



Building eResearch Support at UCT.....

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ERESearch AFRICA - OCTOBER 2013

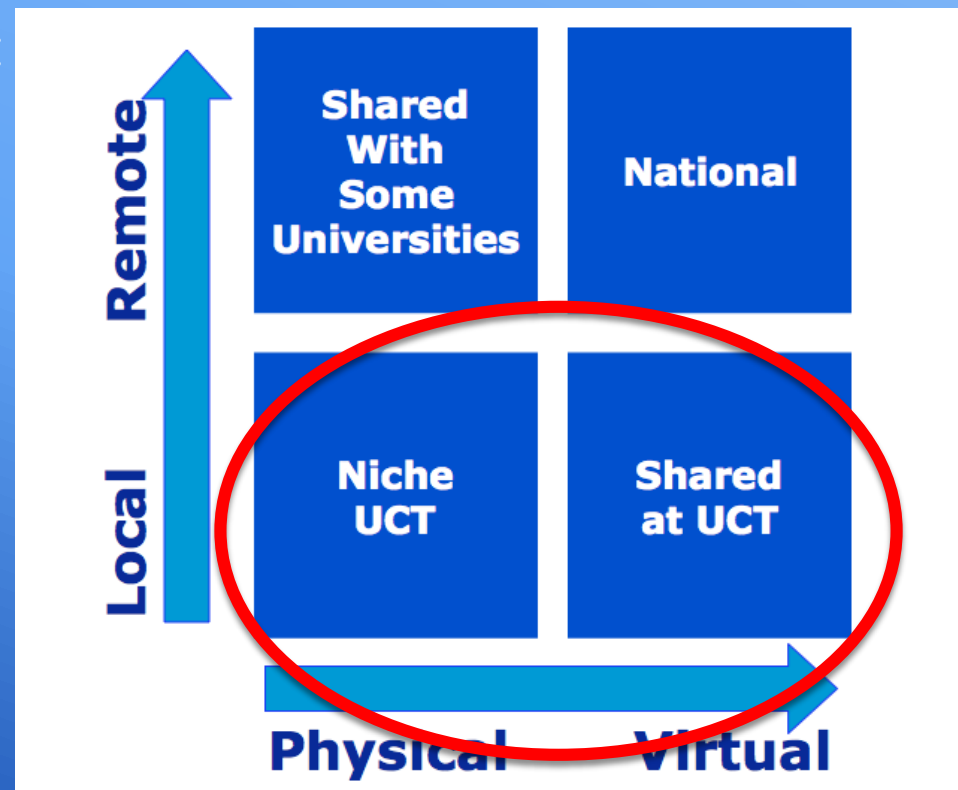
NO





Where we started

- Research support was not part of our ICT Portfolio
- Understood it as in 2009:





Will Cloud change it?

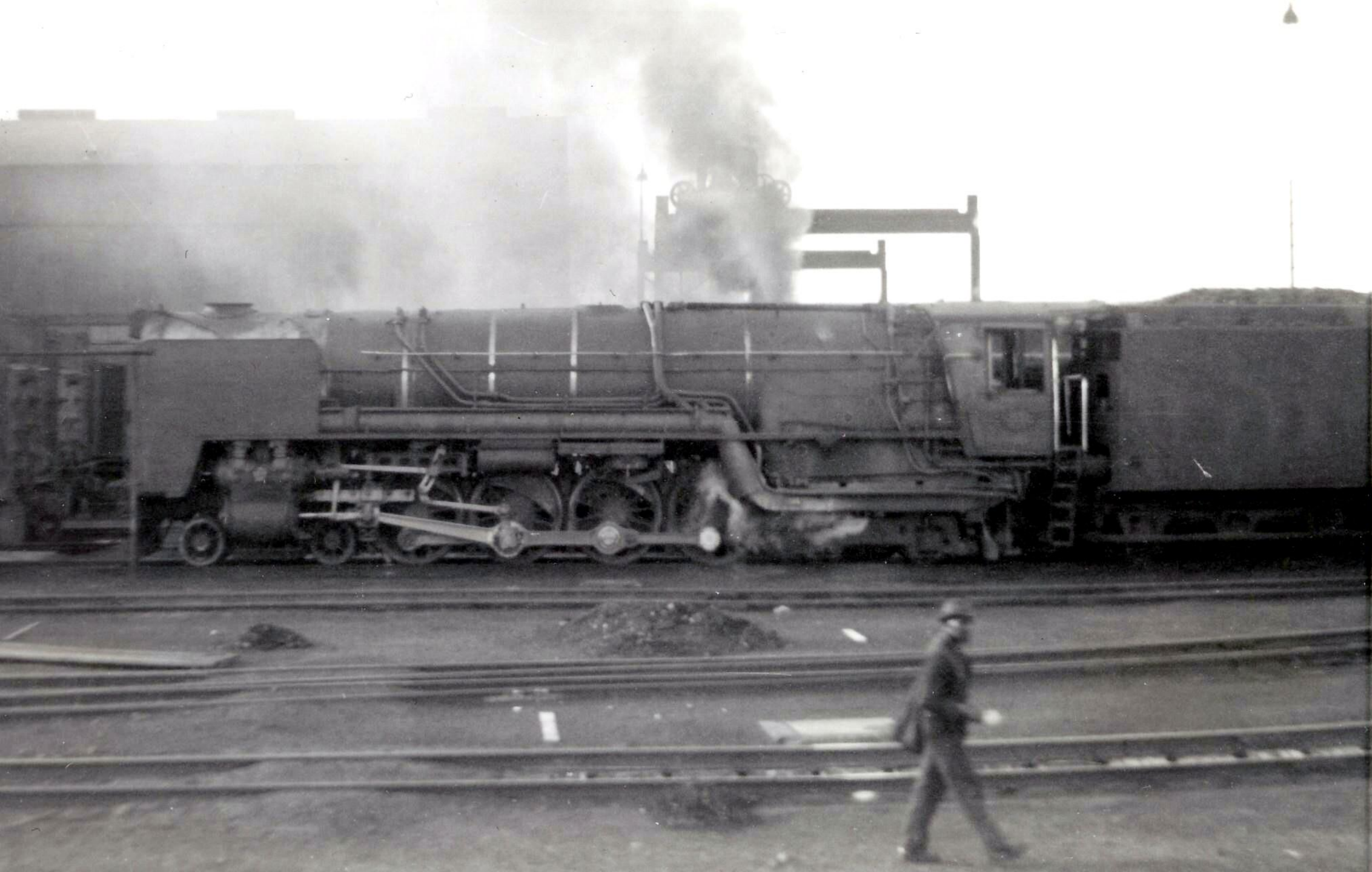
1950's – It was called “Time sharing”

1966 – Douglas Parkhill Published “*The Challenge of the Computer Utility*”



CLOUD IS NOT NEW



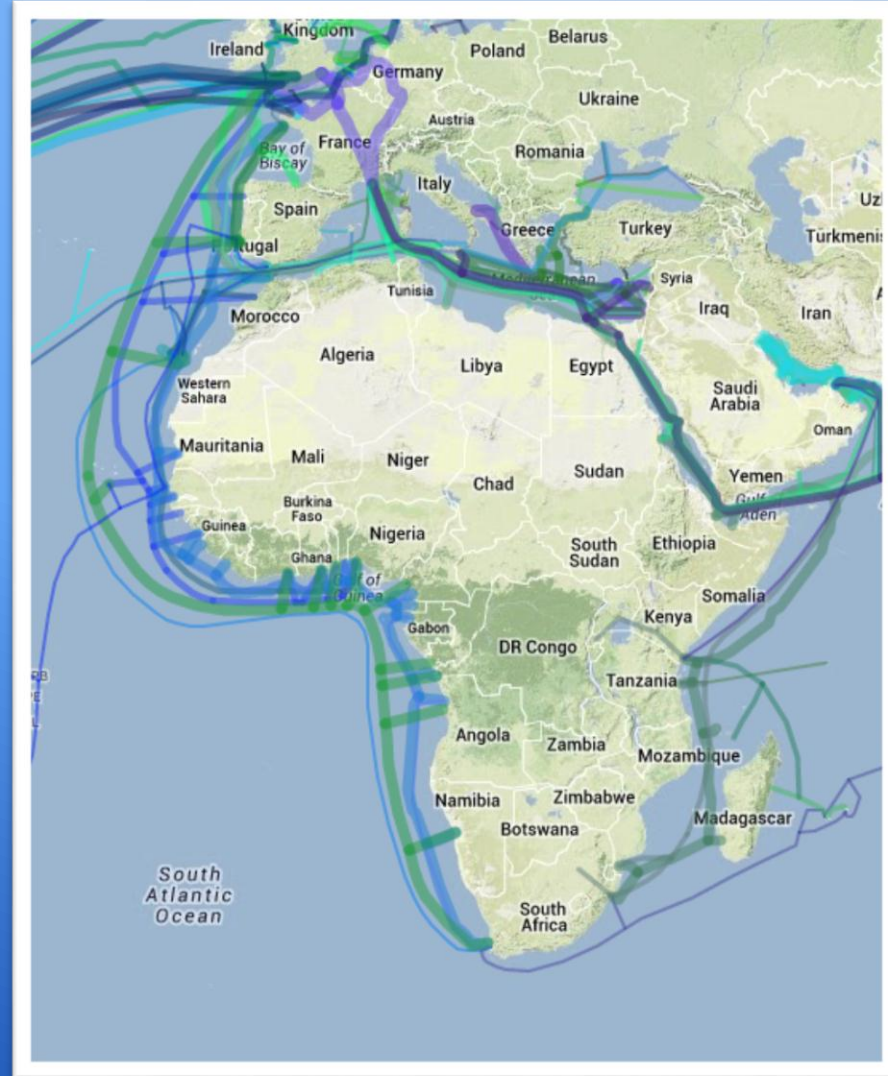




Historical Aspects

- One telecommunications supplier played a crucial role in getting the South African industry to move to the cloud.
- Altech wins battle to build own network in South Africa.
- Bandwidth was expensive in 2009 UCT paid R950,000 per year for 52Mb.
- SA universities invested US\$ 26million in SEACOM for 10Gb.
- UCT now pays R12 million per year for 560Mb international and 10Gb local.
- Universities now connected to SEACOM (10Gb) and WACS (6Gb).

South Africa connected



Source:-<http://www.cablemap.info/>



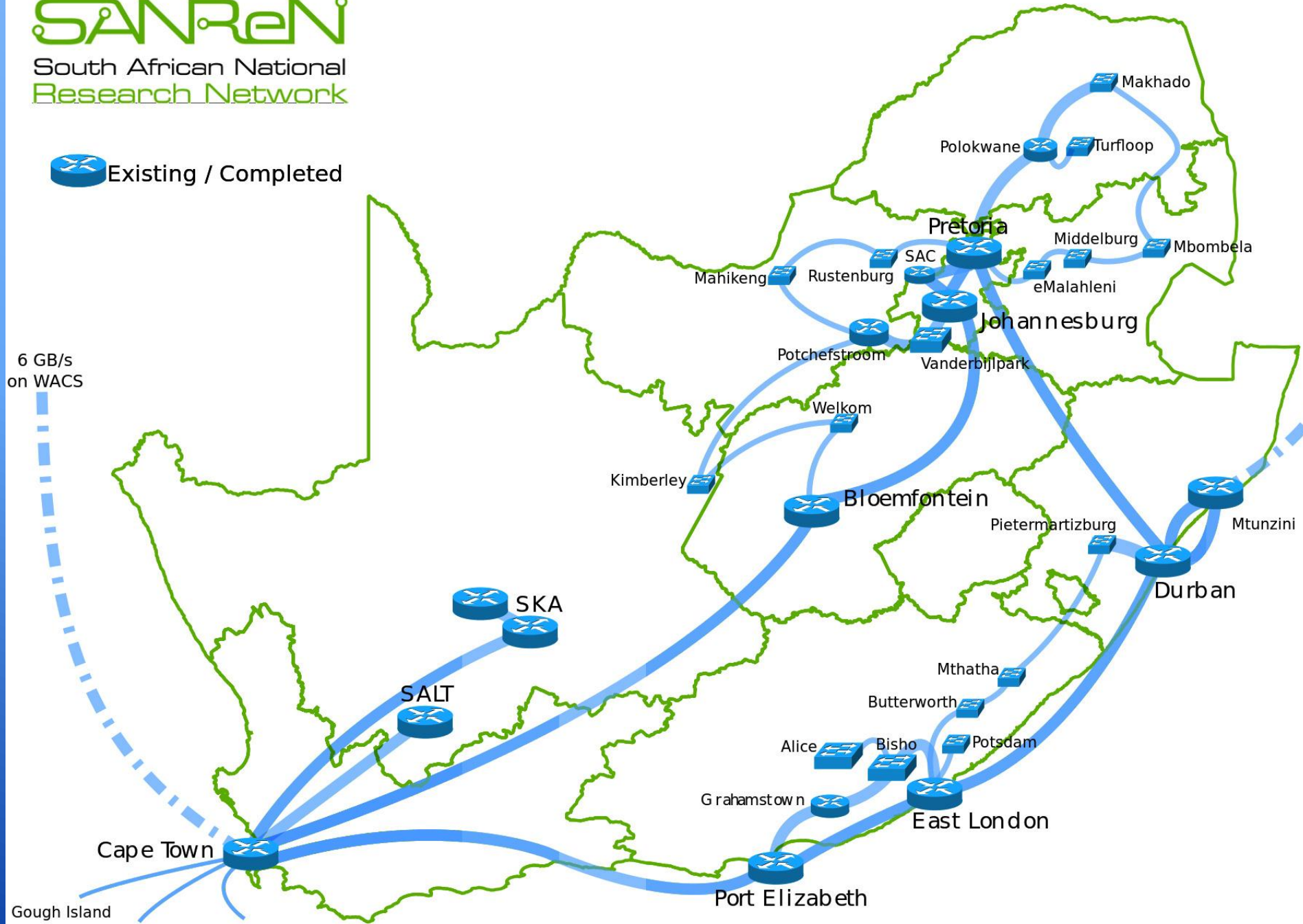
SANReN

South African National
Research Network

 Existing / Completed

6 GB/s
on WACS

10 GB/s on
SEACOM





Gartner has always
forecasted that
opportunities will arise when
South Africa gets
connected.

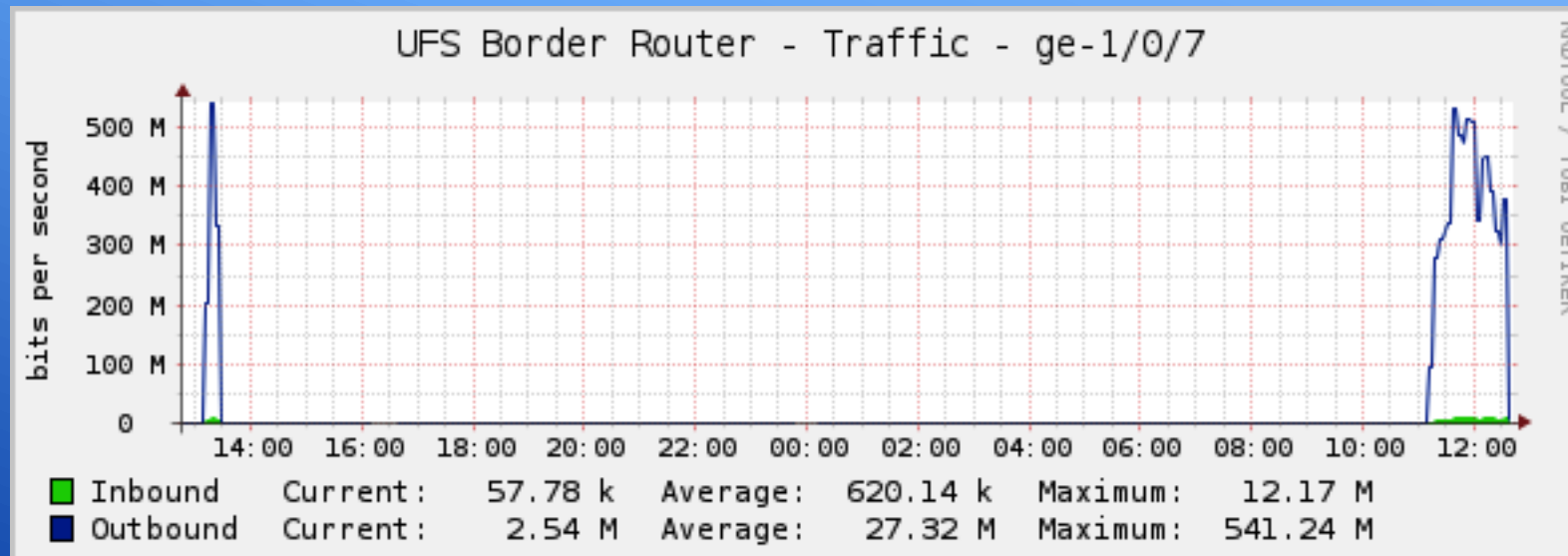


The UCT Risk Management
Committee asked ICTS to
move data to another
university



Moving Data is Easy

- Installed some storage to UFS
- Setup an layer 2 Network
- Copy the data
- Done!!



2009 UCT “We are not alone”

- UCT study with 7 Australian Universities
- It was clear Australia had the same problem
- Australia was leading the way in addressing their challenges
- We attended the eResearch Australasia conference
- It was clear that we need to rethink our strategies
- Our infrastructure was too “Solid”
- We needed an “elastic” solution
- Look at a “South African University cloud”





Other burning issues

- Open Educational Resources
- Open Research Data
 - Raw data for secondary research
 - Research outputs
- No one solution for research support
 - eResearch – ICT tools used by researchers to do their research
- Demand for eResearch support is not always the same
 - On demand
 - Elastic
 - Everywhere
 - 24x7x365

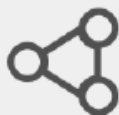


Now what?

- We had to start somewhere
- Openstack looked like to right choice
 - No skills in the sector or South Africa
 - Rackspace could train for +R300K

Private Cloud

Scalability & Elasticity



Shared Infrastructure

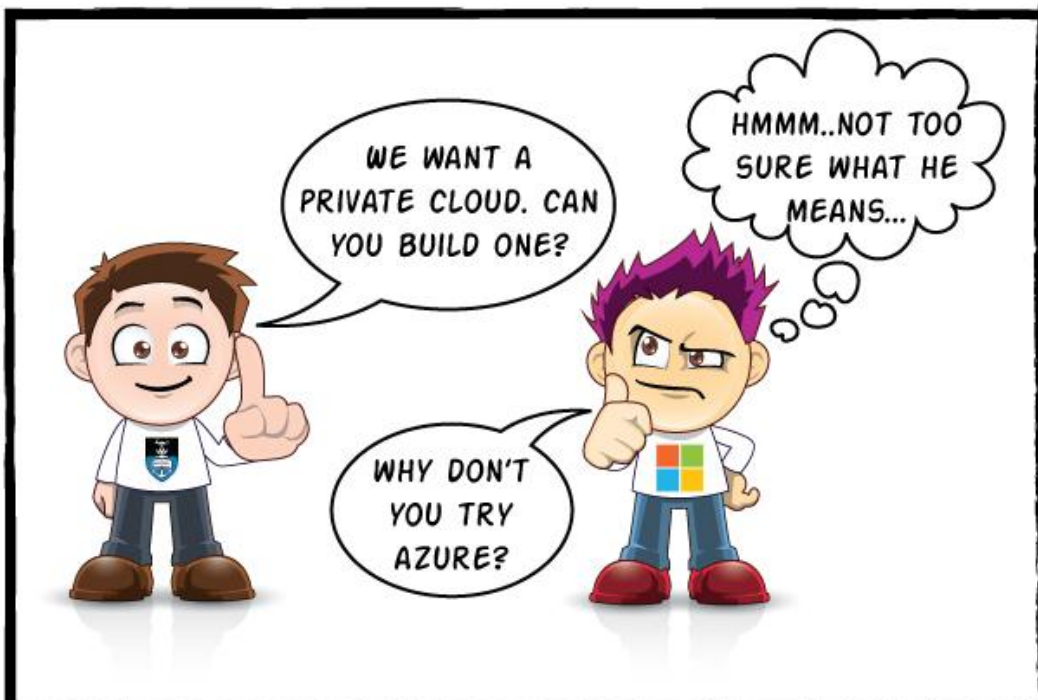


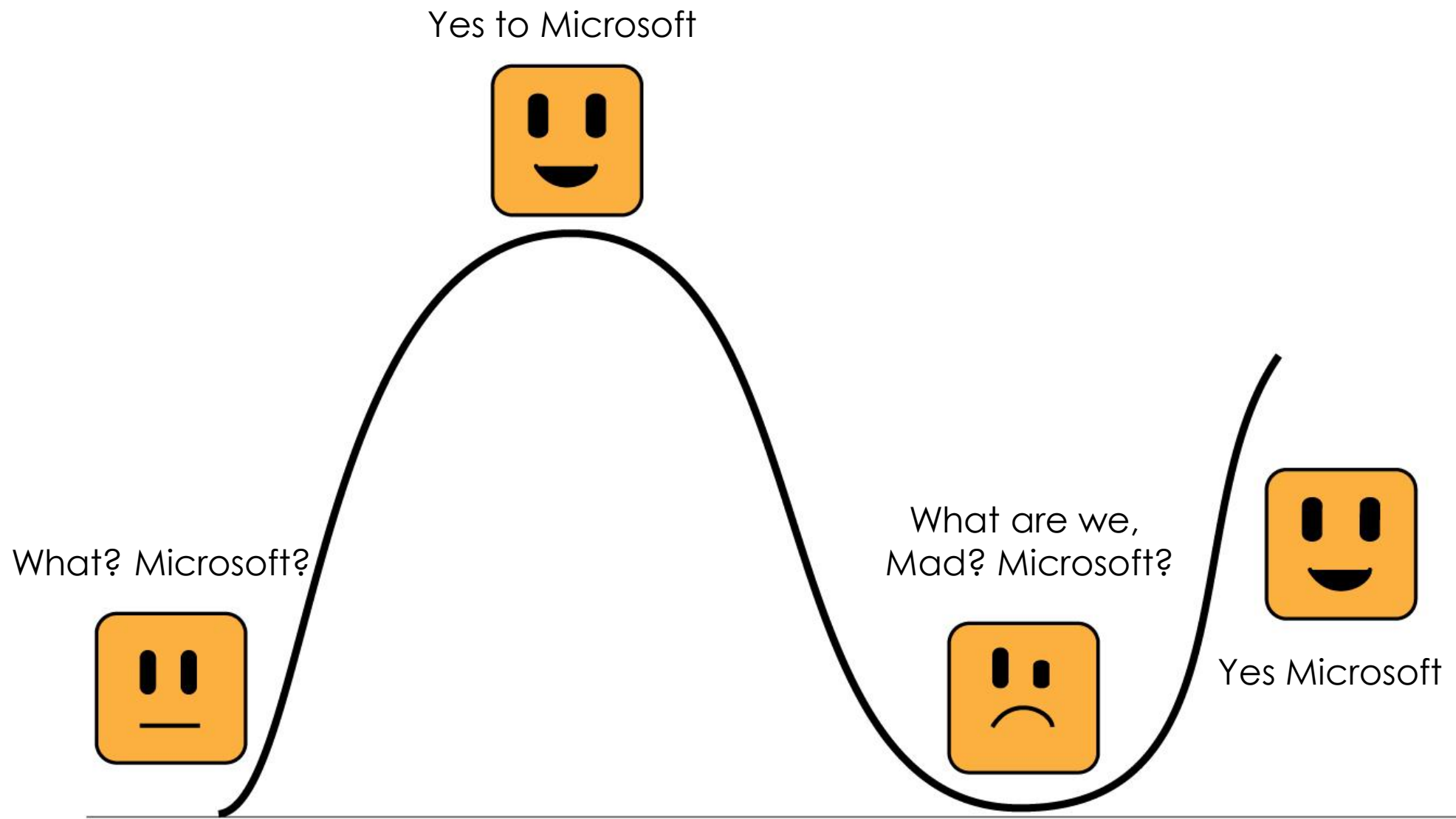
Usage Based



Automation & Self-service

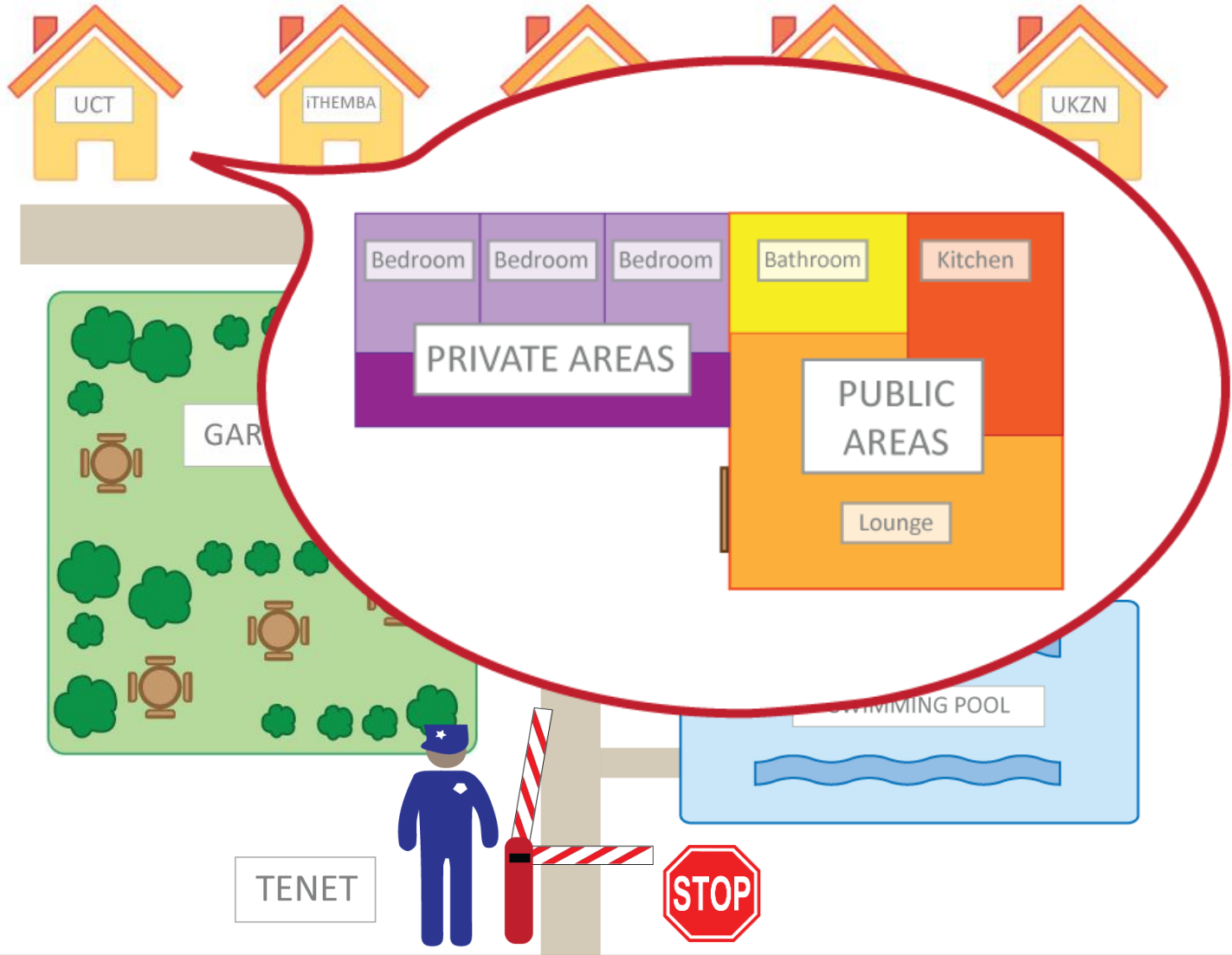








The Design



SANREN HIGHWAY

UCT introduced cloud-based services

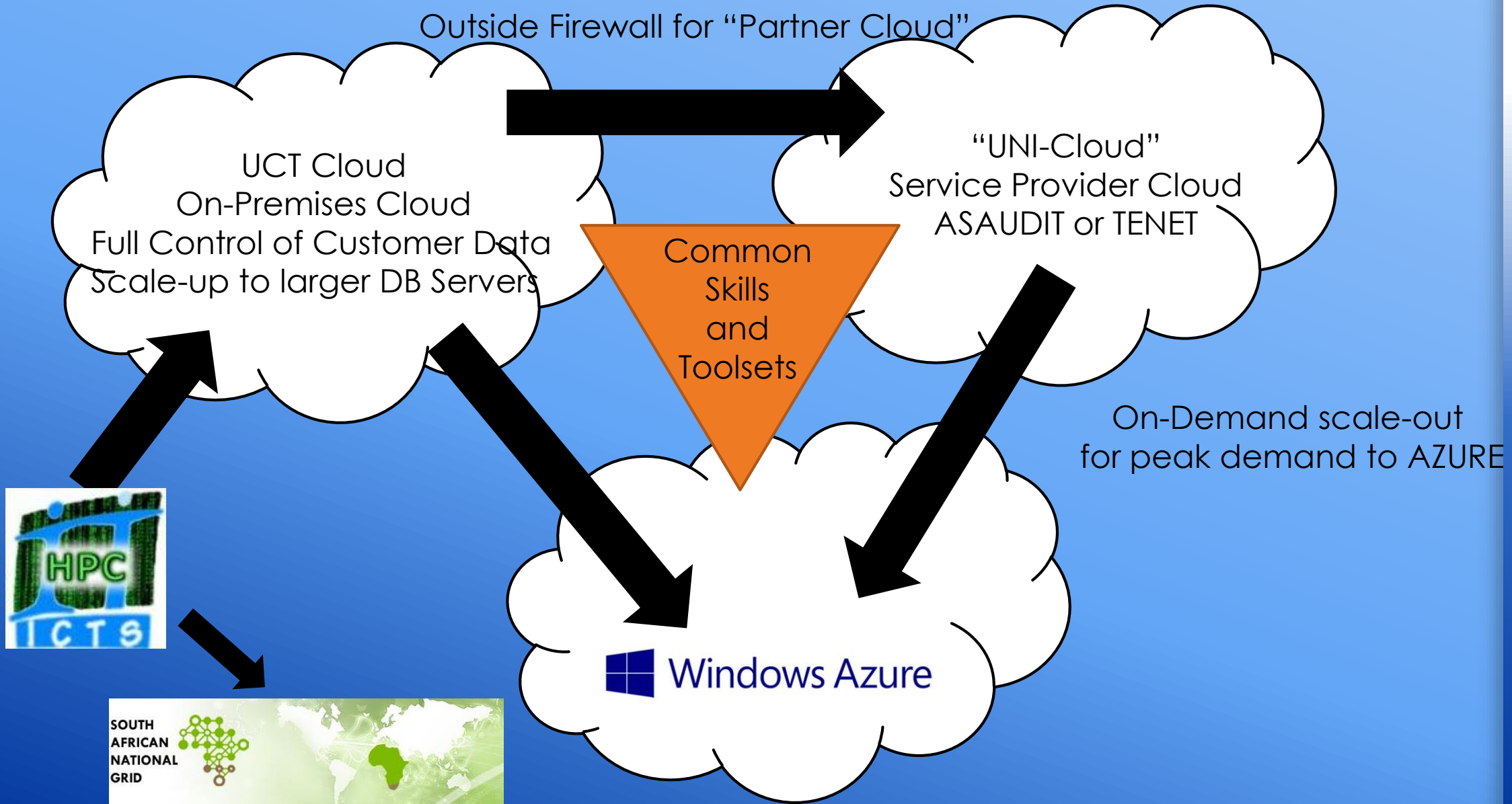
- ▶ Mimecast
- ▶ VoteNet
- ▶ ServiceNow
- ▶ UCT Ready (KUALI)
- ▶ Office365
- ▶ Tested Ckan
- ▶ Tested Own Cloud
- ▶ Scaling to Azure and Amazon was tested



Research Support UCT 2016



Outside Firewall for "Partner Cloud"



Lessons learnt

- ▶ Change is hard.
- ▶ Cloud non-believers.
- ▶ Nearly missed great opportunity by building a level 2 network .
- ▶ Technology is easy. People is the challenge.
- ▶ Governance is very important.
- ▶ Trust does not come easy.
- ▶ You have to take the risk.
- ▶ What about OCCI?



Thank You



References

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- ▶ <http://www.southafrica.info/business/trends/newbusiness/voip-deregulation.htm>
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- ▶ <http://owncloud.org/>
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- ▶ <http://www.openstack.org/>
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