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Digital Libraries

By Diana Rosenberg



Digital technologies have profoundly changed the ways in which students learn and scholars do research, teach and contribute to the growth of knowledge. University libraries are faced with the challenge of using the technology to provide the most effective enabling infrastructure to make digital scholarship and learning possible.

In this special issue, we have asked a number of librarians to tell us how they are facing the digital challenge. From the University of Nairobi come thoughts on library automation. The Higher Education Commission in Pakistan tells us how they have gone about marketing e-resources, while the University of Dar es Salaam provides information on its current ways of monitoring and evaluating their use. Facilitating end user access to electronic information resources by enabling search and retrieval at document level in one single interface is the wish of many libraries, and there are two articles on the ELIN@ service. The Institutional Repository movement is presently gaining momentum and holds great promise for

About INASP

The mission of INASP is to enable worldwide access to information and knowledge with particular emphasis on the needs of developing and transitional countries.

We work with partners around the world to encourage the creation and production of information, to promote sustainable and equitable access to information, to foster collaboration and networking and to strengthen local capacities to manage and use information and knowledge.

Our objectives are to

- Improve access to scientific and scholarly information
- Catalyse and support local publication and information exchange
- Strengthen local capacities to manage and use information and knowledge
- Foster in-country, regional and international cooperation and networking
- Advise local organisations and agencies on ways to utilise information and publishing to achieve development goals.

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bridging the gap between campus/institutional producers of information and all those who can benefit from it. We have three related contributions, from Yale University, from CLACSO in South America and from University of Western Cape on its electronic theses project.

Finally we cover some of INASP's recent initiatives in this area: its report on the current status of digital libraries in Africa, bandwidth management and optimisation activities and a situational review of scientific and research information in Bolivia.

Bandwidth management and optimisation: the importance of executive management and leadership

Bandwidth management and optimisation activities are often not undertaken in universities and research organisations – or, when they are, they often face significant problems. Contributing factors include:

- lack of information, skills, knowledge and actions at a technical level;
- lack of leadership and direction to help guide actions and policy development; and
- a non-supportive wider strategic and policy framework within which the appropriate technical solutions can be implemented.

Executive level leadership is essential to provide the supportive framework within which bandwidth can be managed and optimised. Appropriate strategies and policies need to be developed and implemented to address these challenges. Technology alone cannot provide the solutions. Leadership, management, strategy and policy development are essential for successful change in this area.

INASP and various partners will be undertaking a range of capacity development activities in these areas including management seminars, briefing sessions, training workshops and tools development. Over the next six months the focus will be on:

- policy development workshops and training materials to support the development of supportive policy environments;
- network traffic monitoring and analysis workshops, training materials and software tools;
- development of a community portal for resource distribution and online information exchange: www.bmo-community.org;
- network control and network traffic shaping workshops, training materials and software tools; and
- content caching and filtering and authentication workshops, training materials and software tools.

Over the next 6 to 12 months these will be targeted at universities in Congo, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Malawi, Rwanda, South Africa, Senegal, Tanzania, Uganda, Zimbabwe.

Representatives from universities within these countries are invited to contact Martin Belcher: mbelcher@inasp.info for further information and to register their institution to participate in these activities.



University of Nairobi Library's automation project: lessons learnt

by Salome Mathangani

Presented here is a brief analysis of the University of Nairobi (UoNBI) Library's automation project to show what lessons have been learnt, and what aspects would – with hindsight – have been approached differently.

Initial efforts for the automation of the University of Nairobi Library started in the early 1980s, however the idea only materialised in 1999 when an agreement was signed between the Free University of Brussels (VUB) and UoNBI. The agreement provided *VUBIS*, an integrated library system developed by VUB, for one-third of the cover price, as part of the Network/E-Lib project (itself a component of the UoNBI/VLIR project). Four modules of the system were planned, with phased implementation and training of in-house trainers for each module.

The project took off in April 2001 with the installation of the cataloguing module, the retrospective conversion of the catalogue records, the bar-coding of loanable materials, and the launching of the online public access catalogue (OPAC). The circulation module has been installed and is soon to be launched.

It took a long time to implement the original idea. During the intervening period the library went through an automation planning process as laid out in textbooks – actual implementation has taken about four years and is still ongoing. The process has presented many challenges, but its main objectives have been realised. The project has been a learning experience from the management of the planning phase, identification of the system, negotiations with the supplier and the implementation process. In retrospect, the question arises as to whether it would have been possible to employ a different approach given the existing circumstances.

The conceptualisation of the project was unnecessarily narrow, restricted to computerisation of the library's functions and the creating of a bibliographic database. A more embracing concept would have recognised that the real challenge entailed moving the library from a hard-copy setting to a newly established electronic environment, and ultimately integrating the two for the maximum benefit to users. A phased planning process would then have considered automation, digitisation, local content, institutional repositories, and information skills, etc.

However the challenges of an all-embracing approach were outside the scope of the library and the UoNBI and include crucial national issues like research, learning, preservation of information, etc. With this in mind, the planning process should have included official representation from relevant bodies, e.g. the Ministries of Education and Information and Communication; the Commission for Higher Education, etc. Such an approach would have ensured that:

- issues relating to infrastructure and connectivity received appropriate attention and at the right level;
- subsequent matters including issues of intellectual property, licensing, subscription to online databases, etc. received the necessary national attention; and
- the formulation of policies and official plans took cognisance of the role of information, libraries and the contribution by librarians within these developments.

Secondly, the issues confronting the UoNBI Library were not peculiar to the institution and UoNBI Library had the opportunity to propose some form of joint approach. This would have facilitated the following:



- pooling and sharing of resources (human and financial) and experience;
- one voice in dealing with vendors and suppliers of systems and equipment;
- a common approach to the pressing issues of maintenance and sustainability; and
- application of cooperative strategies to deal with such issues as research on use, networking, local content, and developing of local metadata.

Finally the project would have benefited from wider consultations with our many partners and links at the international level. There would have been a rich harvest of experience out of which would have emerged the most suitable solution.

In conclusion the ongoing automation project of the UoNBI Library has come some considerable distance and achieved most of its main objectives. However, an important fact to note is that the potential and full impact of this project and its related development remains unrealised. This position has implications that go beyond the immediate institutional level as they touch on issues and agendas with national and international considerations. The newly formed Kenya Library and Information Services Consortium offers a forum through which some of the issues raised here might be addressed.

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Marketing e-resources to university staff and students in Pakistan

by Amina Said

The Digital Library (DL) Project of the Higher Education Commission aims to support the information requirements of the research sector in Pakistan by providing relevant online information resources and the skills to utilise them.

Presently there are over 17,000 journals being provided to over 150 organisations that include public sector universities, private sector universities and other research and development institutions.

The provision of access to databases is, however, not enough. The Digital Library Project has encountered many challenges, the greatest of which has been spreading awareness and encouraging usage of the resources acquired.

Various promotional materials have been developed to promote awareness of the resources, including posters and pamphlets. These have been distributed throughout the campuses of participating institutions. Institutions have ensured that this material is displayed in their libraries and that students can obtain this information readily. Bookmarks containing uniform resource locators (URLs) of all publisher databases are also distributed so that students have promotional material at hand to refer to when conducting their searches.

A comprehensive Website has been developed to create awareness and provide users with a central point of DL resource information. Each participating institution has its own page carrying information about registered resources and contact details for representatives. Students and university staff can view a listing of what resources are being provided to them and directly link to the publisher databases to begin their search. The Website also holds a number of useful links to open access resources and various other scientific search engines. A section containing

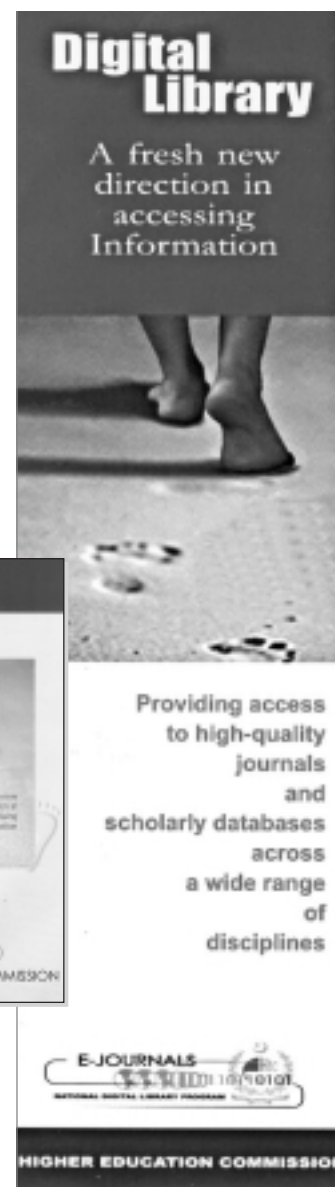
frequently asked questions has been added.

The Digital Library Team has held a number of training events. These have been geographically spread through all the main regions of Pakistan and teams of two or three members have actively conducted onsite promotion and training activities for users. The latter have been broadly divided into two categories: novice researchers conducting first time searches, and active researchers who are dynamically involved in research.

A priority initiative of the Digital Library Project has been to introduce a one-window search interface known as the ELIN@ (see articles elsewhere in the Newsletter). The pilot project was launched in September in three main universities in Pakistan. Relevant promotional materials have been prepared and training will be conducted.

Another recent initiative has been the development of a distance learning programme through which the Project is to be promoted. Content will be supplied through the virtual university in the form of videotapes and broadcast via the education channels acquired by the HEC. The television broadcasting will ensure deeper geographical penetration of information to students in relatively remote areas.

The Knowledge Fair is an event that has been planned for 2006 to celebrate all the research activities of HEC. The intention is to hold events in major universities of Pakistan nationwide. This exhibition will not only promote the Digital Library Project but it will also provide exposure for other



programmes that have been chalked out for the enhancement of research capacity among the masses at a broader level.

These activities are the milestones that promise the sustainability and growth of the digital libraries in Pakistan. Our country still has much to learn from those who are ahead in their expertise of managing and implementing digital libraries. The need for e-resources is at its peak and all countries must develop their methods of communication and so empower researchers with access to information.

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Monitoring and evaluating e-resource use at University of Dar es Salaam Library

by Elizabeth Kiondo

The University of Dar es Salaam (UDSM) Library serves a user population of about 15,000 and started implementing an automation programme in 1998. The PERI initiative facilitated the provision of e-resources from 2000, and in 2003 UDSM Library established its digital library with e-books, e-journals and databases, selected Web resources, local content databases, and an e-reserve collection.

The monitoring of e-resource use is critical for their continued and sustained success. Currently the UDSM Library does not have software to monitor usage and relies on data collected through the following techniques:

- **Suppliers' data:** usage statistics of electronic resources subscribed through PERI programme is provided by suppliers.
- **Library user statistics:** usage data is collected from e-resource service points within the library. Users are required to register and indicate which e-resources they intend to use. Information collected includes name, status, year of study, faculty/department, title of e-resource, etc.
- **User queries:** librarians monitor and analyse requests and questions from users on specific e-resources.

UDSM user surveys

Initially conducted to address a concern of stakeholders on the apparent limited use of e-resources at UDSM, surveys were conducted in 2004 and 2005. The first examined the extent of e-resource use and factors that might influence use. The findings were instrumental in intensifying marketing of e-resources and implementing an information literacy programme. The second also investigated whether increased user access to e-resources has had an impact on the teaching and learning processes of the university. The techniques used in the survey included self-administered questionnaires and face-to-face interviews with selected key users to get in-depth insights into patterns of use and factors that might hinder or facilitate use of e-resources. Additionally, group discussions and workshops were held, in which stakeholders provided further input on the way forward.

- **User surveys:** UDSM Library conducts periodic user surveys to gather key information about resources and services.

E-resource usage data requires care in interpretation and use. The major weakness of data collected from suppliers and library registers is the lack of context. These data do not provide explanations for the observed pattern of use. Therefore the raw statistics cannot be the basis for major decisions. Also, the library is only one of many points of access within UDSM, so any statistics generated there cannot be comprehensive.

Data generated from surveys is probably more comprehensive but it is subject to recall problems, it is not regularly undertaken and may provide unreliable information.

Monitoring is useful as it provides an indication of the extent of usage of resources as well as the types of e-resource used, and enables better judgments on improving services. For example within UDSM, it indicated a need for improving ICT and IL skills in users, for improving ICT infrastructure by optimising bandwidth usage and PC access ratio, and the need to increase marketing and publicity of available e-resources. Data monitoring can also assist in ensuring that scarce resources are used effectively.

UDSM Library plans to continue to use a combination of techniques to monitor e-resource usage. It will continue to conduct user surveys as they have proved to be useful. Plans are also underway to acquire software that will monitor usage of e-resources within the various campus units in order to get more comprehensive data.

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Bioline International receives OSI support to extend its work with developing countries

Bioline International is pleased to announce the receipt of a grant of US\$30,000 from the Open Society Institute's Open Access Project. The grant will support the incorporation of ten additional bioscience and health journals published in developing countries into the BI system.

It is now well recognised that scientific publishers from developing countries have difficulties raising the visibility of their journal publications, due to various financial and technical constraints. However, publishers increasingly understand the great value of open access as a way to incorporate local research into the mainstream knowledge base. Already, over 40 peer-reviewed journals are collaborating with BI, and for many publications, document downloads have increased by ten-fold as a result.

More information can be found on www.bioline.org.br

ELIN@ and its future as an e-resources management tool in developing countries

by Lars Bjørnshauge and Lotte Jørgensen

The ELIN@ service facilitates end user access to electronic information resources and at the same time offers the library staff easy administration tools for managing electronic content. Via agreements with a very large number of publishers and other information providers the ELIN@ service comes with metadata of >26,000,000 records (September 2005) searchable and retrievable on document level in one single user interface, with cross searching, merged search results and many more advantages for end users. In addition, the interaction with the metadata records is all based on local area network traffic and not wider Internet information transfers. This is of significant benefit for institutions that have limited external Internet connectivity but do have reasonable local area networks.

The ELIN@ system within low bandwidth environments significantly improves the speed of using electronic information resources. This is mainly due to the single user interface, which allows users to quickly focus on content, regardless of source. Browsing and searching for resources is all conducted on LAN systems (which exist in many larger educational and research institutions in the developing world) that are relatively high speed. This means that

users are able to search and query data much more quickly and they only need Internet connectivity for full text downloads. This is still dependent on network conditions but with the ability to schedule batch downloading of articles for quiet network periods, quick access to full text resources is possible. The administrative tools are all accessible via Web pages held on the LAN and allow library staff to have full control over the local implementation of the ELIN@ system.

The pilot implementation of the ELIN@ system has also been a development of the ELIN@ application system as an Open Source software application and the application code base will be released under a standard OSI Certified Open Source Software license after the pilot phase is over. The system consists of these main components:

- **Data import and processing** – to allow the full range of data sources to be easily imported and included into the ELIN@ system. This module will provide tools and guidelines on preparing and accessing data sources for inclusion in the ELIN@ system.
- **User interface and search and retrieval tools** – to allow end users to search, retrieve and

interface with the data sets included in the ELIN@ system. This module will provide easily configurable interfaces with multi-lingual capacities.

- **Administrative tools and interfaces** – to allow technical and content administrators to administer the ELIN@ system via a suite of simple-to-use Web-based tools.
- **Documentation and user training modules** – a comprehensive set of documentation and user training materials to support the ELIN@ system. Users are defined as: end users of the system, content administrators and system/technical administrators.

Currently ELIN is in production with local installations at Makerere University in Uganda and National University of Rwanda while the HEC of Pakistan is using the installation at Lund University. We are looking forward to providing the service to more countries in cooperation with INASP in the future.

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ELIN@ in action at Makerere University

by Beatrice Sekabembe and Miriam Kakai

The month of May 2005 brought a lot of excitement to Makerere University as ELIN@Makerere was installed, tested, and implemented.

Initial preparations included the purchase of a server, a DELL Power Edge 2650, and installation of the ELIN system, which was done by the technical expert from Lund with

local technical staff. User training started in July 2005 with 150 academic staff. An awareness week for students is soon to be organised.

User comments, collected from evaluation questionnaires, as well as Email and verbal messages, include the following:

- **Comments on the layout** – addition of fields such as adding and deleting full text requests after downloading to avoid confusion with the current requests.
- **The ability to open full text articles in PDF** is very useful as retains the original formats.
- **The interface is user friendly.**

- **Exposure to unknown resources:** one user revealed that he did not expect free journals to provide quality information. ELIN@ is therefore a marketing tool.
- **The ELIN communication system:** librarians can communicate with users through their subject areas and users can also make suggestions. These options have generated a lot of excitement because they make the users belong to the system thus creating harmony. Many useful database suggestions are received through this channel.

- **Database availability:** being a pilot stage, not all databases available to Makerere have been included in the system. Some users have been disappointed, so we reassure them that INASP and Lund are working hard to convince the publishers to provide their metadata.

The ELIN@ pilot will end in December 2005. Although the statistics link in the system is not yet activated, all indicators point to a continuous ELIN@Makerere service beyond the pilot stage. There are plans to include the Uganda Science

Digital Library within ELIN@ and the library will continue to work with Lund to ensure that the system remains manageable centrally. Makerere University will play a leading role to promote and market the ELIN@ service to other institutions in Uganda and beyond.

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Scientific and research information in Bolivia: situational review and recommendations with reference to digital libraries

INASP recently undertook a review of the scientific and research information environment in Bolivia on behalf of the Directorate of Science, Technology and Innovation within the Bolivian government. The objective of the exercise was to help inform the National Action Plan on Science, Research and Innovation being prepared by the government by reviewing the challenges and opportunities faced by the research and education communities (especially universities) in the areas of production, access and use of scientific and research information and associated processes. In the process of undertaking this review close attention was paid to the situation of libraries in Bolivian universities and particularly the status of digital library developments.

It was found that there were significant infrastructural challenges faced by these communities, although in many instances, these are currently being addressed with impressive efforts. This was particularly true of some of the digital library developments underway within various organisations in Bolivia.

Many of the libraries visited during the review suffered from the commonly occurring problems of:

- under-resourcing reflected in poor upkeep of buildings and collections;
- low level of stock development;
- low level of ICTs in the library (for staff and end users);
- extreme variability in library automation and system development (often resulting in big differences within the same campus);
- lack of training and skills in the use of ICTs by library staff; and
- an interest in digital libraries, but a lack of practical skills.

What was particularly interesting was that the situation was quite different when looking at ICT centres and units within the same organisations. The ICT centres were generally relatively well resourced in terms of equipment, infrastructure and skilled staff. There were well-qualified staff, often with the latest equipment and working in all of the areas that one would expect. This included significant developments in the area of digital libraries. Numerous examples were encountered of ICT centres taking on aspects of what might traditionally be considered the role of libraries e.g. setting up library automation projects, searchable reference databases and managing access to

electronic journal subscriptions and similar resources.

Several examples of advanced digital library development projects were encountered:

<http://www.archivoybibliotecanacionales.org.bo/>
<http://infocyt.dicyt.umss.edu.bo/>
<http://coimata.uajms.edu.bo/frida/biblioteca/cgi-bin/publica.pl>

In many respects it could be said that virtual libraries are blooming in Bolivia but what was particularly interesting was that generally these were being produced outside of the strict library context. Mostly they were being led and implemented by ICT centres where the technology, skills and the necessary equipment were readily available. What this says about the future of digital libraries, regular libraries and ICT centres in Bolivia is not entirely clear.

The report and recommendations that resulted from the review are currently being considered by colleagues in Bolivia. Further information from Martin Belcher: mbelcher@inasp.info.

Institutional repositories – today's realities

by Ann Okerson

The concept of the Institutional Repository (IR) needs to be better understood, not just its idealistic promise but also its challenges. Below I examine the Yale Library experience of developing an IR.

Initially the IR was perceived as a free digital place for researchers to deposit articles being submitted to formal publishers. However, the goals of an IR are now far more comprehensive. It is evident that universities foster hundreds of thousands of digital outputs and these require identification, secure storage and accessibility for indefinite periods of time.

Specifically, we have defined our IR system to include the following functions:

- *Digital storage* – a safe place or places to put information;
- *Curation* – selectivity and stewardship;
- *Preservation* – a sophisticated, long-term strategy for keeping material alive and usable; and
- *Access* – a layer of services on top of the digital content to ensure appropriate retrieval and integration with other materials.

Our IR will not be found on any single campus server – it is conceived as a large number of sites, which are federated and interoperable. This is the reality for a large university.

The successful IR system requires many parts of the university to come together to develop critical elements for success including:

- standards and consistent standards-compliant architecture;
- definition of requirements for included content;
- best practices for how to include materials;
- clear statements of expectations and functionalities and rights;
- clear understanding of where coordination and responsibilities lie; and

- staff and funding to achieve these goals.

Some immense challenges for us are listed below.

- There are currently no turnkey solutions, though partial solutions such as D-Space, Fedora, and Greenstone exist and may do part of the job. Thus each institution is doing a significant amount of exploration and development. Our IR leader and workgroup spent about a year assessing the current status and preparing recommendations.
- An IR is costly: institutions must cover the costs, often by reallocation of funds. We are starting with the library's own e-repository. The three-year start-up costs for hardware and software alone are over \$300,000 (one-time costs for storage and backup: primary storage, redundant storage, tape system, and running costs). This does not include staff to do development, installation, and, most of all, to provide the proper metadata for successful retrieval and downstream preservation of the hundreds of thousands of items.
- We need and want to extend the benefits of the IR across the entire campus, but these benefits often seem remote to the researchers, so there is a significant educational role to be undertaken.
- Rights issues. Many researchers are concerned about privacy and particularly rights management, particularly relating to patents or grant applications.
- Relationship with formally published materials, by publishers who charge for high quality, peer reviewed works such as journals.

In the end, the IR movement will be of greatest benefit if many institutions around the world come together

HIF-Net Moderation and Facilitation

Launched in July 2000, HIF-net is an Email discussion forum where more than 1200 people from around the world share ideas and insights on ways to improve access to reliable information for healthcare workers in developing and transitional countries.

After many years supported by INASP, Exchange, the Wellcome Trust, WHO and others, HIF-net is entering a new phase.

Under an agreement between INASP and the *Global Forum for Health Research*, we are pleased to announce that support for the core moderation and running of the list has been secured until the end of 2006.

As part of this collaboration, the existing HIF-net platform for communication will continue to be moderated by Neil Pakenham-Walsh, Fred Bukachi, and Rachel Stancliffe.

To join HIF-Net send an email to hif-net@dgroups.org, or for more information, see www.inasp.info/health/hif-net.html

around a common vision of basic goals and standards. That is the dream. We have embarked on this path, but we have many years of work before the vision of interoperable campus repositories can be realised on a sizeable scale, let alone with numerous other such repositories.

Abridged from a paper delivered at the second annual meeting of the STS Forum, Kyoto, Japan, 11–13 September, 2005: www.stsforum.org

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Using open source software Greenstone for a network of digital collections

by Dominique Babini

CLACSO (Consejo Latinoamericano de Ciencias Sociales) is a 30-year old academic network gathering more than 168 social science research and teaching institutions in 21 countries of Latin America and the Spanish Caribbean. Each of these institutions publishes journals, books, working documents and conference papers, which are not readily available because of high postage costs, reduced number of volumes printed and lack of inter-library loan. In 1998 CLACSO decided to start promotion and training activities to encourage members' editors to provide Web access to the electronic version of the print publications and at the same time CLACSO started a virtual library to provide integrated access to the distributed collections of e-documents available on member Websites.

To build our digital library we wanted an open source, user-friendly software system where users could search in all or only one collection, in metadata or in the full-text, and editors could input their publications online.

After some research, Greenstone was selected: www.greenstone.org produced by the New Zealand Digital Library Project at the University of Waikato, and developed and distributed in cooperation with UNESCO and the Human Info NGO. It is open source, multilingual software, issued under the terms of the GNU General Public License.

The implementation process at CLACSO took a few weeks and was the responsibility of Florencia Vergara: vergara@clacso.edu.ar. We had to:

- study information provided on the Greenstone website;
- download the Greenstone software and install it in our server;



Dominique Babini

- define diverse configurations. We chose HTML for the texts, we defined the metadata needed for each text (title, author, date, ISBN/ISSN, URL, publisher, subject, abstract) and allowed searches in all or only one collection. We have now 95 collections with more than 4,100 full text documents;
- define which presentation format we wanted for the search results. We chose to first present the search results as a list of documents: selected documents are then presented as a cover image plus contents index; then the document citation, finally the full text as PDF or HTML; and
- overcome problems including: defining metadata, training staff to migrate documents from PDF or Word to HTML and adding metadata to each document. We are still trying to solve how to search with accents (very common in Spanish, French and other languages).

Our service is Open Access on www.clacso.org.ar/biblioteca. We use the statistical system Webalizer. We receive 80,000 visits a month and you can see each month the list of countries that visit the library, topics most requested, documents most requested and how many times each document is requested. The copyright of each document in the digital library is owned by the editor

New Fellowship Collaboration

21 October 2005. The Third World Academy of Science and the Indian Association for the Cultivation of Science (IACS) have recently signed a new fellowship collaboration agreement offering a total of three fellowships per year: 2 postgraduate posts and 1 post-doctoral post which will be tenable at IACS institutes.

For more details see www.twas.org/

and/or author of each document. CLACSO protects the contents of the collection from commercial use, by using an open access Creative Commons Attribution-NonCommercial-NoDerivs 2.0 licence: <http://creativecommons.org>.

The main additional cost for our digital library to migrate to Greenstone has been adding metadata to each document and for this we have received support from INASP (for journals) and ICA/IDRC and Asdi (for books and other documents).

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First IAALD Africa Chapter conference

Agricultural information professionals in Africa, under the aegis of the International Association for Agricultural Information Professionals (IAALD), will be organising a conference from 21 to 26 May, 2006 in Nairobi, Kenya.

The conference theme is "Managing Agricultural Information for Sustainable Food Security and Improved Livelihoods in Africa."

For more information visit www.asareca.org/iaald-africa

Electronic theses and dissertations: defining the objective and secondary challenges

by Wynand van der Walt

In 2004 the University of the Western Cape (UWC) embarked on a project aimed at the development and implementation of an Electronic Theses and Dissertations (ETD) service. This is the first step in producing a complete digital repository of the institution's research output. The project consists of two distinct phases, with each phase addressing a specific objective.

The objective of the first phase (2004–2006) was to digitise theses received from the student administration office. The process involved scanning the items and uploading the digital documents onto a server. Access was via the library's website: www.uwc.ac.za/library as well as by means of hyperlinks from within the bibliographic record on the online catalogue. During this phase workshops and meetings were held with representatives from all the departments and faculties on campus.

The objective of the second phase was to develop and implement a single system based on the outcomes of the discussions during the first phase. It needed to enable:

- communication between the students enrolled for higher degrees and the lecturers/examiners;
- communication between the faculties and the appropriate bodies such as the Higher Degrees Committee;
- use of specified styles and thesis layout templates;
- tracking progress;
- automation of administrative functions;
- adding standardised metadata;
- 'publishing' of the thesis;
- access and archiving of the product; and
- open general feedback capabilities.

The phases were aimed at addressing the two distinct yet interlinked objectives. The following is a list of the most crucial challenges encountered.

Technical factors. Although other software solutions were investigated and tested, UWC developed a system within the institution's enterprise architecture. The system uses international standards for information interchange and harvesting, as well as currently used systems at UWC. Other general technical factors included infrastructure, security, backup/storage, and systems stability.

Digital submission and preservation. Students are requested to submit the original theses in either Open Office, MS Office or WordPerfect file format. This enables the creation of an end product (PDF document) adhering to specifications for data encryption, watermarking and unique institutional identification. Having only one file type to manage allows for easy data migration, data refreshing and emulation.

Intellectual property and copyright. Awareness of ceded rights, copyright control, embargoes and plagiarism are important factors. In most cases existing rules and regulations already addressed some of these factors or had to be amended to suit the digital environment – for example a policy regarding the requesting of embargoes.

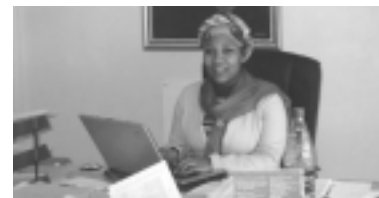
Submission processes. The complete process had to be re-engineered to allow for workflow, rules and regulations, physical processes, and quality requirements.

Project management. As the project initiator, the library took overall responsibility with specific responsibilities allocated to departments or campus institutions as required.

AJOL – in Africa

'It was reported in the last Newsletter that African Journals Online (AJOL) was about to be transferred to new management by NISC SA. We are pleased to report that the move has now been accomplished and AJOL is now operating as an independent not-for-profit company, administered by a board of trustees and working in collaboration with NISC SA.

Noxolo Mniki is the new Administration Manager, dealing with the day-to-day running of the service. So if you wish to have your journal included on AJOL then email Noxolo at info@ajol.info. To see the full list of AJOL journals, visit the website at www.ajol.info.'



Noxolo Mniki, new administrator of AJOL

Capacity building and sustainability. Long term sustainability, training, and resource sharing is dependent on collaborative efforts between departments within the institution, and on regional and national initiatives, the last mentioned of which is now being actualised.

The implementation of an ETD service at UWC as a project does not really differ from standard project planning in terms of identifying the objectives. What is important is the realisation that automating manual processes and procedures differs entirely from re-engineering the processes in order to automate.

Development of the complete ETD system is well underway and the university will be unveiling the service in 2006.

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The current digital status of university libraries in Africa: an INASP report

by Diana Rosenberg

In the last Newsletter, mention was made of a survey, which INASP commissioned in 2004, to examine the current status of digital libraries in universities in sub-Saharan Anglophone Africa, excluding South Africa. Further details of its results and conclusions were promised for the current issue. For the purposes of this survey, a digital library was defined as one where some or all of the holdings are available in electronic form and where the services of the library are also made available electronically, frequently over the Internet. The aim of the survey was to draw conclusions on where future developments and investments might be made and what can be learnt from the implementation of digital libraries within the continent. 68 libraries from 18 African countries returned completed questionnaires.

Findings included:

- 15% of libraries considered that they were fully automated; 21% had not yet commenced automation. 20 different management systems were in use;
- only two libraries reported owning no computers, but the majority reported less than one computer per 500 FTE students. Internet connectivity was uneven and half of the connected libraries said that slow speeds and reliability were a barrier;
- e-journal support programmes were available in all countries;
- there was a growing interest in digitising local content and setting up institutional repositories, but little progress as yet;
- e-services were in their infancy;
- dependence on external funding for e-resources and ICT infrastructure was common;
- library education and training did not provide new professionals with e-management knowledge and skills; and

- 16% of libraries supported integrated information literacy programmes.

Conclusions included:

- libraries within countries and within regions are at very different stages of digital development, with very different needs. Support programmes need to take the needs of all libraries into account and not concentrate on those of a few;
- libraries need to acquire the basic building blocks of a digital library, e.g. automation of library systems and sufficient ICT facilities, before moving forward into e-service provision;
- upgrading the skills of existing staff is a priority. At the same time attention needs to be paid to the updating of library school curricula and the upgrading of those who teach the courses;
- more attention needs to be paid to the development of information literacy courses for researchers and students; and
- libraries need guidance and advice on how to drive forward digital development.

Based on these findings and conclusions, INASP is already working on action in the following areas:

- the survey covered Anglophone Africa well, but to gain a more complete picture it is suggested that a similar survey is undertaken in Francophone/Lusophone Africa and in private universities and other academic and research environments;
- the findings should be validated through meetings/workshops to identify library, country and/or region-specific needs and actions;
- working with funders, ensure that programmes aimed at supporting digital library development are

sufficiently inclusive and flexible to directly support the differing needs and levels of expertise of each individual library;

- encourage and support institutions and countries to formulate plans and actions for all university libraries to obtain the basic building blocks of a digital library;
- support a number of research and demonstration projects in e-services and e-resource management and disseminate the experiences learned;
- support curriculum improvements in library schools to prepare new professionals for the digital environment;
- best practice in user education for the digital environment should be summarised and disseminated to ensure efficient use of digital library services;
- working with partners, develop and support continuing education and training programmes for librarians using a variety of approaches and methodologies; and
- support consortia to build strong networks and expertise within their countries/regions, so enabling them to take on wider coordination and advisory roles and to foster collaboration among libraries involved.

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Towards the digital library: findings of an investigation to establish the current status of university libraries in Africa. Oxford: INASP, 2005. 30p.

Towards the digital library in Africa. Oxford: INASP, 2005. 4p. (INASP info-brief: 5)

Available for free download from:
www.inasp.info/pubs

Print copies can be ordered by
emailing: inasp@inasp.info.

INASP appoints Library Support Programme Manager

In January 2006, Chris Hagar starts work as Senior Programme Manager in charge of INASP's Library Support Programme.

She has worked in public and academic libraries for over 20 years. In her work in academic libraries she was involved in a number of UK e-Lib projects. Currently she is completing the doctoral programme at the Graduate School of Library & Information Science, University of Illinois at Urbana-Champaign, USA where she has also been an instructor on the MLS (Masters in Library Science) programme. During her time at the University of Illinois, she was an instructor at the Mortenson Center for International Library Programs: www.library.uiuc.edu/mortenson.

Chris' other activities have included consultancies with DfID and the British Council, and lecturer at the International Centre for Information Management Systems and Services, University of Nicholas Copernicus, Torun, Poland, and at the Department of Information Management and Librarianship, University of Northumbria.

She is particularly interested in the development of digital libraries and also in working with LIS faculty to develop their curricula. Her current research interest is in the area of crisis information management.

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The International Council for Science (ICSU) releases new strategy to strengthen international science for the benefit of society

During the 28th General Assembly in Suzhou, China, ICSU announced its plan of action to strengthen international science for the benefit of society.

"Scientists need to do a better job of communicating what they know to world leaders, but they also need to find out what information those policymakers would find useful," said ICSU President Jane Lubchenco.

The new plan is based on several expert reports and on consultations over the past three years with working scientists and scientific institutions worldwide. The strategy builds on ICSU's current programmes to coordinate environmental research, protect scientific freedom, and open up access to data and information, while launching new initiatives that will bring scientists together from many disciplines and countries.

The full press release can be read on the ICSU website: <http://www.icsu.org>

The ICTP Open Access Archive

Because of relative isolation that still persists in developing countries, scientists are often unaware of the extent and nature of science that is being done in their own countries, and have inadequate personal knowledge of their fellow scientists. They also have some difficulty in publicising their work quickly.

To provide assistance in these matters, the Abdus Salam International Centre for Theoretical Physics (ICTP) has launched an Open Access Archive to allow the scientific work of any scientists from any country to be posted free of charge. Authors may upload preprints, reprints, conference papers, pre-publication book chapters and the author's CV.

The Archive will be maintained for about five years in the first instance (though it could last for longer). Changes necessitated by new technology may occur without advance warning.

If you are a scientist subscriber of the free electronic Journal Delivery Service (eJDS), residing in a developing country, and do not have a reasonably fast connection to the Internet, you can get any (PDF, PS, HTML or Ascii) document from this archive via e-mail.

To upload documents, scientists must register and login. The procedure is self-explanatory and can be obtained by logging on to <http://eprints.ictp.it>.

The next *INASP Newsletter* will be published in Spring 2006. If you would like to contribute to its contents, please write to the editor at the Oxford address. Contributions must be received by **1 January 2006**.



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