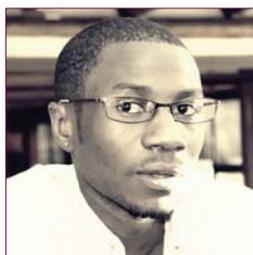


# Electronic Infrastructure

By Albert Ngosa, Information and Communication Technology Officer



Albert Ngosa

The Gender Links Information Technology (IT) Department is responsible for the establishment of information technology (IT) policy and planning, for IT procurement and contracts, and for providing the computing and telecommunications infrastructure for all information systems technologies within the organisation. This report reflects the continuing evolution of Information Technology mission and the activities conducted by this organisation for the year 2014.

## Importance of IT to GL work

IT is an important tool to optimise GL operations and conduct information exchange. IT has proven beneficial in Knowledge and experience sharing both internally and externally. It would lead to the effectiveness of the organisation processes and systems. It leads to the death of distance as GL programmes need to reach out as many beneficiaries as possible. IT provides an easier platform for this to be achieved through the use of latest social media platforms for information sharing and outreach.

## Background

Over the years, Gender Links had been working towards the improvement and restructuring of its IT infrastructure. Gender Links took into account the extremely dynamic nature of Information Technology, the need for flexibility, responsiveness and adaptability for the future. GL adopted as one of its slogans: *Making IT work for gender justice!*

The purposes of the infrastructure improvements are to:

- Improve user support to employees and community.
- Increase agility, performance, effectiveness and efficiency of our information technology services

and best position our IT department to be responsive and proactive to the ever changing IT landscape and expectations from our partners and funders.

- Reduce costs, where feasible and appropriate.
- Best utilize our human, technical and financial resources.
- Thrive in the ever-competitive NGO environment.

The major premise of this reorganisation was that information technology is a key to Gender Links success now and in the future. And while technology is a means not an end, it is undeniable that the pervasive nature of technology throughout the entire organisation has made agile, state-of-the-art, effective and efficient technology a must for any successful organization including Gender Links.

## Strategic targets

In 2014 Gender Links developed the first ever IT strategy to take effect in 2015. Gender Links used the emergent approach to IT strategic planning as it allows the organisation to learn and adapt to the technological needs in order to sustain efficient use of IT.

The IT strategy covers the following areas:

1. IT Governance and budgeting is integral to the planning and all operations.
2. IT to be aligned with performance and sustainability objectives.
3. Monitoring and evaluating IT investment and expenditure.
4. IT to be an integral part of risk management.
5. Information assets to be managed effectively.
6. Audit committee to review IT expenditure and report to the board.

The effectiveness of any IT strategy is to provide a fit with the overall organisational strategy. The table below gives a summary of key IT priority areas as related to Gender Links overall strategic plan.

GL strategic objective	IT strategic priority
Design, procure, install and maintain a superior information and instructional technology infrastructure that supports all GL organisational functions.	Maintain and Improve the Core Infrastructure.
Develop and implement administrative policies that directly support staff initiatives and programming.	Support and Enable Administrative Information Systems and Business Intelligence.
Capacity building and staff development.	Support and train internal technology Users.
Information management.	Maintain and Enhance Information Security.

## Systems

The IT department has in the past year implemented a host of technologies and support structures to ensure the effective implementation of departmental programs.

In February 2014, the department developed and deployed a new office 365 share-point dashboard available to all employees.



The dashboard gives managers working directly with staff in country, the ability to see in real-time the status for each documents and take proactive measures to assist country staff.

The department implemented a standard security protocol requiring Active Directory system (this is the network login aid application). This system allows users to change their passwords on a regular basis, enables password hardening by requiring the use of special characters, verify all existing user accounts, and create user security groups to limit access to sensitive data.

## User Support/Helpdesk



GL IT Officer Albert Ngosa troubleshooting the network. *Photo: Trevor Davies*

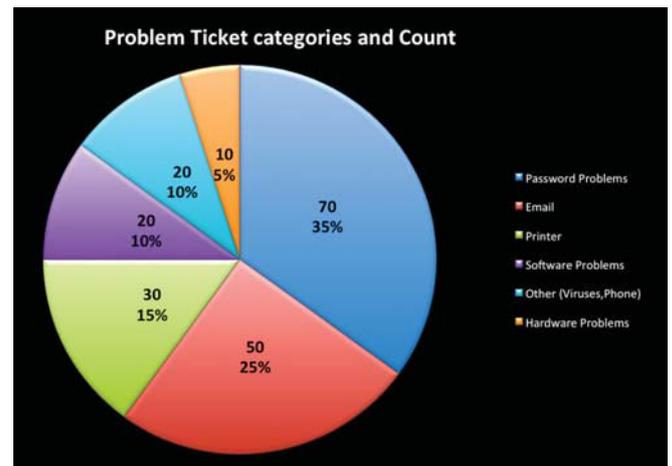
Availability of IT services is paramount to the continued operations and success of Gender Links. The IT department strives to provide support on a daily basis as well as looking to future demands a secure, reliable and robust network infrastructure for all Gender Links users. As the IT environment changes user demands increase, hence the need to establish systems that accommodate those demands.

In 2014, Gender Links developed and implemented the helpdesk system in order to ensure that GL Staff requests for service and support are streamlined and addressed in a timely manner, based on priority and available resources.

Major activities and projects in which helpdesk system provided significant support:

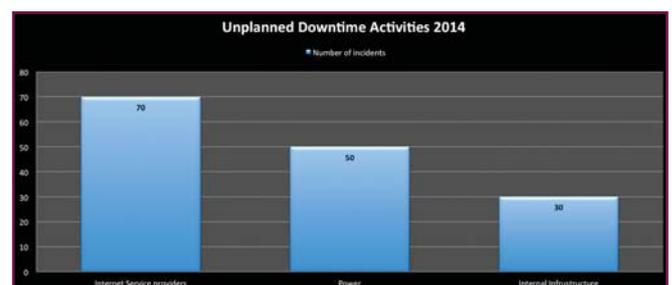
- Computer and mobile device updates and refresh for 40 internal users.
- Migration and consolidation of two different Active Directories and Exchange systems.
- Developed and implemented remote support plan for the organisation through Team Viewer services.

Gender Links uses the "Spiceworks" software to record incidences and issue tickets for all IT queries coming through to helpdesk. In 2014 the IT helpdesk handled approximately 200 queries from internal users. Below is a graph showing the nature of queries handled in year 2014:



Gender Links user demands are directly linked to network availability. However, the availability of the network can be impacted by both scheduled and unscheduled downtime. Typically, scheduled downtime is the result of planned activities and any associated downtime is anticipated and managed. Unscheduled downtime, however, are those unexpected and unplanned events that cause major operational issues and negative customer impact.

The IT department monitors and tracks these unplanned events that result in downtime in order to better identify potential issues and proactively implement mitigating solutions or improvements. The chart below provides a snap shot of unplanned activities by source resulting in downtime as of Jan 2014.



The following measures have been taken to address the above incidents:

- **Internet Service providers:** Gender Links has switched service providers from Telkom to Neotel, who are currently providing the fibre network solution. Telkom lines have been maintained and are being used as backup lines.
- **Power failure:** Gender Links has invested in Uninterruptable power supply (UPS) which keeps the system running for an optimal period of time to switch to a 24 hour power generator.
- **Internal Infrastructure:** Installed state of the art Network access points and increased the number of access points from two to six access points around the premises.

### Key project in 2014

Below a list of some of the projects completed in 2013-14:

- Installation of Neotel fibre optic to increase Internet speeds.
- Pastel evolution and partner to aid Finance and HR systems.
- Built SharePoint environment to support Gender Links web site.
- Active Directory and Exchange Migration: Created application and user reports to assist with email migrations to office 365.
- Completed the migration and consolidation of four different Active Directories and Exchange systems. All employee e-mail boxes, contacts, and calendars were migrated to Microsoft cloud solution.
- Developed an easy to use password reset tool to assist User support.

### The successful conclusion of these projects provided the following savings:

- **Microsoft and licensing agreements provide popular software at significant savings** to Gender Links. New agreements provide current and new Microsoft software at no additional cost for Gender Links-owned computers. The licenses helps to keep computers up-to-date and in compliance.
- **Pastel Evolution and Partner** improves compliance and provides better information. The reports now include retroactive salary transfers, salary cap calculations and a better layout. This means less time processing reports and fewer compliance reviews.
- **Share Point environment** is being utilised to promote green computing, saving 4000 sheets of paper (per month) with online reports while increasing accessibility and convenience. This also helped in minimising data centre power, network and space demands by virtualising computing Infrastructure.

### Security

Gender Links is in the process of developing a comprehensive information security program that includes security awareness training for all staff. Currently, the IT department works to safeguard the enterprise data and systems from unauthorized access, modification, or dissemination to ensure its availability, confidentiality and integrity.

The current GL security protocol covers the following defined Gender Links assets:

- **Information:** Databases and data files, configuration setups, contracts and agreements, documentation and manuals, operational procedures and plans, audit trails, logs, archives.
- **Software assets:** Network and information systems software, application software, software for subscribers, development tools, operational tools, operational software.
- **Physical assets:** Facilities, switches, cables, terminal equipment, network and information systems hardware, network equipment, removable media.
- **Services:** Computing services, network services, general utilities such as power supply, temperature and humidity control.
- **People:** Gender Links staff, IT staff and service providers.

The above have been classified as assets which, when breached and or failing, can have a negative impact on the security or continuity of electronic communications in the organisation.

In the past two years, Gender Links in partnership with Hambisana Technologies has been able to implement a new statistical records system on the Linux server using Symantec EndPoint Protection (SEP). The IT department can now gather and track metrics of infiltrations on server and network computers. On top of that, Gender links has deployed an effective network and computer antivirus, which helps track, clean and block any suspicious infiltrations on the network.

As a way of safeguarding institutional data, a Guest access point was established to allow Gender Links visitors on the network but without access to any institutional drives.

### Challenges

- **Underinvestment:** Being a donor-funded organisation, GL is under constant pressure to keep overhead costs down and generally spend less of operating revenues on ICT. GL often implements

only what is necessary to keep field programs running with its limited funding.

- **Threats are increasing for information security:** This is impacting risk mitigation and legal compliance.

- **Staff rigidity to the ever changing technologies:** As part of the knowledge sharing programme, the IT department has been developing in-house user training manuals and holding IT clinics in order to help staff acquaint themselves with basic IT troubleshooting tricks.

### Risk analysis

Risks	Rate - High/Medium/Low	How these will be mitigated
Unauthorized Access (Unauthorized access via ad-hoc privileges could compromise of confidentiality & integrity of GL data.)	High	Intensify IT security roles & responsibilities.
Passwords are not set to expire; regular password changes are not enforced.	Medium	IT system hardening and weekly security audits.
Remote OS authentication is enabled but not used.	Medium	Inforce remote access control management.
Fire	High	IT disaster recovery Planning and Virtualisation of all backup and file servers.

### Initiatives and Projects for 2015-16

- Virtualisation of Servers, Storage and Backup.
- Initiate Security Project: Conduct the first Gender Links comprehensive network security assessment and analysis.
- Transition User Support staff to support voice, workstation, and user account services.
- Re-designing network Infrastructure.

### GENDER LINKS FUTURE IT INFRASTRUCTURE

