ICT
A Status Review of ICT in Universities in the SADC Region
Studies Series 2007
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February 2008

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southern african regional universities association
Leading Regional Development through Higher Education
SARUA is a not-for-profit leadership association of the heads of the public universities in the 14 countries of the SADC Region. Its mission is to promote, strengthen and increase higher education, research and innovation through expanded inter-institutional collaboration and capacity-building initiatives throughout the Region. It promotes universities as major contributors towards building knowledge economies, national and regional socio-economic and cultural development, and for the eradication of poverty.

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The future of African research and the construction of the Knowledge Society are fundamentally dependent on high quality and affordable ICT.

In this regard SARUA commissioned the current study in order to present a status review of Information Communication Technologies (ICTs) in public universities across the SADC Region.

ICTs have become vital to the overall competitiveness of nations and are therefore critical to Africa’s long-term economic growth. ICTs make possible the fast, efficient and cost effective communication between countries and across continents which underpins the global economy. In addition, high-value ICT products and services themselves form part of an expanding network of international trade and commerce.

Over the past 20 years, ICTs have become an indispensable tool for the delivery and management of Higher Education. Underlying this is the fact that ICTs are ubiquitous in a knowledge society, and cannot be separated from a society’s education and learning systems. Indeed, Higher Education Institutions have a responsibility to ensure that their graduates are competent in the use of ICTs as they enter the world of work.

ICTs form the backbone for science and technology innovation, research and publication. Building a knowledge economy, establishing strong and innovative research communities and centres of excellence, disseminating new knowledge and participating in the global information and research societies are critically dependent on high quality ICTs; much as our economies are dependent on electricity and transport infrastructure.

Examples of innovative and novel ways in which ICTs are being used to improve Higher Education delivery and performance are found in Higher Education Institutions throughout the world. The internet, e-learning, virtual classrooms and learning networks can all be used to expand the quality, accessibility and relevance of Higher Education. ICTs are also being used to develop new education models to deliver a diverse array of learning experiences.

SARUA commissioned this study in order to determine the status of ICT current capacity vs. needs – and anticipated needs – at Higher Education Institutions in the SADC Region. While the study focuses mainly on bandwidth, it also looks at Acceptable Use Policies (AUPs) and the extent to which ICTs are integrated in the operations and teaching functions of universities.

The outcomes of the study include an assessment of the critical constraints and gaps that exist in the ICT infrastructure of Higher Education Institutions, and in the deployment of ICT systems. It also notes that the time is ripe for National Research and Education Networks (NRENs) to emerge and leverage ICT assets such as fibre-optic cable backbones in a strategic and collaborative manner.

SARUA is proud to be part of a process that helps focus the discussion and debate on the role of ICTs in African Higher Education. SARUA is confident that the information and analysis contained in this study will contribute to this process.

Piyushi Kotecha
Chief Executive Officer
SARUA

11 March 2008
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ACKNOWLEDGEMENTS

My sincere thanks to all the members of staff of the Southern African Regional Universities Association (SARUA), especially Ben McGarry and Coco Belgarrab, who assisted every step of the way in this assignment including formatting and disseminating the questionnaire and following up to obtain responses from member universities.

Also my sincere thanks to all those who took the time off to provide information required or to discuss aspects of Information and Communication Technologies (ICTs) in the region and in higher education institutions in the region especially Duncan Martin of Tertiary Education Network (TENET) of South Africa, Heloise Emdon of the International Development Research Centre (IDRC) and Mike Jensen, independent consultant. Thanks also to Karanja Gakio of Cyberplex Africa who supplied me with detailed information from the African Tertiary Institutions Connectivity Survey (ATICS) of 2006.
EXECUTIVE SUMMARY

Information and Communication Technologies (ICTs) have become a necessary and indispensable tool for higher education institutions all over the world. ICT underpins the development of knowledge economies. In the SADC region, universities are actively integrating ICTs into all their operations including administration, teaching, learning and research. There are also several initiatives at the national and regional level to deploy ICT infrastructure and especially telecommunication infrastructure. The time is therefore ripe for an institution like SARUA to play a critical role in advancing its member institutions’ efforts to develop and integrate ICTs at the institutional, national, regional and international levels.

At the institutional or campus level, SARUA’s member institutions are making available computing resources including the Internet to the student and staff bodies. Many of the institutions have deployed campus backbone networks and installed Information Management Systems (IMS). A most interesting development has been noted on the e-learning front. All the institutions responding to a survey conducted as part of the study report have an e-learning initiative or application deployment underway, compared to only about a half of the institutions reporting such initiatives in an earlier survey in 2006. It is important to note that these institutions have in many cases created dedicated ICT management units reporting to the top university management and have also enacted ICT and ICT-related policies.

Despite these efforts, SARUA’s member institutions continue to experience critical constraints and have gaps in their ICT infrastructure and system deployments. Teaching, research and administration staff enjoy much better access to computers than students do, with on average about four teaching staff per computer, three administrative staff per computer and 70 students per computer when considering full-time campus based students. This falls far short of the target of five students per computer as recommended for US universities according to a recent report. Inadequate and expensive bandwidth is still a major challenge. As the African Tertiary Institutions Connectivity Survey (ATICS) found a year ago, the institutions’ bandwidth situation can still be said to be “too little, too expensive and not well managed.” While the average amount of bandwidth per university has gone up compared to a year ago, none of the universities surveyed has close to or over 100 Mbps connectivity. With Gigabit connectivity becoming de rigueur for universities in Europe, the Americas and Asia, SARUA’s member institutions and indeed other African institutions have a long way to go to catch up with their peers elsewhere in the world. Costs of connectivity seem to have gone down by almost 50% compared to a year ago but at about US$2 430 per Mbps, these costs are over 20 times what American and European households enjoy. It is worrying that some universities still do not have ICT policies and only a little over half report having an Acceptable Use Policy (AUP) in place. Indeed, while universities continue to embrace e-learning, only about half of the institutions have developed e-learning policies and provide training for their staff. Enabling policies are necessary for the effective utilization of scarce and expensive ICT resources. Procurement of ICTs at a majority (75%) of the institutions is decentralized to individual departments and some universities operate without any ICT standards to guide acquisition and replacement. This means that universities are probably unable to leverage bulk institutional purchasing power to negotiate lower costs for ICTs. Lastly, there is no evidence of ICTs being used for advanced research. As research is a cornerstone of a university’s activities, this must be brought to the attention of institutional heads.

On the national and regional front, many countries are in the process of developing and deploying national fibre-optic cable backbones. There are also “alternative infrastructure providers” such as electricity companies with substantial fibre assets although the use of these assets is still restricted by regulatory, business and pricing issues. Nevertheless, the time is ripe for National Research and Education Networks (NRENs) to emerge and leverage the increasing availability of these fibre assets. Many countries have few universities and could benefit from a regional rather than, necessarily, a national, Research and Education Network. Already, the Ubuntunet Alliance (UA) has plans to develop a regional REN-like network (the Southern Cluster) and these plans should be supported. SARUA and UA are natural strategic partners that can leverage on each other’s strengths to ensure that a regional REN is developed and deployed collaboratively rather than through possibly two separate initiatives.

Indeed, SARUA has a critical role to play to support its members to overcome some of the capacity constraints and gaps in their endeavors to integrate ICTs into their operations. The overriding goal for SARUA should be to ensure that its members effectively and efficiently integrate ICTs into their operations, without competing with or duplicating their
existing efforts. SARUA’s roles, strategies and activities should, therefore, focus on adding value to its members’ existing and planned efforts, while leveraging its network of members to bring the expertise, knowledge, experience and skills inherent in that network to bear in addressing the challenges they face. SARUA can achieve this by acting as an advocate, facilitator, convener, coordinator and trusted neutral advisor. SARUA is endowed with political capital, by virtue of its membership, with the authority to speak for its members in advancing their causes. One of the biggest contributions SARUA can make to its members’ efforts is to launch an advocacy campaign in support of their members’ efforts at the institutional, national and regional levels. The time is ripe for SARUA’s involvement.
1 BACKGROUND

This study and its resultant report were commissioned by the Southern African Regional Universities Association (SARUA). SARUA’s main stakeholders are the leaders of the 64 public universities in the 14 countries of the Southern Africa Development Community (SADC) of which 45 institutions are currently SARUA members.

1.0 Objectives of the Study

The overall objective of the assignment was to produce an Information and Communication Technology (ICT) strategy document for SARUA that will contain the following:

- A status review of ICT in the universities across the SADC region;
- Status of current capacity vs. needs – and anticipated needs – mainly focusing on bandwidth but to also include Acceptable Use Policies (AUPs) and the extent to which ICT is integrated (or not) into the operations and teaching functions of the universities;
- Recommendations on short/medium/long term strategies to address the major issues identified (including access to and management of any potential additional significant resources).

1.1 Methodology

The assignment was carried out following a three-step process.

Step 1: Discovery
The first step was to identify and gather information on a) the status of ICTs in SARUA’s member institutions b) the status of ICTs especially telecommunication networks at the national and regional levels, and c) existing and planned ICT initiatives at the institutional, national and regional levels. The required information was gathered through searches on the internet, a survey questionnaire sent to all of SARUA’s member institutions, past ICT survey reports/ informal interviews and discussions with key experts and the consultant’s personal contacts. The survey questionnaire was formatted and distributed by SARUA’s staff.

Step 2: Analysis
All the information gathered during the discovery phase was reviewed and an analysis undertaken to determine the current status of ICTs, the needs and gaps that exist and the major challenges faced at the institutional, national and regional levels.

Step 3: Design and Development
The final step involved design and development of strategies based on the needs, gaps and capacity constraints identified during the analytical phase.