Levels of information technology (IT) applications in Muslim world libraries

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Keywords

Communication, Technology led strategy, Libraries, Library automation, Pakistan

Abstract

The utilisation of information technology (IT) has become an indicator of a country’s wealth level. Countries, which fail to prepare for information technology and do not use it properly, are likely to lose their global competitiveness. Muslim countries have paid little attention to leverage the benefits offered by the IT use in their library and information centres. The first part of this paper reports the status of information technology applications in libraries and information centres of Muslim countries. The second part of the paper reports the level of hardware, software, and IT-based resources available in libraries and information centres in Pakistan. The third part of this paper discusses the problems hindering the wider use of information technology in libraries and information centres in Pakistan. Based on the findings of the survey and documentary research the final part of this paper puts forward overall suggestions to solve the problems hindering the wider use of information technology in libraries and information centres in general, and in Muslim countries in particular.

1. Introduction

Information technology (IT) is widely considered as the most important revolution humankind has experienced since the industrial revolution and the development of movable-type printing techniques. A country’s development depends on the extent of use, speed of access, and skilful application of IT systems. The utilisation of information technology has become an indicator of the level of a nation’s wealth. Countries, which fail to prepare for IT and do not use it, are likely to lose their global competitiveness. Dr Mahatir bin Mohamed, Prime Minister of Malaysia has very rightly commented that:

In the information age that we are living in... there is today, no wealthy developed country that is information-poor and no information-rich country that is poor and undeveloped.

Electronic business, e-commerce, e-marketing, e-governance, tele-medicine, wired money, virtual universities, and digital libraries are the buzzwords of these days. Communication channels such as, World Wide Web, Internet, intranet have linked people and information, and have fundamentally changed the way scientific, technical, and commercial information is transferred and accessed. Today a wide range of recorded information and thought is available in both print and electronic formats. McGown (2000) predicted that soon many resources would only be available in electronic formats. Consequently, libraries globally have undergone a significant change; they are using expert systems, virtual collections, interactive Web interfaces, virtual reference services, and personal Web portals. Despite the tremendous capabilities of IT, and falling costs of the hardware, software, and telecommunications, libraries in the majority of the Muslim world, especially in Pakistan, have lagged in its application as compared to similar institutions in the developed world. This study explains the level of hardware, software, and IT-based resources available in libraries and information centres in Muslim countries, especially in Pakistan. It discusses the common problems, indicates the emerging challenges, and puts forward recommendations to meet the technology challenges.

2. Review of IT use in Muslim world libraries

Muslim countries having a common cultural heritage and geography share many problems and varying opportunities in the library and information profession. Anwar (1999) mentioned...
that one of the problems that Muslim countries are facing is that Muslim scholars are not producing adequate information to meet our need; hence, we are dependent on Western sources. Muslim countries as a group produce very little literature that is neither well organised nor accessible nor properly utilised. So Muslim countries need to acquire a reasonable amount of foreign literature, which is very costly.

2.1 Status of IT in libraries in Islamic Republic of Iran
Computerisation of library services in Iran started in the late 1970s and it resumed in the late 1980s after an apparent gap. Farajpahlou (1994) mentioned that until 1991 many libraries were in the process of using CD-ROM, and other information technologies, however, a majority of the libraries were encountering problems due to lack of networked databases, lack of strategic automation plans, and ineffectiveness of library education to deal with modern technologies. Gharibi (1995) wrote that computerisation of libraries was gaining momentum and the role of IRANDOC is central in introducing CD-ROM databases and other technology-based products and services. In his country report for ASTINFO Gharibi (2000) mentioned that Iranian society has witnessed significant changes due to massive investment in telecommunications. The number of telephones available per 100 people has increased five fold during the last two decades which means that the use of the Internet is on the rise.

2.2 Situation of IT in Far Eastern Muslim countries’ libraries
The application of IT in Malaysian libraries gained momentum by the end of 1980s. Yaacob (1999) mentioned that it has helped in development of specialised online databases at the national level. Its national networking system will enable resource sharing among the libraries and provide access to different databases through the Internet. Library databases of all the major libraries are searchable through the Internet and they are looking forward to start electronic publishing, digitisation of information resources, multimedia and image handling, and remote online services. A survey conducted by Singh (1998) revealed that out of 83 respondent Malaysian librarians, 90 per cent used the Internet for professional purposes, and 97.3 per cent used e-mail on a daily basis.

After the 1996 economic crisis state university libraries in Indonesia started co-operative acquisition, use of Internet and other technologies to create union catalogues, publish electronic journals, networking, and a few libraries have published their catalogues on the Web. Low telecommunications capacity is a barrier in implanting a sophisticated digital library system. Widharto (2002) mentioned that Indonesian Digital Library Network has started functioning and providing Indonesian people facility to share and download electronic collections throughout Indonesia.

2.3 Situation of IT in Middle East Muslim countries’ libraries
Syria has started entering the world of the Internet; however, there are some obstacles ahead. Askhita (2000) revealed that since 1998, Al-Assad National Library has allowed its visitors to use the Internet, and has also published its online public access catalogue on an Internet-enabled server. He also advised that the Arab world should involve it in information production, and e-commerce, rather than consumers only.

While reporting results of a survey of Jordanian libraries conducted in 1986 Younis (1993) revealed that only ten out of 255 libraries were using computers for different operations. Respondents mentioned: librarians’ lack of knowledge in the use of computers, expensive computer systems, lack of funds, administrators’ resistance to change, and fears, and lack of standard library packages, as major problems hindering use of IT in Jordanian libraries.

2.4 Status of IT in Arabian Gulf countries’ libraries
Libraries in Saudi Arabia started using computers in the late 1970s, and automation of library operations with integrated library systems, and use of online databases began by the end of the 1980s. CD-ROM technology was introduced to Saudi Arabian libraries during the early 1990s, followed by Internet and networking in special and academic libraries. Results of a survey of Saudi Arabian professional and para-professional library staff conducted by Al-Zahrani (2000) revealed that out of 121 respondents 62 per cent use computers and 38 per cent use CD-ROM.

Kuwait University library has introduced CD-ROM and Internet facility in its libraries. Similarly, University of Bahrain libraries have implemented electronic check system, and are using CD-ROM databases.

2.5 Computer applications in libraries in Pakistan
Computers were first used in Pakistan Scientific and Technological Information Centre in 1968 to produce the country’s first union catalogue of scientific periodicals, followed by automation of libraries of agriculture universities and research centres, Lahore University of Management
The questionnaire regarding attitudes to IT was sent in November 2001 to 363 head librarians working in academic and research libraries in Pakistan. Academic institutions in the provinces of Balochistan and NWFP remained closed for four-five months due to America’s war in (Pakistan’s neighbouring country) Afghanistan. This affected the response rate. Out of 363 questionnaires administered, 265 (73 per cent) were received back. A major part of the questionnaire regarding attitudes to IT was incomplete in the case of 21 respondents. Finally, 244 questionnaires were used for data analysis and interpretation. MS Excel and SPSS were used for data computation and other appropriate analysis. A hypothesis was designed to measure the intensity of librarians’ attitudes toward IT, extent of hardware, software available in respondent libraries, their utilisation levels, and the degree of changes which have occurred in application of IT in respondent libraries.

3. Status of IT applications in Pakistani libraries

To understand the impact of IT on libraries and to help librarians develop the skills necessary to utilise technology, the primary data were collected through a questionnaire survey of the head librarians working in academic and research libraries in Pakistan. Respondents were asked to indicate the extent of hardware, software, and electronic databases available, their utilisation levels, and degree of changes which have occurred in the use of IT, on a five-point Likert scale.

Questionnaires were mailed in November 2001 to 363 head librarians working in academic and research libraries in Pakistan. The year 1992 was important in the history of library automation in Pakistan when the country’s telecommunication sector started expanding its services and five computer-training centres were established for working librarians. The same year, University of Peshawar organised a conference on “Challenges in automating the library services”, that helped produce Pakistan’s library automation literature (Haider, 1998). In 1995, the government of Pakistan established electronic mail service. By 1997, eight companies launched Internet services with total connections approaching 10,000.

Realising the importance of information and communication technologies (ICT), the government of Pakistan has focused since 1998 on promoting the use of IT in its private and public concerns. Out of 20 university libraries half were using the Internet for performing various library functions and services (Saeed et al., 2000). There were 1.2 million e-mail accounts, and over 250,000 Internet subscribers by the end of 2000. The government of Pakistan has established one virtual university, and opened seven IT universities to prepare IT professionals (SZABIST, 2002). Ministries, departments, and academic institutions are receiving significant funding for IT, and libraries are considered amongst the chief organisations that rely heavily on IT. This is evident from the current emphasis of the heads of the organisations and institutions to automate their libraries, provide Internet access, and purchase multimedia products.

3.1 Extent of hardware available in libraries in Pakistan

It was deemed that the availability of computers, e-mail, Internet, and library software were the basic tools for IT applications. Respondents were asked to indicate the number of computers, number of CD-ROMs, and the presence of different hardware, software, and online resources in their libraries. Since the computer is considered the most important IT tool, respondents were asked to mention the number of computers available in their libraries. Table I reflects that 57 (23 per cent) respondents did not have computers in their libraries. The majority, 129 (53 per cent) respondents had fewer than five computers each, 48 (20 per cent) had between five to 20 computers, and ten (4 per cent) respondents had more than 20 computers in their libraries. CD-ROM is also considered an important IT tool for information storage and distribution. Data revealed that 91 (37 per cent) respondents did not have any CD-ROM in their libraries. The majority, 115 (47 per cent) of the respondents had between one to 50 CDs in their libraries.

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<tr>
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<td>57</td>
<td>23.4</td>
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<td>129</td>
<td>53</td>
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<td>48</td>
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<td>Total</td>
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3.2 Kinds of hardware available in libraries in Pakistan

Respondents were asked to check the hardware available in their libraries. Data revealed (Table II) that 63 (26 per cent) respondents had microfilm readers, only 18 (7 per cent) had microfilming units and 68 (28 per cent) respondents had fax machines in their libraries. A total of 35 per cent of the respondents had audio players, 34 per cent had television sets, 35 per cent had video cassette players, and 15 per cent had video/digital cameras in their libraries. A total of 51 respondents (21 per cent) had digital scanners, and only 12 per cent of

Table I Computers available in Pakistani libraries
the respondents had barcode readers in their libraries. CD-ROMs were not available in 37 per cent of the libraries, 68 per cent of the respondents had no network server, which is a key in establishing intranet and libraries’ remote services. With respect to hardware, key tools such as microfilm readers, CD-Writers were available only in a very small number of cases. Even a sizeable number of respondents (37 per cent) were without photocopying facility.

3.3 Types of software available in libraries in Pakistan

Respondents were asked to indicate the types of software available in their libraries. Table III shows that 182 (75 per cent) respondents had word processors, 161 (66 per cent) had spreadsheet, 56 (23 per cent) had desktop publisher and only 12 (5 per cent) respondents had OCR for digitisation in their libraries. A total of 48 (20 per cent) respondents had HTML, and 41 (17 per cent) had training software in their libraries. More than 57 per cent of libraries had e-mail, 53 per cent had Internet, and only 20 per cent of the respondents had intranet facility in their libraries.

5. Problems in library automation in Pakistan

Respondents were asked to list in priority the problems they were facing in implementing and increasing the use of information technology in the target libraries. A list of common problems such as, budget, standard library software, hardware, skilled human resources, cost of software, and management attitude was given for their convenience. Table V indicates that 98 (60 per cent) respondents rated non-availability of budget as the number one problem, 18 mentioned standard library software, five mentioned hardware, 14 indicated lack of skilled human
resources, seven believed cost of software, 19 reported negative attitudes of management, and a few mentioned lack of IT training as their number one problem. Similarly, 24 respondents indicated budget as their priority two, 11 mentioned it as priority three, and the remaining listed budget at priority four and below. The data below indicate that the respondents rated lack of budget, standard library software, unskilled human resources, and management attitudes as the major problems hindering the promotion and development of information technology in respondent libraries.

Some responses carried remarks that while making any recommendations or decisions regarding IT acquisition for library, the decision makers, and management relied more on computer professionals than on librarians.

To understand the librarians’ role in decision making about IT, respondents were asked to indicate the departments involved at different stages of IT acquisitions. The respondents revealed that at the initiation stage librarians were involved in 71 per cent of the cases, at the specifications preparing stage they were involved in 43 per cent of the cases, they made choices in 29 per cent of the cases, and in only 34 per cent of the cases they were involved in the purchase of IT. These figures reflect that 100 per cent of librarians were not involved at different stages of IT acquisitions.

Lack of computer literacy among librarians; improper planning; non-availability of standard library software; lack of standardisation and quality control; librarians’ absence in decision making, and bureaucratic attitude of the management are major problems preventing the wider use of computers in libraries. Johnson (1991) observed that in most developing countries, librarians along with the funding agencies plan the automation in a very simple manner. They purchase hardware without considering future storage needs. Computer people who do not know much about library needs recommend software.

While analysing the Pakistan library automation scenario Rehman (1993) mentioned that librarians and library administrators carry many “myths and misconceptions”, about automation. They think that the automation is a panacea for all the ills and deficiencies of a library, which is not true. Automation of library operations without removing basic deficiencies will not serve the purpose. It should be systematically analysed, carefully conceived, appropriately designed, and implemented using established standards.

Computer programmers are assigned to develop library systems, which they cannot. In the presence of hundreds of library software, any initiative to develop an in-house program is like re-inventing the wheel. Administrators in Pakistan want results in days and weeks, which are not possible, so all concerned must comprehend automation as a systematic process and not a magic trick.

### 6. Conclusions and recommendations

It so happens that most of the Muslim world libraries and information centres hold a lot of
overseas information – their stacks are full with foreign encyclopaedias, statistical sources, and databases, but they are unable to satisfy requests for local information. Experience in many libraries indicates that more than 50 per cent of the information requests at the reference desk are for local information. There is so much information that is generated and available in the Muslim world that is hardly indexed, abstracted, or compiled in local databases. There is a need to catalogue and compile local sources of knowledge for use of the Muslim scholars, and students, who currently rely on Western resources. Effective use of IT can pave the way for establishment of local databases, networks for sharing of resources, and their commercialisation.

Similarly, access to public information in our countries is still limited mainly due to bureaucratic culture where officials remain reluctant to disseminate information. Many people still find it difficult to obtain data or information from government institutions. Lack of technological sophistication, including incompatibility of systems, unreliability of telecommunications, interrupted electrical supply, insufficient maintenance of equipment; lack of depth in collections; shortage of competent information professionals; and difficulty in getting local published materials are major problems in libraries. Based on these findings and conclusions, the researchers offer the following recommendations to enhance the level of IT application in our libraries:

- A significant effort is required to increase awareness of new technologies among the librarians and decision makers in the Muslim world. Librarians should be proactive in reading; discussing and publishing IT-related issues and experience.
- There is a need to raise the libraries’ budget in order to acquire IT hardware, software, and to increase IT-based collections.
- We should introduce interlibrary loan, resource sharing, and establish consortiums and networks to pool academic and research resources.
- Similarly, hardware without software is like a person without a brain. While the cost of the software has gone down considerably, we should seriously consider equipping our libraries with tested integrated library systems. Alternatively, a national level team of competent librarians, and system engineers under the shadow of a government ministry or department should take the responsibility to develop standard library software, considering international standards and local needs. This should be a permanent body to provide technical support, innovations, and revision.
- Librarians need to be fully involved at each stage of the IT decision making.
- IT should be a core component of formal library education in our countries.
- We need to develop local databases, networks for resource sharing, and commercialisation of resources available in the Muslim world. We need to move from information consumers to technology-based information producers, compilers and sellers.

If these recommendations are implemented this would go some way to solving the problems hindering the wider use of information technology in libraries and information centres in general, and in Muslim countries in particular. Librarians and administrators in other developing countries can also benefit through these recommendations.

References


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