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Towards the Digital Library in Africa

The term digital library is used to refer to a library where some or all of the holdings are available in electronic form, and the services of the library are also made available electronically – frequently over the Internet so that users can access them remotely. Over the past fifteen years libraries worldwide have increased their holdings of electronic information and automated their operations, but within Africa digital development has been uneven. The philosophy of the academic library as a passive repository has taken longer to change, and librarians have not had the opportunities to critically reflect on what has been developed, and what their priorities are for the future. In 2004 INASP commissioned a survey of the current status of library digitisation in sub-Saharan Anglophone Africa, so as to draw conclusions on where future developments and investments might be made, and what can be learnt from the implementation of digitisation within the continent.

Enormous progress has been made in the past five years to ensure that staff and students in African universities can access the growing quantities of electronic information, but progress towards a totally digital library environment has been uneven. Universities are increasingly becoming focal points for infrastructure investment and information provision with a view to improving education through the use of ICTs – however it is difficult to identify where development has taken place and where it is still required. To gain an understanding of the status of development in the adoption and use of electronic tools and resources, INASP undertook a survey of publicly-funded university libraries in Anglophone sub-Saharan Africa to investigate:

- progress towards digitisation;
- current priorities and plans;
- which support interventions have been most successful; and
- what support is now required.

The survey

Data were gathered between September 2004 and January 2005 from questionnaires completed by libraries. These covered all aspects of digital librarianship including library automation, ICT facilities, electronic resources, local content, finances, management and training, user education and future plans. The questionnaire was sent to 107 libraries in 20 countries, and site visits and interviews took place in Ghana, Malawi, Tanzania, Uganda and Zimbabwe. A focus group discussion also took place in Oxford with librarians from Kenya, Malawi, Uganda and Zimbabwe.

Sixty-eight completed questionnaires were returned, giving an overall response rate of 72%. Returns came from 18 of the 20 countries surveyed (Mauritius and Rwanda were absent).

Findings

Library automation

Although the majority of the libraries surveyed had started using library management systems in the early 1990s, only 15% considered that they were fully automated and 21% have not yet commenced any automation. Twenty different library management systems were in use, with several systems operating in the same country and sometimes in the same university. Some libraries that automated early have not been able to find funds to migrate to newer and updated systems.

ICT facilities

Only two libraries reported no computers available for users, but the number of computers was generally low with the majority of libraries reporting less than one computer per 500 FTE students. Internet connectivity was uneven with only 35% of the libraries reporting more than three-quarters of their computers connected to the Internet. Connection was usually through VSAT. Half of the libraries that were connected said that slow speeds and reliability was a barrier to the use of e-resources.

E-resources

Journal support programmes offering discounted or free access to publisher packages were available in all countries, but provision of e-books was only available in 28% responding libraries. Downloading was currently a major problem, however several

libraries stated that they would like to move towards using e-books in the future. The Internet was perceived as replacing CD-ROMs, as elsewhere in the world.

Local E-content
E-indexes to local materials (e.g. theses, student projects) were reported by 14 libraries, but only two were accessible on the Web, and only a few on library local area networks or CD-ROM.

Databases of theses (abstracts only) were reported by six libraries. Four libraries submitted records to the Database of African Theses and Dissertations (DATAD). Two universities have set up full text institutional repositories (IRs) (Makerere and Namibia), but several libraries expressed an interest in this area and recognised its value in increasing the availability of local materials and research.

E-services
Most libraries have a long way to go in developing e-services to facilitate access to available information and promote its use: 35% had library Web pages: 45% have developed online public access catalogues (only 16% accessible on the Web – i.e. outside the library). Just three libraries were offering combined searching of all electronic resources, five had e-bulletins, three had started e-content delivery through virtual learning environments (VLEs) and two had developed online training packages. No library offered a single search tool for all library resources (whether physical, electronic, in-house, regional, etc.) or a Web-based and distributed enquiry or reference service.

Finance
Most libraries received their e-resources from funded programmes or free of charge. Only four libraries relied on institutional funds. However there was a move towards self-reliance and away from total donor dependency: 10 libraries in three countries entirely reliant on external funds until 2003 have now formed library consortia and are collecting contributions towards the cost of subscriptions.

It was more likely for an institution to meet (or contribute to) the cost of ICT facilities (network, computers, etc.) than pay the subscription costs of e-resources. There was a dependence on external funding everywhere. Only ten libraries reported purchasing 100% of ICT facilities and only two purchased all of their e-resources: 42% of libraries purchased less than 10% of their ICT facilities and 61% less than 10% of their e-resources.

Libraries indicated that future sustainability was an issue. Fourteen libraries preferred to rely on institutional budgets; a further three said that they intended to lobby for more money from this source. Libraries were divided as to whether charging fees for Internet access provided money essential for the maintenance of the service or discouraged use. The establishment of consortia was mentioned as key to any sustainability strategy.

Management
Librarians had different views as to the most effective staffing structure for the management of e-resources. In 58% of the libraries, e-resources and services were managed within existing departments: in 32%, separate sections had been set up with new e-posts. In the former, computers were usually scattered throughout the library, in the latter they were kept in separate laboratories. There was no evidence as to which worked best, as no libraries had yet developed any measures with which to evaluate usage.

Training in e-resource management was not widespread although each library had at least one member of staff who had attended an ICT-related workshop. Many librarians raised the issue of professional training: library school curricula were felt to be out of date and did not take into account what was needed in the field, so that new recruits did not have the necessary ICT-related knowledge and skills.

User education
Training of academic staff and researchers was offered by 66% of libraries – usually as one-off workshops. However many thought it had not been effective, and new approaches were needed in addition to building librarians' training skills.

Only 16% of the libraries supported integrated information literacy programmes for undergraduates. No training was offered by 21% of libraries.

Achievements/challenges
There was a consensus that the key achievements of libraries had been the provision of e-resources, the raising of Internet awareness and provision of training, followed by the provision of ICT facilities and connectivity.

Lack of funds for the purchase and maintenance of hardware and e-resources together with lack of, or retention of, trained library staff were identified as the main challenges, followed by the low levels of ICT literacy and e-resource use among users.

Plans for the future and support required
Most librarians stated that their plans for the next three years were to consolidate existing digitisation before moving into new areas. These included maintaining subscriptions and acquiring more e-resources (47%), training of library staff (45%), acquiring more computers (42%), improving Internet connection (37%), and improving user training programmes (31%). Many (34%) included completing or upgrading library automation and extending this to branch libraries.

New areas included digitising local publications and establishing an IR (26%), and enhancing and extending e-services (15%).

All the libraries stressed the need for enhanced support from their institutions and continued support

from funding agencies, both financial and in the provision of expertise.

Additional funds were identified for the purchase of computers and e-resources (73%), for training library staff (65%), for library automation (21%) and for improved Internet connectivity (15%). Libraries were very clear on how this support should be delivered – directly to the library concerned or through library consortia. A preference to deal with one funding agency rather than many was also expressed.

A variety of training approaches were also requested, for example, workshops, attachments to other libraries, exchanges between libraries, link programmes, on-site visits by consultants and experts, and distance education.

Up-country and newer university libraries, together with branch libraries felt that they had suffered by not being given the same opportunities for development and training as main or major libraries.

Conclusions

External support programmes
The provision of computers and purchase of e-resources has been heavily dependent on external funding. Libraries considered that this situation would continue, with a continued lack of institutional funds. However, libraries are at different stages of digital development, with very different needs. It is up-country or newer university libraries and (in multi-site libraries) branch libraries that lag behind.

Programmes that assume all libraries within a region or country have the same needs and aspirations are unlikely to be successful. The needs of different libraries must be taken into account and support delivered directly to that library or through a country consortia/network, where each library has a voice. Funders were urged to give fair attention to the needs of all libraries rather than concentrate on a few; and coordination through one major funder was identified as preferable to many within one library.

Minimum ICT levels for all
Full and effective use of e-resources and e-services (and subsequent institutional contribution to their shared cost) depends on all university libraries in a country and all libraries within a university library network acquiring and maintaining the basic building blocks of a digital library – automation of library systems, sufficient ICT facilities (computers, networks) and adequate connectivity. At the present time, most public university libraries in Africa have not attained these basic levels and others are struggling to maintain them.

Libraries that have fully automated systems are also those that have the best levels of ICT facilities, trained staff, user education programmes and e-services. Support for the instigation and completion of library automation projects should therefore be given high priority.

Continuing education for library staff
Upgrading skills and retraining library staff is a priority, particularly in the areas of e-resources management, e-services development and teaching skills. Some training areas are already being addressed (such as bandwidth optimisation). There are immediate needs for support in full text digitisation and in training of library staff in educational theory and practice.

Training given at the institutional level and tailored to the needs of a specific library was preferred. There was a call for training methods to be diversified, so that the method was appropriate for the subject area. In particular, attachments to libraries where the required expertise was being practised or visits to libraries by experts were demanded, both of which incorporate "learning by doing".

Library schools
The future quality of university libraries relies on the quality of new library staff. Library school curricula have not kept up with the needs of the new e-environment and those responsible require opportunities to upgrade their knowledge and skills prior to designing and teaching the new courses.

User education
It was also emphasised that users need the competencies to make good use of e-resources and e-services – and this helps to persuade the authorities of the value of including associated costs in institutional budgets. Most libraries undertake some sort of training at the undergraduate level, but few support integrated information literacy programmes. This is an area that is beginning to be addressed by the Standing Conference of National and University Libraries in East, Central and Southern Africa (SCANUL-ECS). A volume of case studies from libraries in the region is due for publication in April 2005 and it is hoped that a proposal for further action will result.

Training of academic staff and researchers is acknowledged as a continuing challenge that requires new and more innovative approaches.

Guidance and inspiration
Libraries lack advice as to where to go next: those wishing to automate lack guidance on how to choose the best system. The libraries that have established adequate infrastructures are failing to develop holistic e-services and find it hard to convince IT experts of their particular needs. Mechanisms for sharing in-country experiences are not widely available, and there is a need for country-level bodies which understand the requirements of libraries and can drive forward digital development – this could be within government or become a role of country consortia.

One way of encouraging the development of extra-value e-services might be to grant fund a series of projects in individual libraries which are ready and eager to move forward into areas like digitisation of

local collections, course content delivery through VLEs, and e-reference services. In addition funding for projects to investigate areas like standards, performance indicators, staffing structures, library re-design would also be valuable.

Proposed areas for action

- 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
  - 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 university 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 small '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.
- 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 in digital developments.

Further information

This investigation was undertaken by Diana Rosenberg, and this *infobrief* is a summary of the findings of the full report *Towards the Digital Library in Africa: an investigation to establish the current status of university libraries*, which can be found on the INASP website: www.inasp.info/pubs.

About INASP

Enabling worldwide access to information and knowledge

The mission of INASP is to enable worldwide access to information and knowledge with particular emphasis on the needs of developing and transitional countries. Established in 1992, 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.

We act as an enabler, connecting worldwide information and expertise. Working through networks of partners, we aim to strengthen the ability of people in developing and transitional countries to access and contribute information, ideas and knowledge. In particular we seek 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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