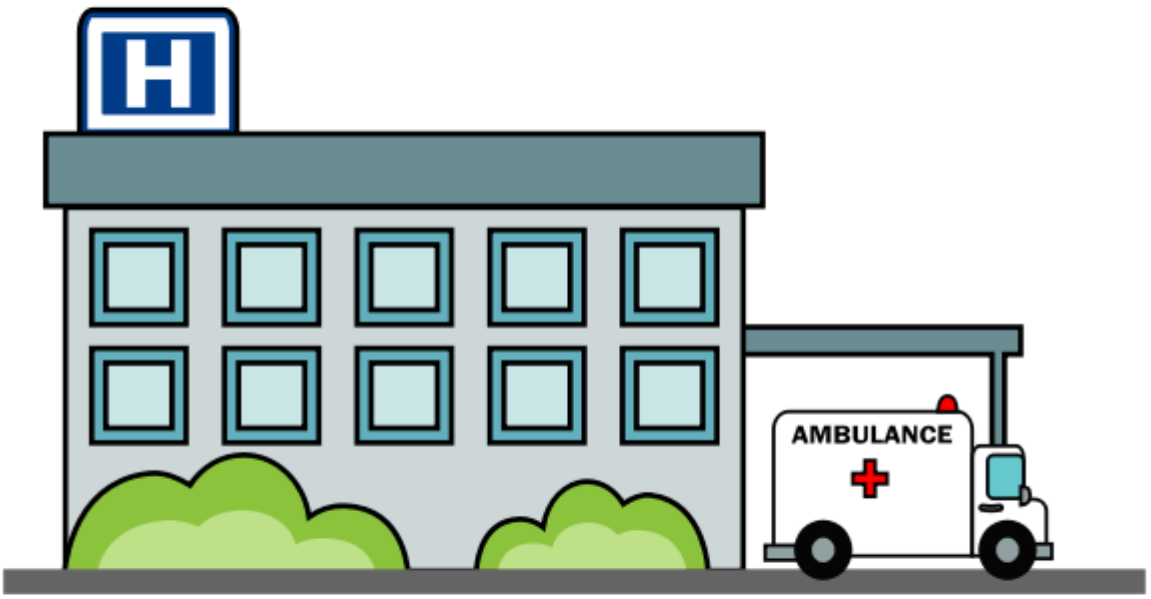
NGOMA DZA VHATEI PROJECT PLAN

UTHUKELA DISTRICT MUNICIPALITY HOSPITAL



GROUP MEMBERS

MUKHOLA THUSO

MUGUVHANA MBAMBALA OSBORN

MOHLALA SURPRISE

MAPHALA LIVHUWANI

RAMBAU LINDELANI

IT Mapping Structure:

Network Layer:

Main Connection:

-A high-speed internet line installed by Openserve connects the hospital to the internet.

-Local Area Network (LAN): The internal network connects all hospital departments, wards, and administrative offices.

-Routers/Switches: These ensure proper data flow between departments and external networks.

Hardware Layer:

-Data Servers: Located in the hospital, storing patient data and managing the hospital's local intranet.

-Workstations: 20 computers across different departments will be replaced and upgraded to support the software solutions.

-Printers and Scanners: 5 printers available across the hospital; more will be installed for different wards.

-Backup Systems: Cloud and physical backup systems for patient records and operational data.

Software Layer:

-EHR System: Manages patient data across the hospital, accessible from all wards, securely storing and retrieving patient records.

-ERP System: Handles all administrative tasks (finance, supply chain, etc.), ensuring seamless coordination across hospital departments.

-Communication Systems: Integration with the hospital's intranet for internal communication and external systems for supply chain management.

-Data Management Software: Secure systems for handling sensitive patient and hospital data, with proper access control and encryption.

Security Layer:

-Firewalls: Protect the network from unauthorized access.

-Antivirus/Anti-malware: Protect systems from malicious attacks.

-Data Encryption: Secure sensitive information, especially patient records, to prevent breaches.

-Access Control: Role-based access for staff members, ensuring that only authorized personnel can access sensitive information.

Project Plan: Developing a World-Class Network Infrastructure for uThukela District Hospital

Introduction

The purpose of this project plan is to outline the steps required to implement a world-class network infrastructure at the main hospital in uThukela, KwaZulu-Natal. The project aims to address the hospital's outdated IT systems and provide a secure, reliable, and sustainable solution that supports the hospital's critical operations. The plan considers key project phases such as planning, design, implementation, training, and testing to ensure the project is completed within one year.

Project Objectives

- **Establish a Reliable Network**: Develop a fast and secure network infrastructure that connects the hospital to the internet via Openserve.
- **Hardware Upgrades**: Replace outdated computers, printers, and networking equipment to support hospital operations.
- **Integrated Systems**: Implement an integrated hospital management system covering medical records, administration, supply chain, and finance.
- **Data Security**: Establish a robust cybersecurity framework to protect patient records and sensitive hospital data.
- **Staff Training**: Train ICT support and hospital staff to manage and maintain the new systems.

2. Project Scope

In Scope:

- Installation of fiber-optic cabling and dedicated internet connection.
- Upgrade of existing computer hardware (20 old computers) and printers.
- Implementation of secure networking equipment, including firewalls and servers.
- Software integration (EHR system, supply chain, finance, and administrative systems).
- Staff training on new systems and cybersecurity.

Out of Scope:

- Major hospital construction work.
- Expansion of the project to other hospitals beyond the initial scope.

3. Project Phases and Timeline

This project will be executed over one year with six primary phases:

Phase	Activities	Duration	Key Milestones
1. Planning	Define project scope, objectives, and requirements. Assign project team roles. Conduct a needs assessment and risk analysis.	1 month	Completion of project charter and risk analysis
2. Design	Design the network architecture, hardware layout, and software solutions. Create detailed system integration plans.	1 month	Approved network design
3. Hardware Procurement	Purchase computers, printers, servers, routers, switches, firewalls, and storage solutions.	1 month	Receipt of all equipment
4. Installation & Configuration	Install and configure network infrastructure. Deploy servers, computers, and networking equipment. Implement software systems.	3 months	Network installation complete
5. Training	Train ICT staff and hospital personnel	1 month	Completion of all training sessions

	on new hardware, software, and network security practices.		
6. Testing & Deployment	Test the network and systems. Ensure all components are functioning. Address any issues and officially hand over to the hospital.	2 months	Successful deployment of the system

4. Resource Allocation

Project Team:

- **Project Manager**: Oversees the project from start to finish, ensuring all phases are completed on time and within scope. (Thuso Mukhola)
- **Network Engineers**: Design and install the network infrastructure. (Livhuwani Maphaha)
- **Hardware Technicians**: Responsible for the installation of computers, printers, and other hardware.(Mbambala Muguvhana)
- **Software Integration Specialists**: Handle the integration of software systems for hospital operations. (Surprise Mohlala)
- **ICT Trainers**: Provide training to ICT staff and hospital employees on system usage and maintenance.(Lindelani Rambau)
- **Cybersecurity Specialists**: Ensure the network is secured and compliant with healthcare data protection standards. (Thuso Mukhola)

Required Resources:

- **Hardware**: 20 new computers, 5 printers, servers, routers, firewalls, switches, and storage units.
- **Software**: Electronic Health Record (EHR) system, supply chain management software, finance and administration software, cybersecurity software.
- **Training Materials**: User manuals, troubleshooting guides, training videos, and in-person workshops.

5. **Risk Management**

Risk	Impact	Likelihood	Mitigation Strategy
Delays in Hardware Procurement	Project delays	Moderate	Order equipment in advance. Maintain backup suppliers in case of delays with primary vendors.
Network Security Breach	Loss of sensitive data	High	Install firewalls, encryption, and monitoring tools. Conduct regular security audits and vulnerability tests.
Resistance to Change	Low adoption of new systems	High	Involve staff in early stages of the project. Provide comprehensive training and user-friendly interfaces
Staff Training Issues	Reduced system efficiency	Moderate	Involve staff in early stages of the project. Provide comprehensive training and user-friendly interfaces

6. **Budget Estimate**

Category	Estimated Cost
Hardware	R1 200 000
Software Licenses	R715 000
Network Equipment	R1 000 000
Staff Training	R800 000
Project Management	R146 000
Contingency (10%)	R429 000
Total	R4 290 000

7. Monitoring and Evaluation

To ensure the project stays on track, the following monitoring and evaluation practices will be implemented:

- **Weekly Progress Reports**: The project manager will provide weekly updates on the status of each phase.
- **Milestone Reviews**: At the end of each phase, a review will be conducted to ensure all objectives have been met before proceeding.
- **User Feedback**: After system deployment, feedback from hospital staff will be collected to identify areas for improvement.
- **Post-Implementation Audits**: Cybersecurity and system performance audits will be conducted to ensure network reliability and data protection.