

# **DEVELOPING A MODEL CAMPUS NETWORK: CHALLENGES AND OPPORTUNITIES**

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# Problem

- 📖 In the recent years, LASU has not enjoyed the benefits of connectivity and associated services.
- 📖 A lot of investment has gone into internet bandwidth.
- 📖 In this presentation, attempt will be made to outline the approach LASU is employing to implement a model campus network.

# Analysis of the Problem



- Provision of internet bandwidth is only part of the problem.
- Reliance of commercial ISPs to solve internal campus network issue is not only problematic but a serious failure.
- There was a need for robust campus network that could easily fit into National Research and Education Network (NREN).
- Think about services need to enhance research.

# Attempts at finding solutions

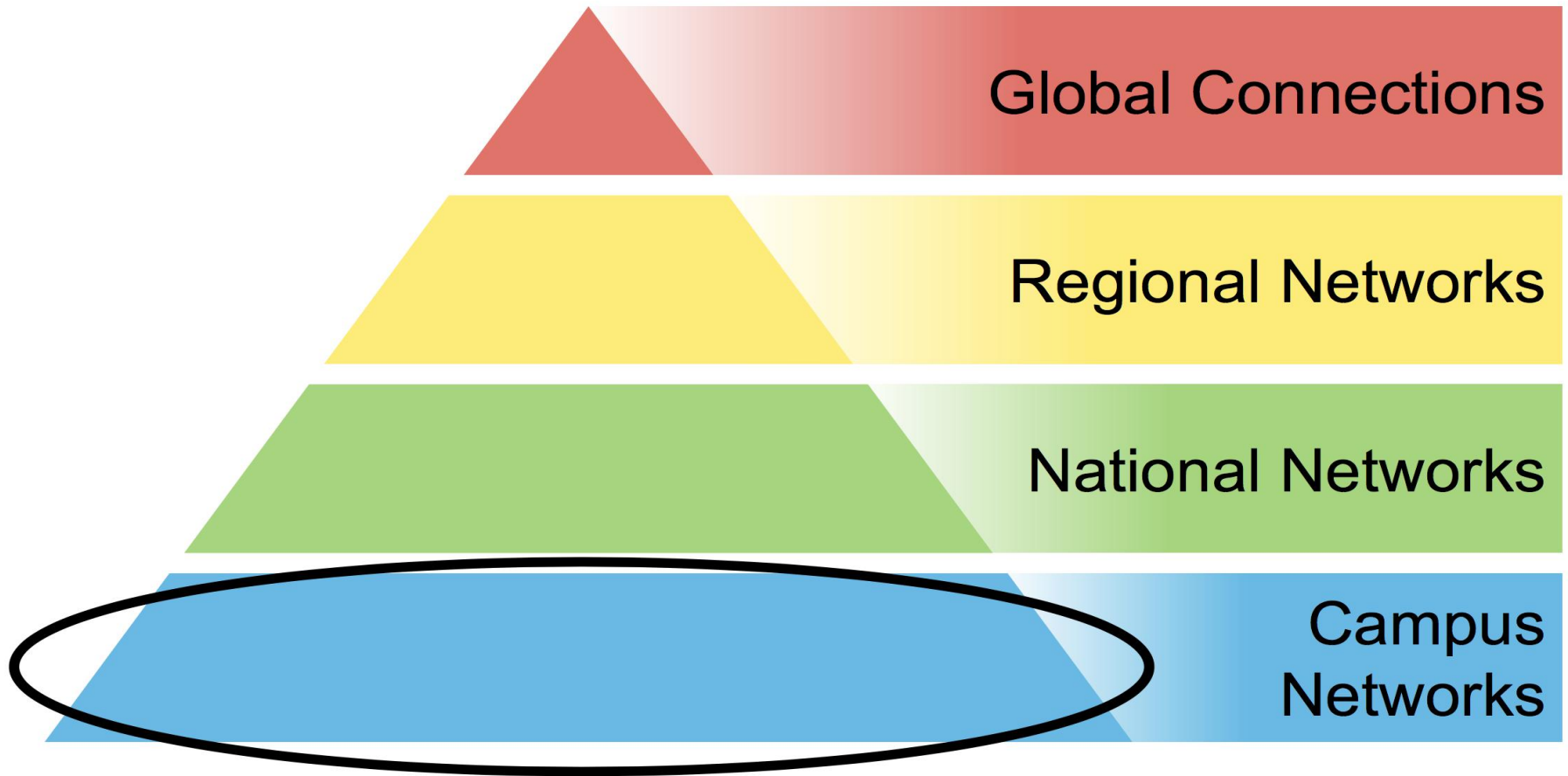


- The management of our University was absolutely committed to the cause of finding solution to the problem.
- The University engaged a local NREN provider – Eko –Konnect.
- The Vice-Chancellor ensured that the management has good understanding of the need to have good campus network.
- Policy workshop training for management.
- Eko-Konnect organised management visit to various Data centres.

# Management Visit to Datacentre



# NREN EcoSystem



Courtesy NRSC

# Campus Network Role



- It is only through campus network that a student of faculty member is connected to the global, regional or national network.
- A good campus network is *essentially* essential.
- The campus network is the foundation that the REN ecosystem is built upon.

# Building Campus Network: Start from the Basics



- Undergo a thorough campus network audit
- Undergo Power Audit to understand what it will entail to keep your campus network up 24/7
- Have physical plans or designs of your campus
- Create and keep high level designs and low level designs of your network and keep as part of your strategic plan
- These activities were done in conjunction with your NREN or independent consultants – Eko –Konnnect.



# Capacity building & Awareness Essential

- Capacity Building and Awareness through seminars workshops and conferences.
- Attend NREN & RREN Conferences:
  - Eko-Konnect, WACREN
- Attend workshops organized by NRENs and RRENs Eko-Konnect, NgREN, WACREN, ATI
- Workshops for technical staff: NgNOG, AfNOG
- Collaborate with NREN to organize specific local capacity building workshops



# Put Into Maximum Use Local Cloud Hosting



- Leverage Cloud Services provided by NREN Operator.
- Host servers in cloud if infrastructure is not available.
- Consult with NREN provider about cloud implementation.

# Use Interventions To Develop The Campus Network



- When interventions come as they sometimes do, ensure they align with the campus network plan.
- Explore funding models with NREN operator
- Prioritize purchasing considerations.
- Establish good relationships with InfraCos they may bring interventions in terms of infrastructure.

# Don't Wait For The Perfect Campus Network to Emerge



- Start to prepare for the services that deliver value
- Build robust registry and bursary systems
- Have a good campus directory
- Ensure Library has good Library Systems and Institutional Repositories.
- Ensure good network authentication systems
- All the above as well as the network are required to deliver good research and education services.

# Use Students To Support The Network



- Not always easy to have all network staff needed
- Students can be used as resources to give user support to campus network.
- Establish a good Helpdesk
- Recruit students to support network using student Internships
- Use SIWES also to recruit

# LASU Campus Network Implementation



- Phase 1: Network & Power Audit - Completed
  - Site survey; campus physical site map with plotted GPS co-ordinates, staff interviews, verification of inventory
- Phase 2: Campus Network Design & Monitoring Training Workshops - Completed
  - Outputs included important knowledge and skills transfer to LASU ICT and networking staff
  - Set of important reports and documentation to inform implementation of campus network
- Phase 3: Implementation of Campus Network and services – In progress

# Challenges

- Finances
- Power
- Skills and Capacity
- Awareness of evolving trends





# Opportunities: Participation in the Global REN



- Participation in the Global REN
- Mobile Identity (eduroam)
- Increased institutional visibility
- Increased opportunity for local and global research collaborations
- Participate in the open science movement
- Attract investment