

## **AUTOMATION TRENDS IN SPECIAL LIBRARIES OF BANGLADESH: SOME OBSERVATIONS AND FUTURE DIRECTIONS**

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Across the disciplines technology is spawning brand new carriers in even as it changes in the way we performed old ones. Standing at the edge of 21st century probably there is no dispute over the recognition of technologies in information activities. Unprecedented changes in the use of information are reshaping our personal activities, our community and organizational practices. Information Technologies (IT) bring the global information to our finger end. With the emergence of Internet information kept in different locations has become asset of the world community bringing almost everyday in equal platform. To control over the world information resources different specialized information systems and networks are playing vital role in accumulating and generating indigenous literature on their concerned subjects and enrich the world literature by riding them on the information super-highway. The success history of those information organizations in accumulating, organizing, synthesizing and customizing the information products according to the needs of users depends on how effectively they have been able to adopt ITs or not. ITs are brought in use in information activities in Bangladesh. This papers aims at exploring IT application trends in some special libraries in Bangladesh.

### **Methodology**

Different organizations working in special fields of knowledge claim that they have separate libraries or special information unit. Maximum of them have a few collections with some internal reports that are between 300 to 1000 volumes in number, let alone automated processing and service systems. A few of them are well equipped and are working as central office. To explore the IT use trends I have selected 13 large special libraries out of which three are working in the field of agriculture, three in science and technology, three in health and population, and four in development. The indicators of ITs application trends are: database development and maintenance, total collection, remote access to

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1996, 18). Most of the libraries and information centers use computers as stand-alone device. The use of computers in these libraries are basically confined with bibliographic database maintenance and some word processing activities. Few libraries have CD-ROMs facilities, but no initiative has been taken in action to produce any indigenous information products on CDs. Some libraries have online connection and are providing external resource searching facilities to a limited scale. Only a few specialized libraries and information centers have started networking and resource sharing or used telecommunication systems for inter-site data transfer. The role of IT in most of the organizations is marginal and has little impact on the manner or quality of services for end users.

It is a fact that special libraries and information centers are the pioneer in computerization of information activities in the country. There is no formal study on how many libraries and information centers have brought ITs in use. There are 665 special libraries and information centers in Bangladesh covering health, agriculture, science and technology, polytechnic, research, departmental, ministries, missions etc. (Khan: 1997: 71) There is no accurate statistics on automated special libraries in Bangladesh. According an unofficial statistics it is observed that 45 libraries and information units have brought ITs in use (Khan, 1996). The application areas are not so much different than that of general libraries. In brief, the automation status may be presented by following table.

**Table 1: Distribution of IT facilities in the selected special libraries in Bangladesh**

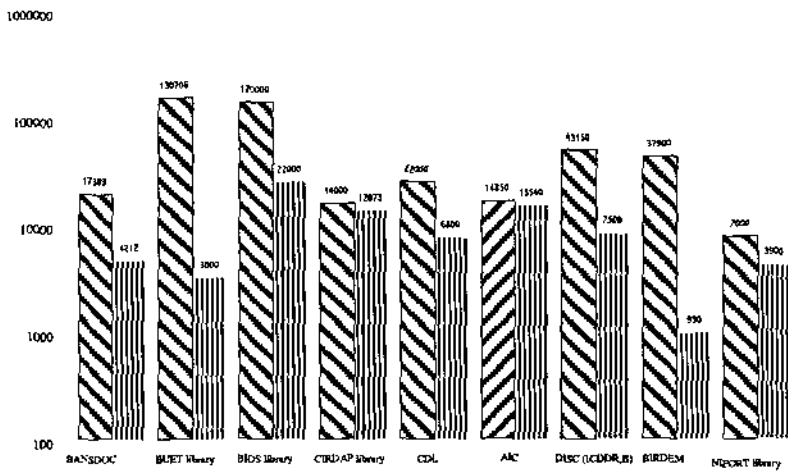
Name Of The Library	Total Collection	Database Records	Year of IT Installation	Availability of CDs	Online facilities	Number Of Computers	Network Members
BANSDOC	17303	4212	1985	NA	YES	24	BANSLI NK
BUET library	130706	3000	1987	YES	YES	4	
BAEC library.	12634	NA	1997	NA	NA	1	
BIDS library	120000	22000	1995	YES	YES	4	
CIRDAP library	14000	12073	1979	YES	YES	2	
CDL	22000	6800	1989	YES	YES	5	
AIC	14850	13540	1989	YES	YES	6	NAIS

Bangladesh Agricultural university Library	162348	NA	1996	YES	NA	2	
SAIC	NA	NA	1991	Yes	Yes	11	
DISC (ICDDR,B)	43150	7500	1985	YES	YES	14	
NHLDOC	28000	NA	1990	YES	NA	5	HALLIS
BIRDEM	37900	930	1990	YES	YES	3	POPIN, MEDLINE
National Institute of Population Research and Training (NIPORT)	7000	3900	1994	YES	NA	1	POPIN

Source : Observation reports of selected special libraries.

Majority of these information centers maintain bibliographic databases though their systems cover only the bibliographic citation of publications only, rather than texts. Little initiatives have been taken to include periodical literature. No initiative has been taken to cover text database.

Figure 2: Relative Position of total collection and records in the databases



Source: Observation report

According to the observation reports we can categorize the IT application trends under the following main headings:

### **Database**

Maximum libraries and information centers that are currently using computers maintain bibliographic database or trying building up databases. Sixty nine percent of the sampled libraries are maintaining bibliographic database. None have yet been able to cover the total collections of their own library. In different databases BANSDOC has been able to enter 4212, BUET about 3000, BIDS 19000, CIRDAP 12073, CDL 6800, AIC 13540, DISC of ICDDR,B 7500, BIRDEM 930 and NIPORT Library 3900 records. Figure 2 may show the relative position total number of collections and number of records in the database. It is observed that considering the total collection the number of records of CIRDAP library, CDL, BIDS library and AIC are significant. It is also to note that considering the total collection, and present status of databases, the noticeable thing is that during the last thirteen years these libraries have been able to enter 16.05% of the total collection though they started automation process during early 1985. The observation reports indicated that most of these databases cover bibliographic citations of books and reports only. AIC, CIRDAP and BANSDOC are trying to include periodical literature in the database. AIC periodical database has 13540 records of articles published in different journals on agricultural sciences which is the largest periodical database in the country. Some libraries e.g. CIRDAP library, BIRDEM library, BIDS library, produce monthly periodical index for current awareness services but no formal database exists on periodical literature. For database creation and maintenance most of the libraries use mini-micro CDS/ISIS package.

### **CD-ROM facilities**

According to the survey conducted by BANSDOC 28 libraries of the country have CD-ROM facilities and offer services from the CD-ROM databases. It is observed that ten libraries of the thirteen sampled libraries have CD-ROM searching facilities. It is worth of mentioning that ICDDR'B with the help of some Asian organizations have been participating in a CD-ROM project, called AHEAD (Asian Health Environmental and Allied Databases). These organizations have been contributing their databases to produce the Asian CD. The AHEAD CD-ROM databases include information on periodical articles, monographs, reference books etc. NIPORT library has accumulate about 2000 titles of CD-ROMs.

### **Networks**

Information network concept is a three years old child in Bangladesh. Only three years have passed since Bangladesh entered network world with the establishment of Information Service Network (ISN) in June 1996. Like ISN some other private organizations - Grameen Cybernet, Proshikanet, Pradeshtanet, BD online - installed VSAT through leased telephone lines of Bangladesh T&T Board. Now they are providing email, Web phone and fax services, web page and web site browsing and data transmission facilities. A few large-scale libraries and information centers including nine of the 13 sampled special libraries are connected with any one of these Information Service Providers (ISP). All the libraries use the online facilities for web page and web-site browsing and searching and email. The services of some libraries are free for internal users and some organization charge a little from the users. Like LINET of our neighbor country India, no centralized library network has been established in Bangladesh. According to a recent study it is found that five specialized libraries are trying to establish national network or act as focal point of international or regional networks. These networks initiatives are: BANSLINK initiated by BANSDOC in the field of science and technology; NAIS by AIC in the field of agriculture and also acts as focal point of AGRIS; HELLIS by NHLDOC in field of medicine; DEVINSA of BIDS in development, and INRD of CIRDAP in the field of rural development (Mannan S.M. 1996). All these networks are now at the initial stage and no initiative has been taken yet to produce indigenous information products and ride to the information super high way. Only CIRDAP library and AIC have home pages.

### **Acquisition and Serial Control**

CDL, BIRDEM, DISC of ICDDR,B, and AIC use computer to a limited extent in acquisition work such is searching publishers' catalog on DCs, preparation of order list, official correspondence etc. Only AIC uses computer for serial control. No library has established circulation control system yet.

### **Information services**

Notable Information services in these organizations are: searching bibliographic databases which is limited for internal researchers or members

only. General users are to use card catalogue. On request they also prepare short reading list and bibliographies. The libraries that have online equipment facilitate the users (usually internal) web site and web page browsing, and access to remote databases.

### **Word Processing and Publications**

All the libraries having computers use word processing packages e.g. MSWORD, Word Perfect etc. They use these packages for official correspondence, presentations, reports etc. Only DISC of ICDDR,B has special publication unit to publish ICDDR,B research reports and other research publications. Besides the common scenario, technological facilities and their application are different in these libraries. let us see the trends in different libraries and information centers:

**NHLDOC:** It is interesting to note that the NHLDOC has initiated to computerize the information systems in 1990. Two computer operators are working there with five PC. Yet no initiative has been taken to develop bibliographic database. The information center is the focal point of a health information network 'Health Literature Library & Information Service (HALLIS)' They have a CD-ROM unit which used for medicine search. They are expecting to introduce in house database, online facilities by the end of 2000 A. D.

**DISC:** Dissemination and Information Service Center, ICDDR,B may be the pioneer in computerization of information systems in Bangladesh. It initiated the program in 1985 and brought 15 computers in use. Its processing unit is fully computerized. However, they maintain card catalog beside the databases. To answer a question one of the library users remarked that electronic catalog should be for open use. They are providing internet searching facilities for internal researchers free of cost. A special unit is working for publishing ICDDR,B reports. They are planning to turn into electronic information system and establish a local area network in the field of medical sciences.

**BANSDOC:** Bangladesh National Scientific and Technical Documentation Center is playing vital role in providing information in the field of science and technology. BANSDOC is trying to establish a country wide network 'BANSLINK' with different specialized institutions (15 libraries initially)

working in the field of science and technology which is a three years project and going to end June 1998. But we know a little about its success story. *The library maintains in house database. Since the inception of its computerization program in 1985 the library has been able to enter 4212 records out of its 17303 collections in the database. The library has internet facilities with limited use for internal staff. Their future plan is to establish the network with at least 100 participant in the respective field.*

**NIPORT:** The National Institute of Population Research and Training library is one of the richest library in the field of population and demography in the country. It has been *working with computers and related technology since 1994. The library about 4500 collections and subscribe 12 journal regularly out of which it has been able to enter 3900 records of books and reports in the population database. The library also has CD-ROM searching facilities and mean while they collected about 2000 titles of CD\_ROM publications. Being the largest library in the field of population it is the country focal point of Population Information Network (POPIN) and has a future plan to establish a population information network with population related government and non-government institutions.*

**BIRDEM:** Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM) Library BIRDEM is a well established medical library which has about 27000 publications and 12000 bound volume of 415 regular journals. The library brought 4 personal computers in use. Just they have initiated to create a database and has been able to enter only 930 records. The library has also a CD-ROM derive.

**CDL:** Community Development Library (CDL) is the only library related NGO working in the field of development and rural information systems. It has about 20,000 publications, 2000 bound volume of 100 journals. The library maintains database that contains a total of 6800 records. The library has recently installed online searching equipment and provides fee bases online serves. The library also possesses a rich audio-visual section.

**CIRDAP library:** Center for Integrated Rural Development in Asia and the Pacific (CIRDAP) is a non-government organization working the field of rural development. It has a established library having 16461 publications with about 400 current journals. The special feature of its collection is its large number of news clippings. They maintain tow databases: one for

publication and another for news clippings. The library is equipped with online facilities and it has its own web site. The library has a large number of CD-ROM collections on rural development. It acts as national focal point of an international network 'Information Network on Rural Development (INRD).

**BIDS library:** Bangladesh Institute of Development Studies (BIDS) is the largest national organization working in the field of development economics. Its library has an extensive collection on development. Its total collection is about 100000 publications, 20000 bound volumes of 84 current journals. Since 1995 library installed 4 computers one with multimedia and entered 20000 records in its databases. The library also has CD-ROM, and scanning facilities. The library has extensive facilities for online facilities for members only. BIDS library acts as national focal point of a regional network 'Development Information in South Asia (DEVINSA)' and regularly publish DEVINSA Abstract containing indigenous books and articles on development.

**BAE library:** Bangladesh Atomic Energy Commission (BAEC) library has a rich collection on nuclear and related sciences. The total collection is 12234 with 100 current journals. Still today it is a fairly traditional special library. Last one year they have installed a PC. They has not yet initiated to create databases or other mechanization process in library activities.

**BUET Library:** Bangladesh University of Science and Technology Library is the largest library in the field of science and technology. The library is now working with 4 micro computers which hold approximately 5000 records in the database. The total collection of the library is 122340 including 100 current periodicals. The library also possesses CD-ROM facilities. The library services the students are still traditional.

**BAEC library:** Bangladesh Atomic Energy Commission (BAEC) Library is playing important role in the field of nuclear power and related technology. It has 12234 publication with 84 current journals. It is fairly a traditional library. Last year the installed a micro computer. Probably soon they will start process for computerization.

**BAU Library:** Bangladesh Agricultural University Library is the largest library in the field of Agricultural sciences in Bangladesh. Its collection includes 128908 publications, 33448 bound volume of 440 research



Journals on agriculture. Recently they have initiated database and CD-ROM collection. By the next to years they are going to have online facilities. The library services are still running on traditional ways

**SAIC** : SAARC Agriculture Information Center (SAIC) is a regional information center working in the field of agriculture of South Asian. The information center installed first computer in 1991. At present it has 11 computers with multimedia. The center has online facilities with its own home page. It has a small collection on agriculture but no initiative has been taken to create database. They regularly publish and serve on the home page named AGPER.

### **Problems**

For socioeconomic development, and to up hold the country's dignity on world society it is essential to develop reliable and up to date information systems for organizations working in different branches of research and development. Considering the socioeconomic conditions of Bangladesh it is not so easy to build up simultaneous information systems because like many developing countries like Bangladesh has less computing resources, little telecommunication facilities, poor logistic support and non-availability of trained personnel which are prerequisite for technology based information systems.

### **Manpower**

We have a very few manpower that has tripartite qualifications: information science, technology and systems design. Dr. M.S. Mannan in a recent study observed that "Regarding the computer manpower 72 per cent of the libraries have professional computer manpower and 28 per cent libraries do not have any computer manpower. About 94 per cent of the computer manpower do not have any degrees in the particular field but have training to run the routine functions." Basically their expertise is confined at the operator level and they have to depend on computer engineer for trouble shooting in case of any sort of hardware or software system failure. With these semi-expert manpower maximum information authority fear to turn their system into automation. Human resource development in the field of IT has special significance in Bangladesh. Skilled manpower in IT is necessary for effective IT implementation in libraries and information centers in Bangladesh.

### **Short Commings in Information Education**

Expert manpower is essential for a simultaneous information system. The information education standard of Bangladesh dose not reflect the professional needs of the age. The syllabus, teaching methods and necessary equipment of Dhaka university, Rajshahi University and other library institutes that are now providing library education are not up to date and adequate. In the curriculum still more and more emphasis has been given on traditional librarianship practices e.g. traditional cataloging, classification, library history or like these. Though concerned department of Dhaka University is providing practical computer training on databases and word processing its scope is extremely limited. They can operate with some application software but unable to develop an integrated system even to customize a software according to organizational needs. As a result our professionals are now able to develop database and it is our recent trends in computerization of libraries and integrated library systems is still beyond our expectations. If we want to so we have to depend on non-professional computer experts. One of our university librarian opined that if our library schools will continue with the traditional guidelines and approaches near future it would be impossible for us to survive with the traditional approach to librarianship teaching profession." We will not be able to attract a bright student because our input will not help him/her for getting a suitable job.

### **Attitude of professionals toward ITs**

The attitude of professionals toward information technology is not so encouraging. According to the observation reports they are impractical than that of their verbal attitude toward technology. 'We have acute lack of computer stuff' was a common dialogue of most the librarian when we wanted to know the progress of computerization. But little initiatives have been taken or shown their willingness to turn existing library staff to computer expert. In some organizations non-professional are working at the decision and policy levels, they hardly think or pay little attention to turn to mechanized information systems.

### **Attitude of user groups toward information and ITs**

Public attitude toward information in Bangladesh is that except a few literary and research communities are dependent on information. The

concept of library and information services is not clear to the general public even to many literary persons let alone technology based systems. It is observed that 58% of the internal users and 41 outside users know that computer may be used for searching books and CD-ROMs but practically 29% Internal and 17% external practically used technologies in the sampled libraries. Frequently the library staff operate these facilities on behalf of the user. From the statistics it is evident that the user groups are not so much aware of the advanced level information services.

**Inadequate IT resources:** Inadequate computing resources is an another problem on the way of computerization in Bangladesh. Most of the library authorities said with grief that cost of computer and related peripherals is beyond their purchase ability. Maximum libraries are using micro computers which are in most of the cases can not support advanced systems.

### **Poor Infrastructural Facilities**

An well infrastructure telecommunication facilities, uninterrupted power supply etc. is the precondition of a sound technology based information system. In Bangladesh such facilities is not so well off. Especially power supply and telecommunication system is not much reliable. Another problem in the way of computerization is high temperature: about 45° c and high humidity: 95% during summer and dust.

### **Future Directions**

The information systems must be designed according to the information needs for R&D. For the greater interest of the country and to survive with dignity the information professionals must take the challenges. In spite of so many problems we are optimistic. There are brighter prospects in the application of ITs in Bangladesh.

### **Professional and Social Awareness**

For bringing ITs in use for the development of information services professional awareness about the facilities ITs and their importance must be recognized by the professionals. Information services and professional development would be dead lock until a realization comes to the professionals that why librarian or information officer post has been created, what is his/her responsibility and what s/he is doing? Library

education institutions and professional organization can play active role in creating awareness among professionals by eradicating all sorts of misconceptions. Beside this proper initiatives need to be taken to turn the existing traditional staff into experts in application technology.

### **Restructuring Information Education**

To uphold the information profession probably there is no alternative to restructure the information science curriculum. It is not so difficult if the teaching staff of the library schools would be sincere. The curriculum must include all information technologies in teaching and the teaching methodology must be practical oriented rather than mere theoretical instructions. If the schools can establish link programs with library schools in the developed countries, it would be more helpful for the teachers in keeping track with the recent trends in information practices. Very recently Department of Library and information Science of Dhaka University has initiated to revise its syllabus giving due emphasis on ITs applications. Other institutions must take proper steps to update their curriculum according to the professional demand of the age. It would be more helpful for the schools in designing simultaneous curriculum if they with the keep in touch professionals working in different information centers. In some cases working professionals may be encouraged for guest lecturer on existing problems and suggestions of information activities. Bangladesh is a manpower exporting country, a qualitative change can be brought about in manpower export by developing exportable IT skilled manpower. By introducing IT related education a large number of programmers can be trained to developed export-oriented software industry.

### **Economic Assistance**

Insufficient fund support is one of the major problems in IT applications. The National Education Commission Report 1974 has recognized libraries as heart of educational systems. At present the government has given top priority but compare to other sectors of education sanction for library development is not balanced. So the government should pay due attentions to library sectors. Considering the world trend of 'sustainability' the information centers can initiate for some fund generating activities e.g. fee-based information system besides government assistance. We can seek help

form donor agencies, NGOs, and government for building infrastructural facilities and collecting information resources of such systems. Its a happy news for us that government has recently taken a decision to reduce taxes on computers and accessories. We hope that this decision will encourage our people for extensive use of computers and related technologies

### **Creating Public Awareness**

Besides the development initiatives proper steps needs to be taken to aware of the services and facilities for the users by the libraries. Library orientation program may be an effective tool for the purpose. Video shows, reading sessions, seminar etc. may create public awareness.

### **Network**

Information networking is also a prospective concept in Bangladesh. One of the network manager in Bangladesh opined that "people in general have tendency to contact hierarchically upper places. So it may not be good approach to do something against their will, at least initially." (Iqbal S.M. : 1997:88) This phenomenon straightway dictates a centralized way of connection rather than a fairly inter-connected networks similar to LAN and WANs. For information networking among libraries and information centers telecommunication support is essential. A balanced solution like keeping some extra bandwidth for data along with voice may ease the situation. To ensure telecommunication facilities private sector may be encouraged. If telecommunication facilities support is adequate, there would be brighter prospect in establishing dial-up networking through out the country. In this system each library having telephone and computer facilities can participate in the network with more than one networks. Of course, the central organization needs to be well equipped so that it can support remote access. Note that BANSLINK is such type of network in the field of science and technology. Such types of network environment exists in Bangladesh for other disciplines such as agriculture, development and so on.

### **Logistic Supports**

Besides telecommunication facilities, some logistic supports are also necessary to materialize our dream 'technology based information systems'.

These include steady supply of electricity and neat and clean environment which are not so difficult to achieve. The government needs to take proper initiatives for production and sound distribution of electricity. There is a bright prospect for establishing power generation units drawn from solar energy. Such installation is a very common in our neighbor countries. The main input for solar power, the sun light is available almost through out the year in our country. To protect the technologies and other information resources form excessive heat, humidity and dust the information professional should try to establish a sound environment for IT maintenance.

### **Long term planning**

Considering the socioeconomic condition of Bangladesh it is difficult and impossible for some organizations to design an well equipped and automated information with in a few days. Because it is impossible for most of the libraries to provide the required financial, technological, infrastructural and technical support at a time. But the libraries can take long range planning for developing an up to date automated library. Library and technological experts in the profession may play important role for the purpose.

### **Conclusion**

Considering the demand of the age the status of computerization in special libraries and information centers of the country is not satisfactory. However, it is not impossible for us to reach the minimum satisfactory level. To materialize the dream we are basically dependent on with how earnestly professional wants to bring these ITs in use, how much they are sincere and confident on themselves to enter their information resources onto electronic media, how soon they would be able to transform existing staff to technology expert and well attitude toward technology. I want to emphasis on these behavioral issues because now we have a little scope to say that the cost of these items is beyond our purchase ability, we have no adequate staff or such types of ill-disposed and unobligatory statements. The government of Bangladesh has reduced taxes on imported computer and other peripherals so that a general public having ability to buy a Television be able to purchase a computer, it has opened and approved

different institutions providing computer education through out the country. I think a favorable environment exists for adopting ITs in Bangladesh. To survive with dignity Information professionals should adopt ITs without delay and design our information systems in such a way so that we can provide *every desired information for its user and each bit of information will be useful to its users and that is our minimum expectation.*

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