

MAKERERE UNIVERSITY



ICT Policy/Master Plan (2010 - 2014)

(ICT Services and Systems; Management, Control and Maintenance)

Vision

"... University-wide access to and utilization of information and communication technology to enhance the position of Makerere University as a center of academic excellence, and its contribution to the sustainable development of society..."

i.

LIST OF ABBREVIATIONS AND ACRONYMS

ARIS	Academic Records Information System
DICTS	Directorate for ICT Support
DLE	Digital Learning Environment
DNS	Domain Name Service
Email	Electronic Mail
FAQ	Frequently Asked Questions
FINIS	Financial Information System
HURIS	Human Resource Information System
CICTC	Council ICT Committee
IRM	Information Resource Management
LAN	Local Area Network
LIBIS	Library Information System
URL	Universal Resource Locator
WAN	Wide Area Network
WWW	World Wide Web

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1. SUMMARY OF ICT SERVICES AND SYSTEMS POLICY

It is University policy to promote ubiquitous and equitable access to ICT resources for students and staff to the network through the establishment of network infrastructure in all work areas of students and staff.

It is University policy that all services that are common/shared by the whole University community are centrally hosted in the NOC. Allowance shall be made for services peculiar to a specific Unit with an acceptable rationale for central hosting.

It is University policy to provide adequate computing time for each student and staff through the provision of sufficient computing facilities and access times.

It is University policy to manage access control to high security locations on the various campuses through the implementation of a smart access system.

It is the University policy to acquire, deploy, use and dispose of ICT facilities in ways that ensure environmental sustainability

It is University Policy to provide access to ICT services located both within the University network and on the Internet through Common Network Services. Such access will at all times be governed by the University Network acceptable use policy.

It is University policy to provide each student and member of staff with an e-mail address under the official university domain name structure.

It is the University policy to provide Internet access to all its students and staff for use for purposes of facilitating research and learning.

It is the University policy to provide web services for the purpose of disseminating information within the University and to the rest of the Internet community.

It is the University Policy to ensure the efficiency and effectiveness of library operations and services through the use of integrated on-line Library Information System.

It is the University Policy to leverage faculty/unit effectiveness and enable easier access to and coverage of university education by using ICT through the use of Education Technology in instruction, learning and university wide research

It the University Policy to ensure sustainable management of the university's E-learning function and resources through a central operational unit, that will cater for the broad interests of all users through teaching and learning of these different users.

It's the university policy to adopt a common DLE infrastructure and software responsive to academic needs through the designated management unit.

It is the University Policy to ensure efficient and effective management of student academic affairs through the use of an integrated Academic Records Information System.

It is the University Policy to ensure that financial management processes and reporting facilities at both central and faculty levels are streamlined through the use of an integrated Financial Information System.

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It is the University Policy to enhance and streamline the human resource management and administrative processes through the use of a Human Resource Information System.

"It is university policy that all computers in it owns use only licensed software or applications that do not have any legal breaches"

"It is University policy to provide for a centralized and coordinated approach to software development"

2. DATA COMMUNICATIONS INFRASTRUCTURE

The ICT infrastructure is conceived as comprising of three major components: - the data communication network; A Network Operations Center (NOC); computing resources for the users.

2.1. The Data communication infrastructure

The data communication infrastructure provides the essential links between users of information and sources of information. The University shall establish a University-wide data communication network consisting of the following building blocks:

- A data backbone inter linking all buildings for each University campus. The following functional requirements shall guide the technology option used: - Highest speeds, reliability, efficiency, ease of maintenance and sustainability.
- Inter-campus connections between the different sites of the University. Options for either owner or leased links shall be considered whenever a procurement choice is to be made.
- Individual Local Area Networks for all administrative and Academic buildings at each University campus. Every staff shall have provision for network access at a work space and every student computing facility shall be linked to the backbone
- Infrastructure for wireless access within students and staff residences on the various campuses.
- Infrastructure provisions for off-campus access for both students and staff.

The University shall promote ubiquitous and equitable access to ICT resources for students and staff to the network through the establishment of network infrastructure in all work areas of students and staff.

2.2. The Network Operations Center (NOC)

The NOC shall be the home for all back-end servers and related equipment that provide the hardware platform on which all the central network services shall be run. It shall also be the major switching for the data communication network. The University will establish the Network Operations Center (NOC), specially designed with cooling, uninterruptible power supply, backup-facilities, physical protection, and smart access control. To assure a quick turn-around time in case of disasters, a duplicate of the NOC, i.e. a Disaster Recovery Center (DRC) shall be established as at a remote location.

It is University policy that all services that are common/shared by the whole University community are centrally hosted in the NOC. Allowance shall be made for services peculiar to a specific Unit with an acceptable rationale for central hosting.

2.3. User Computing Resources

These consist of computers and related accessories the University community uses to access the various network services and to facilitate work. Every University User shall have adequate computing time to carry out his/her work

It is University policy to provide adequate computing time for each student and staff through the provision of sufficient computing facilities and access times.

Computing resources are categorized between the two groups.

2.4. Staff computing resources

Computing resources to enhance staff operations shall be provided in one of two ways depending on the availability of funds. The University shall either provide a computer at each staff member's desk or a centralized pool of computer resources accessible to all staff members.

2.5. Student computing resources

Setting up of the central computing centers like computer labs in Units and computer kiosks shall be the focus for student access. The University shall also explore possibilities of loan schemes for student ownership of computers to ease the load on these pool facilities.

For both categories of users, wireless network access shall be made available within various campus locations where users can comfortably access ICT services. Particular focus shall be in residential premises and public buildings like the Library.

2.6. Smart Access Infrastructure

Within the context of this policy, the rationale for smart access systems is to increase security of and access to ICT resources. The university shall promote the use of smart access to special ICT services. Two categories are defined: -

- (i) *The back-end (Central server rooms)*. Smart systems shall be established for access by technical staff and other service providers to these locations which include the NOC, DRC and any other locations that the University will deem necessary. A logging function shall be established to ensure fulltime monitoring. Smart access infrastructure (card readers) shall be deployed in such locations and provisions shall be made for availing and replenishing smart cards for different categories of users of these facilities.
- (ii) *The User-end*. Smart access systems will be provided by different service units of the University. This implies that different products may be deployed for this purpose. To ensure interoperability, the terminals (card readers) shall comply with industry standards.

It is the University's preference to use only one card (the student and staff identity card) to access all smart systems that shall be deployed. The following functional requirements shall therefore be considered for the identity card to support this requirement: -

- i. The Card should be useable with an industry standard terminal to allow interoperability with any other card readers of future service providers.
- ii. The chip or magnetic stripe should be multiple read/write to allow Portability of applications as and when need arises
- iii. The smart card system (i.e. application used to produce the card and information thereon) should be Security accredited against *Common Criteria ISO 15408*

It is University policy to manage access control to high security locations on the various campuses through the implementation of a smart access system.

2.7. Acquisition, Deployment, Use and Disposal (ADUD) of ICT facilities

Computers and related equipment have a big potential for potential degrading the environment. The type of equipment acquired, the way it is used and disposed of influence the extent to which such a potential danger can be avoided. Therefore all ICT infrastructure shall be acquired, deployed, used and disposed of in a way that is environmentally sustainable. An ADUD policy that is in line with the procurement and disposal policy of the University shall be developed to guide this function.

It is the University policy to acquire, deploy, use and dispose of ICT facilities in ways that ensure environmental sustainability

3. COMMON NETWORK SERVICES

For the purposes of the Makerere University ICT policy, common data services will be deemed to comprise of:

- Common Network support services that enable the network to function such as the Domain Name Service, Network access proxy service, automatic host configuration service, routing and authentication systems.
- User-level Data Communication Services such as electronic mail, access to Internet, Web Services, which actually are major “users” of the low-level network support services

It is University Policy to provide access to ICT services located both within the University network and on the Internet through Common Network Services. Such access will at all times be governed by the University Network acceptable use policy.

3.1. Electronic Mail Services

Electronic mail (E-mail) services provide users with the means to exchange digital messages using a store and forward mechanism. Electronic mail systems accept, forward, deliver and store messages on behalf of users, who only need to connect to the e-mail infrastructure for the duration of message submission to, or retrieval from, their designated server.

Electronic mail services depend on correctly functioning Network support services, especially the Domain Name System services which enable the back-end servers to locate other e-mail servers and vice versa, and authentication systems that identify e-mail users.

It is University policy to provide each student and member of staff with an e-mail address under the official university domain name structure.

Electronic mail use will be guided by the provisions contained in the acceptable use policy, and will comprise of the following:

- A web interface, providing facilities for creating, addressing, sending, receiving and forwarding messages. This will ensure that users can send and receive e-mail from any computer connected to the Internet, both within and outside of the University network.
- Support for access using standard e-mail clients for creating, addressing, sending, receiving and forwarding messages.
- Support for disk quotas to control the use of storage space
- Mechanisms to control the amount of unsolicited e-mail that users receive
- Mechanisms to intercept e-mails that contain viruses

3.2. Access-to-Internet

Access to the Internet is one of the most valuable communication services for institutions of higher learning. It provides access to a wealth of information sources located on computer systems around the world. Like the e-mail service described above, the service relies on correctly functioning low level network support services.

It is the University policy to provide Internet access to all its students and staff for use for purposes of facilitating research and learning.

Use of the Internet service will be guided by the provisions contained in the Acceptable use policy, and in particular, priority will be given to those users that need the service for academic purposes.

3.3. Web Services

Within the context of this policy, Web services will exist to provide facilities for storage of information formatted as web pages, and make such information accessible to the University community and the general public. The service is subdivided into two sub-services, namely Intranet services and the University web page.

Intranet Services will be used for on-line publication of parts of the University databases within information systems like FINIS, LIBIS, ARIS and HURIS. Further, the service will be used to access course manuals and other study and research documentation hosted within e-learning systems.

The University web page on the other hand will publish information whose access will not be restricted, and therefore will be available to all users on the Internet.

It is the University policy to provide web services for the purpose of disseminating information within the University and to the rest of the Internet community.

4. MANAGEMENT INFORMATION SYSTEMS

The University shall harness the potential of ICTs to enhance the services it offers to its staff and students. To this end, the automation of various management functions and processes through the establishment of integrated Management information systems shall ensure that this core category of University stakeholders is provisioned with various management services in an effective and efficient manner. The core services/processes that this policy with focus on automating fall under two categories – the Academic and the administrative. The Academic shall include: - Library services and Teaching/Learning (E-learning). The administrative shall include: - Human resource management, Academic Records Management and Financial Management.

Academic and Research systems:

Makerere University shall improve its academic and research functionality through information systems that support the efficient management of academic and research processes. These will include e-learning, the library and academic support applications.

4.1. Library Information System

To create an environment in the library that utilizes Information Technology, the University shall provide the library with a Library Information System that shall support its administrative and management processes. This shall ensure circulation control, catalogue maintenance, ability to share resources among libraries at different locations, on-line catalogue access, Statistical reporting and management of information.

It is the University Policy to ensure the efficiency and effectiveness of library operations and services through the use of integrated on-line Library Information System.

4.2. E-learning

The University will enhance its teaching and learning approaches by utilizing modern instructional materials and methods. It will harness the potentials of ICT to facilitate these functions within and outside the classroom. The aim of this shall be to contribute to better quality graduates and to provide greater access to university education, by developing capacity for increased enrolment through non-conventional approaches in teaching and learning, for example Distance Education and Virtual University.

It is the University Policy to leverage faculty/unit effectiveness and enable easier access to and coverage of university education by using ICT through the use of Education Technology in instruction, learning and university wide research

To this end, the University shall create organizational (trainer capacity, training management) and technical (practice lab and computer based training tools, self-paced training mode) conditions assuring continuous in house e-learning training capabilities in the long-term.

E-learning Management:

The E-Learning function will be managed by a central e-learning unit that will be responsible for the university wide direction, management and implementation of the E-learning function. This unit will also be responsible for establishing the Educational Technology Resource centre. It will consist of different categories of people with ICT skills, teaching experience, technical skills, operational skills, and good communication skills

Specifically this unit will be mandated with: - Coordinating of all e-learning activities; Vetting proposals on e-learning; Monitoring and evaluating e-learning implementation at Makerere University; Promoting e-learning through awareness seminars, workshops etc;

Ensuring implementation of agreed policies in the faculty, and guiding the development and implementation of faculty-specific e-learning activities.

E-Learning Resource Centre

The University will establish an Educational Technology Centre, which will be based within the E-Learning unit with the responsibility of providing all required support towards content creating and management. The resource center shall be equipped with all required hard/soft resources and technical expertise to cater for all user content needs.

It the University Policy to ensure sustainable management of the university's E-learning function and resources through a central operational unit, that will cater for the broad interests of all users through teaching and learning of these different users.

Common DLE Infrastructure and Software

The University will establish a common DLE infrastructure and software to support sustainable and effective management of all E-Learning requirements. These will include the Servers, Labs, Trainers and finally the Students. A common DLE environment will foster sustainability in the e-learning function and prevent duplication of Digital Learning Environments in the University as a whole.

It's the university policy to adopt a common DLE infrastructure and software responsive to academic needs through the designated management unit.

Administrative Systems:

The University shall automate its core administrative functions by establishing three integrated information systems targeted to address the Finance, Human Resource and Academic Records Management functions.

4.3. Academic Records Information System (ARIS)

The University will ensure that student academic records are efficiently and effectively managed through the establishment of Academic Records Information System (ARIS). The system shall provide for proper storage, retrieval and manipulation of student personal, academic, admission and financial data. This shall among others aim at reducing on the registration queues, standardizing the academic structure, eliminating duplication of academic courses, enabling automated application and admission as well as managing study records safely and efficiently.

It is the University Policy to ensure efficient and effective management of student academic affairs through the use of an integrated Academic Records Information System.

4.4. Financial Information System (FINIS)

The University will ensure the effective and efficient management of its financial data through a Financial Information System which will enable the automated collection, storage and analyzes of university financial data. The Information System will support and improve Cash collection, debt management, foreign aid management, budgets preparation, ledgers management, accounts payable and receivable including other accounting functions. This will enable the university to make good financial management decisions in budgeting and financial forecasts saving the university money.

It is the University Policy to ensure that financial management processes and reporting facilities at both central and faculty levels are streamlined through the use of an integrated Financial Information System.

4.5. Human Resource Information System (HURIS)

A Human Resource Information System will be implemented in the University to enable the effective and efficient management of the human resource functions through capturing of personnel information and manipulating it to handle the administrative needs of the Human Resource Management Unit. This will enable the university in efficient and accurate planning, recruitment of employees, orientation, training, appraisal, motivation, remuneration, salary administration and pension fund administration through use of the data that is captured by the information system.

It is the University Policy to enhance and streamline the human resource management and administrative processes through the use of a Human Resource Information System.

4.6. Software Applications:

These shall include the operating systems and applications that are used on a typical desktop computer/laptop. The University discourages the use of non-licensed software and aims at ensuring that only legal software is installed on its computers. The University shall endeavor to provide and maintain licensed software applications for all its users using a centralized procurement approach. The software shall be configured and used in accordance with the licence terms and conditions as set out by the copyright holder is used.

"It is university policy that all computers in it owns use only licensed software or applications that do not have any legal breaches"

4.7. Standardization of the operating environment

Standard operating environment (SOE) is a specification for a standard computer architecture and software applications that is used within the University. This ensures that the risks of copyright breaches or license non-compliance are addressed in

addition to improving reporting and reducing the total cost of ownership by increasing efficiency and productivity.

The University will deploy a standard operating environment (SOE) to all client computing systems to deliver a stable, supportable and secure platform for University related activity. This shall be operationalized at a Unit level. Exceptions to the SOE and permission to self install software are subject to approval by the central IRM Unit.

University clients who acquire and/or install software are responsible for ensuring that they do so in accord with the relevant IRM procedures. In all instances clients must ensure that software is used in accordance with the license terms and conditions as set out by the copyright holder.

4.8. Software Management:

The University will manage all its software from a centralised IRM unit, which will identify a list of software applications that is made available to University clients as required. The University categorizes software into two types for the sake of identification of ownership, security, support, responsibilities and sustainability of the software;

Crosscutting University Software

This refers to applications that shall be accessed from a central location (Servers) and used by the entire university. These applications shall be hosted in the university secure Network Operation Centre and shall be supported and maintained and managed by the Central IRM Unit. These include among others the University administrative systems (ARIS, FINIS, HURIS), E-learning platforms, Anti-virus software, etc.

Unit Specific Software

This refers to applications that are acquired and used by a unit/faculty to suit the needs of that particular unit or faculty. The procurement and administration of these applications shall be the responsibility of the respective unit. However the IRM Unit will evaluate ALL software to determine its resource requirements, its compatibility with other University systems, its interface requirements to existing University systems if any, its security capabilities, deficiencies, and/or vulnerabilities and to make sure there are not already existing University software systems that provide equivalent functions.

4.9. Software Acquisition:

The acquisition of any new central University systems will be done in consultation with the central IRM Unit. At the time of acquisition, the University shall consider the most appropriate option among the following with the guidelines as defined therein: -

Software development

For crosscutting software, the central IRM unit shall have to be consulted at all stages of development so as to meet the required standards. For unit specific software the development will be done in consultation with central IRM Unit. In either case, development of software will done in consideration of cost and human resource to ensure optimisation of effort.

All university administrative and research systems will be developed centrally in order to prevent duplication of effort and maximize resource utilization. Existing systems will be extended/fixed/upgraded where possible rather than source new solutions. User requests for enhancements will be managed through a clear change control mechanism.

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Off-the-shelf software (Propriety Software)

For crosscutting software, identification of software, procurement and modification to suit university specific needs will entirely be the responsibility of the central IRM unit in consultation with the Data Owners. Procurement of unit specific software shall be the responsibility of the respective unit but shall be done in consultation with the IRM Unit.

The IRM Unit will advise, conduct an evaluation of the desired system with the department and vendor, and will provide an assessment detailing all of the aspects of the evaluation. The Faculty or department or unit will then have all of the necessary information to make an informed decision as to whether they want to acquire the system.

Free and Open Source Software

Open source software (OSS) is that for which the source code and related rights are freely available to the public domain for use, change, improvement of the software, and redistribution in modified or unmodified forms. The University encourages the use of such software where applicable as it typically provides a sustainable solution in addition to developing technical capacity

It is the university policy to, as far as possible, use open source software as a first option in all applicable scenarios.

4.10. Software Ownership:

For developed software, ownership refers to authority over the source code. For propriety software, it refers to the ownership of the licenses that come with the software.

Titles to computer software and software support materials developed by faculty/unit, employees, and students of the University shall belong solely to the University

It is University policy that all Software acquired by or through the university will belong to Makerere University.

4.11. Security:

The University will meet its goals of protecting the confidentiality, integrity and availability of information and information systems from unauthorized access, use, disclosure, disruption, modification or destruction.

Access rights (refer to ISP doc)

The university will, from time to time, establish access levels, rights, privileges, obligations and sanctions consistent with the University Information Policy, aimed at enabling easy access to corporate data and information needed for the different roles of the university community, while assuring the integrity of such data and information and respecting the privacy of individuals.

Antivirus Solution

The university will ensure secure computer working environments by providing protective software designed to detect, remove and defend all university computers against malicious software or malware or viruses. The university will establish appropriate guidelines for usage of the antivirus in consultation with the computer owners and central IRM Unit.

It is University policy that all computers in the university MUST be installed with a centrally managed anti-virus software according to the guidelines provided by the central IRM Unit.

5. MANAGEMENT OF UNIVERSITY DATA

Institutional data refers to all data created, collected, maintained, recorded or managed by the university and/or agents working on its behalf, which satisfy one or more of the following criteria:

- The data is relevant to planning, managing, operating, or auditing a major administrative function of the university;
- The data is referenced or required for use by more than one organizational unit;
- The data is included in an official university administrative report;
- The data is used to derive a data element that meets these criteria;

This data can be contained in any form, including but not limited to documents, databases, spreadsheets, email and web sites; represented in any form, including but not limited to letters, numbers, words, pictures, sounds, symbols, or any combination thereof; communicated in any form, including but not limited to handwriting, printing, photocopying, photographing, and web publishing; and recorded upon any form, including but not limited to papers, maps, films, prints, discs, drives, memory sticks and other computing devices.

5.1. Types of Institutional data

- Research Data* – refers to all outputs of creative work undertaken on a systematic basis in order to increase the stock of knowledge and information. Examples include research publications (books, book chapters, journal articles, conference publications, thesis and dissertations), project/annual reports; planning documents (policies, strategic plans).
- Library Data* – refers to data, which contain information on university library profiles such as subscribed journals, available print collections (books, serials and references), available special collections (photos, music, archives).
- Academic Data* – refers to data, which contain information on university academic profiles such as courses/curricula, enrolment, degree/transcript, course/examination timetables and alumni.
- Student Data* – refers to information relating to student characteristics (course & residence registration, academic performance, financial status) and student demographics (region, age, sex, religion).
- Human Resource Data* – refers to data, which contain information on the human resource profile of the university such as establishment; staffing level; procedures and manuals; benefit schemes and beneficiaries.
- Personnel Data* – refers to information relating to staff characteristics (qualification, rank, pension accrued, compensations, salary etc) and staff demographics (region, age, sex, religion, marital status, department etc).
- Financial Data* - refers to data, which contain information on university financial profiles such as revenue, expenditure, budget, assets and facilities.

Policy Guidelines

University community members require access to different categories of institutional data in support of the university's teaching, research and outreach missions. This section of the policy is intended to help ensure that such access is within acceptable norms and that appropriate management, ownership and security arrangements are instituted.

University community members working with or using institutional data in any manner must comply with all applicable country laws and all applicable university policies, procedures and standards; and all applicable contracts and licenses.

5.2. Roles and Responsibilities

The university shall ensure that roles and responsibilities associated with each institutional data are well defined. Roles shall be defined to include:-

- *Data Owner* – a mandated unit or official with management, policy and operational responsibility for areas of institutional data. Thus, the Academic Registrar, including its staff, is responsible for the academic data.
- *Data Custodian* - a university unit or employee responsible for the operation and management of systems and servers which collect, manage, and provide access to institutional data. Thus, the director DICTS, including its staff, is responsible for managing the server infrastructure that houses the academic data (ARIS).
- *Data User* - a university unit or community member using institutional data in the conduct of university business. Thus, faculty staff (e.g. faculty registrars), who need access to academic data, are examples of data user.

Data owners must implement a formal data classification process for institutional data under their stewardship. This process must assess the criticality and required confidentiality of data elements, as well as the risk of exposure or loss. Three level of classification shall be adopted;

- *Public* – Data intended for broad distribution in support of the university's missions or freely available to any person or organization with no restrictions;
- *Limited Access* – Data available without restriction but whose integrity must be carefully maintained;
- *Restricted* – Data protected or regulated by law or critical to university operations including sensitive personal information such as Social Security Numbers, proprietary information and trade secrets.

The university shall ensure that information relevant for tactical and strategic needs of university management and top executives is provided in a timely and easy to access way. The university shall therefore, promote and support the development of high level reporting applications that consolidates data from across all institutional databases using data mining and/or other approaches.

5.3. Data Security

Institutional Data must be safeguarded and protected according to approved security, privacy and compliance guidelines, laws and regulations established by the University and/or the country. Permission and access to institutional data shall be granted in accordance with defined access and use policies and procedures determined by the Data owner [see ISP].

The University shall develop and implement an appropriate backup and restoration policy, a business continuity plan and information security policies to ensure protection, integrity and reliability of all institutional data.

The university shall promote the development of a centralized system of authentication that ensures users of the University's information technology resources and associated data are correctly identified, authorised and authenticated before access to the corresponding systems and resources is granted.

The university shall ensure that whenever certain portion of a given institutional data is generated and maintained by an external party – example UNEB results; fees payment at respective banks - appropriate procedures and guidelines are developed to guide the exchange of such data.

6. END USER SKILLS DEVELOPMENT

End users are the University employees and students who make use of the available ICT resources and they generally fall into two categories; students and staff. End user skills have to be developed so that all users are able to:

- Use ICT services and systems effectively and as independently as possible.
- Contribute to the specification, design and implementation of ICT applications.
- Be aware of the shared responsibilities for equipment, software and data, and enforce an atmosphere of collective responsibility and system ownership.
- Manage and control complex project oriented processes, like implementing University-wide infrastructure or information systems.
- Establish and sustain effective, effectively use the available ICT resources for academic, administrative, or managerial tasks.

6.1. Basic ICT skills

Students shall be ICT literate during their time at university. The Faculty of Computing and IT (CIT) shall develop a standard cross-cutting basic ICT skills course which should be adopted and administered by all University units. CIT shall be required to vet the lecturers who teach this course in each unit and it shall also carry out the monitoring and evaluation function.

It is University Policy to ensure that all students take the introductory basic ICT skills course at the beginning of their training and are provided with progressive and continuous ICT courses that are tailored to their specific academic programmes.

It is therefore University policy that effective August 2010, all students in all faculties are required to take the prescribed introductory level module(s) that will be credit carrying modules within twelve months of first registration.

Staff shall be trained on a continuous basis in order to build their ICT expertise and experience. This will ensure that they are competent enough to use ICT resources and to keep abreast of the dynamic and ever changing nature of ICT in Higher Education.

The University shall provide training that is innovative and adapts to both the dynamic changes in ICT and changing staff training needs and caters for staff at different levels of expertise in order to build capacity.

It is University Policy to train staff on a continuous basis in basic ICT skills and other skills relevant to their jobs and require that all new staff to be recruited possesses the relevant ICT skills for the jobs applied for.

It is therefore University policy that:

(a) Effective July 2010, all staff recruited into positions at or above M14 are required to demonstrate the prescribed level of competence before formal appointment.

(b) Before appointment to Assistant lecturer level, academic staff are required to demonstrate the prescribed level of competence in technology enhanced interactive learning techniques. Staff already at or above this level will be

required to acquire the prescribed competence by the end of December 2010, or such other deadline as may be set by Council.

6.2. Academic specific skills

Although the Quality Assurance Directorate is mandated to oversee the development of academic programmes in the University, each academic and research unit shall be required to develop progressive and continuous ICT courses that are tailored to their specific academic disciplines. This will ensure that students apply ICT skills throughout their learning experience.

It is University Policy to ensure that students are provided with progressive and continuous ICT courses that are tailored to their specific academic programmes.

6.3. Administrative skills

Staff shall be able to understand and use the core University administrative applications such as the human resource information system. The Human Resource Directorate shall develop and implement training strategies that help staff to make use of all the functions provided by the applications.

It is University Policy to provide staff with training that equips them with the necessary skills to fully utilize the core administrative applications.

Library services

The University Library makes use of ICT to provide access to a wide range of electronic information from both University and external sources. The end users shall have the information literacy skills to effectively use the electronic information which include electronic journals, databases and other resources.

The University Library shall organize and conduct training that will:

- Create awareness about the wide range of available information resources
- Equip users with skills for determining their information needs
- Provide users with the ability to locate and retrieve relevant information
- Enabling users to evaluate information and its sources
- Facilitate users' understanding of ethical and legal issues surrounding information use.

It is University Policy to ensure that end users are provided with training that enables them to effectively utilise electronic information resources.

6.4. E-learning skills

E-Learning describes learning done at a computer which is usually connected to a network, giving users the opportunity to learn almost anytime, anywhere. Development of e-learning skills assures appropriate and effective application of e-learning to teaching and improves student learning.

The E-learning unit shall develop training packages for both staff and students and put in place evaluation and support mechanisms to ensure quality assurance of materials. This unit shall also set up an e-learning laboratory to develop local capacity in development and evaluation of appropriate training software.

Academic staff members shall continuously make use of e-learning to enhance the effectiveness of their teaching and provide students with an e-learning experience throughout their programmes of study.

It is University policy to ensure that students take an introductory e-learning module(s) that is mandatory and continually use e-learning in their different programmes of study.

It is University policy to provide staff with training so that they can adopt e-learning technologies and develop their e-learning skills.

7. ICT MANAGEMENT

ICT management involves the adoption of complimentary strategies in three key areas:

- Budgeting and finance
- Human resource
- Policy and best practice

To derive more value from organizational ICT investment, **ICT management** requires flexibility, constant learning and appreciation of the specific implementation of ICT.

The University has decided on the following general policies for the development and sustainability of appropriate Information Resources Management (IRM) capabilities. The general policy includes short-term IRM policies, long-term IRM policies and ownership policies.

It is the University Policy to ensure sustainable management of the university's ICT policy and resources through the creation of appropriate policy, advisory, management and operational organs that will cater for the broad interests of all users.

It is the University Policy to provide for the growth and financial sustainability of its ICT resources through appropriate funding and operational mechanisms.

General ICT Management Policy

The university will establish policy and operational structures to oversee the management of the ICT in the entire university.

At the policy level, the Council ICT Committee (CICTC) will be set up by Council, while at the operational level, an Information Resource Management (IRM) Unit shall be established.

7.1. Council ICT Committee

The CICTC will have internal representation from academic faculties nominated from the humanities and Sciences, students and administration of the university. Representation will also be from external ICT stakeholders like Government. It will be chaired by the Vice Chancellor. The IRM unit shall be the secretariat to this committee. The Committee will be responsible for providing a high-level mechanism to:

- Monitor and control the progress of all activities arising from the implementation of the University's ICT Policy;
- Allocate resources according to the agreed master plan
- Budget for the cost of management, operations, maintenance and expansion through the university budget
- Recommend proposals for cost-recovery and cost-sharing

- Determine /approve ICT Policy adjustments arising from technology trends or new visions and strategies.

7.2. Information Resource Management

The university shall adopt an ICT management model with service deployment at both the centralized and decentralised levels to offer complimentary support services across the units.

It is the university policy to provide adequately skilled and resourced ICT management structures and procedures to ensure timely access to support services by all end-users.

Centralised support - Central Information Resource Management (IRM) unit

One centrally organized, service oriented, unit (not necessarily geographically concentrated) will be formed. The primary tasks of this unit/department are management and maintenance of common ICT systems and End-user support. This organizational unit will be appropriately named as it evolves. Due to the cross-cutting nature of the duties of the central IRM unit, affecting all academic and administrative units of the university, the head of this unit, the Director, will report to the Vice Chancellor.

Decentralised support – Network administrators

Network administrators will be profiled and recruited under the central IRM and deployed to offer first hand trouble shooting and support at all user –units and escalate relevant queries to the central support unit. Network administrators will report to the central IRM. Additional support can be recruited by individual units if required.

7.3. User Forum

There will be established User Forum (UF) composed of representatives from the Sciences and Humanities faculties on the academic side, as well from the administrative units. Representatives will be selected on the basis of understanding, interest and ability to articulate collective faculty ICT requirements.

The User Forum will provide a forum for the development and continuous review of the University's information architecture, ensuring that it conforms to the common vision of the end users. The UF will be a change driver, providing inputs for DICTS and the Council ICT Committee, and shall therefore be a high level forum where faculties are represented by the Dean or the Deputy Dean, and administrative units by the Head of the unit or the Deputy to the Head. DICTS will provide the secretariat to the UF. The Forum will not exceed 10 representatives including DICTS as the secretariat.

The UF will be operationalised by Council after the end of the project phase of the University ICT project.

7.4. General information resource ownership policy

Ownership

For each ICT service* an "owner" will be defined. Ownership of specific ICT resources will be determined by the university's general management. For example: the Finance Department would be the owner of the Financial database server computer and the financial database. All servers for cross –cutting services will be hosted at Network operating centre (NOC) managed by the central IRM unit .

* Database services, Information systems, Network services, E-learning and Library services

Owners of different ICT resources will be responsible for monitoring and evaluation of ICT access and usage in facilitating the objective of the designated unit core functions in particular and the university strategic objectives in general.

Ownership of common ICT resources (e.g. communication infrastructure, general services) will be delegated to DICTS.

(see also Responsibility section of the University Information security policy)

It is the university policy to ensure sustainable integration, access and use of ICT resources through the formulation of appropriate guidelines and protocols

Hiring of External Expertise

Owners are allowed to hire certain support services from external professional providers in consultation with DICTS, only if cost-effective and if the expertise involved is not (yet) available in the University and will (cannot) not be developed provided by DICTS.

Service Levels

A service-level agreement (SLA) is a negotiated agreement between two parties where one is the customer and the other is the service provider. This can be a legally binding formal or informal 'contract' (internal department relationships).

The SLA records a common understanding about services, priorities, responsibilities, guarantees and warranties. Each area of service scope should have the 'level of service' defined. The SLA may specify the levels of availability, serviceability, performance, operation, or other attributes of the service such as billing. In some contracts penalties may be agreed in the case of non compliance of the SLA. It is important to note that the 'agreement' relates to the services the customer receives, and not how the service provider delivers that service.

Service levels of the central IRM unit will be determined between the university and the relevant Service providers through DICTS, in line with the ICT services/systems provided and related service level requirements.

Internal service level will also be defined between the central IRM and the central university ICT service support unit and the internal user departments of the university.

SLAs will be documented and disseminated on the university website in the public domain

It is the university policy to ensure the provision of reliable , timely and competitive ICT services from external and internal service providers to support dynamic ICT requirements for academics and research.

7.5. Sustainability of ICT resources

The key recurrent cost elements that should be considered include:

- Cost of bandwidth (very high especially in Africa)
- Cost of maintenance of equipment and applications
- Recurrent cost of software licenses (application for the main information systems, specialized applications, database platforms, and desktop applications).
- Cost of replacement of equipment: a computer bought today must be replaced in three to five years time.

- Emoluments for ICT professional – generally at levels that are likely to be higher than average because of competition for the same human resource by the private sector

The university will develop and institutionalise relevant strategies for funding, policy drivers and human skills. Relevant internal and external stakeholders and development partners will be engaged to provide solutions for sustainable ICT resources.

Technology Fee

The University Council will put in place a technology fee payable annually by each student to ensure that ICT services and systems can be expanded and sustained at the level compatible with the University's needs.

Information, Education, Communication (IEC)

Given the cross-cutting nature of ICT in enabling the effective realisation of the university strategic objectives, the IRM unit should be represented at all appropriate forums including senior university management.

A three pronged strategy for information dissemination to inform, educate and communicate will be used to ensure all university stakeholders' continued ICT awareness, functional education and skills development. The IEC strategy will facilitate integration ICT into all university functions, develop and sustain cordial public relationships between end users and central IRM management .

Technology Watch Function

The central ICT support unit will institute a technology watch function that monitors progress and innovations in ICT, in order to advise, implement innovative and sustainable ICT solutions to promote Makerere's strategic objectives.

Collaborations

Makerere will continue to improve its internal ICT infrastructure and systems to leverage research and academic collaborations with other institutions of Higher Education, in content creation. This will further improve affordability of scarce ICT resources and add value thru shared resources.

Internally, DICTS will collaborate with designated ICT academic and research units on a non-profit basis, for the development of sustainable ICT solutions.

It is the university policy to monitor and implement sustainable ICT innovations responsive to dynamic ICT requirements to improve academic, research and administrative performance.