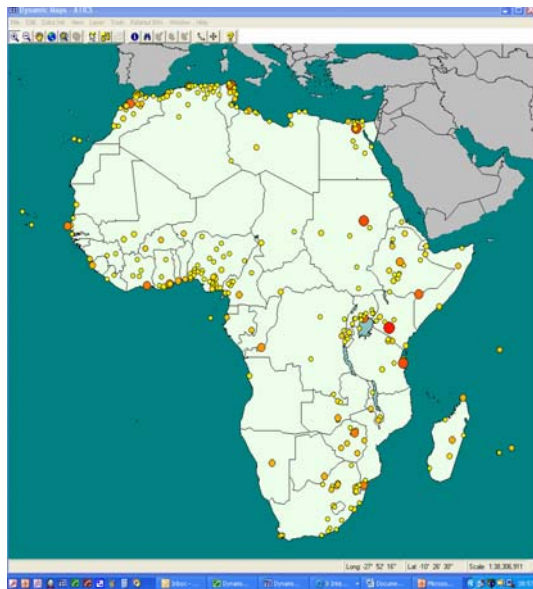
Promoting African Research & Education Networking –Internet Bandwidth Challenges and Opportunities



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R. Steiner, K. Gakio – AAU Presentation Feb 23, 2005

Higher Education Institutions in Africa



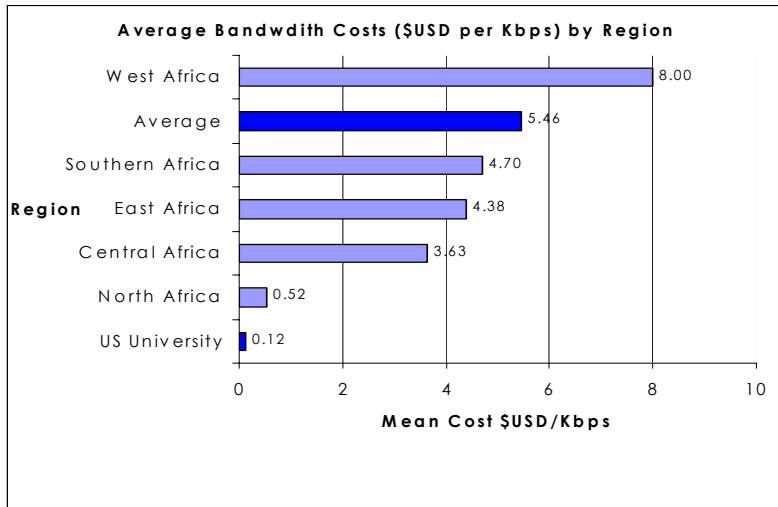
ATICS
83 Institutions

PAREN
646 Tertiary
Institutions
Mapped

Bandwidth:
1) Too Little
2) Too Expensive
3) Poorly Managed

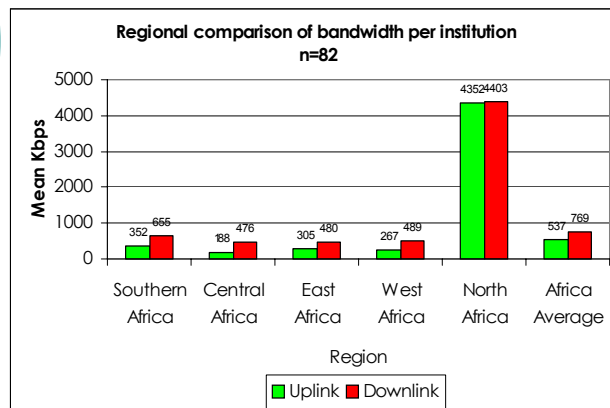
Division between
research and
education

Average Bandwidth Costs



Source: ATICS Survey 2004

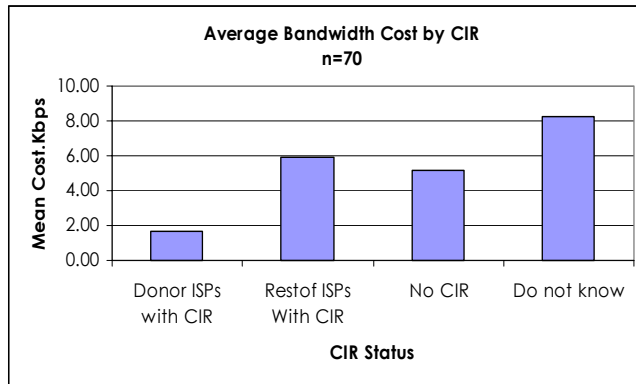
Wide Differences in Bandwidth Across Regions (www.atics.info)



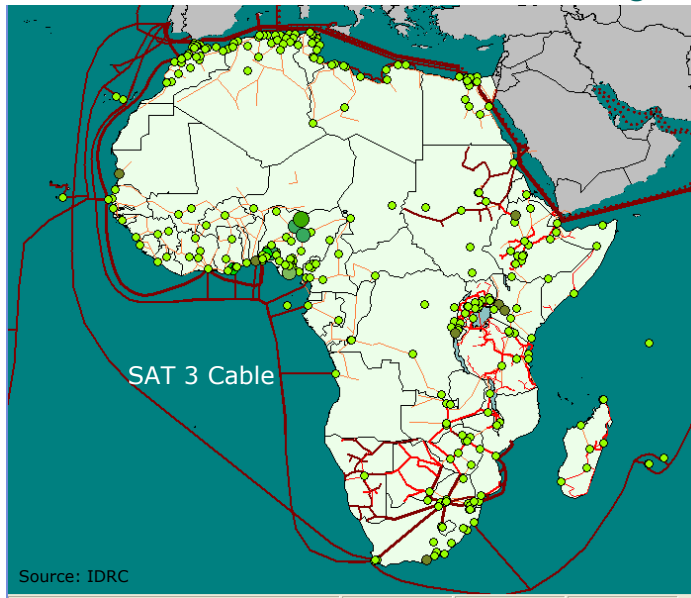
The average bandwidth for an African educational institution in this sample is about 1/2 Mbps uplink with 3/4 Mbps downlink – the equivalent of a broadband residential connection

Source: ATICS Survey 2004 of 83 Tertiary Education Institutions

Committed Information Rates – the power of information



Terrestrial/Sea Networks Growing



Source: IDRC

African National Networks - Examples

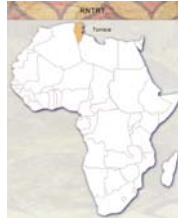
Morocco



TENET



Tunisia



KENET



NUNET



Tanzania



Other NRENs include Egypt, Malawi and Algeria

African Continental Networks - Examples

Partnership for Higher Education



African Virtual University

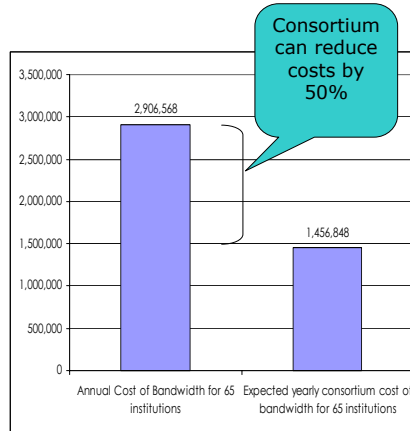
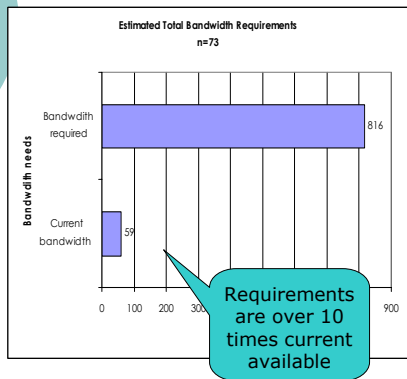


RESAFAO

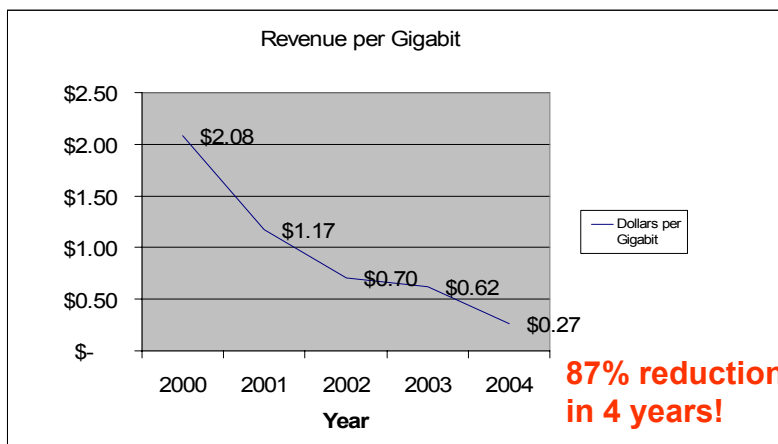


Other multi country networks involved with/proposing bandwidth purchasing include SARUA, Mimcom

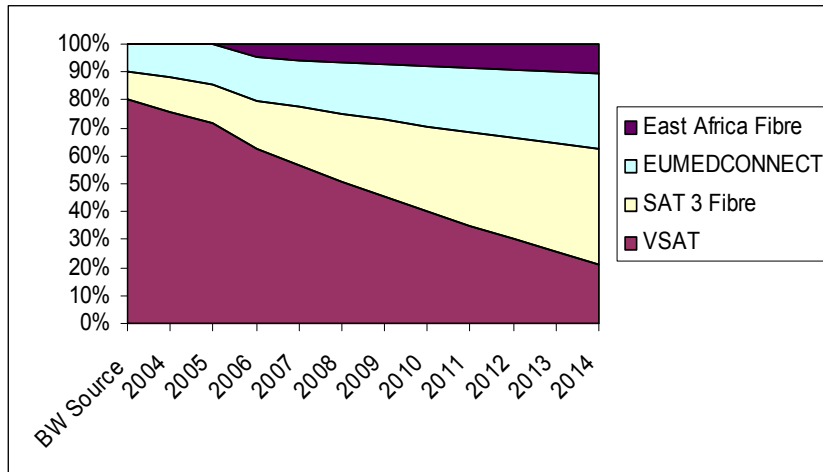
Bandwidth requirements and potential consortium savings



Abiline Value – USA Network



Eventually bandwidth sources are likely to move to terrestrial links



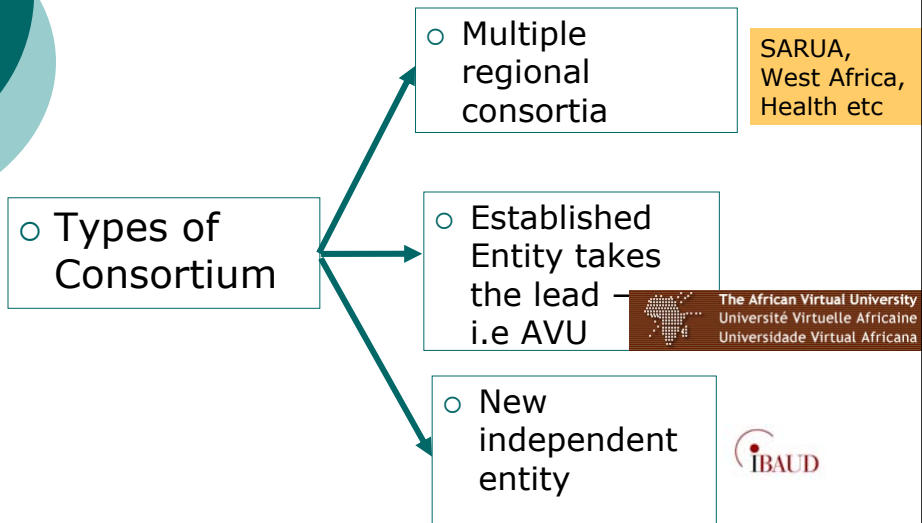
Barriers and Solution

Primary barriers to effective communication in African universities

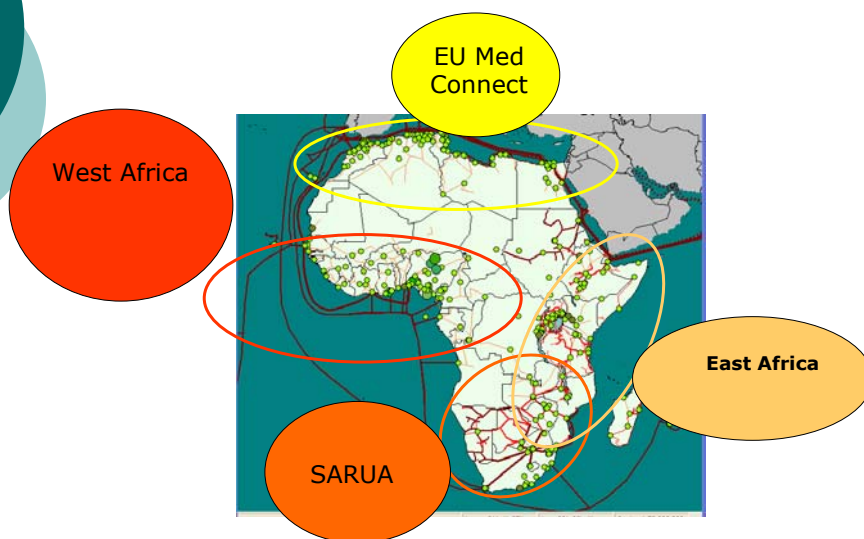
- Available bandwidth (both cost and quantity)
- Adequate systems management, and
- Regulatory issues.

A Consortium-centrally managed network using (at this time) satellite technology would address all these issues

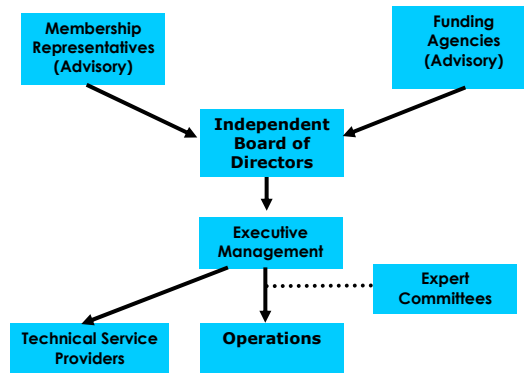
VSAT Consortium Options



Potential Regional Consortia



Recommended Structure



Key Characteristics

- Independent board to ensure fairness and focus on best interests of the network as a whole
- Small operational staff focused on contracting services and management

Learning from other successful models

- Initial Donor/Government Funding important
- Consortium must negotiate with governments to eliminate license fees and monopoly pricing – diplomacy key
- Consortium governance must be non-profit, participatory and transparent
- Partnerships with private sector can be beneficial
- Sustainability must be built into the model



Next Steps

- Coming together of higher education stakeholder groups with long term vision
- Clear consensus on stakeholder plan – lets move into action
- Increased sharing and coordination among interested parties