



SEFAKO MAKGATHO
HEALTH SCIENCES UNIVERSITY

INFORMATION AND COMMUNICATION TECHNOLOGY THE ROAD SO FAR: NETWORK INFRASTRUCTURE ESTATE REFRESH

ICT DEPARTMENT

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ICT INFRASTRUCTURE: RIP AND REPLACE

When an **independent Infrastructure Audit** highlighted **severely outdated ICT infrastructure** as a key obstacle and threat for the institution, Sefako Makgatho University was forced to **implement a comprehensive 'rip and replace' strategy to bring the university's ICT infrastructure into the 21st Century**. This case study has invaluable lessons for institutions facing similar technology challenges.



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OUTLINE OF THE PRESENTATION

- Introduction and background of the ICT network infrastructure estate refresh project
- Scope of ICT refresh project
- Preparation of the ICT refresh project
 - ✓ Request for funding
 - ✓ Appointing a project partner
 - ✓ Standardisation: RFP and RFQ process
 - ✓ Executing the project
 - ✓ Impact of Covid 19
 - ✓ The progress so far
 - ✓ Lessons learned



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INTRODUCTION AND BACKGROUND OF THE ICT NETWORK INFRASTRUCTURE ESTATE REFRESH PROJECT

- **SMU was established in 2015** when demerged from the University of Limpopo.
- The SMU cabling infrastructure was **over 20 years old**, while switching and compute was 8 years old. (One HP rack)
- **SMU had a tremendous deficit in terms of infrastructure and human resources:**
 - Running on desktops as additional necessary servers,
 - Only two network/server infrastructure resources.
- **Project partner/consultant appointed in 2015 to facilitate project.**
- **Preliminary project partner was under experienced to facilitate a project of this nature and size.**
 - Project severely under costed.
 - Initial tender to market failed in 2018 due to perception that the tender was OEM biased.
- **Re-application to DHET for funding based on market pricing 2018.**



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SCOPE OF ICT REFRESH PROJECT AND FUNDING

- Application to DHET for R148 million in 2019 (through Infrastructure Efficiency Grant)
- Covers four domains:
 - Data Centre infrastructure
 - Cabling – Ethernet/Fibre
 - Compute/Server, network storage, and backup solution infrastructure
 - Networking Infrastructure (Internal and External WIFI access points, Switching and routing)



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APPOINTING A PROJECT PARTNER

- Partnered with PURCO in 2019
- PURCO was appointed on a technical project management role.
- PURCO also played a role as a procurement vehicle.
- All procurement processes were aligned to SMU SCM policy.



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STANDARDISATION: RFI TO RFP

- **Motivated for an approved standardisation approach.**
- **RFI's** then evaluated by technical project team to see compliance to the scope.
- **OEM** selected through **BSC** and **BAC** committees to adhere to governance and project requirements.
- **OEM** selection assisted **SMU** to standardized on:
 - Cabling – Ethernet/Fibre
 - Compute/Server infrastructure
 - Network infrastructure
- **RFP** published to the industry based on the **OEM** designs to **OEM** partners.
- **The RFP** followed the approved tender process from bid specification right through to bid adjudication.



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EXECUTING THE PROJECT

- Understanding the scope and the SLA associated with delivery of the projects
- Setting up of the project office on site
- Support from SMU staff – Technical and Admin
- Stock holding areas at the campus
- Health and Safety
- Access Management
- Stakeholder Engagement
- Mobilising of the Local Community/ Community Engagement Protocol



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IMPACT OF COVID-19

- Shortages of information and communication technologies worldwide.
- Shipping challenges and delays.
- Massive price increases of equipment.
- Unavailability of key resources.
- Extended working hours.



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THE PROGRESS SO FAR

- **Data Centre:** Data centre completed in December 2021.
- **Copper and Fibre Cabling:**
 - Currently on 85% of the civil works for the external fibre ring
 - Currently on 62% of the indoor copper cabling for the 58 buildings that were planned to install
- **Storage:** The storage project is in the planning phase right now, 85% complete with the planning phase and will start deploying the equipment once the equipment arrives in country
- **Networking and Wi-fi:** Currently in planning phase. Equipment is being delivered in batches as and when they arrive in country. This project is reliant on the cabling (copper and fibre) being completed.



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LESSONS LEARNED

- Project: Extra burden on internal staff who are expected to still perform day to day.
- Time: Executing four projects with four different partners and the impact of many meetings towards project and vendor management.
- Disruption: Executing the project while other University infrastructure projects are active.
- Labour issues: Community engagement and the role of ICT as a mediator.
- Financing: Duration of project versus OEM price increases and applying to DHET for variances.
- Approval limits: Technical vs. project management and the impact of not having a full project office.
- The independent audit: The process also allows to identify any shortfalls that internal IT may have missed, thus ensuring the next stage which is planning and architecture is completed correctly.
- The Planning and architecture stage is a workshop with stakeholders and IT which ensures that no information is missed when designing and architecting the blue print
- Standardization on OEMs



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AUDIT FOCUS AREAS FOR CONSIDERATION

- Project definition and requirements management
- Project organisation and governance
- Risks management
- Procurement and contract management, financial controls and engagement with commissioning processes
- Configuration management, project change controls and Project Management Office
- Project Planning and scheduling
- Performance and benefits management
- Stakeholder management and communications
- Social responsibility and sustainability



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Thank You

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