

*Fall 2008 Internet 2 Members Meeting  
13 October 2008 New Orleans*

# **Research and Education Networking in Sub-Saharan Africa**

## **2. Infrastructure Developments**

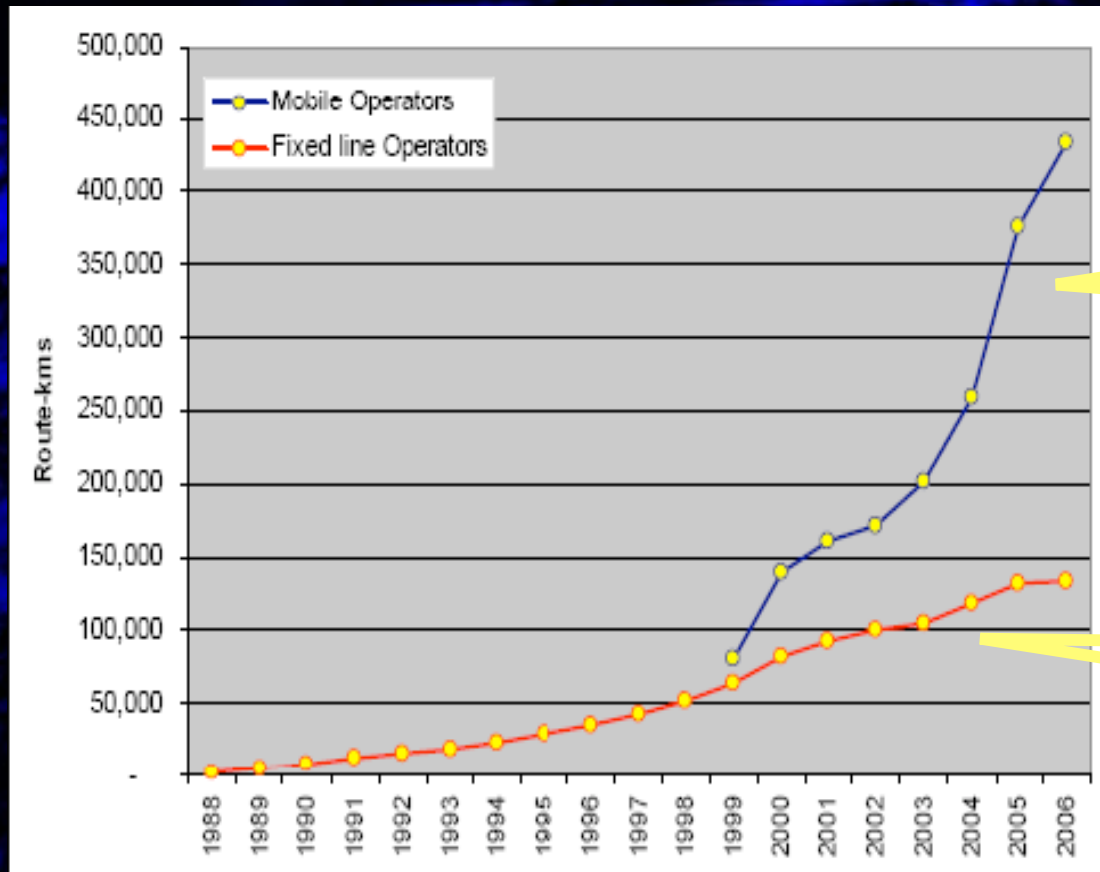
***Duncan Martin***

*Director (non-exec): UbuntuNet Alliance*

*Director and CEO: TENET. South Africa*



# Backbone network development in Sub-Saharan Africa



Mobile operators  
(mostly microwave)

Fixed line operators

Hamilton, Paul. 2007. *Analysis of the Extent of Development of Transmission Backbone Networks in Sub-Saharan Africa*. Study commissioned by World Bank.

## Some countries are developing “National” Backbones

- Government-led projects
- Capacity intended to be available to all operators
- Often public-private partnership
- NREN is often part of the motivation
- May compete with existing operator’s network
  - Especially in metropolitan areas
- DRC, Ethiopia, Ghana, Rwanda, Sudan, Tanzania, Uganda, Zambia

# Some countries have liberalized telecommunications

- Several licensed operators
  - Operators all tend to deploy backbones in the same areas (“concentration”)
  - Each backbone typically used only by its owner
  - Little wholesaling of backbone capacity
- Benefits
  - Prices tend to fall
  - Cross-border connections stimulated

# Concentration

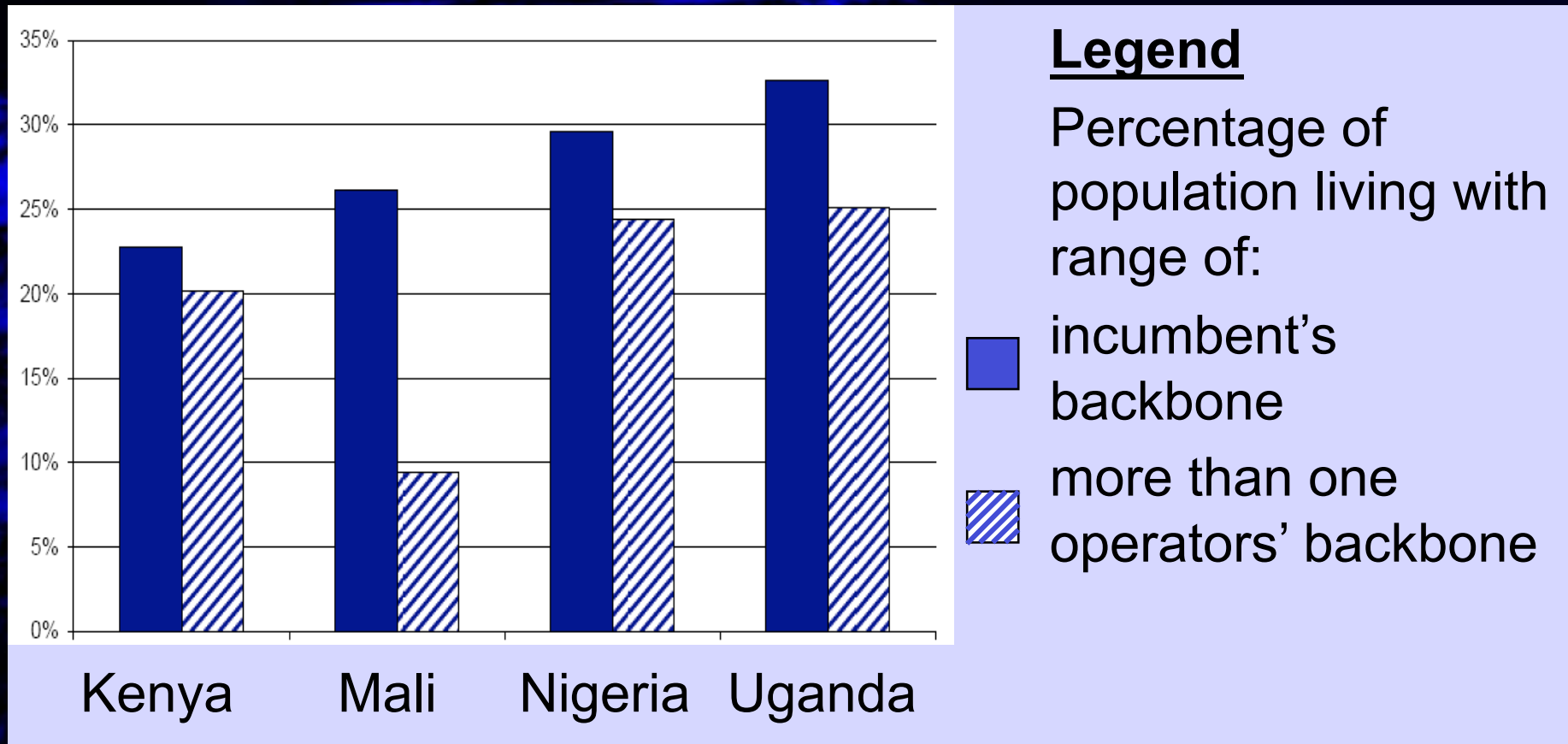
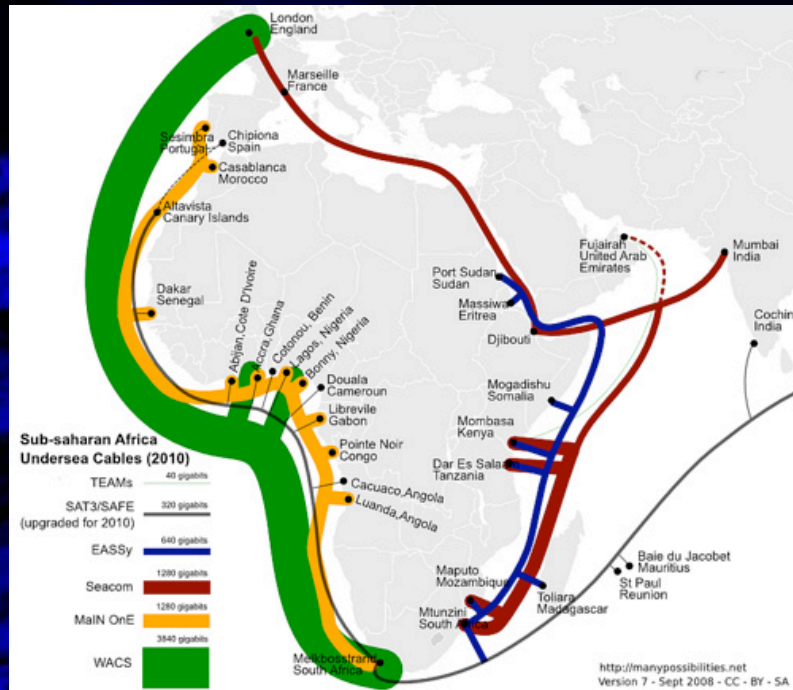


Chart from Hamilton, Paul. 2007, cited earlier.

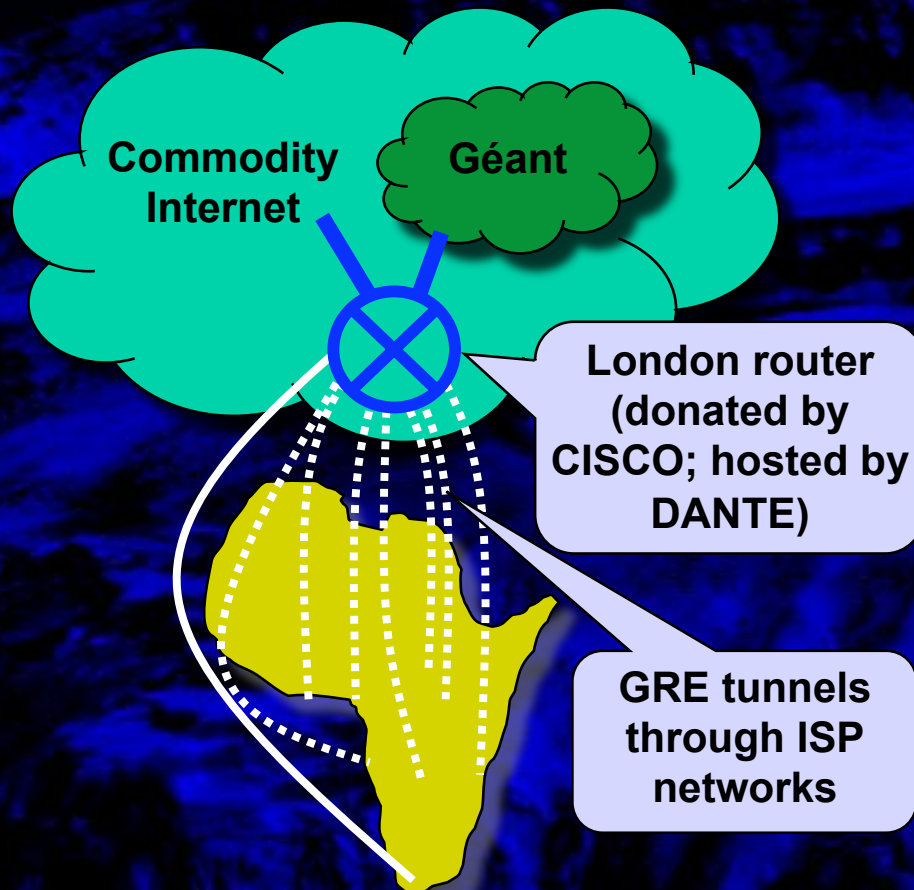
# Submarine cable initiatives



Map: Thanks to Steve Song.  
<http://www.manypossibilities.net>

Legend	Cable
	SAT-3 (WASC-SAFE) 2003. Operator Club
	SEACOM (E. Africa to London) 2009. Investors. Open access.
	TEAMS (Mombasa to Fujairah) 2009. Kenyan Govt.
	EASSy (E. Africa to Port Sudan) 2010. Operator consortium
	WACS (Cape Town to London) 2010. Operator consortium
	MaIn OnE (W. Africa to Portugal) 2010. Investors. Open access Phase 2: Luanda, Cape Town

# UbuntuNet's “Thrust to connect NRENs to Géant”

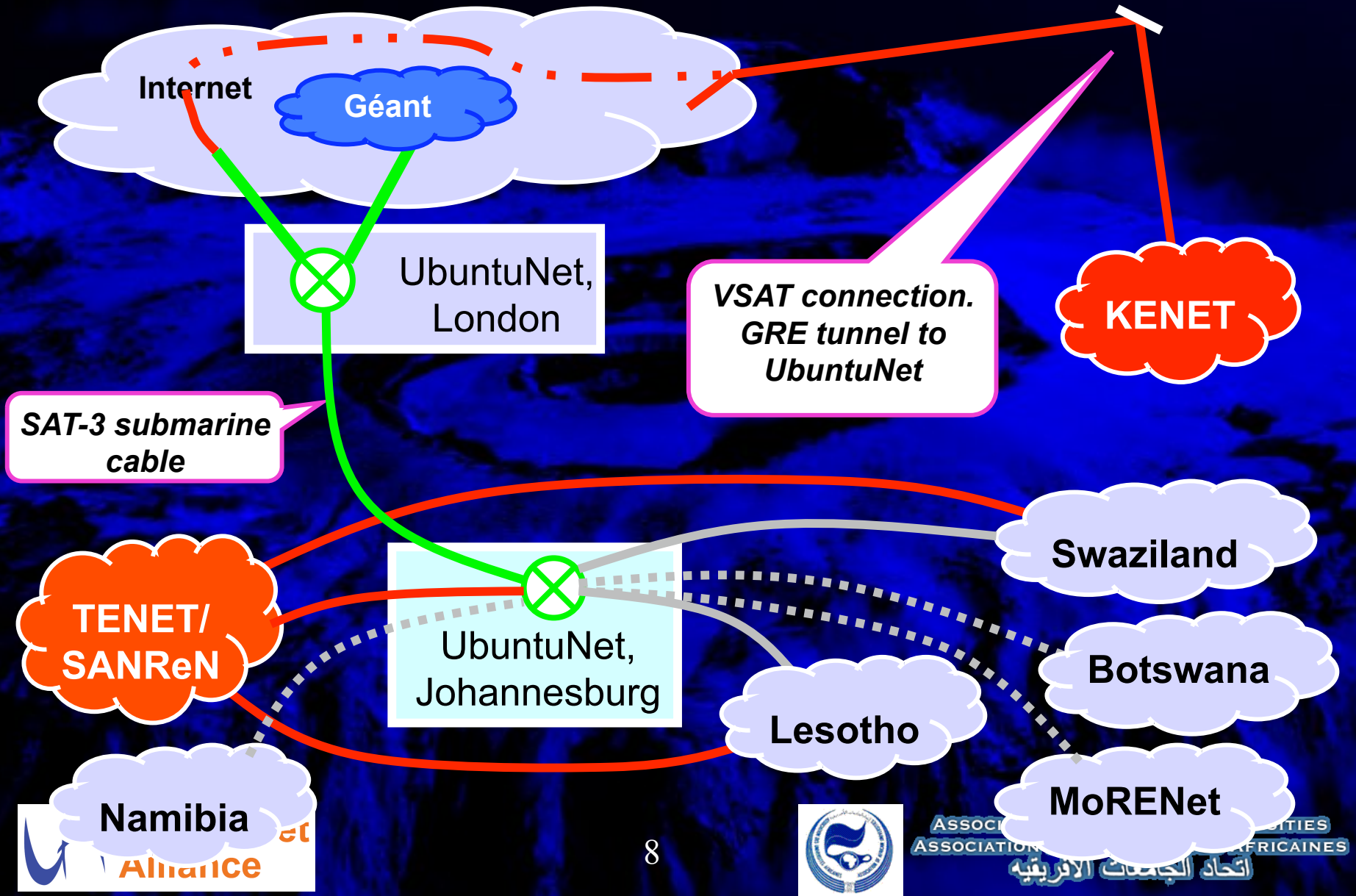


Dear Member NREN!  
Connect to the Global  
REN:

-via your VSAT, and  
- courtesy of Géant!

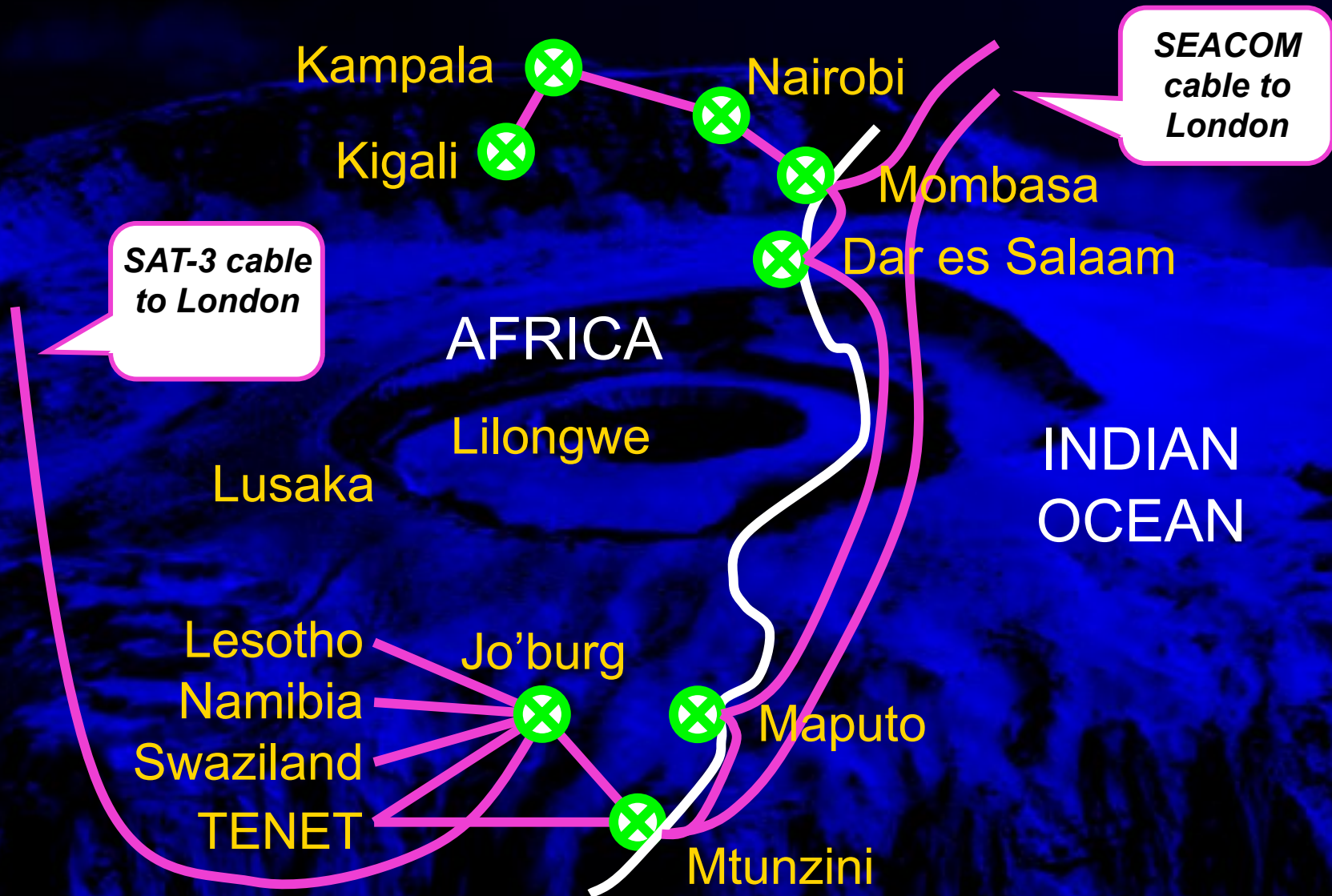
You'll need your own  
ASN and IP space  
- AfriNIC's 50% discount

# UbuntuNet operations today





# UbuntuNet by end-2009



**-Thanks for listening!**

