The Adoption of Information and Communication Technology (ICT) in the University Libraries of Bangladesh: An Exploratory Study

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Abstract

This study aims to explore the extent of adoption of information and communication technology (ICT) in the university libraries of Bangladesh. The study discusses the present conditions of using ICT by the public and private university libraries in Bangladesh. The study also finds out the systems and services provided by the university libraries. The paper is a basic work so far such study has not been carried out by anyone in Bangladesh and it investigates the original views of the library and information professionals of the country regarding the adoption of Information and Communication Technology (ICT) in the university libraries of Bangladesh. . Data have been collected by Postal and electronic survey. Finally it finds the problems faced by the professionals and made some specific recommendations for the solutions.

Keywords - Bangladesh, University libraries, Information and communication technology (ICT).

1.   Introduction

Information and communication technology plays a vital role in bringing out changes in our society. As technology becomes more sophisticated and more affordable, the range of services that are provided also increases our life style, our business, our educational system, our political and our social values. In this age of information and communication technology the role of University Libraries has changed radically in developed countries. They are providing more sophisticated and user friendly services to its users (Shuva, 2005). The accelerated adoption and use of Information and Communication Technology (ICT) has resulted in the globalization of information and knowledge resources (Islam and Islam, 2007). That is why it has become very

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important to adopt the technology for the betterment of the education sector (Dunmill and Arslanagic, 2006). According to Blurton (1999) ICT are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.

The academic library environment is in a state of transition in terms of resources and users; many information sources once available only in print are now available in print, CD-ROM, online and other sources; other sources may only be available in electronic form (Abels et at., 1996). The observed transition is apparently necessitated by the emergence of the modern information and communication technology (ICT) and its unprecedented impacts on the provision of library services. Therefore, the use of information technology (computers, telecommunication, reprography, etc.) has a special role in the modernization of library practices. Hence, with ICT, such things as electronic cataloguing, electronic online public access catalogues (OPACs), electronic acquisition and serials control, electronic circulation functions, electronic distribution of commercial publications, electronic availability of raw data, multimedia information delivery systems, dititized collections and online textbooks are all now practicable with a higher degree of user satisfaction (Ajayi, 2002; Abels et at., 1996). It is recognition of this, that universities have begun to developed IT and IS strategies to deal with the need to respond to rapid changes in technology which affect content of nearly very course; graduates must be up to date with the latest systems and software if they are to keep pace with the current demands in the knowledge economy (Gallimore, 1996).The panacea to this problem lies in effective adoption of ICT in academic libraries. Through ICT libraries users can have access to variety of information available on computer networks and online services across the globe. Thus Omoniwa (2001) has posited that in the twenty-first century, globalization of information and the adoption of information technology will be the hallmark of great libraries. The size of libraries or their collections may not be the benchmark but rather accessibility to the major thrust of the library automation. For any library to derive maximum benefit in this information age, it has to be online.

2.   State of ICT in Bangladesh

Bangladesh entered into the computer era in 1964 with the installation of an IBM 1620 machine at the Atomic Energy Center at Dhaka. Institute of Statistical Research and Training (ISRT) installed IBM 101 Statistical machine in 1964. Commercial application of computer was initiated by Janata Bank with an IBM 1401 in 1967 followed by Adamjee Jute Mills, Ltd. in 1970. The Government use of computer began in 1973 with the procurement of an IBM 360/30 machine for the Bureau of Statistics. Bangladesh University of Engineering and Technology (BUET) started its computer application in 1968 by offering courses in Numerical Methods and computer programming, acquiring IBM 029 Data Entry Machines. Bangladesh University of Engineering and Technology (BUET) started its computer application in 1968 by offering courses in Numerical Methods and Computer Programming, acquiring IBM 029 Data Entry Machines. Now computer systems have been introduced to several Ministries and many other government department and private sector establishment. The 1980s are considered the beginning of the automation era as far as libraries and information centers in Bangladesh are concerned. The International center for Diarrhoeal Disease Research, Bangladesh (ICDDR, B) Library and the Agricultural Information Center (AIC) are pioneers in creating bibliographic databases on specialized fields using microcomputers (Ahmed, 1998).

3.   ICT in the University libraries of Bangladesh

Bangladesh, located in South Asia is one of the overpopulated, underdeveloped and technologically backward countries in the world but the higher academic institutions of a country are pioneers in adopting and using Information and Communication Technologies (ICT) (Roknuzzaman, 2006). The higher academic institutions of a country are pioneers in adopting and using ICT (Roknuzzaman, 2006).

The evolution, development and advances in modern ICTs have brought in a dramatic and an unprecedented revolution library profession and practice. This study seeks to answer question bothering on the reaction of academic library environment in Bangladesh to the phenomenal and global changes in the practice of librarianship. In other words, the study explores the extent of adoption of ICT in Bangladeshi university libraries as modern tools of providing library services

to users in the global setting. The study also explores the sources of fund available for ICT and factors that impede effective adoption of ICT in these libraries.

Data was collected by using the medium of postal and electronic survey from all the 31 public and 51 private university librarians of Bangladesh. A total of 30 duly completed questionnaires (responding 24.39 per cent response rate) were received and used for data analysis.

Regarding the extent of computerization of university libraries in Bangladesh, the results in Table 1 show that, out of 20 responded university libraries, only six of them are partially fully computerized. These libraries are the Bangladesh University of Engineering and Technology Library, North South University Library, East West University Library, BRAC University Library, Independent University, Bangladesh Library, and American International University of Bangladesh Library. Of the remainder, eleven libraries are "about to be computerized", and three libraries "plan to be computerized".

Table 1: Extent of computerization of university libraries

Extent of computerization	No. of Response
Partially Computerized	6
Not computerized	0
About to be computerized	11
Planned to be computerized	3

Computerized Documentation System/Integrated Set of Information System (CDS/ISIS) or Winisis are the most commonly used library software among the computerized university libraries while KOHA and GLAS (Graphical Library Automation System) are used BRAC University and Dhaka University Library (Table 2).

Table 2: Library software used by computerized libraries

Library software	No. of using Libraries
GLAS	1
Librarium	1
NSU LMS	1
Book Traxy	1
BUET LIB	1
UIU Information System	1
EWU LIBMIS	1
SQL Server	1
Library Management	1
KOHA	1
CDS/ISIS or Winisis	8
Others	2

In the Table 3, the results of the survey show that cataloguing of library materials ranks first among computerized library tasks with all computerized libraries doing it, then acquisition and serials control (both five libraries) and circulation. The observed results particularly emphasized the importance of cataloguing in the practice of librarianship. Other tasks that are also computerized as specified by the respondents include reference services and reserved book collections.

Table 3: Computerization of library tasks among the computerized libraries

Library task	Response
Acquisition	5
Cataloguing	6
Circulation	4
Serials control	5
Administration	3
Others	2

The results of the extent ICT based library services provided by the surveyed university libraries for their users are shown in the table 4. The results show that the major ICT based services provided by these libraries is the CD-ROM search; five university libraries provide this access. All the surveyed university libraries of Bangladesh provide OPAC, Internet, E-mail, and reprographic services for their users. And fourteen university libraries provide fax facilities and only seven libraries provide other services for their users.

Table 4: ICT based library services

ICT based library service	Computerized library	About to be computerized library
CD-ROM databases	2	3
OPAC	6	11
E-mail	6	11
Internet	6	11
Facsimile (Fax)	6	8
Reprography	6	11
Others	6	1

4.   Sources of funding for ICT in university libraries of Bangladesh

Table 5 shows different sources of funds available for the adoption of ICT in university libraries of Bangladesh, and the common available source is the university grants commission (UGC). The second major source of funding is the special grant by the international organizations and then grants received by the alumni of the concerned universities.

Table 5: Sources of funds for adoption of ICT in university libraries

Source of fund	Response
University Grants Commission (UGC)	20
Special grants by the Government	3
Special grants by the international organizations	6
Special grants by the alumni	5
Others	0

5.   Factors influencing effective adoption of ICT in university libraries of Bangladesh

The study results in Table 6 shows that major factors militating against effective adoption of ICT in Bangladeshi university libraries is inadequate funds, lack of trained personnel on ICT and lack of awareness of ICT potentials by users. Fifteen surveyed university libraries suffer frequent power outage and poor attitude of staff towards library automation. Ten surveyed university libraries of Bangladesh face negative attitude of university management on ICT.

Table 6: Factors that influence effective adoption of ICT in university libraries

Factor	Response
Inadequate funds	20
Lack of trained personnel on ICT	20
Frequent power outage	15
Lack of awareness of ICT potentials by users	20
Poor attitude of staff towards library automation	15
Negative attitude of university management on ICT	10
Others (Specify)	0

The following factors are also influenced effective adoption of ICT in the university libraries of Bangladesh, which are mentioned as follows:

5.1 Administrative factors:

This factor is much more acute than other factors. Administrators, policy makers, and government executives are not fully aware of the importance of ICT as well digital technologies. Moreover, information professionals have failed to make its importance clear.

5.2 Lack of support from the higher authorities:

Lack of reliable supports (financial, technical, infrastructural, institutional, and administrative, etc.) from the government as well as higher authority creates severe problems to introduce ICT in the public and private university libraries of Bangladesh.

5.3 Lack of computer literate professionals:

Although computer is becoming popular in Bangladesh, still we have of lack of computer literate professionals. Many senior and old information professionals do not know how to operate computer.

5.4 Uninterruptible internet connection:

Our dial up connection as well as broadband connection frequently interrupted due to technological disruptions of service provider and so often cables are cut down by the theft of wires.

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5.5 High cost of infrastructure development*:*

Although ICT is a must for all the public and private university libraries of Bangladesh, but it requires a good infrastructure facilities like adequate number of workstations with internet connection, high bandwidth, laser printers, sometimes need dedicated web servers, modem, UPS, etc. are very costly and many libraries can not afford the cost.

5.6 Lack of skilled manpower:

The information professionals of Bangladesh do not have adequate skills to handle computers and other information technologies

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5.7 Lack of ICT related knowledge:

Library and information professionals of the university libraries of Bangladesh do not have proper knowledge about ICT as well as other digital technology related knowledge.

5.8 Lack of infrastructure:

Inadequate physical facilities of the university libraries of Bangladesh hamper the growth of Information and Communication Technologies.

5.9 Lack of financial support:

Inadequate financial support has made the possibility of ICT application in the university libraries of Bangladesh much more complex.

. **5.10 Psychological problems:**

The reluctance of the information professionals of Bangladesh to accept new technologies hinders the development of ICT based as well as digital libraries.

5.11 Lack of proper planning:

To implement ICT in the public and private university libraries of Bangladesh, need proper long term as well as short term planning.

5.12 Lack of ICT training programs:

To increase the ICT skills of the information professionals of the public and private university libraries of Bangladesh need continuous training and orientation programs.

5.13 Lack of standards:

There is no international standard among the library and information professionals of the university libraries of Bangladesh. In this case, private university like BRAC University has started to maintain international standards.

6. Recommendations

We would like to emphasize on the following recommendations to adopt ICT at a proper and accepted level by the university libraries of Bangladesh:

- The government of Bangladesh as well as other government's agencies should allocate sufficient funds to support the purchasing and maintenance of ICT based system by the university libraries.

- Library and information science teaching and training institutions should introduce different types of training programs for unskilled library professionals. The training programs should include basic things such as cataloging (both manual and electronic), classification, bibliography, indexing and abstracting, electronic information delivery, public relation, email, internet, so that the unskilled library professional can handle information efficiently.

- The Library Associations of Bangladesh (LAB) and other professional organizations should organize seminars, workshops, etc. to create awareness among librarians about the current development and technologies in library field.

- The government can open library and information science department in different government and private colleges and universities to build up more efficient library professionals. It may be noted that only two government universities are offering the library and information science course (both under graduate and graduate degree).

- For smooth management of libraries proper rules & regulations should be formulated as soon as possible and standards should be maintained.

- International cooperation is a must in library field. The government and the library authority should contact with the international body for the development of the libraries.

- The rank and status of librarians and information professionals of the university libraries should be elevated and for this purpose government should take proper initiatives as soon as possible.

- Government and concerned authority should co-operate each other for the development of ICT competences of the information professionals of the university libraries of Bangladesh.

- The library authority should aware of the changes in ICT in the world.

- The Government may recruit new ICT professionals.

- The Government may introduce a pilot project to implement ICT in the university libraries of Bangladesh.

- The concerned library authority and other ICT institutions should provide a comprehensive training to the library staffs.

- Proper planning is a must to improve ICT competences among the information professionals of the public and private university libraries of Bangladesh.

7. Conclusion

The library field has been facing negligence from the very beginning of library movement in Bangladesh. The librarian and the concerned personnel do not get their legal status and facilities. For this reason, they are not active in their field. This problem impedes the gradual development of libraries in Bangladesh. In this age of ICT the university library services should be redesigned to meet the users' needs and to provide modern information services facilitated by ICT. As libraries in developed countries have introduced lot ICT facilities to its users, now this is the time for the developing countries' libraries to follow the developed countries and adopt new technological facilities.

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