



Preparing for the next generation librarianship: a look at innovations to tailor library and information workforce to match the new environment in Makerere University, Uganda

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ABSTRACT

The overall goal of libraries the world over is to best satisfy their users by providing relevant and up-to-date information. Librarians are dedicated to ensuring that information is always available, in retrievable formats and can be readily disseminated on request. But with the changing demographics of our users, along with changes in technology and new courses, it will take a multi-generational hybrid Librarian and Information Scientist to maintain relevant collections and services to meet the needs and desires of our various patrons. To be able to serve the next generation users, Librarians are exploring ways on how to adapt to the new environment: staff development to create hybrid librarians, who will be able to undertake functions of managers/leaders, website designers, authors, mentors, trainers, archivists, researchers and the like. Therefore, the future generation Librarian should be well trained in areas like customer care, leadership, mentoring, website authoring, training of trainers, online tutorials design, network administration, digitization, etc.. In developing countries, services include wireless technology, digital repositories, information commons, monitoring and evaluation of library activities, etc. There is therefore need to have a workforce that will be able to synchronize with the current library trends to provide relevant services. This paper will examine the initiative Makerere University Library has embarked on to empower its workforce through specialized training in various courses programs, which are being carried out both locally and internationally, discuss briefly the trainer of LIS professional at Maker ere University, and briefly highlight best practices adopted from developed libraries. A questionnaire was prepared for library staff to find out what skills they

have acquired so far, where and when. Furthermore, document analysis will be used for other libraries in Sub Saharan Africa. The researchers then analyzed the data and derived findings and conclusions about workforce empowerment and what this will mean for library users in years to come.

1. Background

1.1 Introduction

Libraries will continue to be dynamic in the coming years, because as the needs and expectations of the academia evolve, so too does the expertise and services of the LIS community and the profession. Today is a time of rapid change and great technological opportunities, which Libraries and LIS professionals should engulf. We, as librarians, are feeling growing pressure to be more timely and to predict content that our library users want before they know that it actually exists or that they need it in the first place. We need to keep our eyes on the tools for proactive and personal alerting - tools like the Google Alerts, Change-Detect, Spy-on-it etc. (Abram, 2003). The next generation Librarian has been referred to as “Librarian 2.0”, comparing this to Web 2.0, a term often applied to a perceived on-going transition of World Wide Web from a collection of websites to a full-fledged computing platform service. Ultimately, Web 2.0 is expected to replace desktop computing applications for many purposes. The Texas Library Association and Texas Library and Archives Commission, (2008) observed that Libraries are instruments for innovation, and are molded by the ideal that, in a true democracy, society must maintain an open and public structure (systems) to inform and empower a free thinking populace for the betterment of service.

This paper answers three major questions, taking Makerere University Library as a case study:

1. What should libraries be like in the future?
2. What are the challenges faced when implementing innovations identified
3. Does Makerere University has development opportunities for the new and existing librarians?

These questions are directed towards libraries rather than the Library workforce. In order to move in this direction, we find that we transform our professional focus from “how we do things” to “how does the user expect things.” This question is not about what we would like to be, but rather, what our users think we should be. The purpose of this study is to provide direction into the future of Ugandan libraries. It is hoped that our efforts will manifest the great interdependence among all libraries, (regional, national and international), and bring

forth a higher degree of cooperation, collaboration, and a collective commitment to move into the future

1.2 The Changing Nature of the Library Workplace

Indisputably, change permeates every aspect of our personal and professional lives, to the point where, for the new generation of librarians, change may be seen as the norm (McCarthy, 2005). The impact of information and communication technologies has been singled out as the driver for most of the change. There is no function within the libraries that is not underpinned by technology.

Brewer, Hook, Simmons-Wellborn and Williams (2004) (cited in McCarthy, 2005) identify some key areas and issues for academic libraries to focus on in the immediate future.

These include:

- Identification and management of information beyond traditional published information, including, for example, learning objects and data sets.
- Development of access systems to facilitate searching across multiple sources and systems.
- Leading and managing new directions in scholarly communication (for example, open access publishing and self-archiving, institutional repositories, institutional academic knowledge management).
- Creation of new knowledge products (for example, subject portals and subject specific websites to support learning and teaching).
- Development of physical and virtual spaces for example, 'Hotspots-libraries without wall' and services to support new pedagogies, including greater partnerships with academic and specialist support staff.

As East African societies become more knowledge based, the role of institutions of higher learning has been mainly concerned with building fields of knowledge that deepen scholarly and public understanding of the human condition in relation to effective management for the betterment of humankind in all spheres of life Julita (2001). Thus, the main emphasis in universities are based on three areas: teaching, research and consultancy. Significant changes in African University Libraries have occurred in the workplace, as indicated by Musoke (2007). Traditional manual services such as current awareness and selective dissemination of information are now provided electronically. Library users are guided by the librarians, for example, on how to register with publishers to get tables of contents pop up on their e-mails whenever a new journal issue is out (Musoke, 2007).

Librarians have embraced the new developments/advances in ICTs and many have been trained and re-trained to be able to update their knowledge and skills, be able to train other librarians especially the new recruits, academic/administrative staff, students, external library users such as students/academic/administrative staff from other universities both in Uganda and other countries especially East African Kenya and Tanzania plus the general public. Research has recently increased in most Sub-Saharan African Universities mainly through donor funding curriculum restructuring resulting into introducing new course units from the existing conventional disciplines to suit the communities graduates serve after graduation. This has led to increased demands for Library and information resources. Internationally, both the methods of conducting research and paradigms have kept on changing and new modes of quest keep on emerging today (Musoke, 2007).

There is increased demand for ICT services among library users and the desire to access information resources on the Internet; and yet many users have no search skills. So, librarians have had to conduct information searching and retrieval sessions to guide library users on how to identify reliable and quality sources of information on the Internet. There is demand for development and use of digital and multimedia materials and applications by students, academic staff and other members of the Universities to boost information provision to support study, teaching and research consultancy or community outreach. However, there is a concerted effort to solve the problem of ICT development and usage in Higher Education Institutions in Africa through the Association of African Universities (AAU). Summary of On-Line Discussion on ICT in higher education institutions in Africa (2000). The functions of the Universities are described by Daly as follows:

- Education: conventional, distance education and others
- Knowledge creation: organization and management which includes: research capacity, which requires strong ICT support which is the priority for knowledge creation
- Evolving technology changes which includes: research and development which expands the topics suitable for research

Source: Summary of On-Line Discussion on ICT in higher education institutions in Africa (2000).

1.3 Skills Library Staff Need in the Future

The role of a librarian in the current academic environment and information age is very diverse and essential as she/he displays skills and knowledge in providing library programmes, services and materials that are critical to the changing information needs of students, as well as supporting academic staff who are engaged in lecture-room instructions,

research and knowledge creation. Librarians, therefore, need both the intellectual ability and skills to enable them to accomplish key objectives that are aimed at contributing to the University's mission and vision (Musoke, 2007). The skills and attributes needed include communication, training, technology, planning, organizing, innovativeness, enterprise, team work, and self management.

- i. Communication skills in both written and verbal (plus negotiation or bargaining skills) to support library-to-library user relations and training.
- ii. Training skills are closely related to communication skills. A librarian needs training skills to be able to train users in various ways e.g. information literacy/bibliographic instructions/user education, dissemination of selected information and use of new technologies.
- iii. Technology skills to contribute to the effective execution of library work in the ICT age..
- iv. Planning and organizing skills which contribute to the library long-term and short-term strategic planning; and the ability to plan one's work and to priorities as there are so many demands.
- v. Initiative and enterprise skills that contribute to innovative outcomes and outputs as well as project management skills. Most libraries have to initiate and implement projects with timelines which have to be strictly adhered to.
- vi. Team work /interpersonal skills that contribute to productive working relationship and outcomes.
- vii. Learning and self management skills including the desire for the librarians' professional/career improvement. These skills contribute to the ongoing improvement and expansion in the librarian's knowledge and skills, which enhance the library/university's operations, outputs and outcomes.

In addition, there are various other skills and personal attributes, which are greatly needed by the librarian of today. For example, commitment to meeting the needs of library users, ability to balance work and home demands, adaptability and willingness to work under pressure, respect for ethics, integrity and quality assurance.

1.4 Makerere University

Makerere University is one of the oldest and most prestigious Universities in Africa, having been founded in 1922. Previously known as the University of East Africa (since 1965), in 1970 the University was renamed Makerere. Today the University has twenty-two faculties/institutes/colleges/schools, with above 30,000 undergraduates and 3,000 postgraduate students. Its quality education has continued to be desired by students from countries all over the world. Some of them include: Uganda, Kenya, Tanzania, Rwanda,

Burundi, Botswana, Cameroon, Democratic Republic of Congo, Ethiopia, Eritrea, Liberia, Sudan, Somalia, South Africa, Zimbabwe, Australia, Canada, Germany, Japan, Norway, Sweden, USA, India, Pakistan, Lesotho, etc.as the University's academic (2006/7) admission list shows Musoke (2007). Makerere University Library comprises of the Main Library and seven specialized Branch Libraries, five located within Makerere University main campus and two off campus. Makerere University Library also serves as a National Reference Library. In this capacity, it is a legal depository of all works published in Uganda, including government publications. It is also the depository of United Nations' publications and related bodies.

The Library also boasts of a special collection of information resources, consisting of the University archives, Africana materials, manuscripts and photographic materials (all located in Africana section). The history of medicine in Uganda is located at Albert Cook Branch Library. These unique collections are preserved and provide access to interesting information on Uganda's heritage in medicine. The library collections are accessible through its online catalogue. It also provides web-based access to a broad variety of electronic databases viewed as abstracts and full text.

1.4.1 The University Library initiative to innovations for next multi-generation librarians

Makerere University Library has taken serious steps in recognition of the imminent need to prepare for the next multi-generation librarian. In the presentations, we show that the library there is a view to think of technology as the enabling factor in the new information environment, but also the human aspect is just as important, and efforts have been initiated towards new career paths for the staff and also mean to support them.

The Main Library is situated at Main Campus. It traces its origins from 1959. It covers a total area of 4,000 square meters. It was extended in 1962, 1972 and 2006. The extensions increased the area to 12,000 square meters with a seating capacity of over 2,800 and soon another extension is commencing to increase space for reading capacity . There are eight sections in the Main Library: Technical Services, Periodicals/Serials, Reference and Circulation which includes Law collection and IDA/Basic textbook Reserve collection, Africana, Information and Communication Technology (ICT), Microfilming/ Digitization, Book Bank and Bindery. In addition to the Branch Libraries, there are Book Bank Faculty Libraries namely: Forestry and Nature Conservation, Faculty of Technology, Institute of Statistics and Applied Economics (ISAE) and Margaret Trowell School of Industrial and Fine

Arts (MTSIFA). In a bid to serve all library users including the disabled people, Makerere University Library has refined its library system to allow information access to be customizable and flexible, according to the needs of individual users. A computer Laboratory has for instance been set up on the ground floor of the new extension to cater for the physically handicapped users.

1.4.2 Competencies Matrices at the University Library

The Library has commenced the development of Competence Matrices for key job and service functions. These identify the key competence areas, and the skills and knowledge required to meet the competencies. Makerere University has policies governing all activities which include: Recruitment, Appointment, Promotions, Staff Development, Retention and Retirement. There are Job Descriptions for each category of staff. Makerere University Library Service now follows the recruitment policy derived from the ‘Mujaju Report 2006 which stipulates that academic staff in the university starting point should have attained an Upper Second Class Honors Degree and that equivalent to the Teaching Assistant Post in Makerere University. Librarians are recruited on a ‘Two-Tier System’: Academic and Administrative. Those with Upper Second Class Honors Degree are designated academic; those with Lower Second Class Honors Degree designated as administrative equivalent to any other administrative staff in the University. Emphasis is that to be a Lecturer in Makerere University one must have a doctorate degree (PhD) in order to teach any academic discipline as starting point, thereafter these lecturers are required to show their wits via publishing academic publications to add to the bank of knowledge of the university.

1.4.3 Trainers of LIS Professionals Working in Makerere Library Service

Many of the pioneer librarians who worked in the Sub-Saharan Universities’ Libraries were trained by the Library Association in U.K. Kigongo-Bukenya (2009) Now, most African countries Sub-Saharan countries inclusive have established Schools of Library and Information Science in their universities. Most of the librarians work in Makerere University Library Service now have been trained by the East African School of Library and Information Science, Makerere University.

The East African School of Library and Information Science trains most librarians in East Africa, and other neighboring countries: Sudan, Rwanda, Democratic Republic of Congo Ethiopia and Eritrea. The School offers a number of training programmes so that at the graduate, the students are equipped with skills to work in any Information Institution such as Library, Archive Institutions, Registries, Records Offices, Publishing Houses, Book Distribution Centers, Documentation Centers, Information Centers and Resource Centers. Other components include: Computer and Audio-Visual, Book Processing, Desktop

Publishing. There are three departments: Information Science; Library Science; and Records and Information Management. The School's mission is derived from the goals of its parent body Makerere University, the present and future demand for the community, both local and international and its place EASLIS in the international professional and academic environment, "to become a center of excellence responsible for producing national, regional and international high quality information professionals capable of responding to present and future needs". The School's goal is to produce high quality Library and Information Professionals

2. Innovations in the library service at Makerere University

2.1 ICT innovations

The past few decades have brought in revolutionary changes in information handling activities as a result of advances in Information and Communication Technologies (ICT). Such monumental changes demand new roles for LIS professionals. The twenty – first century information professionals must possess skills on selection, content management, knowledge management, organization of information on intranets and internet, research services, developing and maintaining digital libraries, and bringing information resources to the desktop. People with the right skills are crucial to the success and competitiveness of contemporary information environments. It is predicted that by 2010 the majority of jobs in Libraries and Information Centres (LICs) will be ICT-related. Hence educators must assess what kinds of skills are needed for students to be prepared for the current employment trends. This paper sketches out some emerging visions for the twenty-first century LIS professionals from the employers' and alumni' point of view.

University libraries in most countries in Africa have been given an opportunity by the use of ICTs in providing super library and information services in an environment characterized with the ever-increasing library user communities in the face of diminishing capacity. In Makerere University library, ICT systems have acted as engines to provide solutions in the service delivery. The usual professional activities are done electronically using systems set like Virtua in cataloging, and User Education using Online Public Access Catalogue (OPAC). There are other electronic means of accessing library e-resources such as e-books and e-journals. The Uganda Scholarly Digital Library (USDL) system is used to scan hard copies of dissertations and thesis, conference papers etc. Others include the DATAD in African section where all dissertations and thesis are entered to be accessed online.

2.2 Staff development

In order to promote professional services delivery at Makerere University Library, the library management designed two programs for the new recruits: on-the-job training and orientation. Continuing education/training (both formal and informal) programs is for staff who have finished the probation period of two years. Informal training involves conferences, workshops and seminars, etc. Formal training involves further studies e.g. Masters, PhD and publishing.

2.3 Curriculum development

The structural feature of globalization is its effect on higher education as it depends on the latter for the human capital. Thus it affects policy making, governance, organization, academic work and the identity of higher education. LIS education is also a part of this transformation. The need is to blend global tendencies with local responses. It presupposes a convergence thesis. LIS curricula have taken these challenges into consideration and revised their course structures thus competing with the demands for manpower from the contemporary information society. In 2002, the Indian University Grants Commission (UGC) recommended a Model Curriculum for Library and Information Science. Departments of library and information science are concerned about the challenges of recruitment and of keeping curricula relevant for new jobs in new settings and new responsibilities in old settings. The majority of universities switched over to a two year integrated masters degree in Library and Information Science and adopted the suggested curricular programmes in total or with little modifications to suit local needs and demands. Makerere University currently has both Masters and PhD programs!

2.4 Mentoring and Orientation approaches

The University Library designed approaches to prepare the staff on the probation period for the next generation through mentoring and collaboration. This process is facilitated by the existing professionals in the service delivery (the older staff). The new staff is encouraged to collaborate with the older staff, an external library professional online through an internet library facility called Web 2.0. The new staff also receives orientation in the activities they are instructed to perform especially ICT related activities like web designing, trouble shooting skills, web and tutorials.

2.5 Leadership training

The University Library management has visional leadership which has designed programs to groom new leaders in the library hierarchy through mentoring and collaboration in leadership skills. Some staff, at the onset of their orientation and mentoring, are put on respective committees to receive required skills in leadership. Some staff are given basic skills in

finance management, human resource management, institutional management policies, monitoring and evaluation, implementation of approved policies, communication skills (both oral and written), etc.

2.6 Collaborations and Partnerships

The University Library encourages its staff to be involved in both internal and external collaborations in order to prepare them for the next generation leadership. They are encouraged to join professional associations like Uganda Library and Information Science Association (ULIA), Consortium of Uganda University Libraries (CUUL), International Federation of Library Associations (IFLA), INASP, etc. Other paradigms is to collaborate with other African University Libraries in order to equate themselves with their library operating systems. The following are some of the examples:

- ERUDITE system is used at the United States International University, Kenya
- ADLIB at the University of Dar-es-Salaam, Tanzania
- INNOPAC at the University of Zimbabwe Library
- VIBUSMART at the University of Nairobi, Kenya
- ISIS and WEBLIS, at the Sokoine University of Agriculture, Tanzania; and Uganda Martyrs University

3. Challenges to Innovations in the library service

3.1 Static Library workforce versus Dynamic services

Most Universities in Sub-Saharan Africa are faced with a large number of student enrollment in their universities and yet the librarian' ratio to student is very high. Library infrastructure both physical and ICT are not improved on. In Makerere University, the establishment of Library Professional Staff is 71 established posts, as of now they only 52 professional librarians in the service as discussed in section 4. Reading materials, textbooks, journals not tally with the number library. The computer ratio to student is unrealistic. At Makerere University, the institutional target was 1:5 2006/7 academic year Musoke (2007). Currently, a few computers have been increase in some faculties/institutes/colleges/schools, but is still inadequate

3.2 Financial constraints to Innovation in the library service

Most Universities in Sub-Saharan Africa have come up with funding strategies especially writing proposals to development partners in order to ensure that library services continue running as expected and that donor funded projects are sustained Musoke (2007), inadequate funding has remained one of the worst challenging drawbacks to library services in all Sub-Saharan African University settings. During the 2005 Sub-regional Conference (Musoke,

Kakai & Akiteng, 2005,) as representatives of Makerere Library Service repeatedly highlighted limited funding as a major set back. It was then recommended to integrate the maintenance of sustainability of ICTs in libraries into the main-central University annual budgets. At Makerere University, 3% and 2% respectively from university units, faculties/institutes/colleges/school have so far been put to the Library Service.

4. Survey Study of Librarians at Makerere University

A census was conducted at Makerere University Library to find out, over a period of five years:

1. What additional training the Library workforce has attained, when and where
2. What the benefits of the training were
3. What other library innovations and best practices the staff have been involved in.

A questionnaire was sent to all library professional staff. All the 52 Library professional staff responded by filling the questionnaire. This accounted for 100% response.

4.1 Literature Review

The literature reviewed indicates that most libraries have opened access to the newest technological applications such as instant messaging which will help them make a difference in delivering services to their users. It is an exciting concept which can create a platform that creates the next generation of library websites, databases, OPACs, intranets and portals in a way that allows the end user to survive and thrive, and libraries along with them (Abram, 2007). Libraries in developing countries have engulfed the new technologies by ensuring that the Library W workforce is tailored to adapt to the new environment. These librarians have been referred to as Librarians 2.0 (Ibid). Makerere University has had to develop strategies to address the changing needs of Library users. These changes have come as a result of the changing methods of teaching, learning and research; new paradigms, new/revised programmes, new curriculum developments, groups versus individual study (Musoke, 2007). To be able to effect these changes, the library workforce has had to urgently address the following:

1. Intellectual ability to respond to the changing needs;
2. Practical skills: communication, training and IT;

3. Personal attributes: commitment to meeting the needs of lib users, ability to work under pressure, innovativeness, balance work and home demands, respect for ethics, integrity and quality assurance
4. Developments in ICTs, expansion in information sources and increase in user expectations
5. Library users' active engagement in the information chain (Ibid, 2007).

4.2 Findings

The findings from the study indicated that there have been two types of capacity building of Library workforce.

1. The informal training – This includes short courses attended both locally and internationally.
2. Formal training – This included upgrading from Diploma level up to PhD level.

The trainings (both formal and informal) are steadily leading to better service delivery that the current and future users of the Library will appreciate.

The table below shows the informal and formal training attained by the Library workforce, and how these trainings have prepared the staff for the changing roles for librarians and library services delivery. The scope of the study included the questions about workshops and seminars regarding ICT innovations in the library, as well as formal training of Library staff. The table further shows a summary of the benefits. The major indicator variable was the number of staff that received such innovations and the general outcome of the training.

Furthermore, the table shows the collaborations with other university libraries in developing countries where staff went to be equated with the best practices which are later implemented locally. After visits to these other libraries' setups, information dissemination seminars are organized in the Library with an aim of sharing experiences with colleagues who have not had the chance yet to visit these places. Remarkably, support from development partners such as Sida/SAREC and the Carnegie Corporation of New York have increased the ICT equipment such as computers. This has greatly improved on the user to computer ratio.

Table showing the results of the census for the Librarians in Makerere University

Seminars workshop/ attended	No. of Staff	Location	Period	%	Outcome	Remarks
1. Training						
Website Authoring	20 trained	MAK, UK	2005	38.5	Website management	More staff
CMS	8 trained	MAK	2009	15.4		Need to be trained.
E-Resources:						Good
USDL	1 trained	Tufts Univ & Univ. of Tennessee & Bergen Univ, Norway.	2005	1.9	-Created institutional repository communities, Posting & uploading content into the Digital Library	Good work done
	33 trained	Makerere Univ.		63.5		
-ELIN	3 trained	Lund Univ. Sweden	2005	5.8	-Both staff and users trained	Good work done
	33 trained	Makerere Univ.		63.5		
-Online tutorials	2 trained	Univ. of Pretoria	2006	3.8	- On-line tutorials designed	
Archives Management	1 trained	Univ. of Wales	2009	1.9	- Library's rare collection & records archived	
	1 trained	Makerere Univ.	2007	1.9		
Trouble shooting	33 trained	Makerere Univ.	2004	63.5	PC maintenance by staff	Good work done but more staff should be trained
-OPAC (Virtua)	1 trained	Virginia (Liz)?	2003	1.9	-Records entered in Virtua and edited	Disseminated
	52 professional staff trained		2007	100.0		
Formal capacity building	-2 have PhDs -5 on-going PhDs -4Masters on-going			3.8 9.6 7.7		More needed
Wikis and Blogs development	1 trained	Thomas Jefferson University, U.S.A	2007	1.9		Disseminated, more training needed
ICT	3 trained			5.8		
Collaboration ICT	3 attached to the Montenson Centre, USA Sida, Carnegie Corporation of New York, NORAD			5.8	Best practices and application to Mulib ICT support & capacity building	Exchange programme between Makerere & Champaign, USA
ICT	All	2001to-date		100	ICT facilities increase search commons in progress, wireless connection in progress	Good

5. Conclusion

Creating a positive working environment for new and existing librarians has a lot to do with national, institutional ICT technologies both in infrastructure policies, facilities, equipments and systems. Makerere University, being the biggest and oldest in the country has managed to build the capacity of her Library workforce to a level that will address the ever changing needs of the Library users. Through its visional leadership teamwork, and support from the University Management, it won the Development Partners' Proposal Competition in African countries for funding for Role Model Library in Africa. Most universities in Africa now seek guidance and instructions/training from Makerere University Library Service. So far, countries like Sudan, Nigeria, Zambia in addition to other universities in Uganda are already benefiting from this paradigm. However, more changes in teaching, learning and research are expected. Additional support is required to enable the libraries to address the challenges and to build on the strengths and achievements already realized.

6. Recommendations

As regards need for innovations for the library workforce to prepare for the next generation, the following ICT facilities are recommended:

6.1 Wireless services

The wireless is another obvious trend that many libraries are adapting to very quickly. Some schools are trapped in buildings that limit their technological flexibility. It's just too expensive to wire through poured concrete, asbestos, or historical important buildings. Many institutions have already discovered that such technological approaches as wireless SkyPort drops and Bluetooth solutions can work around these limits and are cost effective, strongly enhance service and access. The wireless technology has so far been installed to the College of Health Sciences, and has so far reduced congestion in the few computer laboratories at the College. Makerere University's Mulib system is setting up a wireless connection to be accessed both in the old Library building and the new Extension.

6.2 Research Commons

One floor in the new Library Extension has been set aside to cater for research commons. This will cater for the needs of researchers and students who may not have the required facilities to support their study and research

6.3 Introduce user-centered & IT-driven Library

LIS schools need to revisit their curriculum to be able to prepare LIS graduates for the user-centered and IT-driven library environment. Such courses as electronic publishing, Database Management, Cybercafé Development and Management, Digital Libraries, Geographical Information Systems (GIS) and Monitoring and Evaluation of information systems and services, Hotspots/ Library without walls should be integrated in the curriculum

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