Enhancing access through electronic resources: the University of Botswana Library experience

A. Mutshewa and
K.N. Rao

The authors

A. Mutshewa is a Lecturer in the Department of Library and Information Studies in the University of Botswana, Gaborone, Botswana.
K.N. Rao is a Senior Assistant Librarian (Systems) at the University of Botswana Library, Gaborone, Botswana.

Abstract

Libraries are changing their modes of information delivery at a very fast rate. This article describes how the University of Botswana Library has taken advantage of the new technologies to enhance its service to its patrons. The university local network is used to bring library electronic resources to the desktops of the patrons in their offices.

Introduction

Traditional libraries stored different types of information resources in different formats in their buildings. Various tools and guides to locate these resources were available only when a patron physically travelled to the library. The situation has now changed and access to these guides has become paramount. With the advent of computers and telecommunications technologies, libraries and information services can provide access to these resources through workstations such as PCs and terminals that are in patrons' offices, as well as in the library building.

The University of Botswana has readily embraced information and communications technology (ICT) resources in providing access to library resources to its patrons. With the establishment of a campus-wide local area network (LAN), the library is able to serve its patrons effectively in their offices, their laboratories, or the library building itself. Internet access also makes it possible for the library to provide Internet sources to users, and to direct individual users to relevant Web sites. For the purposes of this paper, the term "library patron" shall refer to the University of Botswana faculty members and the registered students of the university, even though the University of Botswana is a national reference library, and thus provides services to non-university members as well.

Background information

Botswana – history and economy
The original inhabitants of Botswana are the San. The San have lived in the Kalahari for over 30,000 years. Today there are about 60,000 San people in Botswana. Although they are a minority in the country, their culture and interaction with the government has attracted attention from the local, regional, and international community. The majority of the inhabitants of the country are of the Bantu groups, who have been in the country for more than 2,000 years.

When gold was discovered in Botswana in the nineteenth century the Boer settlers in South Africa started to move northwards into the

country. Boer interest in the country became a threat to the country's effort to attain independence. However, the local groups petitioned the British for protection. In 1885, Botswana was granted protectorate status (as Bechuanaland). The local groups determinedly maintained local authority, though.

Botswana is a young country in sub-Saharan Africa. The country gained independence only in 1966. At the time, the country was one of the poorest in the world, but the discovery of diamonds immediately after independence changed its economic status.

The economy of Botswana has grown fast since independence. Soon after independence, Botswana developed its beef industry by securing regional and international markets. In the early 1970s Botswana earned the bulk of its foreign currency from beef. However, the beef industry was soon overtaken by the mining industry. The discovery of diamonds made the mining industry grow to earn about 40 per cent of the country's exports in 1981. Mining rose rapidly thereafter to reach approximately 80 per cent of total foreign exchange earnings by 1989. Furthermore, Botswana has been able to diversify her trading partners to include South Africa, Europe, the USA, and other parts of the world.

National information and communication technology infrastructure
The Government of Botswana planned to rapidly develop its communications infrastructure through its national development plans. These national development plans led to the rapid growth of telephone facilities in both urban and rural areas of the country. Now Botswana has a modern telecommunications infrastructure, with fibre-optic links running across the country. In 1996 the country was connected to the ever-growing Internet. Cellular phones became available in 1998.

The University of Botswana
The University of Botswana was established on 1 July 1982 by an Act of Parliament. It is the only university in the country. There are about 800 academic staff teaching almost 10,000 students. The university's seven faculties teach both undergraduate and postgraduate courses. They are:

(1) School of Graduate Studies
(2) Faculty of Business
(3) Faculty of Education
(4) Faculty of Engineering and Technology
(5) Faculty of Humanities
(6) Faculty of Science and
(7) Faculty of Social Sciences

The School of Graduate Studies coordinates the postgraduate programs that are offered in the various faculties.

The University of Botswana Library
The University of Botswana Library has existed since 1971. Its current holdings consist of approximately 228,241 accessioned volumes, 1,827 periodical titles, and 17,278 pamphlet titles. The collection grows at an approximate rate of 30,000 titles per annum. Most of the materials that are collected by the library are printed monographs or serials. However, other formats such as microforms, films, computer programs, videodiscs, and CD-ROMs are also collected. The university subscribes to online databases and has access to electronic journals as well.

The University of Botswana collects predominantly English-language materials. Although English is the medium of instruction at the University of Botswana, materials in the local Setswana and Ikalanga languages are collected comprehensively. To support its teaching function, the library also collects materials in French and other languages.

The library is open approximately 90 hours per week, seven days a week. A new extension that will quadruple the library floor space is currently nearing completion.

Information and communications technology infrastructure of the university
In view of the low computer literacy rate among the staff and students, the university embarked on a computerisation project in 1996, and has approached the government for funding for the computers and networking facilities within the campus. Thus the university received three successive yearly grants for computerisation.

The information and communications technology infrastructure of the University of Botswana has seen tremendous growth in the last three to four years. At present the

University of Botswana has a campus-wide network that is accessed by more than 1,000 microcomputers running Macintosh, Windows 95, Windows 98, and Windows NT operating systems. The campus-wide network, which is on a fibre-optic backbone, utilises Ethernet, networks using UTP CAT5, and 10/100Mb. Unix, NT, and Novell servers are being used. There are three off-site campuses. The farthest site is approximately 1,000km away. These sites are served with either leased lines or fibre-optic cable.

The university library's automated systems environment

The computer centre acquired the university management system, which includes student registration and financial functions, in the early 1990s. The University of Botswana Library spearheaded developments in information and communication technologies by choosing to computerise its activities. The library selected Tinlib, widely known as Information Navigator, as its library management system in 1992. The system runs on an HP Unix server.

At the time Tinlib was acquired, there was little computer literacy in the library. A systematic training effort was put in place for the library staff. Training started with an introduction to PCs, Typing Tutor, and an introduction to each of the modules of Tinlib on a training database. Tinlib became operational, with many teething troubles, in May-June 1993. The initial modules put in use were cataloguing and acquisition. The Online Public Access Catalogue (OPAC) was introduced a year later, along with the serials control module. The circulation function was the last to go live, and in phases. A system chronology for Tinlib implementation is shown in Table I.

The library database, called *motswedi wa Thuto*, contains about 230,000 records for monographs, serials, and various media. There are approximately 10,000 patron records and 3,000 serial records in the system. The database is accessible through Telnet using either VT220 terminals or PCs with terminal emulation programs.

Table I Tinlib system chronology

1992	Tinlib system acquisition
1993	Training of staff on keyboard skills; introduction to computers; Tinlib modules on a training database; start of live cataloguing and acquisitions
1994	Introduction of OPAC; serials module
1995	Start of Retro-conversion Project
1996	Experimental introduction of circulation to faculty members
1997	Circulation to external members; access to Tinlib over Internet; connectivity to staff offices; Web publication of new acquisitions through Tinlib; memory upgrade to Unix box; copy cataloguing from SABINET
1998	Introduction of circulation to first year undergraduates and all post-graduate students; upgrade of Tinlib to T-series; upgrade of the Unix operating system to 10.2 version
1999	Circulation to all patrons; searching for an alternative system

The access to *motswedi wa Thuto* also helps library patrons to check their personal loan information by entering their identification numbers and passwords. This facility helps users to keep track of overdue books and return or renew them promptly, thus reducing the payment of fines for late returns.

CDS/ISIS and CD-ROM databases

In addition to *motswedi wa Thuto*, a database of 15,000 bibliographic records specialising in Botswana resources has been developed using the CDI/ISIS software. This database has recently been ported on the NT server and is available from various PCs in the library. Patrons wanting to search this database can get assistance from library staff.

The CD-ROM databases, both stand-alone and networked, and running on a variety of software, are available to library users. Access to networked CD-ROM databases is provided to library patrons, even in their offices. The networked CD-ROMs are hosted on a Novell server using SCSI Express software, and on AXIS towers. These CD-ROMs are searchable with a variety of software installed either on the servers or on PCs. The search environments can be DOS-, Windows-, or browser-activated.

Internet

With the introduction of Internet into the country and to the university, the library developed home pages to publicise the resources available. Other resources that have

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become accessible because of the Internet connectivity are the electronic journals from the Institute of Physics.

The library also has access to bibliographic services such as Dialog, Uncover, and SA Citations. The library has become a full member of SABINET Online, and started utilising the resources for copy cataloguing in 1997.

Currently library patrons can access the following on their workstations and or networked PCs campus-wide:
(1) Online Public Access Catalogue (OPAC);
(2) CD-ISIS database;
(3) CD-ROM databases:
- Silverplatter;
- Webspirs;
- ISI databases;
- Science citation index;
- Social Science Citation Index;;
(4) Past examination papers.
(5) Faculty newsletters.

Setting up a PC to access electronic resources

Batch files have been created and saved on a Novell server that is accessible campus-wide. In order to set up a computer to access the resources, the batch files are copied to the desktop of the machine. Other files are also copied to the relevant locations if a programme needs to be set up on the local hard disk. On finishing the configuration, a shortcut is created on the desktop. The user accesses a resource by clicking on the relevant icon and typing in the appropriate login name.

Online Public Access Catalogue

The library catalogue is accessible through Telnet to the Unix machine that holds the library database. For Windows 95 and NT machines that are predominantly used by the university staff, the Telnet session is made possible by loading a Qvtnet programme on to the machine. Qvtnet has a facility for terminal emulation and an icon for the terminal IS created on the desktop. By clicking on the terminal icon on the desktop, the user is taken to the login prompt. Keying in the log-in name opens the first screen of the online public access catalogue.

CDS/ISIS and CD-ROM databases

The CDS/ISIS database was created by the former National Institute of Research Documentation Centre, which has now merged with Botswana Documentation, and by Special Collections of the Main Library. This unique resource on Botswana has an emphasis on microcomputer-based documents and detailed abstracts containing more than 12,000 bibliographic citations. The database is of great value to social scientists and other researchers working on any aspect on Botswana. With the recent technology, it can be accessed university-wide with windows search mode, and be updated by staff as well.

The University of Botswana Library subscribes to a number of CD-ROM databases. About 25 of them are made available to patrons by both SCSI Express and Silverplatter ERL servers. As mentioned earlier, patrons access the databases by clicking the icon provided on the desktop to get a log-in prompt. On keying the log-in name and pressing the carriage return the database opens up ready to begin the search. The databases that the patrons can access through the network at University of Botswana include:
- British National Bibliography;
- CINAHL (R) Database;
- CD-MARC Bibliographic;
- EconLit;
- ERIC;
- Global Books in Print Plus;
- ISA;
- Information Science Subset;
- Library and Information Science Abstracts;
- MLA Bibliography;
- Science Citation Index;
- Sociolfile;
- Social Work Abstracts;
- NASW Clinical Register;
- Social Science Citation Index;
- Wilson Business Abstracts;
- Popline CD-ROM (available from; Population and Development Programme).

The databases are updated regularly each time a new release arrives.

Because of the large number of CD-ROM databases to which the library subscribes, it has not been possible to have all of them accessed through the network. Because the CD-ROM

towers for loading the database are not adequate, some database are on stand-alone PCs. A reference librarian supervises the check-out and return of these CD-ROM databases, which include:

- African Studies;
- Biological Abstracts;
- CD-MARC Name Authority;
- CD-MARC Subject Headings;
- Discovering Authors;
- Dissertations Abstracts;
- Distance Education;
- Emerald (full text);
- Historical Abstracts;
- Human Rights;
- Intl EC CD-ROM;
- Science Citation Index;
- Social Science Citation Index;
- South African Law Reports;
- South African Statutes.

The World Wide Web

The library has access to the Internet facilities of the University of Botswana. In its effort to exploit Internet capabilities, the library maintains a home page, which provides information about the library and its resources. Within the library home page, links have been made to resources both that the library has access to and that are deemed crucial for the readership of the university.

In addition to providing information about available resources to patrons, the library has enhanced access to the faculty newsletter by making it available via the Web. The newsletter is meant to inform faculty and staff about the latest acquisitions by the library. The library also makes use of the Internet to provide access to electronic journals. For instance, the University of Botswana Library, as a registered site, has full access to all electronic copies of the 34 physics journals by the Institute of Physics.

Intranet technologies

The University of Botswana Library is the repository of past examination papers of the university. In order to provide wide access to the papers, the library has engaged in a major digitisation project to make the papers available to the university community through the Web. The project entails collecting the examination papers from the examination unit. The papers are then scanned and converted to an electronic format, and finally converted to HTML format. An NT server is used to store the digitised examination papers. Accessing is through the Web, and there are no passwords or other restrictions for seeing these papers. The project has been popular among students, especially during the examination period.

Patron training and access

The library automation section provides access to electronic resources campuswide. University staff members who require the service can request a time for an office visit to install the relevant programs to access the electronic resources. This procedure takes about 15 to 20 minutes to complete.

A team of subject librarians provides training for staff on how to use the resources. Training is also given to individuals or groups in their departments at mutually agreeable time. Staff offices, faculty computer laboratories, and library training rooms are all used to conduct training.

Conclusion

Libraries exist to provide a service: access to information. The University of Botswana Library uses the available information technology resources to enhance its service. From time to time, the library professional staff are in search of new ways to improve the service. Information technology has been put at the forefront in the library's quest to provide quality service.

Please see "Further reading", below, for further information.

Further reading

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