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Automation of College Libraries in Bangalore City: A Study

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Abstract: *Library automation involves changes in the ways an organization conducts itself and represents itself to those to whom it provide services. Like any activity that involves change, planning for it, implementing it, and managing it are not simple tasks. Individual roles within the organization, the organization structure, and service patterns will change as a consequence of automation. This paper describes the importance of library automation and need for the automation. Individual roles within the organization, the organization structure, and service patterns will change as a consequence of automation. The recent trend in automation of library has made significant growth in development and up gradation of the Library. It is evident from the study out of 17 libraries around 6 (35.29 %) libraries are using Easy Lib Software. Further about 3 (17.64%) libraries are using e-Granthalaya software. This paper is to provide a status of the library automation implemented in government colleges and issues relating automation aspects.*

Keywords: *Library Automation, Integrated Library Management System, Government First Grade Colleges. Automation in Bangalore, OPAC.*

I. INTRODUCTION

A well equipped and well maintained library is the foundation of modern education structure. The library play vital role and which consists of knowing how and where to find information the art of selecting and processing these documents which are of maximum use and how to deliver it to users who need it. Computer application in library and information field has made phenomenal progress in industrialized countries where hardware, software and communications facilities are well developed. In view of technological advancement they are able to computerize their entire library and information system in the country, with great success.

II. LIBRARY AUTOMATION

The term "library automation" refers to the phenomenon of mechanization of traditional library activities, such as acquisition, serial control, cataloguing and circulation control etc. Today the term "library automation" is however used extensively to refer primarily to the use of computers to perform the library activities in recent times, even the related topics such as information retrieval, semi automatic/automatic indexing network of automated systems. "Library Automation" is generally defined as the replacement of manual operations in libraries by computerized methods. Started in late 1970s in few special libraries it has now reached most of all kinds of libraries. Over the past three decades, libraries have changed considerably as bibliographic utilities, online catalogues; automated circulation systems and other new technologies have been implemented in majority of library operations and services.

III. REVIEW OF LITERATURE

Dasgupta, Kalpana (1978) India has some 90,000 libraries; 25 organizations in and around Delhi were contacted in a survey of computer applications. India's most important plan is the National Information System for Science and Technology (NISSAT), a network made up of a sectoral system, a regional system and specialized services, e.g. SDI. Problems of library automation include technological, economic and attitudinal ones. Recommendations include: more standardization of computers

in use, creation of Indian databases, a national standard for bibliographic information exchange, appropriate training, and user education.

Gupta, Krishna das (1979) there has been a strong negative attitude to the automation of libraries in India due to economic constraints, although the principle of automation is now accepted because of the volume of information. Bibliographic and information retrieval services are a relatively new concept. Consequently automation is used only for indexing, cataloguing, SDI and off-line printing. Outlines the present status of automation at the Documentation Research and Training Center ISI (DRTC), Council of Scientific and Industrial Research (INSDOC), Bhabha Automatic Research Center (BARC), Tata Institute of Fundamental Research (TIFR), Indian Institute of Technology (ITT), and the National Aeronautical Laboratory (NAL).

Chopra, Hans Raj (1980) Discusses the need for the introduction of more mechanization in Indian university libraries. Describes the use of: automatic revolving trays; electric typewriters; calculating machines; stylus pencils; the flex writer; photo charging machines; cutting and pressing machines; the shikanja (book clamp); and photocopiers. Notes the use of computer systems by Western university libraries, and sees the introduction of such systems in India as being a long way in the future.

Chopra, H R (1982) Due to the changing need of society and progress in the field of science and technology, the old concept of librarianship has been changed. Now, the purpose of a library is to provide to clients specific and exhaustive information within the minimum possible time. Almost every library job performed in a library needs automation for prompt results. Discusses all types of library automation available in Western European countries outlining the growing necessity for automation in library and information work in India.

Massil, S W (1986) Libraries in developing countries have been neglected for various reasons. Discusses the factors responsible for transforming societies and economic systems, as applicable to librarianship. Analyses the type of work done by the library manpower and suggests areas of automation such as housekeeping and examines it as a threat to labor. Discusses the use of appropriate appropriate technology, high technology, introduction of new and advanced technology. . Jose, A (1997) Describes the usefulness of LYBSYS, the fully integrated multi user library automation system produced by LYBSYS Corporation, India and designed to run on a wide spectrum of hardware and software platforms. Summarizes the advantages of the software: simplicity in use; wide user base; regional applicability; networking capabilities; local support; and presence of continuing research to produce improved versions.

Library automation was in its early stages during the period 1954-70. The first half of this period saw applications designed primarily to benefit the users. The earliest such applications were machine searches of subject indexes employing post coordination of any terms. The second half of the period saw a trend toward applications that used computers for the performance of routine tasks such as catalogue production order and accounting procedures, serials control and circulation control.

During 1970-90 this period may be the adolescence of the library automation. The first phase of automation had helped in the development of technical specifications, requirement analysis and functionalities desired from automated library systems. The greatest improvements were with regard to behind-the-scene processing function.

The early 1980s became available on local area networks and by dial-up modem by the mid 1980s. Online catalogue brought about many qualitative improvements in access to library resources even though the content and structure of the records was little changed from card catalogues, online catalogues provided new-searching capabilities such as key word access Boolean logic and the possibilities to limit searches by publication year, language and type of material. Thus online catalogues marked a shifting focus from individual local collections to the convergence of multiple collections and from access in the library building to remote access.

IV. AUTOMATION IN GOVERNMENT FIRST GRADE COLLEGES

The libraries of Government First Grade Colleges in the State need to be automated for effective use of library facilities by college faculties and students. Computerization not only eases out the job of librarians who single handedly manage library activities without assistant librarians, it also helps library in providing better services to college faculties and students. It is also mandatory for any college for undergoing NAAC accreditation/ re-accreditation. Keeping in the mind of these points, the study highlights the importance of this paper.

V. OBJECTIVES OF THE STUDY

The objectives of these studies are as follows:

- To examine and investigates the Library Automation status in various degree college libraries.
- To know about the computerization process. (Availability of computers, software bar-coding etc.)
- To study the status of library automation and use of technology.
- To study how many libraries have undertaken automation.
- To study the problems faced by librarians to automate the library.
- To find out areas of automation
- To suggest ways of overcoming the problems faced during automation in various first grade colleges.

VI. METHOD

Study is confined to the automation of Government First Grade College libraries of Bangalore City. The methodology used for the present study is questionnaire-based survey. The questionnaire consists of both open ended and closed ended and also surface mail or a faxed questionnaire Method. Use an e-mail or face-to-face interviews Method and Observation Method.

VII. DATA ANALYSIS

A questionnaire method was used to collect the data. Totally 19 questionnaire were circulated to represents (Librarian) of the different libraries of Government First Grade Colleges located in Bangalore city. In return, about 17filled in questionnaire were received. The response rate is 89.47%.

TABLE .1 Response rate of questionnaire.

No. of questionnaire distributed	19
No. of questionnaire received	17
Response rate	89.47 %

TABLE.2 Types of Users and strength

Number of User	UG Students	PG Students	Faculty	Research Scholars & Other Readers
Below -100	2 (11.77 %)	0	11 (64.70)%	5 (29.41)%
100 -200	5 (29.41 %)	7 (41.17%)	6 (35.29)%	2 (11.77)%
500-1000	3 (17.64 %)	nil	nil	Nil
1000-1500	3 (17.64 %)	nil	nil	Nil
1500-2000	2 (11.77)%	nil	nil	Nil
2000 and Above	2 (11.77)%	nil	nil	Nil

An evident from the above table (No.2) students and teachers are the major kind of users of Government Colleges. Among the students are the popular users, ranging from 2000 and above users about 2 (11.77%) libraries of government colleges and 100-200 range of students around 5 (29.41%) libraries. Thus based on the above analysis it shows students (UG) are the major kind of the users of Government First Grade Colleges.

PG students are the second important users in first grade colleges about 5 (29.41 %) libraries are having ranging from 100-200 PG students of the users.

Faculty is the third important users of Government Colleges about 6 (35.29%) libraries are having ranging from 100-200 faculty members of the users.

About 2 (11.77)% libraries are having ranging from below 100 of faculty and student Users and about 5 (29.41)% libraries are having below 100 research scholars.

TABLE. 3 NAAC Accreditation Colleges

Colleges established under	No of Respondents	% (Percentage)
UGC 2(f) and 12 B	9	52.94 %
Non-Aided	8	47.06 %
Minority	nil	00

The university Grants Commission made accreditation mandatory for all higher education institutions in India. it has come out with mandatory Assessment and Accreditation of higher Educational Institutions, Regulations, 2012. It is evident from Table. No (3) among 17 colleges 9 (52.94 %) are under NAAC Accreditation. 8 (47.06 %) colleges are not under Accreditation. Hence it is suggested to the authority to find out the problems and make necessary requirements.

TABLE. 4 Courses offered

Course offered	No of Colleges	% (Percentage)
BA	14	82.35 %
B.Com	14	82.35 %
BBM	6	35.29 %
BSC	9	52.94 %
BCA	3	17.64 %
MA	6	35.29 %
M.Com	4	23.52 %
MSC	3	17.64 %

From the above table, it is clear that among the 17 colleges 14 (82.35 %) colleges are offering BA courses and in the same colleges are offering B.Com Courses. 6 (35.29 %) colleges are offering BBM and around 9 (52.94 %) colleges are offering BSC Courses. About 3 (17.64 %) colleges are offering BCA Degree. It is clear from the table even government First Grade colleges are also offering Masters degrees among 17 colleges, there are 6 (35.29 %) colleges are having M A and about 4 (23.52%) colleges are offering M.Com.

The analysis from the above table only 3 (17.64 %) colleges are offering MSc degree. The Department of Collegiate Education is introducing more and more courses in First Grade Colleges to improve higher Education.

TABLE .5 Details of Library Collection

Total Books No. of Books	No .of Response	% (Percentage)	Total No. of Journals	No. of Response	% (Percentage)
1000-2000	Nil	00	15-25	8	47.05 %
3000-5000	Nil	00	26-40	4	23.5 2 %
5000-10000	5	29.42 %	41-100	5	29.42 %
10000-Above	12	70.58 %	100 Above	Nil	
	Total = 17	100.00 %		Total=17	100.00 %

From above tables shows very clearly the collections, very few colleges are having only 3000-5000 collections books 5 (29.42 %) among 17 colleges 12 (70.58 %) majority of libraries are having 10000 and above a sound collections of books .

Like books periodicals also play an important role in communicating the information at a faster. Realizing the value of periodicals, the libraries are spending budget for subscribing good number of journals. As have find many libraries are having on- line as well as print version.

Technology is dominating every sphere of human life. The libraries are an exception, this seems to be true even if go back to the second century B.C much has changed since the library of Alexandria to the modern information Centers. Now we are at the age of technology revolution. The developments are focusing our attention to the impact of information technology on libraries. Among various technological developments, computer and communication technologies have thoroughly changed the world by their applications in every field, including libraries. Over the years, libraries are in the forefront for adopting the technological infrastructures in various operations to extend better services for users. In this context, an effort was made here to study the extent of availability and use of various IT infrastructure such as computers software, hardware and communication facilities for library activities in libraries of Government First Grade Colleges chosen for study.

Table. 6 Availability of Hardware facilities

Description	Specification	Numbers	No of Respondents	% (Percentage)
Computers	P 4 / P5	1-5	9	52.94 %
		5-10	3	17.64 %
		10-Above	5	29.42 %
Printers	Copy Printer	1	16	94.11 %
	Barcode Printer	1	14	82.35 %
Photocopiers		1	13	76.47 %
UPS		1	9	52.94 %
Scanners		1	14	82.35 %
Servers		1	5	29.42 %
RFID Integration		Nil	Nil	Nil

The details of response present in the above table (No.6) shows that good number 16 libraries of the study i.e., having printers 16 (94.11%). About 9 libraries out of 17 are having Pentium IV / V computer terminals where as 9 (52.94%). But still many libraries are using old or outdated technologies based computers. Regarding existing other infrastructure such as barcode printer, scanner etc details give in the table shows that only very small number 5 (29.42 %) of libraries having Servers. It is found that majority of Government First Grade College libraries are having computer infrastructure facilities. Still quit a few libraries are using old technologies based computer the overall situation of computer facilities are good but still improvement should required.

TABLE. 7 Availability of Internet Facility

Response	No of Colleges	Leased	Ordinary Dial up	ISDN	VSAT	Other
Yes	13 (76.47) %	7 (41.177) %	2 (11.76) %	Nil	Nil	4 (23.53) %
No	4 (23.52) %					

It is investigating to the above table (No.7) that majority ie. 13 (76.47) % libraries chosen for the study are having internet facility with them. This shows the popularity of internet and user dependency an internet technology for accessing information. Only a small section 4 (23.52) % of libraries still not having internet communication facility with them. The obtaining

communication facility through different linkages. Which has been shown in the above table. Thus based on the above analysis it is observed that majority of libraries are having internet connection with leased line communication technology.

TABLE. 8 Automation Response

Response	No of Colleges	Status/levels of automation	No. Of response
Yes	9 (52.94 %)	Fully Automated	6 (35.29 %)
No	8 (47.05 %)	Partially Automated	3 (17.64 %)

It is evident from the data provided in the above table (No.8) that among the libraries having automation facility in about 3 (17.64%) libraries the automated work is partial. Next to this in about 6 (35.29 %) libraries the automated work is found total. Hence it is suggested the libraries with partial automation work to take improvement to develop the automation work is followed. Further it is also suggested to 8 (47.05 %) colleges those libraries are not automated to initiate efforts for automation of their libraries. Libraries are the centers for providing easy and convenient access to documents and information for efficient and effective use.

TABLE .9 Software Used

Name of the Software	No.of response
In house developed software	Nil
Koha	Nil
New Genlib	Nil
Open biblio	Nil
Easy lib	6 (35.29 %)
Libsys	Nil
e-Granthalaya	3 (17.64%)
Any other	Nil

It is evident from the above table No.9 out of 17 libraries around 6 (35.29 %) libraries are using Easy Lib Software. Further about another 3 (17.64%) libraries are using e-Granthalaya software. Thus, based on the above evident quit good number of libraries of government First Grade colleges are using Easy Lib Software. Performance of operation of software is essential concepts which should keep in mind which select and developing the library software. An attempt was made i.e., the following question to examine the opinion of respondents regarding the performance of software available with them.

Information Technologies can be used for various activities in the libraries such as for housekeeping activities like acquisition, circulation, periodical control, MIS ETC., apart from using accessing, storing and delivering of the documents and information services for the users through various types of services. The following question investigates that areas of i.e. automation IT facilities are used among the libraries of Government First Grade Colleges chosen for the study.

TABLE. 10 Usefulness of Software modules

Modules	Excellent	Very good	Good	Fairly Good	Poor
Acquisition	4 (23.53%)	2 (11.76 %)	2 (11.76 %)	1 (5.88 %)	Nil
Circulation	6 (35.29 %)	1 (5.88 %)	2 (11.76 %)	Nil	Nil
Cataloging	3 (17.64%)	3 (17.64%)	2 (11.76 %)	1 (5.88 %)	Nil
Serial control	Nil	4 (23.53%)	4 (23.53%)	1 (5.88 %)	Nil
Administration	4 (23.53%)	1 (5.88 %)	3 (17.64%)	1 (5.88 %)	Ni
Information Retrieval	3 (17.64%)	5 (29.41 %)	1 (5.88 %)	Nil	Nil
Web OPAC	4 (23.53%)	2 (11.76 %)	2 (11.76 %)	1 (5.88 %)	Nil
Interface to serials distributors	2 (11.76 %)	2 (11.76 %)	4 (23.53%)	1 (5.88 %)	Nil
Inventory	5 (29.41 %)	2 (11.76 %)	1 (5.88 %)	1 (5.88 %)	Nil
Report Creation	4 (23.53%)	1 (5.88 %)	2 (11.76 %)	1 (5.88 %)	1 (5.88 %)
User support	6 (35.29 %)	1 (5.88 %)	2 (11.76 %)	Nil	Nil
e-Mail Notification	6 (35.29 %)	2 (11.76 %)	1 (5.88 %)	Nil	Nil
Bulletin Board Services	5 (29.41 %)	2 (11.76 %)	1 (5.88 %)	1 (5.88 %)	Nil
Stock Verification	6 (35.29 %)	Nil	Nil	2 (11.76 %)	1 (5.88 %)
Bindery Information	2 (11.76 %)	5 (29.41 %)	2 (11.76 %)	Nil	Nil
Web Based Services	Nil	Nil	Nil	3 (17.64%)	6(35.29 %)
Overall satisfaction	6 (35.29 %)	3 (17.64%)	Nil	Nil	Nil

It is evident from the above table out of 17 libraries surveyed the usefulness of software packages its mixed results and not even more than 6 (35.29 %) opinion about usefulness of full modules the data provided in the above table No.(10) indicates that areas of library automation use of IT in different activities among the libraries of the study.

The development and use of computers and communication technologies have changed the nature of work culture in many areas. Libraries also lot scope in using computers in their work which can enhance the efficiency and effectiveness of libraries work and services.

TABLE. 11 Financial Constraints

Insufficient funds	Inability to absorb recurring costs	High initial costs	Not responded
5 (29.41 %)	6 (35.29 %)	2 (11.76 %)	4 (23.53%)

The process of library reorganization cannot be successful without the support of management. As financial allocation is the prime concern to any organization the annual increase to the budget is essential to allow for the planned growth of digital resource. The infrastructure for automation process is very much necessary hardware, software and communication channels. Internet platform to connect telecommunication lines must be kept open. Proper software support is essential to provide security, reliability and enhance the performance of automated library services. It is an ongoing long-term project

From the above table, it is clear that among 17 libraries 5 (29.41 %) are expressed their opinion About insufficient funds and about 6 (35.29 %) libraries inability to absorb recurring costs. only 2 (11.76 %) libraries opinion about high initial costs, remaining 4 (23.53%) libraries are not responded. Thus based on the above analysis it is very clear financial constraints in library automation is very important so concerned authority should take initiatives and make proper plan to continue the process of Automation.

TABLE.12 Library Staff

Response	No of Colleges	Lack of Professional Recognition	Lack of coordination among library staff	Lack of adequate trained staff
Yes	15 (88.23%)	11 (64.70 %)	15 (88.23%)	16 (94.11%)
No	2 (11.76 %)	6 (35.29 %)	2 (11.76 %)	1 (5.88 %)

The staff of the library is very important for overall success of the library and also to cater the needs of the students and teachers. The library staff serves as link between documents and users. For the achievement of the objectives, properly trains and qualified staff is an essential factor in all kind of libraries.

From the above table it is clear to noted that 15 (88.23%) libraries are having problems with shortage of staff followed by 11 (64.70 %) Lack of Professional Recognition and 15 (88.23%) Lack of coordination among library staff. About 16 (94.11%) Lack of adequate trained staff .

When the investigator discussed the matter of existing staff strength, majority of respondents felt that t the existing staff is totally inadequate to carry out the day today activities. Majority of libraries are managing by single person (Librarian) , it is difficult to provide required services for users. Hence it is suggested to concern authorities to provide necessary staff support for the Government First Grade College for effective and efficient functioning of library.

TABLE. 13 Lack of Training

Response	Lack of IT training	Lack of Software awareness
Yes	13 (76.47%)	11 (64.70 %)
No	4 (23.53%)	5 (29.41 %)
Total	= 17	Total = 17

Hence an attempt was made by the investigator to know the library IT training requirements. From the above table shows the clear picture regarding the areas which require the training for library professionals.

Among the response, it is observed that 13 (76.47%) librarians felt that training is required in the general areas of library automation 11 (64.70 %) followed by library relating software awareness next to this 4 (23.53%) libraries have not responded.

When the investigator has interacted with librarians that, the y were expressed their problems some of the problems expressed by librarians are

1. Lack of encouragement to develop library staff.
2. Lack of support to organize such training programmes in their colleges.

So it was suggested to concerned management to encourage and promote librarians to get the opportunity to undergo training in information technology/computer knowledge.

VIII. SUGGESTIONS

The suggestions, recommendations, opinions and reactions expressed by respondents are collected and presented as follows.

1. Suggested common library software should be introduced in the Department of Collegiate Education, Government of Karnataka.
2. Many respondents have suggested for organizing special training programme for librarian in the areas of library automation, networking and digital libraries.
3. Suggested functional library building and other physical facilities should provide to promote the use of library resources.
4. Majority of respondents have expressed their views about shortage of library staff.
5. Encouragement of library Improvements.

IX. FINDINGS

The following findings and conclusions were drawn based on the analysis of data.

1. It was founded a good number of Government First Grade Colleges were established department of Collegiate Education, Government of Karnataka during 2007.
2. It was evident that, many of the colleges have started master's degrees.
3. Majority of GFGC libraries were having good collection of books, subscribing good number of journals both in print and non print forms.
4. It was fund that majority of libraries are managed by single person (Librarian).
5. It was observed that majority of libraries have automated partially.

X. CONCLUSION

Lack of awareness of new technologies in the library community is a real problem. The 'hybrid' (traditional/digital) environment further complicates the situation. Not only should libraries have to acquire or configure technologies to manage their internal collections, but also to manage the resources made electronically available/accessible beyond their own organisations. There has been some significant progress in, and a number of projects on, the development of functional specifications for managing the external digital environment and on access to electronic resources on a large scale. These initiatives, however, have largely ignored the functional and technical requirements for the internal management of resources. It remains the responsibility of individual managers to acquire appropriate systems technologies and software to manage local

collections and to integrate these with the external digital environment. Librarians are now recognized as information scientists and libraries are considered as information centers which provides 'right information at right time in a right manner'. There is no doubt that this library automation will fulfill the 4th law of library science "SAVE THE TIME OF THE READER."

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