

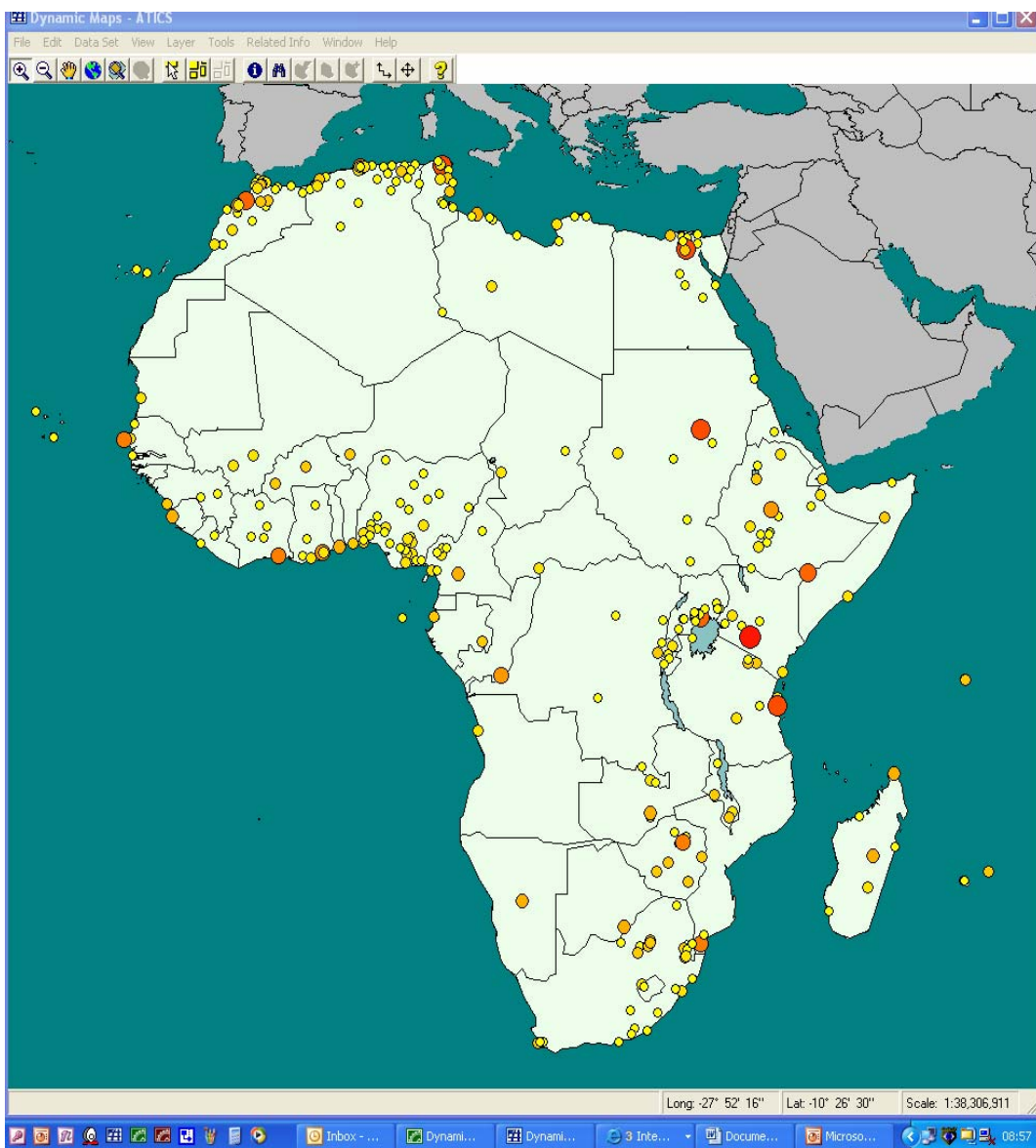
# Promoting African Research & Education Networking –Internet Bandwidth Challenges and Opportunities

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Roy Steiner, PhD  
Karanja Gakio  
for the IDRC  
Feb 23, 2005

# Higher Education Institutions in Africa



ATICS  
83 Institutions

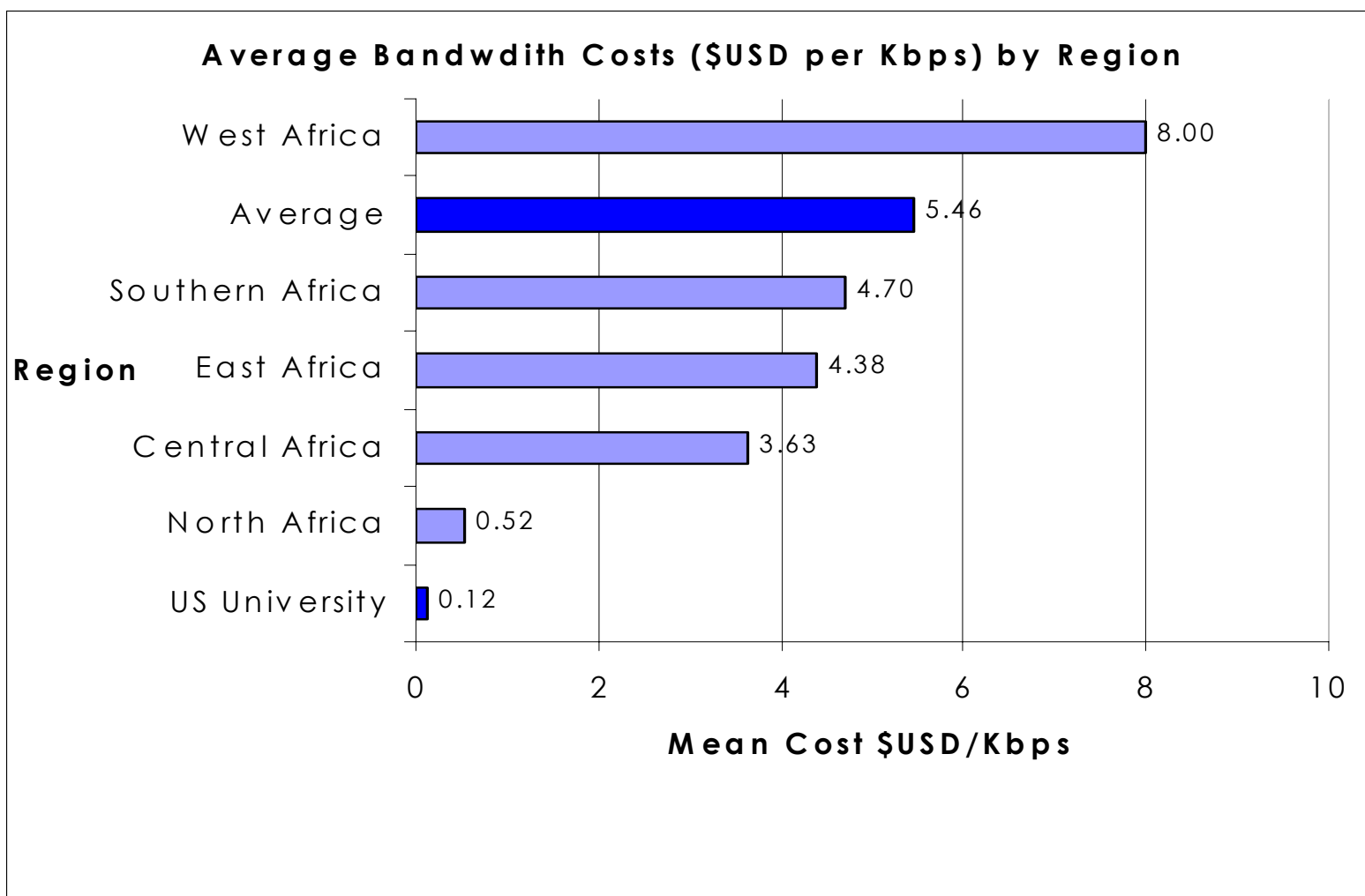
PAREN  
646 Tertiary  
Institutions  
Mapped

Bandwidth:

- 1) Too Little
- 2) Too Expensive
- 3) Poorly Managed

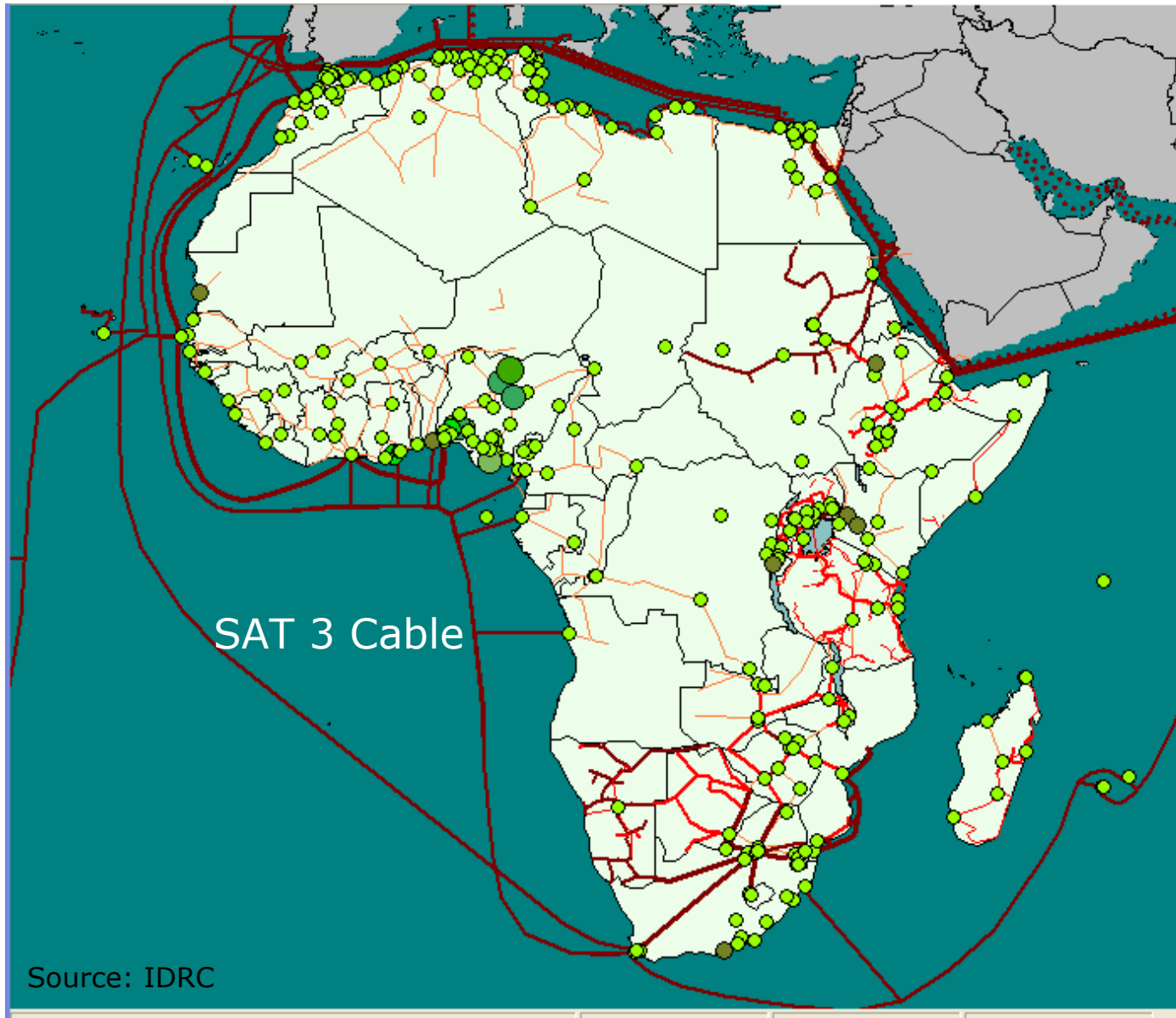
Division between  
research and  
education

# Average Bandwidth Costs

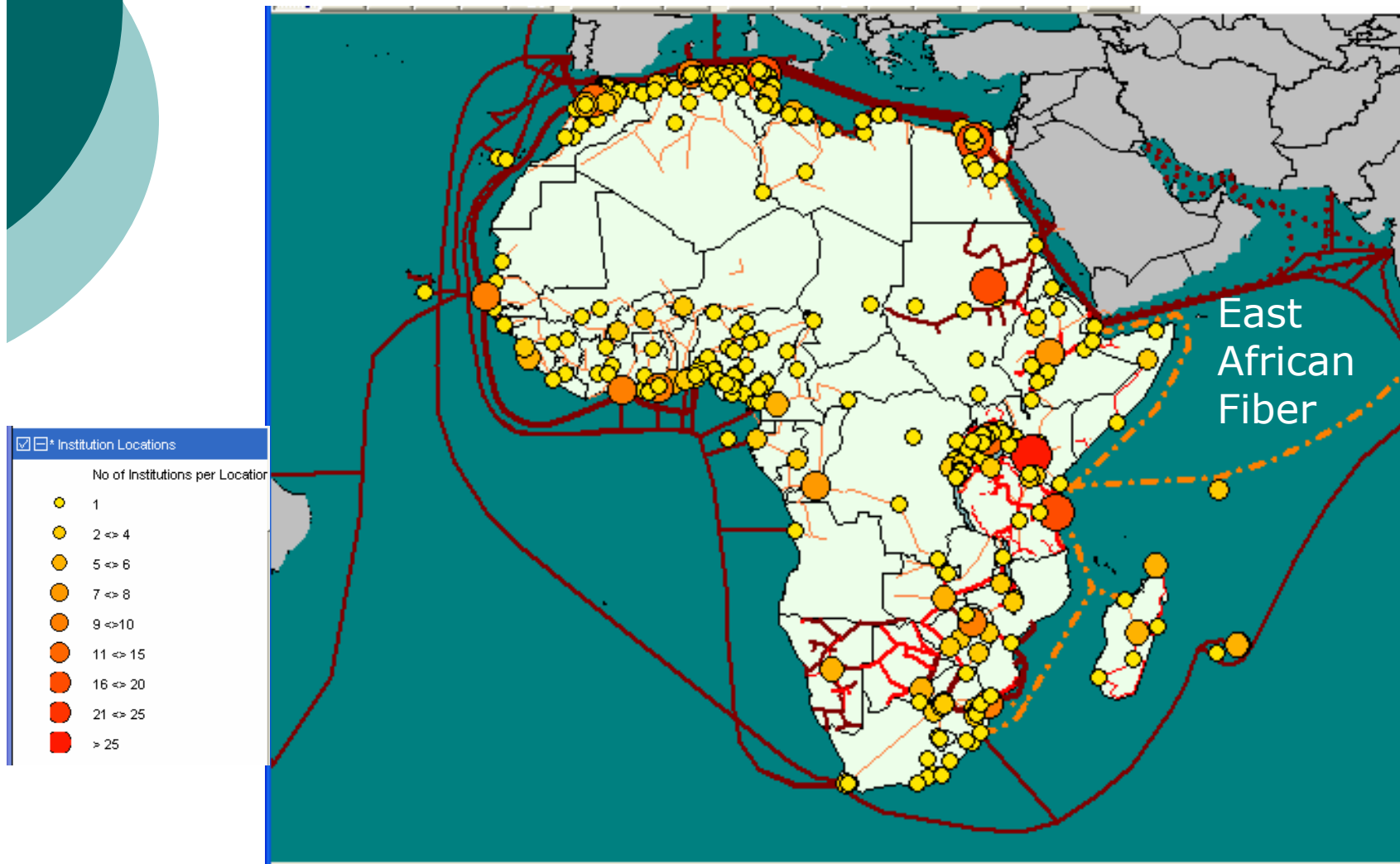


Source: ATICS Survey 2004

# Terrestrial/Sea Networks Growing

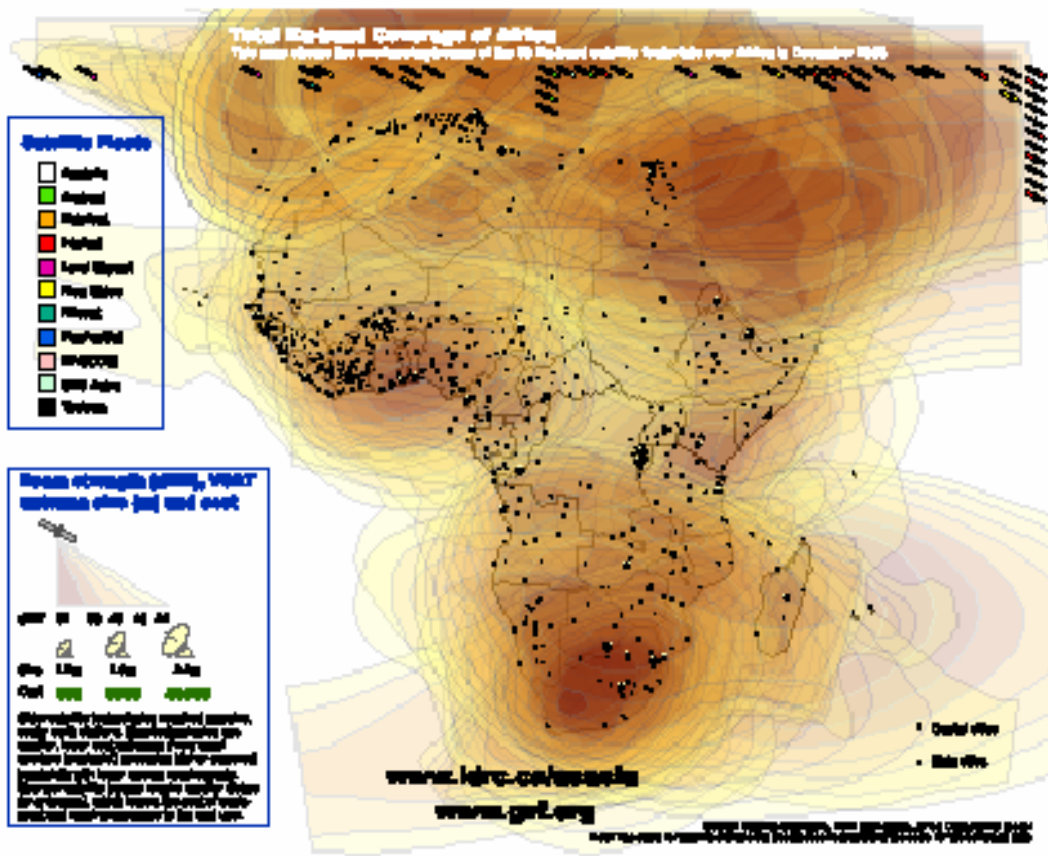


# Planned Backbone Expansions



Source: IDRC

# Satellite coverage increasing



Currently 13 satellite operators have 51 satellites deployed with coverage over Africa

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



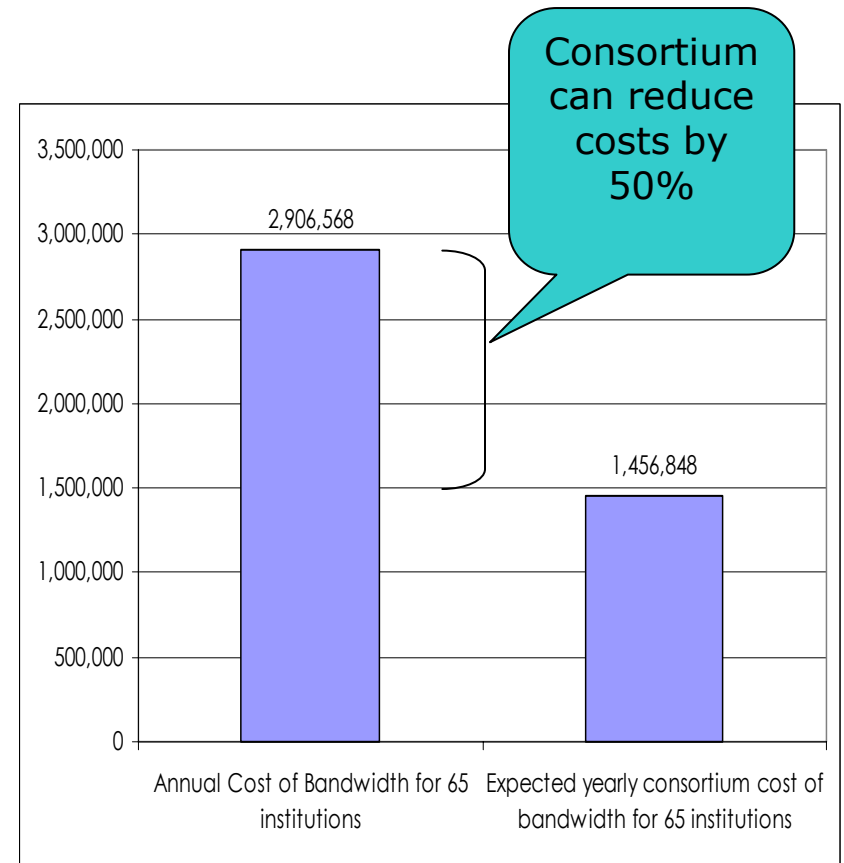
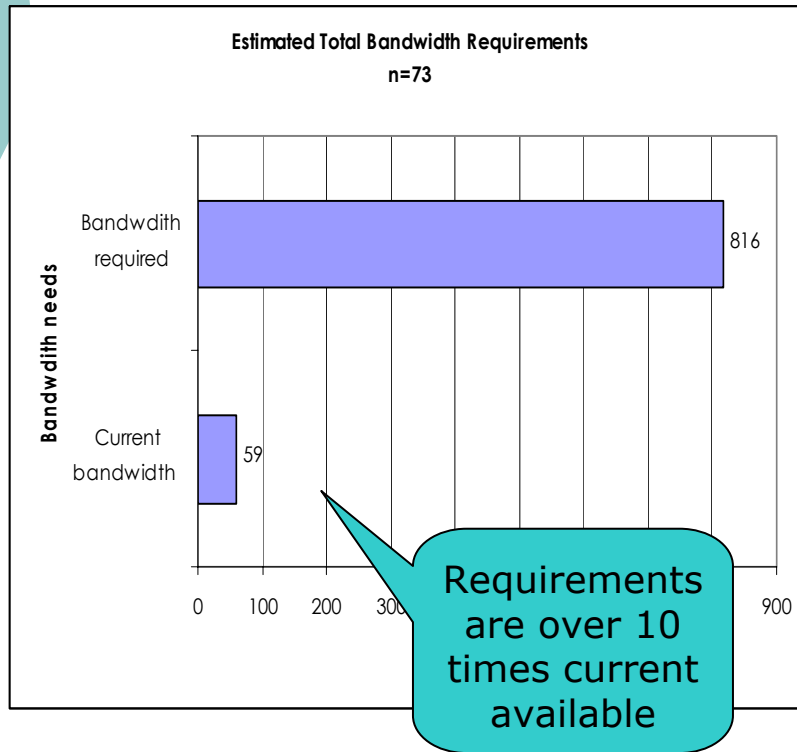
## RESAFAO



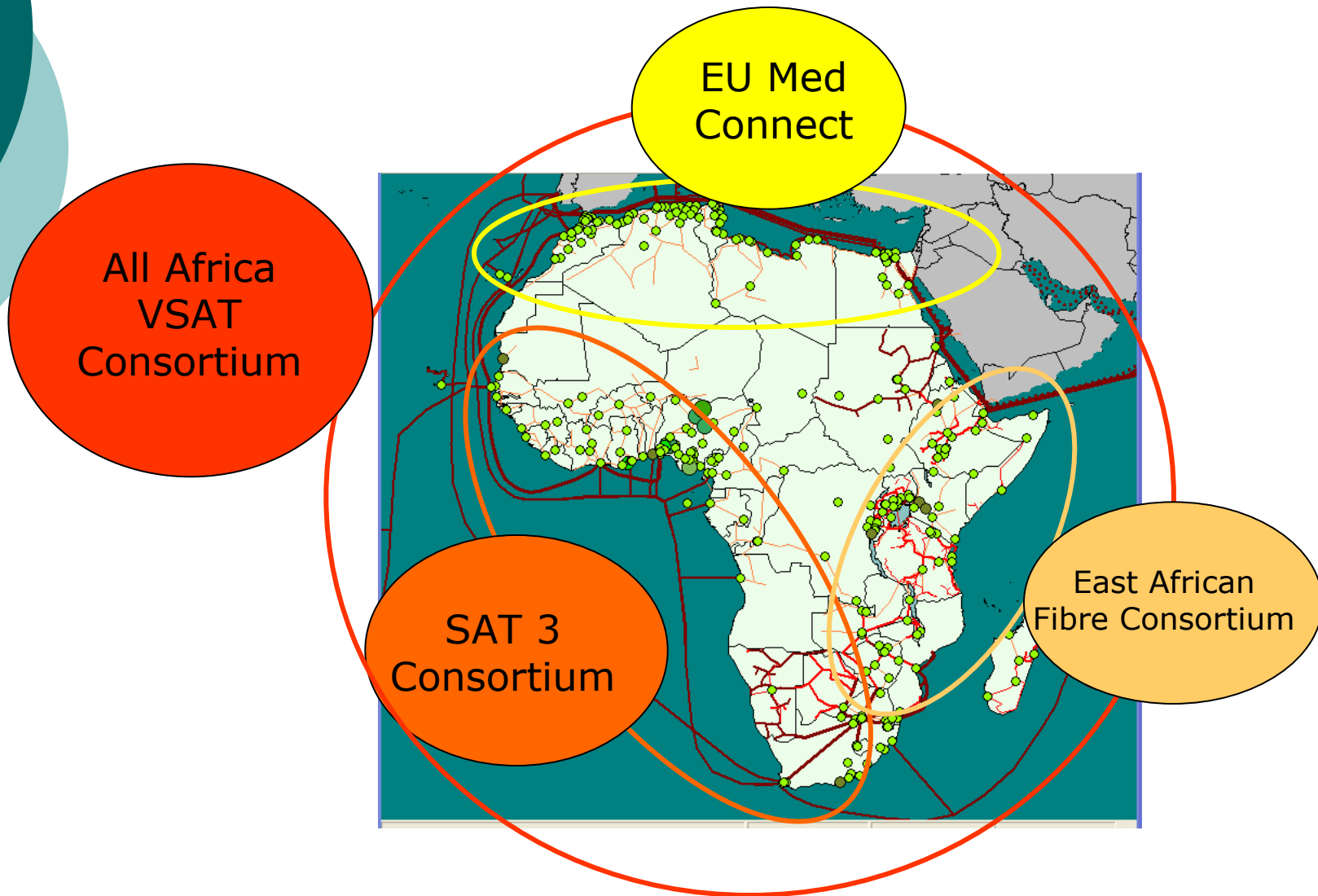
Other multi country networks involved with/proposing bandwidth purchasing include SARUA, Mimcom



# Bandwidth requirements and potential consortium savings



# Potential Consortia



# Barriers and Solution

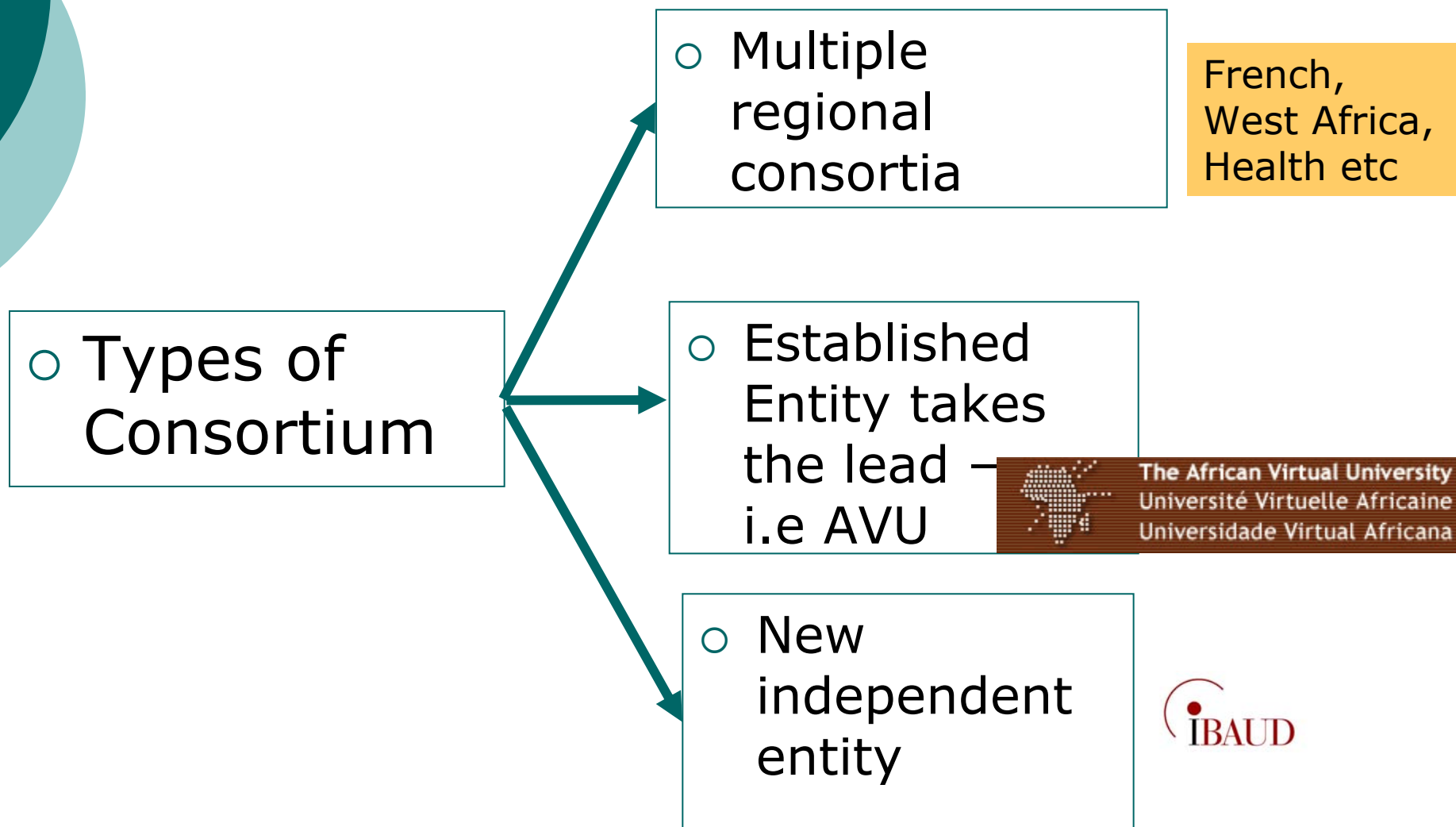
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Primary barriers to effective communication in African universities

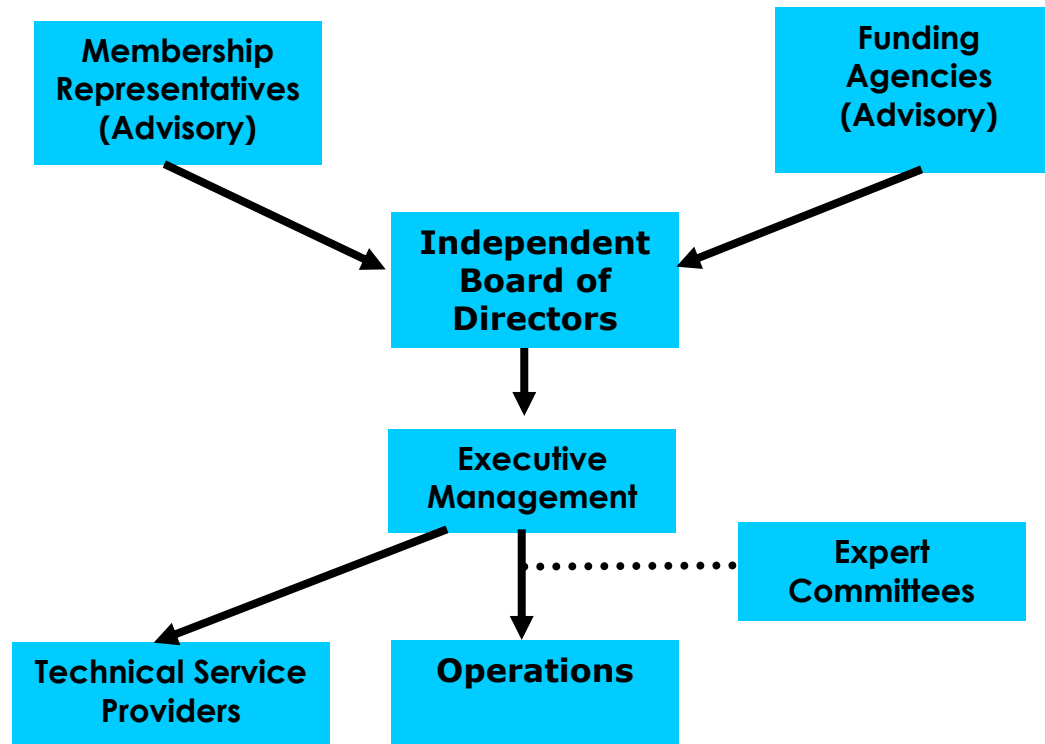
- Available bandwidth (both cost and quantity)
- Adequate systems management, and
- Regulatory issues.

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

# VSAT Consortium Options



# 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

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- 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