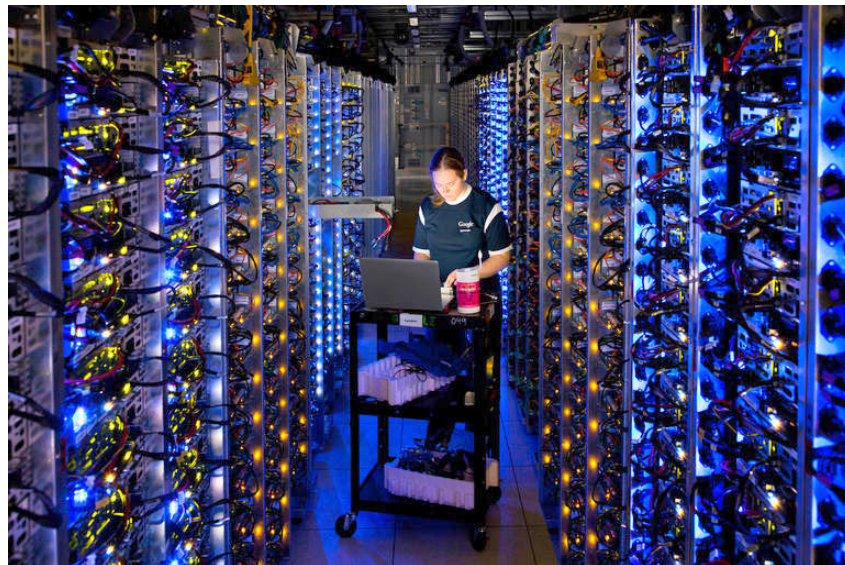


# NRENs and Schools

UbuntuNetConnect 2016, Entebbe  
*3<sup>rd</sup> and 4<sup>th</sup> November 2016*

Duncan Martin, Consultant



COURTESY, KATE LINERSON, PRODUCTIONS

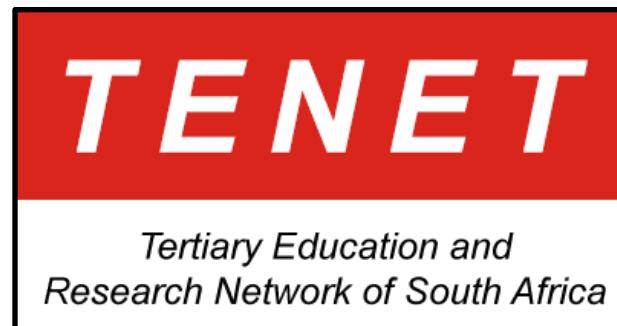
*Reflections triggered by a project involving:*



also known as **eSN**;

(a schools' network based in Cape Town);

*and*



(the South African NREN)

# Disclaimers

- I have no employer or principals
  - (*Principles* are another matter...)
- I am a non-executive director of eSN
- I consult to TENET, but not on the subject presented here.
- I have no mandate to represent either eSN or TENET on the subject of this paper, BUT...
  - I have their permission to present my reflections

# NRENs serving schools?

- It's not uncommon for NRENs to carry schools' traffic.
- Some NRENs started out as schools' networks
  - *Namibia's Xnet*
  - *Zimbabwe's ZARNet*
- Some schools networks resell NREN services
  - *eSN resells TENET's services*
- Some universities allow nearby schools to connect to the universities' networks
  - *Demand for support can become burdensome*



# Schools Connectivity Project

- *Aims to coordinate initiatives of government, industry and donors to promote the use of ICT in Kenyan schools.*
- *So far 100 schools have been connected through partnership with Wananchi Telecom Ltd.*
- *KENET hopes to get other partners as well.*



# *Reflections on a project*

*involving*

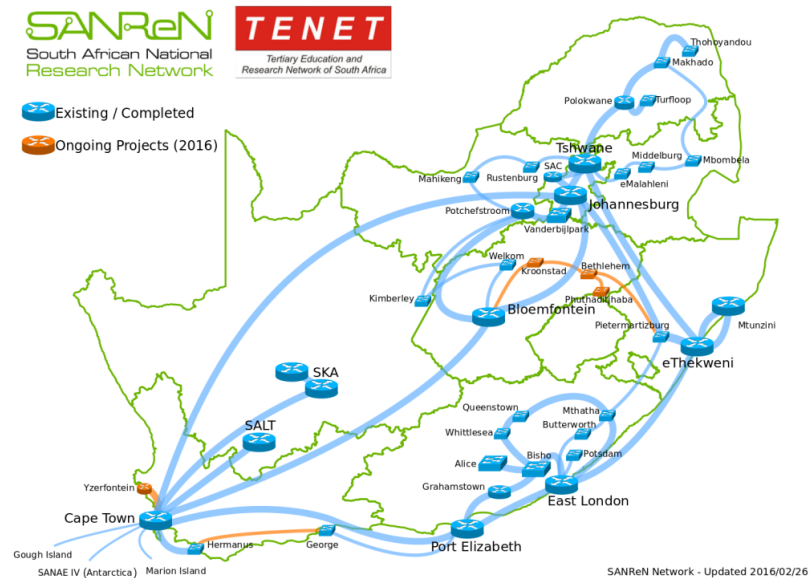


## *Part 1:*

# *The Characters*

# About SANReN

## South African National Research Network



- Multi-gigabit network dedicated to research
  - *> 200 Gbps on WACS submarine cable*
  - *Reaches nearly all university and research campuses*
  - *Will support Square Kilometer Array radio telescope*
- Deployed and owned by the Council for Scientific and Industrial Research (CSIR)
- Capital costs funded by the Ministry of Science and Technology

# About TENET



- TENET: Tertiary Education and Research Network of South Africa NPC
  - *Incorporated as a not-for-profit private company*
  - *Universities and Statutory Research Councils may be Members*
  - *Provides REN services to research and education institutions*
  - *Cost-recovering service charges*
- Comprehensive agreement between CSIR and TENET
  - *First signed in 2008*
  - *TENET operates and uses the SANReN network*
  - *TENET responsible for all interconnections (peering, transit,..)*
  - *TENET bears technical operating costs of the entire network*
- SANReN and TENET jointly constitute South Africa's NREN

# About the SABEN Project



- SABEN is a project of TENET
  - *In collaboration with college principals and SANReN*
  - *Aims to connect TVET colleges to TENET*
  - *Provide them with re-packaged TENET services*
  - **Arno Hart** leads the SABEN Project
- TVET colleges
  - *Technical Vocational Education and Training Colleges*
  - *50 TVET colleges with 264 campuses between them*
  - *National development plan emphasises technical and vocational training*

# About eSN



- e-Schools Network NPC
  - *Founded in 1993 by a group of teachers*
  - *Offered a unique email service with a mailbox for each learner and teacher in a school*
  - *Now serves over 1000 schools*
- Resells services of several commercial ISPs
  - *ADSL access circuits to schools*
  - *eSN's main value-add is its helpdesk/support service*
- Resells TENET's services to some schools
  - *Up to 100 Mbps; uncontended Internet access*

# *Reflections on a project*

*involving*



## *Part 2:*

# *What's happening?*

# Realising Synergies *between*

## eSN and SABEN

- Arno Hart realised that Schools and TVET colleges:
  - WHILE differing notably from universities and research institutionsARE RATHER SIMILAR to each other
  - as regards their demand for Internet and associated services.
- **THEREFORE:** eSN and SABEN should collaborate to:
  - Build and share common access networks to link to TENET
  - Support each other outside of TENET's standard services

# The rationale for collaboration

- Like universities: schools and TVET colleges:
  - *need affordable Internet services*
- Unlike universities; schools and TVET colleges:
  - *Have limited budgetary discretion*
  - *Demand relatively small Internet bandwidth*
  - *Lack in-house technical support capacity*
  - *Require frequent telephonic advice and problem-solves*
  - *Require on-site assistance*
- TENET has no need for a skilled helpdesk
- ESN's HelpDesk:
  - *gives telephonic advice and guidance*
  - *Responds to call-outs / makes on-site visits*

# eSN – TENET Agreements

- Reseller Agreement (5-year term)
  - *Reselling is regulated by telecoms law*
  - *TENET appoints eSN as a reseller to schools*
  - *TENET hands-off to ESN at identified ESN Access PoPs on SANReN*
  - *ESN may customise and re-bundle TENET's services*
  - *eSN sets prices for its services to schools*
- Collaboration Agreement (2-year term)
  - *Every SABEN PoP is also an eSN Access PoP*
  - *SABEN will deploy access circuits to eSN schools*
  - *eSN HelpDesk also serves TVET Colleges*
  - *Arno Hart manages eSN Helpdesk and technical staff*

# *Reflections on a project*

*involving*



## *Part 3:*

# *Conclusions*

# Conclusions -1

- TENET's purpose and focus are to serve universities and research institutions
- By comparison, schools and TVET colleges need lots of technical support
  - *Advice, problem-solving, site visits, hand-holding*
  - *TENET not in a position to do this*
- BUT: TENET is willing to be an upstream provider to suitable resellers...

# Conclusions - 2

- Serving schools and colleges requires intermediary organisation(s) that:
  - Buy in bulk from TENET
  - Collaborate in the deployment of access networks to TENET access PoPs
  - Resell TENET's Internet services to schools and TVET colleges
  - Package and price their services appropriately; and
  - Offer rich support services to schools and TVET colleges
- eSN, in collaboration with SABEN, is such an intermediary / reseller for schools.

Thanks for listening  
*and...*



***Have  
fun!***