Abstract

The paper dwells on key issues and challenges that academic libraries in select developing and underdeveloped countries are facing and explains how these issues are blocking the progress of libraries. The major barriers of concern to academic libraries are illiteracy, budget, software, training, unavailability of cheaper telephone lines, electricity, and others. The author argues that if these obstacles are removed, academic libraries and librarians will be able to meet the challenges of technology in the information age. The key to progress and development of academic libraries is the sound national economy and IT infrastructure; after all, information poverty is linked to poor economy of the nation. The author advocates that the developed nations must come forward and make a commitment to work together in the new global environment of cooperation, development, and resource sharing and to help academic and other libraries of developing nations succeed and invest wisely. This should help to bring the much needed change of introducing technology in all academic libraries of developing nations.

Introduction

Change and hope have been part of human civilization for centuries. On November 4, 2008 Barack Obama, became the first African American President of the United States. During his campaign, he promised to bring the much needed change in the country and there is every hope that he will fulfill his campaign promise. Similarly libraries have been part of the academia since founding of the first university in the world known as Takshila University in Taxila, India in 700 BC (Sharma, 2006). Academic libraries have played a very important part in supporting students and faculty in their curriculum and research needs and preparing leaders of tomorrow. They have also been instrumental in storing and retrieving information for their scholars and other researchers all over the world from rich to poor nations.

Many changes have been introduced in academic libraries since 700 BC to meet the growing and changing needs of students and faculty including the method of obtaining information from them. During the ancient times, information was written and stored on clay tablets and handwritten materials. This method was changed to printed materials during the medieval times. Then microforms, CD-ROMs, and the online storage method was introduced in the twentieth century including databases on the World Wide Web, (Sharma, 2006).

The introduction of technology is still very new to the profession of academic libraries and its users all over the world. With the introduction of punch card procedures during the 1930’s the University of Texas in the United States became the first academic library in the world to use a mechanical system. (Aguou, Haruna, and Aguolu, 2006). The introduction of technology is still very new to the profession of academic libraries and its users. With the introduction of punch card procedures in the 1930’s, the University of Texas of the United States became the first academic library to use a mechanical system in the world (Aguou, Haruna, and Aguolu, 2006). Technology was introduced to the western world during the second half of the twentieth century after the late S.R. Ranganathan of India predicted in 1950s that technology will play an important part in libraries in the near future. Many third world countries of Asia, Africa, Latin and South America, and the Middle East joined the technology wagon in the late twentieth century but are still behind Western nations in its application and services.

In my view, introduction of technology in academic and other libraries has opened a new chapter in the development of libraries in the twenty-first century. It has introduced access to information and various collections including e-books, online catalogs, and many full text databases of journal articles from all over the world. Academic and other types of libraries in the western world have taken full advantage of these
much needed changes through technology. It has given students, faculty and other researchers access to thousands of articles in many languages. On the other hand, academic libraries in the developing nations have been left behind due to many reasons. In fact, they have not been able to catch up and are struggling to maintain their collections and services.

According to a report published by the Progressive Policy Institute of the United States on April 29, 2009, literacy among the world population is on the rise. The UNESCO data shows that 84 per cent of the population now is literate as compared to 82 per cent in 2000 and 56 per cent in 1950. But, there are still 774 million people in the world who are illiterate. Therefore, schools, institutions of higher education, and academic libraries have a long way to go before they can win the battle (Leonard, Andrew, 2009). South and West Asia also has the highest numbers of illiteracy (402,744) with 64 per cent women topping the list, followed by Sub-Saharan Africa with (134,978) and 71 per cent of women are illiterate). During 2000-2004, 33.8 per cent of adult Indians were illiterate, followed by 11.23 per cent Chinese. Brazil with 1.9 per cent had the lowest percentage of illiterates in the world (Literacy in Wikipedia, 2009). There is no place for illiterate people in the academic and other libraries. In spite of the fact that the progress to fight illiteracy is very slow, efforts are being made to open more academic and public libraries in many regions of Africa, Asia, Latin and South America, and the Middle East and introduce technology in them. The Asian continent has fifty-two countries and is the most populous in the world. Both China and India have over one billion people in each country and technology was introduced in libraries of these countries on a limited basis in the 1980’s. Progress has been made but still they are behind as compared to the academic libraries of other developed nations.

**India**

The Information Technology has changed academic libraries in urban India also. In 2008, India had 400 universities and institutes of national importance, 18,600 colleges, with 3 million professors, and 7.8 million students (Golnessa Galyan Moghaddam and V.G. Talawar, 2009, p. 98). It is one of the largest systems of higher education in the world, but only ten per cent of 18 years or older attend colleges and universities in India. Founding of the Information and Library Network (INFLIBNET) Centre in 1991 was a turning point in the history of Indian academic libraries. It is a “computer communication network for linking libraries and information centers in universities, deemed to be universities, colleges, UGC [University Grants Commission], information centers, institutions of national importance and R&D institutions, etc., avoiding duplication efforts...[It] develops and distributes software for university libraries (SOUL) which is integrated user friendly management software (Bhatt, 2009). Another major activity of INFLIBNET is the preparation of the Indian Catalog of University Libraries in India (INDCAT), an online library catalogue of books, theses and journals available in major university libraries in India which provides bibliographic description, location of the material in all subjects available in more than 113 university libraries. INDCAT has over 10 million bibliographic records (Bhatt, 2009). Murthy and Cholin are of the view that “all academic libraries [in India] now virtually depend on the IT systems for their basic operations such as acquisitions, cataloging, circulation, serials control, and other functions” (Murthy and Cholin, 2006). But, it has been said that “most university libraries are ill-equipped to satisfy user needs within their resources. Scholars in remote areas feel mentally isolated” (T.A.V. Murthy and Cholin, 2006). On the other hand, “Digital library projects in the country are on the rise”. The Indian Academy of Science, Bangalore, has demonstrated successfully, free on web delivery of their journals through their website” (Jeevan, 2004). UGC – INFONET Digital Library Consortium was established in 2003 and is doing an excellent job of subscribing to electronic resources for its members at discounted prices (Bhatt, 2009).

Another landmark to improve libraries and make India a knowledgeable society was achieved with the establishment of The National Knowledge Commission by the government of India on June 13, 2005. The Commission has submitted its report to Dr. Manmohan
Singh, Prime Minister of India on May 23, 2009, with 300 recommendations on 27 focus areas including libraries. It will further help to improve and modernize and revitalize the libraries of India (“Towards a Knowledge Society”, 2009, National Knowledge Commission, p.1).

Vietnam

Vietnam is one of the poorest nations in Asia but joined the digital age with the help of Australian National University on April 14, 1994. It ranks 68th in the networking ready index among 102 countries (Binh P. Le, 2006, p.63). In December 1997, Vietnam started its access to the internet which helped faculty, students and others to get up-dated information for their research needs from all over the world. Since then, there has been improvement in academic library services in major cities of Vietnam. A few free databases have also been introduced and academic institutions have also published a few periodicals online for the benefit of all researchers (Binh P. Le, 2006, p. 71). The European community has helped Vietnam to introduce technology in libraries. But, many Asian countries with the exception of Japan, Singapore, and South Korea are still struggling.

Africa

Africa is the largest continent in the world with fifty four countries. Britz and Lor, two well known library scholars from South Africa are of the view that “Africa which represents an eighth of the world’s population can surely be considered as the information-poorest continent when it comes to connectivity”. (Britz and Lor, 2006). In Africa, only 1.1 per cent of the population has personal computers and 0.8 per cent has access to the internet. Though the number of internet users increased by over 170 per cent between 2000-2004, from 4,514,400 to 12,253,300, the actual increase is less than two per cent of the total internet users in the world (Britz and Lor, 2006). Libraries are the key players to educate citizens of the country and introduce them to what is happening in the world through their materials including through technology. But, the development of all types of libraries including academic libraries in Africa in the twenty first century has been very slow because “in Africa … libraries are not a priority” (Eneye, 2008). There are many reasons for the slow development which are discussed towards the end of this paper.

Benin

Benin is a French speaking country in West Africa and still underdeveloped in many ways when it comes to technology and academic libraries. The online catalog was introduced at the National University of Benin (NUB) in 2002 with the help of a grant which the author received during his directorship of the University Library of West Virginia State University, from the United States Agency for International Development (USAID) in 1999. Thirty French language computers with printers were bought for the University Library with the help of the grant money. Proper training was given to all librarians and staff to run their own show. One could see smiles on faces of many students, faculty and administrators when technology finally became a part of the library and its functions. This project certainly “contributed to boosting the NUB Library’s technological capacity” (Natsis, 2006).

Nigeria

Technology was introduced in academic libraries of Nigeria in 1975 led by the University of Ibadan, Ahmadu Bello University, and Obafemi Awolowo University. But, the progress has been very slow and many colleges and universities are still behind in providing service to their patrons through technology. “Most academic and research libraries in Nigeria have not computerized any of their functions. The public card catalog and the visible index are still finding tools for books and journals. In most libraries, likewise, indexes and abstracts are compiled manually. Library and information services in Nigeria have yet to transcend the traditional functions” (Aguolu, Haruna, and Aguolu, 2006).

Sub-Saharan Africa

Education in Sub-Saharan Africa, like many other African countries, is predominantly funded by the government. Though the needs of students, faculty, have increased since the introduction of technology in libraries in 1980, governments of all countries in the region have failed to support them fully.

The Sub-Saharan African academic libraries introduced personal computers in the 1980’s to join the world in the information age. “Library staffs were challenged to develop means of facilitating access within limited resources” (Raseroka, 2006). The demand for access to technology increased. Universities of Botswana, Nairobi, and Zimbabwe took the lead during the early 1990’s. The UNESCO introduced its free CDs/ISIs software for the benefit of African academic libraries. But, for other subscription based databases and even to buy PCs and subscribe to databases, academic libraries had to depend on funding from various donors for both software as well as hardware (Raseroka, 2006). The World Bank has been one of the major donors to African academic libraries. Under difficult circumstances, academic libraries had no choice but to form partnerships to share information resources. This move resulted in the birth of fee based consortiums including the Ghana Interlibrary Lending and Document Delivery Network (GILLAD NET) and the South African Bibliographic Network (SABINET) (Raseroka, 2006). There are at least eleven countries in the region where interstate consortiums are being formed.

The University of Dakar in Senegal, and the University of Conakry in the Republic of Guinea have received financial help from the World Bank for their libraries.
South Africa has received help from the European Union, Carnegie Corporation, Ford Foundation, and Mellon Foundation of the United States to rebuild their academic libraries during the post apartheid era (Raseroka, 2006). It can be said that the academic libraries in Africa have not done very well in the information age and are behind in introducing technology.

The African Digital Library

With the help of UNESCO, the World Bank, the Humanities Library Project, and the Net Library, a few educational, government, non-governmental, and research institutions have been able to establish their own digital collections in their libraries. The most noteworthy and visible among them is the African Digital Library (ADL). It can be accessed through www.africa-education.org/adl

It is a joint venture project of Technikon SA, South Africa; the Association of African Universities and Net Library, a private US based corporation. The mission of ADL “is to provide digitized full text resources to learners in Africa via the revitalization of education and lifelong learning on the continent and alleviation of the digital divide between first and third world countries” (Binh P. Le, 2006, AAMES Newsletter p. 1, 3). The ADL collection contains “full text” e-books, mostly English language text books, and is available to the people and institutions in the African continent, free of charge. The ADL opened on November 1, 1999 and has over 8,000 titles in over fifty subjects including agriculture, business, computer science, education, engineering, medicine, religion, and technology. ADL “should serve as a model for resource sharing for many underdeveloped regions of the world” (Binh P. Le, 2006, AAMES Newsletter, p.1, 3).

The Middle East and North Africa

West Asia, also known as the Middle East since the end of the Second World War, has 29 countries in the region. Introduction of technology in academic libraries of this area has been very slow “due to a number of socio-economic, political, and technological factors” (Aman, 2006). Academic libraries in the Middle East are very different than the libraries in the western world. There are no “reserve collections, e-reserves, or even reference services or desks” (Aman, 2006). About fifty per cent of the population in the region is illiterate and for them academic libraries have no place in their life. It does not make any difference to them whether there are any books or journals in the library or not. It does not make any difference to them whether there are any computers or not with access to the internet in the academic libraries.

Egypt

Technology was used in libraries in Egypt in 1985 and a good information technology infrastructure is in place in major cities of the country. The internet was introduced in libraries in October 1993 “through a gateway established by the Egyptian University Network (EUN) of the Supreme Council of Egyptian Universities” (Shaheen, 2006). The academic libraries of Egypt are progressing very well as compared to the libraries of other Arab nations but the Gulf countries are catching up with the opening of many new universities which are much more technology oriented and have given full support to their libraries to introduce technology for the benefit of their students and faculty.

Central, Latin and South America

There are 33 countries and 13 dependencies with a 955 million population in this region (“Central and South America”. 2009). All major academic libraries have introduced technology in their libraries. In Argentina, Brazil, Chile, and Mexico, universities have supported their libraries very well but smaller libraries are still behind. Other nations in this region of the world have a long way to go to catch up with the western world.

Information Technology

We are aware of the fact that the fully integrated online system has helped to improve the quality of operation of all departments of academic libraries including acquisitions, cataloging, circulation, interlibrary loan, reference, periodicals, and even bibliographic instruction, also known as information literacy. Through technology, academic libraries have succeeded in giving the much needed information to all faculty, students, and other users twenty four hours a day, 365 days a year from homes, offices, student dorms, libraries and other places. The access to many full text electronic databases, the online catalog and other documents has certainly helped all users to do their research in a timely manner.

The wireless technology has further helped the users to find information from the place of their choice within or outside the library even from their mobiles. “The emerging digital library is making this information process much easier for all users. Introduction of e-mail and fax has also brought new life to all types of libraries” (Sharma, 2006). Therefore, it will not be out of place to say that information technology has helped to enlarge the role, capabilities, and importance of all libraries especially academic libraries in the twenty first century. It is due to the introduction of technology that academic, research, and other types of libraries have become more global in nature because of the internet and the access they provide to research materials for their users (Chen, 2004). It must be added that the western nations have done more for their academic libraries through technology as compared to developing nations. In my view, there are many barriers and problems to introduce technology in the developing nations. The combination of both problems and barriers has blocked the much needed
progress of academic libraries in many nations of the third world.

**Barriers and Technology**

**Funding**

One of the major problems for academic libraries in poor and developing countries is the shortage of money for technology. Even developed nations of the West were not ready for technology because no proper planning was done to introduce technology in libraries of higher educational institutions. Library administrators had to divert money from other items of the budget to introduce technology. They had a very difficult time managing finance for their libraries. Even now there are problems because of the rising costs of databases, paper journals, and other aspects of technology. As dean of an academic library in the United States, the author had to cut his book budget in order to meet the technological needs of users in the University. Even deans of many large academic and research libraries are in the same boat in the United States.

Hardware and software are still expensive for libraries in the developing nations including Asia, Africa, Central, Latin and South America, and the Middle East. The present recession has added more misery to the growing problems of all academic libraries because budgets have been cut further. Many academic libraries of poor nations do not have enough money to buy even basic books for their collections, have proper library buildings, hire well-trained systems librarian, or fill other vacant positions, subscribe to paper journals to support the research needs of their students and faculty. “Although universities in the Sub-Saharan Africa have been advised on the 5 per cent of the total university expenditure [for libraries], very few universities have been able to provide this minimum consistently. In the West African country of Ghana, for example, it is estimated that the library budget may be as low as two per cent” (Raseroka, 2006).

How can they even think of buying expensive technology? How can they train their staff in the use of technology? Many countries of the developing nations do not have enough academic libraries and/or have poor libraries to serve their students and faculty. They do not have enough books or journals on their shelves. For a long time, the libraries have been unable to acquire new books due to poor funding. “Most of the books in the libraries are outdated” (Eneya, 2008). How can they think of technology? In a few developing countries, technology has been introduced in academic libraries with the help of donations and grants from other countries and some help from their countries, but the progress is very slow and these countries will never be able to catch up with libraries of developed nations. How long will they depend on donations to build their academic libraries, develop collections, train their librarians and staff, and introduce technology?

When there are wars being fought in countries of Asia, Africa, and the Middle East, how can governments and people of those countries including Afghanistan, Iraq, Pakistan, Palestine, Rwanda, Somalia, and Sudan, think of technology in their academic libraries or even open new libraries? Wars must be stopped and their libraries be rebuilt because many libraries have been destroyed and/or damaged in the wars. They have to develop their collections, train their librarians and staff to serve the needs of their students and faculty. How can they think of technology at this difficult time? Citizens of these countries have been deprived access to information through their academic libraries. The information poverty has made them helpless. How can academic librarians of these poor nations think of technology?

**Illiteracy**

One of the major barriers to the introduction of technology in the academic libraries of developing nations of the world is the rate of illiteracy. “literacy remains a low priority for national governments. As of April 2009, according to UNESCO, 91 per cent of boys and 87 per cent of girls are literate” in the world (www.salon.com, 2009, p. 1). “The largest gap remains in Africa, South Asia, and the Arab World...Some 774 million people in the world are illiterate” (www.salon.com, 2009, p.1).

The world population is forecast to hit seven billion in 2010 and the majority of the population increase will be in developing nations where the illiteracy rates are high (World Population Projected to Reach 7 Billion...(2009) www.cnn.com). According to the Population Reference Bureau’s 2009 World Population Data sheet “a staggering 97 per cent of global growth over the next 40 years will happen in Asia, Africa, Latin America and the Caribbean” (cnn.com, 2009). By 2050, India is projected to be the world’s most populous nation of 1.7 billion people; overtaking the current leader, China” (cnn.com, 2009, p.1). Therefore, governments in developing nations have to meet the challenge of educating their rising populations, open more schools, colleges and universities with libraries in them, and introduce technology because the space in those countries is shrinking. At present, how can leaders of these countries think of introducing technology in their libraries when they have to fight poverty and illiteracy?

In India, there are 138 million Muslims and 50 per cent of Muslim women are still illiterate. They cannot read and write. “as many as a quarter of Muslim children in the age group 6-14 have either never attended school or dropped out” (Biswa, 2007). Literacy in Pakistan stands at 49 per cent. 83 million adults out of 162 million population (15 years or older) are illiterate and 65 per cent of all females adults are illiterate (William Darlymple, 2007, p.19). In Bangladesh, the female illiteracy rate is 78 per cent (Moleke, 2007). In the twenty-first century known as the age of information and technology, “women still...
make up two-thirds of the world’s adult illiterates... In Africa, 49.2 per cent of women are still illiterate. In South and West Asia, 56.4 per cent and in Arab states and North Africa, 52.2 per cent of women are still illiterate (“Illiteracy Rate and Illiterate Population…”, 2003, p.2). In Afghanistan, 95 per cent of the women cannot read or write (Photo Journal: Afghan Women’s Voices, BBC, 2003). People and leaders of developing nations should remember that when you educate a woman, you educate the whole family. Therefore, they should pay attention to this major problem of illiteracy and solve it by educating females of all ages in their countries.

The United Nations Development Programme Report 2007-2008 indicates that the literacy rate in many countries is alarming including Pakistan where only 49.9% people are literate, Bangladesh 47.5%, Nepal 48.6%, Senegal 39.3%, Mozambique 38.7%, Benin 34.7%, Guinea 29.7%, Afghanistan 28.1%, Chad 25.7%, Mali 24.0%, and Burkina Faso with only 23.6% literate people. (List of Countries by Literacy Rate 2009, p.6-7).

According to the CBS News of the United States aired on May 22, 2007, fifty per cent of children in both Pakistan and Nigeria are not in schools at all. (“Literacy and Children”. 2007, cbsnews, 6:30pm). According to the UNICEF, “there are over 100 million children out of school in India” (www.salon.com, 2009, p.4). One sincerely hopes that the recent law about free education for children between the ages of 6-14, passed by the Indian Parliament on august 4, 2009, will help to solve this problem of illiteracy in India (Sager, 2009). There is a shortage of schools, libraries, and other educational facilities in all developing nations, and according to a report by the Commission on Africa, a British government research organization published in 2005, “African Universities were in a state of crisis and were failing to produce the professionals desperately needed to develop the poorest continent” (Polgreen 2007).

Software For Computers
Another major barrier in introducing technology in academic libraries in developing nations is that software used for computers is not available in the local languages. English is the major language for a majority of software followed by French, German, Italian, Japanese, Russian, Spanish, and Chinese. As of July 31, 2009, there are 195 countries and 156 languages spoken worldwide (Rosenberg, Matt, 2009, p.1.). According to the most recent study, the English language leads the world with over two billion web pages (214,250,996), followed by Japanese (18,335,739), German (18,069,774), Chinese (12,113,803), French (9,262,663), Spanish (7,573,064), and Russian (5,900,956). Almost seven in ten (68.39%) of web pages are in English. 5.85 per cent in Japanese, 5.77 per cent in German, 3.87 per cent in Chinese, 2.96 per cent in French, and 2.42 per cent in Spanish language. (Percentage of Different Languages Used on the Web”. 2003).

For your information, for every 1.5 English speaking people, there is one webpage in the world. But, there is only one webpage for 3.7 Swedish people, one web page for every 43.8 Spanish speaking people, and one web page for 1,583.5 Arabic people (Sharma, 2006). In South Africa, only 7 per cent of the population has access to the internet, in Namibia only 2.5 per cent, and in Kenya only 1.6 percent of the population has access to the internet. In Asia, South Korea is the leader because 54 per cent of the population has access to the internet as compared to China with only 3.6 percent. In Latin America, Chile leads with 20 percent and Brazil with 8 percent. On the other hand, 68 percent of the populations in Sweden, 63 percent of the population in Denmark, 54 per cent of Australians, 59 per cent of Americans, and 49 per cent of Canadians have access to the internet (Britz and Lor, 2006). In India, there were only 13.5 million subscribers to the internet in 2007 representing 1.15 per 100 inhabitants. But, 81 million have access to the internet, 6.93 users per 100 inhabitants (Mishra, 2008). Looking at these figures, it can be said that there is a wide gap between the developing and developed nations for their citizens who have access to the internet in the first decade of the twenty first century.

There are still many languages that are not represented on the Internet and people who do not read and speak English and other major languages such as French, German, Spanish, Russian, or languages of the third world nations are far behind in the progress in implementing technology in their academic libraries. They have very little or no information about technology. These nations neither have the money nor the expertise to introduce technology in their academic libraries.

As mentioned earlier, many academic libraries in Asia, Africa, Central, Latin and South America, the Middle East and other regions do not have even enough books and journals for their students and faculty; how can they think of introducing technology? We are aware of the fact that technology is still very expensive for poor developing nations. They need to fight poverty and hunger first and send their children to schools and colleges to get educations and learn how to use libraries first, rather than worrying about technology in their libraries.

According to Alex Byrne, former President of IFLA, technology in Third World nations at present “is limited to those who are literate and have a command of the major languages of commerce and scholarship [English in Particular]” (Byrne, 2003). There is another problem with technology that we cannot ignore and that is “If I put a book [or a paper journal] in a room and close the door [and] open the door in 500 years, the information contained in the book will still be available. If I do that with any electronic storage device, we now know the same will not be true, not even perhaps in ten years. The information may still be in electronic form but we are unlikely to be able to read it with our newer technology” (Graham, 1998).
Online, full text journal databases are very attractive but they are still very expensive for libraries of the developing nations. Secondly, one has to buy full packages rather than individual titles from vendors. This discourages many academic libraries to subscribe to them because of lack of funds as well as materials which do not support their curriculum and research needs. Finally, libraries lose access to databases if they cancel their subscriptions even to the old journal issues, unless libraries pay huge access fees for older issues to the vendors, whereas, if libraries cancel subscriptions to paper journals, all older issues remain with the library. Other major problems include lack of proper library buildings, expensive and unreliable electricity, very expensive or no telephone lines.

“The servers in many institutions are not very reliable. This makes the update of local databases very difficult. [Students, faculty, and other users have] no access to current books. There is no money to renew licenses which are usually for five years” (Eneya, 2008.). In addition, “Libraries in Africa [and in other developing nations] are poorly funded. This has made replacement of equipment virtually impossible and maintenance very difficult. Lack of local dealers in library software is another big challenge. Reliance on overseas libraries is expensive and makes system maintenance a nightmare” (Eneya, 2008).

Meeting the Challenges
Librarians, library educators, academic leaders and administrators have an important role to play in combating information poverty in the developing nations (Britz and Lor, 2006). As mentioned earlier, the software for computers is not available in many languages. At present, only “some library systems and software do provide interface in a variety of languages” (Byrne, 2003). Because of the fact that technology is very expensive even in 2009, a majority of academic libraries in the developing nations cannot consider introducing it. The author has visited libraries in Asia, Africa, Latin America, and the Middle East and can say that it is not a top priority of their governments to upgrade their libraries with technology. For developing nations, it is more important to fight hunger, illiteracy, and poverty rather than information poverty and the lack of technology in their academic and other libraries. Governments of poor countries will certainly devote time and energy to their libraries only after solving major problems of clothing, food, shelter, and illiteracy.

The Internet is the gateway to information and scholarly research for all educated people of the world and it is dominated by the English language and is used by more English speaking people than by non-English speaking people. But, as mentioned earlier, the population of Africa, Asia, Middle East, Central, South and Latin America and other poor nations, has limited access to the internet as compared to the population of the western world. Therefore, they are far behind. In author’s view, it is very important to train people in information literacy and information technology through libraries. It will help to reduce information poverty. We need more leaders like Kiran Martin, founder of “ASHA” in India who helped 135 young people living in the slums of Delhi, India, including 18 year old Shashi Arya and 19 year old Mahesh Sharma to go to University of Delhi for higher education. “Coming from poor families, none of them ever imagined they would go to college. But it has happened with the (financial) help of a local non-government organization” [ASHA] (Ray, 2009).

It is very important and urgent to develop software in national languages of all 195 countries of the world especially developing nations. Only then will nations be able to achieve the maximum benefit for all citizens and libraries. “It is a task that must be seriously considered in order to safeguard against intrusive foreign culture, particularly when they affect the young mind, and more so, national cultural identity” (Panyarachun, 1999).

The literacy rate in developing countries must improve. Only then will the introduction of technology in academic libraries be successful. Federal governments of all poor nations must invest more money in education and technology at all levels, even if they have to form a good partnership with the private sector. This must become their top priority along with fighting poverty and hunger. “One billion people throughout the world suffer from hunger, a figure which has increased by 100 million because of the global financial crisis, says the UN… Almost all of the world’s undernourished live in developing countries, with the most, some 642 million people, living in the Asia-Pacific region. In Sub-Saharan Africa, the worst hit region, the figure stands at 265 million” (World Hunger Hits One Billion, 2009). According to a report published in the BBC website on August 21, 2009, released by a committee appointed by the Government of India and chaired by an eminent Indian economist, S.D. Tendulkar, “At least 38% of Indians live in extreme poverty… the number of poor in India is approximately 297 million”. (“More Indians in Extreme Poverty”, 2009). The future of these developing countries will be much brighter with more educated people in the country. Therefore, present leaders should look forward and lead from front by setting good examples. It is necessary and important to open more schools, colleges, and universities with excellent libraries. Budgets of all institutions of higher learning should be improved. All academic libraries need adequate budgets to introduce technology at all levels to meet the curriculum and research needs of all students and faculty and keep it up to date with all upgrades on a regular basis. Otherwise, the mission of introducing technology will not be successful. It is equally important to allocate enough money for the training in technology for all librarians as well as support staff. Similarly, funds for continuing education for both librarians and staff must be made available on a regular basis in the budgets of all libraries.
The rich nations of the world under the able leadership of the United Nations Organization should take the responsibility to help poor developing nations to improve their academic libraries and educational standards with the introduction of technology at all levels. This investment will be much better and will yield better results than wasting money on wars. More grants and loans should be given to developing nations to upgrade their academic and other types of libraries. It will help poor nations to join the high speed super highway of technology. It should be kept in mind that “computer literacy and language are the most important tools needed for information technology” (Panyarachun, 1999). Individual institutions of higher learning in western nations can also help academic libraries of poor nations in introducing and upgrading technology by offering training in modern librarianship. To bring uniformity in the world it is very important, necessary, and urgent to develop “information literacy standards ... [because information illiteracy is] a significant obstacle throughout the world” (Byrne, 2003).

The combination of computer and information literacy in national languages and higher education with high standards in all developing nations will help to achieve the goal of information technologies successfully in academic libraries of all developing nations and cross a few major barriers en-route to complete success. The communication charges in developing nations are still very high. It will help to make the much needed progress, if the prices are brought down and more telephone lines are laid to speed up connections and access to the internet. Similarly, prices of software and hardware should be controlled to make them affordable to libraries of all developing nations. Finally, electricity is still not available twenty four hours a day in many developing nations. Many villages have no electricity. In cities it is available only for a few hours a day and it is very expensive. It creates many problems for libraries and their users in their services and research. Therefore, it is urged that all major industrial powers of the developed world must help developing nations to generate more electricity, connect libraries, and make sure that libraries and homes are never without electricity.

Introduction of the much needed technology in academic libraries will help students, faculty, scholars, and others to have access to the available information for their research needs and improve the quality of research. It will also help poor nations to join the information super highway of the world rather than be stuck in the local traffic on the side roads and remain behind in achieving the goal of information literacy. It will also help them to join their counterparts in developed nations, where technology has become an integral and very important part of all academic and other types of libraries.

Conclusion

If all barriers of illiteracy, budget, software, training, availability of cheaper telephone line, electricity, and others obstacles are removed, academic libraries and librarians will be able to meet the challenges of technology in the information age. The present conditions in developing countries are hurting the progress of librarians and libraries. In this modern age of library and information “If we don’t try to create an infrastructure which is technically and electronically available to everyone, we will have missed an important opportunity to change our society” ("British Law", 2003, p.3).

It has been rightly said that “information poverty is closely allied to economic poverty: the poorest nations have the least access to information” (Lum, 2007). There are 195 countries in the world and only sixteen of them including Australia, Canada, France, Germany, Japan, New Zealand, Portugal, Spain, Russia, and the United States are considered developed countries by the United Nations. 179 countries of the world are considered developing nations. Palaniappan Chidambaram, former Finance Minister and present Home Minister of India, recently said that developing nations “…have the right to grow, just as much as the U.S. and Europe had the right to grow in the 19th century” (Williams, 2007). Therefore, the world should make a commitment to work together in the new global environment of cooperation, development, and resource sharing to help academic and other libraries of developing nations succeed and invest wisely. They should help to bring the much needed change of introducing technology in all academic libraries of developing nations. It is the hope of this concerned academic library dean that the dream of change to give equal access to information to all student and faculty in poor countries will turn into reality soon.

References


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