Is ICT Infrastructure Capable to Accommodate Standardized Library Management Systems? : Case Studies of Library Automation From Public Sector Universities in Islamabad (Pakistan)

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Abstract
Modern world started Library automation in late 1960s' and developing countries like Pakistan started library automation in late 1980s’. However, till late 1990s university libraries were striving to catch the pace of developed world and bridge the performance gap of 20 years between developed and developing world.

The role of professional library associations (PLAs) in Pakistan failed to deliver anything beyond its electoral process. Reluctant behaviour of PLA and LIS professionals failed in sustaining the country’s only collaborative effort in Library automation LAMP. Information and communication technologies are influencing and reshaping the work pattern of academic libraries in of the new millennium.

On the contrary, developing countries are striving to take up the challenge to adapt these technologies into their higher education sector. This study will explore the current situation of library automation in public sector Universities of Islamabad (Capital of Pakistan). The topical coverage of this study ranges from education policy, professional associations, and literature review to library automation in Pakistan. Revolution in computer technology and consortia concept in developed world is not realized and followed in this part of the World. Concept of globalization and localization made a provision to developing countries like Pakistan to join the race of survival in technological world. Adaptation of INASP, PERI excited the academia and LIS professional of Pakistan to wake up and be proactive to go for automation of libraries. However bureaucratic style of management, slow pace to adapt technology, funding problems, infrastructure of HEIs and role of professional associations proved to main hurdles in library automation in Pakistan.

This piece of research also covers the volunteer efforts in LIS professional and adaptation of international standard in library automation

Keywords: ICTs in University Libraries, Public sector Universities libraries, Library Automation, Library Management Software’s, Library automation in Pakistan.

Libraries and ICTs
The concept of ICT in libraries is related with the development of work done by the machines and usage of computer in libraries. Historically and practically ICT is introduced in library as a library automation tool which is linked with human socio-cultural development and introduction of computer, its allied hardware/software in the routine life. Library automation denotes an overall revolutionary change in libraries from collection management to delivery of service towards library users.

Developed societies started library automation in the late 1960s and the developing world like Pakistan started library automation in late 1980s’. Libraries of developing countries are still struggling to bridge this 20 years gap and so is the case with Pakistan. Most of the developing countries of the world got their independence either from their rulers or from intruders. Many developing countries in Africa, South Asia and even some part of Europe were colonies of Great British Empire. Use of computer in the libraries revolutionized the environment of developing countries' libraries and also impacted their services. This change also touches the user by way of refining their usage and demands for qualitative services.

British Empire had their peculiar education system for colonies developed by Lord Thomas Babington Macaulay. Pakistan also inherited the same at the time independence from British Empire in 1947. The recent global credit crunch hit the developing economies including Pakistan badly. According to the figures from planning commission of Pakistan, the government will now grant only Rs. 18 billion to the higher education sector from the PSDP, instead of Rs. 297.3 billion needed for the 293 development projects planned (Khan, 2009). How will UN-MDGs, Pakistan vision 2030 and target of National Education Policy 1998-2010 be achieved? These are big questions for Pakistan’s future higher education to deal with.
Literature Review

ICT in Libraries: an introduction

Concept of library automation and ICTs as tool of modern age is much newer in this part of developing world. Automation by definition (Britannica, 2008a) “its ideal form, automation implies the elimination of all manual labour through the use of automatic controls that ensure accuracy and quality”. Each library by its type, i.e. Public, Academic, Special has its own specific user type and specific fields of interest. Libraries and technology have a strong link since the invention of printing, emergence of computer, and consortia of digital information provider. Vyys (1997) describes that “two major leaps of man were the invention of printing by Gutenberg in the fifteenth century, and the introduction of computers technology that has advanced quickly since the Second World War. The two main ingredients of technology are computers and communication.” These two ingredients have catalytic link between their development, especially after an initial period, technology spread in no time with the help of its sister organ communication. Today’s world is a global village beyond constraints of space and time. In other words we can say this is world of sharing communities, e.g. twitter, MySpace, face book, blogs etc.

Overview of ICT usage in developed and developing world

Developed world started library automation much earlier. According to Roberts (2008/2009) “the dawn of the age of automation and computer based retrieval was in the 1960s, with a gradual development of information retrieval theory and experiments.” A report for IFLA shows that the concept of computer in library relate to 1964 when IBM introduced the 360 series, the first “family” of computers to be released and the robust machine that propelled computing out of the universities and into the mainstream” (Mccallum, 1963). UK the seat of universities like Cambridge and Oxford, with its internationally acceptable education and perception of its research has a very high and demanding library service user group. The LIS professionals and schools come forward to adopt computer technology for facilitation of their user and to make their services accurate and fast. “In 1982 libraries in the UK formed a Consortium of University Research Libraries (CURL), to share computerised cataloguing or bibliographic information within UK. Birmingham Libraries Cooperation Mechanization Project (BLCMP) is an example of this group work initiative” (Piaister, 1975). This group was started in 1969 and launched first web OPAC in UK in 1995. The famous library management system “Talis” in higher education libraries of UK is product of BLCMP.

Africa being least developed part of the world, concept of libraries automation came later with the help of UNESCO in 1980s. PADIS was set up in 1980 at the Headquarters of the United Nations Economic Commission for Africa (UNECA) at Addis Ababa, Ethiopia, with an objective of assisting African states to establish national information systems which will hold information on development oriented systems. The CABECA project began in 1993 with the aim of introducing low cost electronic connectivity (Fido-based) to some 24 African countries in the region (Chowdhury, 1998).

Libraries and ICTs in Libraries of South Asia

ICTs usage and Library automation activities started in India during 1980s. “The first players in this sector were special libraries. University libraries joined the fray only during the 1990s, when the University Grants Commission established Information and Library Network (INFLIBNET) as the national agency for coordinating the library automation activities of universities” (Suku and Pillai, 2005). According to an article by M.N. Munshi, “Bangladesh entered into the computer world in 1964 with the installation of an IBM 1620. Till now, there is not a single library or information centre in Bangladesh which is literally automated except ICDDR, B Library and North South University Library machine.” (Munshi, 2003)

The efforts by Pakistani professionals and government are not much significant. First efforts by Government, according to Mushahid-Hussain, (1994) was “Mr. L.C.Key was invited in early 1950s’ and asked to develop a plan for Liaquat Memorial Library at Karachi (Called as National Library of Pakistan at that time) and also to chalk out a scheme of library development for the country”. Another effort by library professionals was formation of Pakistan Library Association (PLA) in 1957.

Three major library automation projects were launched in Pakistan from time to time, e.g. NLD (Netherlands Library Development Project), Asia Foundation and USAID collaboration with PASTIC (Pakistan Scientific and Technological Information Centre) and UNESCO CDS/ISIS. All these efforts ended with the drying up of foreign funding. “According to HEC, out of total 124 universities, 67 are public sector and 57 are private sector in Pakistan. Out 67 Public Sector 14 universities are in Islamabad (Capital of Pakistan), and of these 11 are public sector and three are private sector universities” (Pakistan, 2008). These public sector universities are mainly financed by the government.

Mahmood (1999) assigns “Four reasons for library computerization:(1) The flood of information; (2) Services to readers; (3) Efficiency and accuracy (4) Resource sharing”. Provision of technology, software and internet in Pakistan was a giant leap to be taken by library professionals, who are supposed to be the custodian of libraries, archives centres and information handlers. Out of the three major library automation projects that were launched in Pakistan from time to time only NLD was successful till early 1990’s. Use of internet in the libraries especially higher education libraries was not common till late 1990s. Though developed world had already started electronic
document delivery (EDD) service by that time, specially British Library. Use of internet for EDD, facilitates the researcher all over the world. According to a study of internet use in Pakistan universities libraries conducted in 1999; out of 20 University libraries half of university libraries have no internet connection (Saeed et al., 2000).

Another remarkable change occurred when a lot of libraries adopted free library software LIMS (MS-Access based library package). LIMS was offered freely by the PAKLAG to LIS community in Pakistan. According to one survey conducted in Lahore (a major city of Pakistan), 31 types of library software were being used by the 84 automated libraries of Lahore. Out of 84 libraries 28 are using free package LIMS, 18 are using UNESCO free package Win ISIS and 9 are using NLDLP project product LAMP (Shafique and Mahmood, 2007). Recently PAKLAG has introduced customised KOHA (an international open source standardized library management solution) on service and support price base. This is cost effective system, fully adaptable with the developing economies, it also has compatibility to international standardised requirements for all types of libraries in Pakistan. PAKLAG-KOHA is MARC21, Z3950 gateway, complex language capability (UNICODE based), SRU/SRW enabled library management system. Would this prove to be a sustainable solution for Pakistani libraries without any Government/Pubic or permanent funding, is still arguable.

Problem for Investigation
Looking back at the literature review, it has been drawn that over all concept of mechanization, ICTs and computer usage in Pakistan started by scientific organization in late 1960s. “A large number of libraries were computerized during or after 1987 (Haider, 1998)”. Comparatively library automation in Pakistan started almost in the same era as other developing world but the pace of development is not much significant. One of the major deficiencies was a lack of collaborative efforts which could be possibly due to electoral process and politics of late election of professional association (PLA). PLA came in existence in 1957, however it is unable to accept and deal with professional career structure, professional education, professional trainings, emerging technologies and libraries infrastructure etc. Use of computer in University libraries of Pakistan was started in 1980s. Looking at the number of the LIS literature published and problems discussed in these articles by the Pakistani LIS professional shows, lack of professional leadership and professional writing is another main reason for low research and professional development output in Pakistani LIS profession. In the decade of 1990s a lot of changes occurred in the field of computer science (hardware, software). In Pakistan, until early 2000 no significant efforts were made towards adoption and adaptation of international professional standards for library softwares, e.g. MARC21, Z3950, SRU/SRW. No other initiative was also taken for standardising Library Management System to cater to the requirements of local bibliographical information, e.g. complex language compatibility, right to left language etc.

Keeping in view all the factors mentioned here, this piece of research will address the following:

- Evaluation of government initiatives in developing modern libraries projects in public sector universities of Islamabad
- To discuss the possible contributions in solving problems of ICTs implementation in university libraries and to support research environment in the capital where modern technology infrastructure is available
- An overview of library automation services and training opportunities in universities of the national capital
- Assess the role of volunteers and sustainable individual efforts and their impact on information access and retrieval
- Status of alternative library services by universities in the capital area.

Methodology and Method
In this particular effort both qualitative and quantitative approaches are used. Survey method is used in conducting this study which comprises both qualitative and quantitative aspect. The sample population are the 14 public sector universities in Islamabad (Pakistan). In qualitative method as an instrument survey questionnaire, interview, personal observation, review of relevant literature are used and archived material, already published is consulted.

An online blog is also created to get the latest trends and professional views about current status of library automation, role of professional association and effect of voluntary efforts. This can be accessed on www.profprog.blogspot.com. 14 responses are received. All responses are from LIS professional of Pakistan using emailing list serves. Some of them are from abroad but they were the part of Pakistan’s LIS community and also graduated from Pakistan.

Overall responses on all these research tools used are very healthy. Data are analysed through the help of tools available

Limitations of the study
Respondents’ answers to some questions may affect the findings of the study, e.g. financial figures. Pakistani official statistics and documents took more time due to the bureaucratic system. Only three month period was available for the study. The Pakistan Institute of Engineering and Applied Sciences (a degree awarding Institute) is part of Pakistan Atomic Energy Commission educational department. For
security reasons they have declined to participate in the study. Islamic International University professional were busy and the response was from the middle management staff. That is why their response is put under semi-respondent heading.

Results And Data analysis
Response was very good. The main reasons behind the high response were the investigator’s personal social network, participation in professional association in federal area along with the co-operation shown by his subordinates in following up the questionnaires. Over all response from 14 libraries is 85% as shown in Table 1 below.

<table>
<thead>
<tr>
<th>Libraries Participation</th>
<th>Participation</th>
<th>Participation %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Response</td>
<td>12</td>
<td>85.71</td>
</tr>
<tr>
<td>Incomplete Response</td>
<td>1</td>
<td>7.14</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>7.14</td>
</tr>
<tr>
<td>Total Libraries</td>
<td>14</td>
<td></td>
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</tbody>
</table>

In the sample two types of questionnaires were sent, one for senior/chief librarian and other for professional staff. The above mentioned 85% response is from the head librarians.

Though NDU was the first to start library automation the AIOU stands at top in finishing the automation as per this survey of usability of LMS in libraries as shown in the Table 2

All universities have some ICT facilities and digital reproduction equipment e.g. scanner, photocopier; however it seems very little as part of major service to university students. This is very strange that some university libraries haven’t their own main computer server for library services. Five out of 14 has no dedicated library server. That is why those libraries are dependent to IT department which is separate entity in universities of Pakistan as shown in Table 3.

Table 1: Participated Libraries Response

<table>
<thead>
<tr>
<th>Libraries Participation</th>
<th>Full Response</th>
<th>Incomplete Response</th>
<th>No Response</th>
<th>Total Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Participation %</td>
<td>85.71</td>
<td>7.14</td>
<td>7.14</td>
<td></td>
</tr>
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</table>

Blog Results
The second tool used in this research for collecting data was online blog accessible at http://proprog.blogspot.com/ created on 12 February 2009 (Shafi-Ullah, 2009). Blog is the latest tool to have collaborative feedback. This is an instantaneous method, less time consuming and easy to use. Till this time 13 responses are updated on blog. In the blog, nine major issues were raised by the researcher to get the feedback given below.

Professional leadership: Haroon (LIS PhD Scholar from Germany) describes professional leadership as grey area since two decades. Situation is leading to betterment from last five years with the effort of new young, energetic and research oriented LIS leadership.

Tariq Mahmood (Assistant Librarian, COMSATS, Islamabad) strongly emphasised on leadership flaw in Pakistan. The reason in his opinion is inactiveness of Pakistan Library Association and financial constrains.

Collaborative professionalism: Syed Adnan Adil (Outreach Librarian, UK) relates the automation problem with sharing platform either in the form of professional association, professional list servers, so that professional can discuss, solve their day to day professional problems and can look forward to

Table 2: LMS usage in libraries

<table>
<thead>
<tr>
<th>University with Established Year</th>
<th>LMS Module Used as Automated Service</th>
<th>Automated Service Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collect Development (Yes/No)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Catalogue (Yes/No)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classification (Yes/No)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Circulation (Yes/No)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reference Service (Yes/No)</td>
<td></td>
</tr>
<tr>
<td>PIEAS 2000</td>
<td>Not participated</td>
<td>0%</td>
</tr>
<tr>
<td>NDU 1970</td>
<td>N Y N Y Y N</td>
<td>40%</td>
</tr>
<tr>
<td>BU 2000</td>
<td>N Y Y Y Y N</td>
<td>60%</td>
</tr>
<tr>
<td>AU 2002</td>
<td>N Y Y Y Y N</td>
<td>60%</td>
</tr>
<tr>
<td>IST 2002</td>
<td>N Y Y Y Y N</td>
<td>60%</td>
</tr>
<tr>
<td>FUUAST 2003</td>
<td>N N N N N N</td>
<td>0%</td>
</tr>
<tr>
<td>PIDE 1957</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
<tr>
<td>QAU 1967</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
<tr>
<td>AIOU 1974</td>
<td>Y Y Y Y Y Y</td>
<td>100%</td>
</tr>
<tr>
<td>NUMUL 1976</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
<tr>
<td>IIU 1985</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
<tr>
<td>FAST-NU 1996</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
<tr>
<td>COMSAT 1998</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
<tr>
<td>RIU 2002</td>
<td>N Y Y Y Y Y</td>
<td>80%</td>
</tr>
</tbody>
</table>
automation in general. In his view the information sharing and problems resolving through online discussion group is a cost-effective and collaborative effort. According to Haroon’s comments collaborative professionalism through all online groups, especially PAKLAG, who is pioneer in this collaborative efforts is positive professionalism. Being adaptive, Haroon expressed his opinion that our senior generations have a problem of being adaptive with latest development and technologies, but our younger generations are very positive, if not wonderful in this regard. Ata ur Rehman (Librarian, Islamabad) does not agree that Pakistani professionals are lacking in this area. In his view young professionals are especially making difference by adapting new techniques in librarianship like OPAC, Bulletin Boards/Forums, List serves, to keep abreast with day by day information needs of their clients.

Marketing of library services, Muhammad Ajmal Khan (Librarian, NU-FAST, Lahore) relate marketing of library services with identification of marketable services that our libraries provide not just speak about the acquisition of books. According to Haroon, marketing of library services is a newly introduced area.

Poor Government Initiatives professionals like, Ataur Rehman express the opinion that we always blame others for our weaknesses. As Haroon mentioned, HEC and University Management had focused on libraries during last 7/8 years. HEC digital library project (PERN) is the one and only example in a developing country. According to Zafar Javed Naqvi some improvements are needed for government’s initiatives and funding for libraries.

Funding for University Library Automation, Muhammad Iqbal Rana (Library Specialist, Planning Commission of Pakistan) said that to ensure a fair treatment of the topic, we shall have to compare the Library Automation in Pakistan only with developing countries having comparable GDP and as per capita income. Haroon has different view that “Funding for University Library automation” needs more attention, not by university authorities or HEC alone, but by library professionals too. The authors have observed, where library professionals are articulate, they have got good funds, but where, they lack activity, awareness, presenting themselves and their needs properly at relevant forums, they are far behind. Where PAKLAG has an admirable role in free of cost automation culture, its shortcoming is that the university authorities and library professionals think that they should get everything free, which is not possible to build the systems up to the level of artificial intelligence and decision supports.

Ata ur rehman supported Haroon’s opinion and said that for a while if we suppose that the factors are poor government initiatives or university library funding, but this is a fact that free wares/open-source soft wares/solutions can help librarians a lot to raise the position of our profession. And there are many examples of energetic professionals who upgraded their library services using free/open-source software.

Table 3: ICT and Digital Equipment in Universities

<table>
<thead>
<tr>
<th>Name of the University</th>
<th>library server</th>
<th>Total computers in library</th>
<th>photo copier</th>
<th>Scanner Scanner</th>
<th>Digital Camera Camera</th>
<th>A/V Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIIOU</td>
<td>1</td>
<td>50</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>AU</td>
<td>0</td>
<td>15</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>BU</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>COMSAT</td>
<td>1</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>FUUAST</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IU</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IST</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>NDU</td>
<td>0</td>
<td>21</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NU-FAST</td>
<td>1</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>NUML</td>
<td>2</td>
<td>130</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>PIDE</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PIEAS</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QAU</td>
<td>1</td>
<td>130</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>RIU</td>
<td>2</td>
<td>40</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

International professional collaboration for standardization, Nosheen said that an effort towards standardization in library automation is a need of future. Haroon shares his comments that I am not aware of any formal initiatives regarding international professional collaboration for standardization, because, perhaps, we lack real, active professional associations. Ali Muhammad (University of Bremen, Germany) has opined that main issue is the difficult choice between free open source software and standardized application. Small and medium budget organizations do not promote the standardized
solutions due to cost. In my opinion, Pakistan Library Association should try to establish international collaborations or consortium to promote open source software in libraries.

**Future realization**, Nosheen has opinion that had we realized the future needs this initiative would have the step towards standardization in library automation in Pakistani universities.

**Comparison with other developing world**, Muhammad Iqbal Rana said that library automation in Pakistan should be compared with only other developing countries having comparable GDP and as per capita income. Ata ur Rehman expressed his views that despite all shortcomings, we can proudly compare us with other developing countries and we are in a better position but this is just a start... the destination is still too far... Zafar Javed Naqvi said that despite all shortcomings and challenges, we have to compare the library automation activities in Pakistan with other developing countries, like Bangladesh, Brazil, Sri Lanka, etc. you may find that our position is far better in some area than other countries.

**Interviews**

Four open ended interviews were conducted through direct calls from mobile phone to look into the problems of library automation in Pakistani LIS profession. All participants have a variety of professional job experiences, special interests and contributions in the area of library automation.

Prof Dr. Khalid Mahmood, Chairman LIS Department, University of Punjab. He is heading one of the most active and adaptive LIS schools in Pakistan. He introduced a lot of new topics in syllabus, graduate from this school easily get job and they are delivering more than the other LIS school professionals. He expressed his experiences about library automation in these words “problems in public sector universities includes budget, which was a big problem few years ago but not now. Software is still problematic area especially foreign standardised software purchase and its annual maintenance. Locally available software is not standardised. Motivation and willpower in LIS professionals is not there. Government through HEC play a role in acquiring the international database for universities libraries as well as some hardware and software funding provision of university libraries. Institutions have also contributed in providing the hardware to libraries.” (Mahmood, 27 April 2009).

Mr. Muhammad Ajmal Khan, Librarian FAST-NU, Secretary General PAKLAG, PAKLAG is the brainchild of Ajmal Khan. He is the first person who introduced free LMS package and started email groups which later on became PAKLAG. He contributed a lot in adapting standardised tools in LIS professional community of Pakistan through a series of training from their PAKLAG platform, e.g. Marc Edit, LOC Z3950, helping in retrospective conversion etc. He has pointed out the library automation problems in these words “Computer usage is not common in the libraries, library software availability, reinventing the wheel behaviour of universities and wastage of a lot of money and time and at their end and still librarians are blamed for non-progress hence professionals show lack of interest in institutional policies due to their bureaucratic and red-tape culture” (Khan, 27 April 2009).

Mr. Anwar Ejaz, Library Director, Punjab Group of Colleges has diverse experience of profession and professional associations. and as consultant to international organization. He has also experience of being LIS consultant to international organization in Pakistan like IL, World Bank, UNICEF etc. He articulated his experienced as “In 1990s librarians were willing to do automation, however, organization were reluctant to pay. LAMP lost its popularity after the emergence of windows by Microsoft. This was a DOS based programme and it has some compatibility issue on network due to Novel network compatibility. PLA also hasn’t much funds to convert it to Windows. Delay in PLA election also is a reason. LAMP creates awareness among professionals about library automation, but launch of windows based WinISIS’ availability also affected its popularity. Then there was another milestone by volunteer group PAKLAG, product LIMS (Library information Management System). Their free service, trouble shooting and online email group made it popular. In public sector mindset is still not much adaptable for library automation especially in colleges. Still funding problem is there” (Ejaz, 27 April 2009).

Mr. Muhammad Iqbal Rana, Library Specialist, Planning Commission of Pakistan. He is the first LIS professional who is selected as library specialist to the Planning Commission of Pakistan (a government institution of policy making). He shared his experience in these words “Library automation problems in public sector are: lack of working environment, financial resources are less, library staff is not responsive, motivation level among staff is less then private sector, high expectation from department vs. low out put, training opportunities as change management are less in public sector, they also calculate whether automation will affect their incentives or not which normally does not do any thing in public sector, there is service structure in the public sector, LIS staff retire in the same cadre even after serving in a department his whole service until unless he changed department. Only project people struggle more to justify their job and they have motivation of getting the extension in their contract or look for better job” (Rana, 26 April 2009)

**Conclusion and Recommendations**

The data analyses given above leads to following conclusions and recommendations;

1. A generous funding for development of ICTs enabled libraries of higher education Institutions
(HEIs) and their infrastructure is necessary to made proper provision of research culture in HEIs.

2. A one time special funding for specifically library automation may help HEIs in acquiring essential hardware and software as well as in clearing the backlog through automation projects.

3. There is a dire need of proper annual budget allocation for ICTs implementation especially for library automation to facilitate its users and researchers. This will drive libraries' automation in right direction, though HEC has made some provisions in budget for universities under the head up-gradation of laboratory and research facilities. However, this amount is inadequate to start any library automation project.

4. Service conditions of librarians are not still well defined which causes demoralization in profession. Each university has its own isolated services and pay structure for librarians. To motivate the professionals and made them job satisfied people, a proper uniform service structure for academic library professionals should be introduced through HEC.

5. HEC being central point and regularity authority, after analysing the user requirements of different levels of institutions, should acquire standardised LMS as consortia for all HE institutions of country. The annual support and maintenance cost should be met by the institute on regular basis through annual budget provision.

6. It is recommended that Government of Pakistan should direct HEC to collaborate officially with all stakeholders, including (Ministry of Education, Librarians, PLA, LIS schools, Volunteers) on a single platform to discuss all prevailing and future issues about libraries, its services and library automation.

7. HEC should also direct, manage, facilitate and monitor capacity development, CPD, and in-service trainings of library professionals via this single collaborative platform. This will result in harmony of functions and service in HE education and research environment.

8. Other collaborative efforts on special interest group base as developed world has in their professional organization e.g. CILIP, should be established to improve services and infrastructure by involving the professionals’ organizations and other stake holders through the provision of special funded projects. The concept of special interest group (SIG) as developed other international and national professional association’s e.g. CILIP, ALA should be introduced. This will take on board all professional of different sectors and levels, i.e. universities, colleges, schools, special libraries on a single platform.

9. Government should support professional association, LIS schools and volunteers to collaborate for in-service trainings, and other technological experiences sharings as Punjab University LIS has made official link with volunteer group PAKLAG. This model should be adopted by all others LIS schools in country.

10. HEC as only quality assurance authority of country should make sure that all stakeholder universities must have properly funded and developed libraries for support of research culture. To monitor progress on this important issue a joint task force of eminent professionals, academics and a member from HEC should be raised for regular inspection of universities and HE institutions.

11. PLA and LIS schools should play a vital role of awareness creation regarding technical issues of automation, i.e. complex language issue, local language issues, and retrospective data conversion. They should also discourage the widespread concept of individual efforts, solo flight or reinventing the wheel every time. Professionalism should be realized through awareness campaign to be more adaptive, proactive and futuristic in their approach.

12. PLA, volunteers groups and LIS schools should support and involve themselves in adaptation of international standardization move like MARC21, use of LOCZ3950, for their local professional as PAKLAG is doing by a series of training with LIS department and from their own platform also.

13. Lack of research, other practical issues of technology and emerging trends should be addressed through the research by LIS schools as well as by regular publication of PLA, SIGs, and LIS academia research publications.

Further areas to explore
Change is form of evolution and constructive revolution is key indicator of life existence. Charles Darwin theory “Survival of the fittest”; or saying of Pakistani national poet and philosopher Sir Muhammed Iqbal “Sabaat ek taghayar ko hai is zamane main” (change is the only permanent thing in the world) seems excellent path to follow for tracking of human existence. This philosophy fits to all aspect of human, social and moral life. Professionals should be adaptive to change; to survive in new paradigm professional life. Library professionals can also perceive this concept from the change in their profession looking in professional history from Papyrus to paper printing and now digital environment which is leading to mobile environment, e.g. books on iReader, Kendall. Library professionals in Pakistan have some how future perception of library services and their automation. However there is an urgent need to study, why adaptation of latest tools and sharing platforms role is so tardy.
In Pakistan private universities are working in the market of education as business model. The facilities and services are competitive, market based and much better than public sector. Further research is required to study their model of working and its provision with in the public sector institutions. Emerging web2.0/3.0 tools for information and knowledge sharing e.g. twitter, blogs, MySpace, Face book, hardware like kindle, Sony reader, ereader, and mobile library services through widows based cell phone are common in the developed world. In developing world like Pakistan professionals have some knowhow and awareness through email and discussion groups, however, reluctant in opting this to improve their user services. Developing LMS initiative in Pakistan is always a solo flight. Institutions are still working to develop their own LMS, why? Further research is required to look for provision of standardized LMS according the local needs.

References


