

UTILIZATION OF ELECTRONIC INFORMATION RESOURCES BY ACADEMIC STAFF AT MAKERERE UNIVERSITY

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Abstract

The study investigated the utilization of Electronic Information resources by the academic staff of Makerere University in Uganda. It examined the academic staff awareness of the resources available, the types of resources provided by the Makerere University Library, the factors affecting resource utilization. The study was both qualitative and quantitative employing both questionnaire, interview and content analysis methods. Findings reveal that the University Library provides electronic information resources and that most academic staff are aware of their availability, but do not utilize them. Furthermore a number of factors affect electronic information resources' utilization. The study concludes that despite a number of problems that inhibit utilization of e-resources, a limited number of academic staff actually use electronic information resources. The study recommends enhancement of Information and Communication Technology Network or Bandwidth, provision of adequate Information and Communication Technologies, decentralization of service provision and increased marketing strategies.

Background

The shift from printed forms of information resources to electronic information materials means that both academic staff and students must utilize these resources for better quality, efficient and effective research more than ever. Although Makerere University Library has conducted workshops and several times communicated to academic staff, they have not utilized electronic information resources effectively. Few document request forms are submitted in a month requesting for articles through electronic journals and the same is true with utilization of Document Delivery Services and other scholarly databases.

Today all the 54 countries and territories in Africa have access to electronic information resources especially in their capital cities. Uganda was

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one of the first countries in Sub-Saharan Africa to obtain some of these resources. University libraries in Africa are keen to extend their application of Information and Communication Technologies, subject to resources being available. This extension however is not likely to reduce the need for printed books and journals as sources of information, but might provide links to the outside world and increase Intra-African exchange of information.

Over the past five years, the trend towards making information available online has accelerated. This is particularly true of serial publications, although digitized books are also beginning to make an impact. In endeavoring to access information that their patrons require, libraries operate in an increasingly complex environment. They weigh the merits of print against electronic versions of publications, taking into account the implications of moving from owning print publications to leasing access to electronic resources.

Due to developments of Information and Communication Technology especially the World Wide Web, Makerere University Library introduced a dial-up based Internet service through a commercial Internet Service Provider in 1997. It was aimed at facilitating information delivered by providing direct access to electronic information resources via the Internet. It is noted that the first Internet Access Centre of the University was based in the Main Library. As a result Internet sites, World Wide Web products, online search services, Compact-Disc search services and electronic texts are being provided.

Makerere University like most institutions in the region has started integrating Information and Communication Technology (ICT) in all its functions in order to improve the delivery of its services. Whereas access to electronic information resources offers most institutions opportunities to obtain such literature in a secure and timely fashion, a look at the utilization of these electronic information resources in the Makerere University Main Library showed that slow processes of searching, dissatisfaction and frustration of users loom in the air (observation and personal communication).

This study examined why the academic staff of Makerere University has not utilized electronic information resources and made proposals for improvement. The major objectives of the study were to establish the types of electronic information resources available, establish the factors affecting their use, identify problems associated with their utilization and make recommendations on how such electronic information resources can be effectively utilized. The study would provide vital information to library management and the intended beneficiaries of the electronic information resources. It would also help to identify solutions to both administrative and technical bottlenecks.

Review of Literature

The introduction of Information and Communication Technology and its continued growth and utilization in information centers and libraries has resulted in a number of studies. In the past libraries and information centers had to manually manage their information resources and the laboriousness of such practice, the attendant delay in information processing and delivery services and the general ineffectiveness of information services in the 1990's no doubt motivated serious research into better means of information management (Nwalo, 2000). The high point of the research outcome is the much cherished information technologies of the present day.

Mutshewa (2000) asserts that 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 visited the library. The situation has now changed and access to these guides has become paramount. He concludes that 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.

As far back as 1978, developing countries were being urged to adopt the new technologies. Although this vision of the future has been disputed, certainly the more recent discussions on University education in Africa have leaned towards the adoption of information technology - whether for the automation of libraries or for accessing or acquiring of information through the use of CD-ROM or electronic networks - as being of key importance in solving University Library problems (Rosenberg, 1998).

According to Nwalo (2000) information technologies found in libraries at present can be divided into three categories: computers, storage media and telecommunications. These three aspects, working together have brought about great improvement in the quantity and quality of library services to users and an amazing reduction in the delivery time. Furthermore, the fusion between computers and telecommunications has enhanced the development of information networks around the world, the highpoint of which is the Internet.

Majid (1999) emphasizes that the amazing technological advancements have opened new horizons for information creation, duplication, storage, access, distribution, and presentation. The pace at which information sources are being produced and converted into electronic form is marvelous. Digitization of information is resulting in access to an unbelievable volume of information.

Various studies have examined the use of CD-ROMs in Africa, especially in libraries (Nwalo; 2000). Apart from storage space economy, the CD-ROM provides access to information held by important databases without laying

cables. This is very significant considering that lack of good telephone services is one of the major obstacles to computerization and networking by libraries in Africa.

Today, libraries are providing electronic access to a wide variety of resources, including indexes, full-text articles and complete journals. Electronic journals offer a solution to some of the problems facing the management of the academic journals, they are space saving, they enhance speed of communication, provide powerful searching tools, can provide immediate access to your desk and they can provide facilities such as integrated text, hypertext links and multi-media that the printed journal cannot offer (Sweeney, 1997).

Electronic document delivery in libraries and information centers, which is an aspect of Inter-Library Lending (ILL), is concerned with access to, and dissemination of non-returnable library materials between libraries and information centres and their patrons (Alemna, 1997). A summary of the findings of a recent survey of the situation among University libraries in Africa, undertaken by the London-based International African Institute (IAI) encapsulates a number of problems such as gross under-funding, inadequate IT infrastructure, donor-dependency, poor collections and high postage/delivery charges as some of the constraints that have militated against document delivery as an alternative to large core collections in Sub-Saharan African University Libraries (Kisiedu, 1999).

Several studies have emphasized the need for computer literacy among academic staff. A computer literate faculty member is expected to benefit from CD-ROM databases, effective use OPACs and online services, and confidently explore the amazing world of Internet. Many researchers believed that use of computers in pedagogical process would help improve the quality of education as well as assist in intellectual growth (Majid, 1999).

Merrill (1996) highlighted the impact of computers in the pedagogical process, and the use of various computer applications in education like drill-and-practice, tutorials, simulations and problem solving applications. The authors argued that online database searching skills would help lecturers to compile bibliographies on particular subjects and direct students in their course works. Buckle (1994) observed that scholars and researchers would be using the electronic medium for information acquisition, usage, and sharing. He emphasized the need for teachers and students to use electronic information sources, considering that interactive electronic applications were of much assistance in posing questions, providing and analyzing answers.

According to Wood (2000) our society's digital revolution has transformed the traditional quiet world of libraries. Open to debate is the exact form and role we can expect for academic libraries in the beginning of the new millennium. Dramatic changes are in the offing for academic libraries as a result of the digital revolution, such as: changes in the form of

the library, changes in the relationship between an Institution's Library and its Information Technology Division, changes in the way collections are acquired, organized, stored, and delivered and changes in the design of library buildings and facilities and in participation by libraries in Consortia (Marcum, 2002).

Despite developments in the use of information technology in University environments in the region, the countries of Eastern and Southern Africa and the whole sub-Saharan region still lag behind compared to their Western counterparts (Mutuwa, 2001). According to the 1996 Status Report on 19 University libraries representing 12 countries in East Africa, the adoption and use of information technology was found to be quite low (Rosenberg, 1998). She further looks at the benefits that Information and Communication Technologies have brought to these University libraries in twelve African countries, but wonders what will happen when donor aid ceases since, at the time of the survey, no library had made any practical proposals for financial sustainability.

Mutuwa (2001) concludes that in general most University libraries within the region have limited access to modern computing and communications technology, so it is difficult for teachers and students to keep abreast of current developments in their academic areas.

Levy (2001) further asserts that although the Internet and related resources are marvelous tools, they cannot replace teachers, libraries or librarians. Because they are very new in Africa, many African University Administrators have misconceptions about their place on campuses. He concludes that these resources cannot replace libraries, although he had heard vice chancellors postulate that libraries were becoming superfluous, we cannot do without the print media. Electronic information resources are likely to be the backbone of our research, therefore there is need to look at how they are currently utilized and identify the bottlenecks, if any, that impede their effective utilization in our universities.

Methodology

Both qualitative and quantitative research methods were utilized. Quantitative research design was used to determine frequencies and percentages. Qualitative research was applied because it delves into where and how policy and local knowledge and practice are at odds and handles real as opposed to stated organizational goals (Marshall, 1999). The population consisted of 1024 academic staff of Makerere University drawn from the 17 Faculties, Institutes and Schools. Stratified random sampling strategy was used to select the 300 respondents. Questionnaires, interview schedules and document analysis were used to collect data. The SPSS package was applied in data analysis. Data is presented in the form of explanatory notes and tables.

Discussion of Findings

Respondents

A total of 157 questionnaires were returned, the response rate was therefore 52% . This low rate was a result of academic staff's lack of time to answer questionnaires and their availability for interviews. However, this did not affect the reliability and validity of the study since methodological triangulation was used. Respondents were from the 17 Faculties, Institutes and Schools of Makerere University. Of the 157 respondents, 122 respondents (77.7%) were male and 35 respondents (22.3%) were female. While 7 (4.5%) were Professors, 5 (3.2%) Associate Professors, 22 (17.2%) Senior Lecturers, 53 (42.7%) Lecturers, 18 (15.3%) Assistant Lecturers, 15 (13.4%) Researchers and 6 (3.8%) other categories.

Availability, access and use of computers

Respondents were asked about the availability of computers in the faculties/departments. 153 respondents (97.5 %) indicated they had computers in their faculties/departments while 4 respondents (2.5%) did not. Among those that had computers in their faculties/departments only 95 respondents (60.5%) had them in their offices while 62 respondents (39.5%) had none in offices. Findings indicated that 66 respondents (42%) were connected to the Internet, 77 respondents (58%) were not connected. 14 (8.9%) did not respond.

Respondents were asked about their computer skills and accessibility to electronic information resources. Findings revealed that 84 respondents had intermediate skills (53.5%), while 52 respondents (33.1%) were experienced in computer use and 21 respondents (13.4%) revealed they were still beginners. Accessibility to the electronic information resources was also considered and 104 respondents (66.2%) indicated they had access to these resources, 52 respondents (33.1 %) had no access to them, while 1 respondent (0.6%) ignored the question.

Awareness about electronic information resources

140 respondents (89.2%) were aware of the availability of E-Resources while 17 (10.8%) were not aware of these resources. Despite academic staff awareness of these resources only 55.7% were aware and had ever used the same resources while 44.3% were aware but had never used the same leading to major issues of utilization and non-utilization of electronic information resources.

Non-utilization of electronic information resources

Findings revealed that 79 respondents (50.3%) had used these resources while 78 (49.7%) had never used them.

Reasons for non-utilization of electronic information resources

Of the respondents who had not utilized electronic information resources, 14 respondents (17.9%) mentioned they had no access to the services. While 12 (15.4%) indicated that they did not know what they were and hence could not use them. The same number of respondents mentioned lack of facilities to use and lack of time as limitations. In this category of non-users of electronic information resources 10 (12.8%) said they were completely not aware of these resources and actually needed more information about them. Some respondents cited other reasons like overcrowding in the library computer laboratory, failure to get passwords from the library staff, lack of information about electronic information resources and lack of familiarity with these resources.

However, despite these reasons, the majority of the non-users 74 (94.9%) indicated that they were interested in using these resources. This is an equivalent of 47.1% of the total number of respondents, while only 3 respondents (3.8%) did not respond and 1 respondent (1.3 %) was not interested at all in their use.

Non-users views that can enable them use electronic information resources

The library's linkage with faculties was mentioned by 28 respondents (35.9%), and most of these were of the view that decentralization of such services would enhance their use. This therefore means that some did not even know that with passwords one could easily access these resources. Increased publicity or marketing of the availability the electronic information resources by Makerere University Library was also mentioned by 19 respondents (24.4%). Other respondents mentioned provision of passwords and relevant databases, congestion in the computer laboratory, independent access sites, unfriendliness of library staff, explanations by library of the advantages of electronic information resources and provision of a help desk.

Utilization and knowledge about electronic information resources

Respondents were asked how they learnt about the availability of the Electronic Information Resources provided by the University Library. Workshops were the most useful tool for publicity and staff sensitization, 42 respondents (53.2%) cited notice boards, 24 respondents (30.4%) mentioned use of electronic mail. Others mentioned colleagues, individual visits to the library, circulars from the University Librarian, communication from individual departmental meetings and seminars and use of mailing lists. CD-ROM databases were mentioned as some of the resources that have been utilized by 25 respondents (31.6%), 46 (58.2%) electronic journals, 10 (12.7%) electronic document delivery confirming earlier fears of poor publicity.

Use of electronic information resources

Findings revealed that 45 (57%) of those that use electronic information resources used University Library computers, 30 (38%) departmental facilities, 16 respondents (20.3%) used their offices. Other responses included use of Internet/business cafes outside the University. Interviews and visits to faculties confirmed some of these findings.

Findings further revealed that electronic information resources were not frequently used. 23 respondents (29.1%) used them only once in a week, 17 (21.5%) use them more than once a day, 13 (16.5%) once in a day and 27 (34.2%) use the same less than once a month.

Electronic information resources in terms of information provision

Both interviewees and questionnaire respondents were asked how they rated these resources in terms of information provision. 7 respondents (8.9%) mentioned that Electronic Information Resources were excellent, 30 (38.0%) said they were very good, 33 (41.8%) good, 6 (7.6%) poor and 1 respondent (1.3%) mentioned them as very poor in terms of information provision. Interviews revealed that most academic staff regard them as essential for their research and teaching.

Academic staff benefits from electronic information resources

Respondents were requested to give reasons why they use electronic information resources and related to this were the benefits accruing from use of these resources. 72 respondents (91.1%) utilized these resources for research. This involved retrieval of current literature reviews, personal research and accessibility to latest research developments in the academic world.

Findings revealed that 43 respondents (54.4%) of those that utilized these resources were using the same for teaching purposes and 33 (41.8%) preparation of presentations and conference papers. Others mentioned book selection, easy communication through the Internet and acquisition of information on courses and programmes.

Factors affecting the utilization of electronic information resources provided by the University Library

In African universities today electronic information resources are a new phenomenon and a number of factors must therefore be at play in their utilization. The researcher therefore had to include a question as to what factors affect their utilization in the University Library. 45 (57%) mentioned inadequacy of the existing facilities, 20 (25.3%) slow speed or poor bandwidth, 16 (20.3%) poor sensitization or limited publicity, 14 (17.7%) limited Information and Communication Technology.

Other factors included: lack of fixed schedules for computer laboratories, centralization of the resources, lack of time, irrelevance of the databases, limited subscription to databases and poor packaging of information, library's preference for cheaper electronic information resources, limited accessibility to databases through use of passwords, restriction in use of diskettes for information retrieval and brevity of information. Other factors least mentioned are laziness, inability to print from the library, limited funding by the university to avail every department the needed facilities and location of some faculties for example faculties of Veterinary Medicine and Human Medicine that are far from the University Library. Academic staff and Senior Librarians that were interviewed also listed the above factors.

Challenges to the utilization of electronic information resources by academic staff

Inadequacy of facilities for use was mentioned as one of the biggest problems users faced, leading to congestion. This was summed up by one Senior Lecturer interviewed who wondered "how a research library could stay unconnected to the Internet in this ICT age" in reference to Veterinary Medicine Library. Poor computer communication systems were mentioned which some respondents took as poor bandwidth leading to poor utilization of these resources. Another Professor remarked that "constricted access lines were very frustrating" leading to poor utilization. However, interviews with some staff from the Department of the Directorate of Information and Communication Support revealed that the increased use of Information and Communication Technologies for communication purposes and infrastructural problems especially in the developing countries were responsible for delayed access.

Findings revealed that most respondents had not heard about Electronic Document Delivery Services. Centralization of utilization of electronic information resources was also cited and those interviewed mentioned that the introduction of the Local Area Network would go a long way to solve this problem. Unstable Internet facilities, limited access to some sites, lack of permanent time schedules for individual departments for respondents that were accessing these resources from the University Library were mentioned. A Senior Lecturer in the Department of Food Science mentioned that "biological abstracts relevant to their field of study" were not available, concluding that "there were no relevant databases that suit their information needs".

As mentioned earlier the study revealed that 13.4% of the respondents were beginners in computer use, it's no wonder therefore that poor computer skills was one of the problems cited while some raised the problems of location of faculties, space limitations, poor publicity by the University

library, printing costs, restrictions on use of diskettes, unnecessary erasure of mails and lack of time.

Conclusions

- Findings show that despite poor facilities for use in communication, sensitization and other impediments, a limited number of academic staff utilise Electronic Information Resources.
- To achieve this little success the University Library had to employ a number of strategies and as findings show most staff are now aware of the availability of these facilities although they have not used them.
- Findings further indicate that a number of electronic information resources which include; CD-ROMs, electronic journals, electronic document delivery services, Internet search engines, scholarly databases among others are being accessed by academic staff indicating a new shift from use of traditional information sources. The frequency of use of these resources however indicates that a lot has to be done to attract more users.
- From the findings a number of factors and problems do inhibit use of electronic information resources and a look into other studies from the literature review indicates that such challenges are bound to exist especially in the developing countries where most of these resources solely depend on donor funding which is limited.

Recommendations

Despite the prevailing unfavorable circumstances, recommendations were drawn that may offer the way forward. These included among others;

- Increase of ICT network or bandwidth.
- Provide of adequate Information and communication technologies.
- Decentralize of service provision.
- Increase marketing strategies.
- Train staff in Information and Communication Technologies.
- Promote effective communication of usernames and passwords.

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