

Usage and Application of Information Technology in Central University Libraries' of Uttar Pradesh (UP), India

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Abstract

The main focus of the study is to identify the application and Usage of Information Technology (IT) in university libraries of UP in terms of house keeping activities as well as IT-based services provided to the users and also to determine the extent of providing status of IT in the university libraries of UP. The study is based on questionnaires, interviews and observations. The findings of study revealed that there is a bit difference between the old centralized and newly centralized universities especially in BBAU the *de-novo* centralized university. It has to do a lot in the sphere of providing IT enabled services to the users. The lack of planned funding, inadequate budget plans and the time constraints for the up-gradation of IT enabled services are the major reasons attributable to this backdrop.

Keyword: Information Technology, Central University Libraries, Uttar Pradesh

Introduction:

In an era of globalization the role and importance of Information Technology (IT) is considered to be a significant and vital resource to integrate the economies, businesses, trades and dissemination of knowledge by and large the societies globally. The IT industries are playing the role of torch bearer by generating, processing, disseminating and transmitting information. In order to make and integrate the Indian libraries with global libraries, the application and usage of IT is of paramount significance. All over the world, the libraries are all out efforts to making use and application of IT for their collection development and the policies pertaining to organization. The new concept which has now gained currency is collection development in IT based environment in the libraries dealing with building, growing and expansion of libraries, selection and acquisition of library materials and thus to provide invaluable services to their users. The present paper makes a comparative case study of four central university libraries of UP i.e. Aligarh Muslim University (AMU), Banaras Hindu University (BHU), Allahabad University (ALU) and Baba Bhim Rao Ambedkar University (BBAU).

Review of Literature:

In the following paragraphs review of literature a pertinent to IT application in library is presented and based thereupon research gap has been identified.

Khalid, H.M. (2000)¹ discusses a range of factors has provided facilities for the maximum use of technology in libraries. This application has marked a new era for library services. Mulimila, R.T.(2000)² observes the trend of information technology (IT) applications in East Africa government-owned university libraries for ten years,1987-1997. It was revealed that the extent of IT applications in those libraries from 1987 to 1997 was very limited. By 1997, only one government-owned university library in East Africa had automated its library catalogue and books circulation control. Financial resource crunch and lack of trained manpower in IT remained the most critical obstacles in the application of information technology in East Africa government-owned university libraries. Singh, S.P. (2001)³ has made survey to find out present state of computerization in six IIT libraries (Bombay, Delhi, Guwahati, Kanpur, Kharagpur and Madras). The Indian Institutes of Technology (IITs) have been recognized all over the world as centers of excellence in learning, training and research in the fields of engineering and technology. Haneefa, Mohamed (2007)⁴ conducted a study to investigate the application of information and communication technologies (ICT) in special libraries in Kerala, India.. ICT-based resources and services were not reaching the users to the expected extent. Most of the libraries were hampered by lack of funds, lack of infrastructure, and lack of skilled professionals to embark on automation of all library management activities and application of ICT. Muhammad Ramzan (2004)⁵ made a study to presents the extent of information technology (IT) utilization in libraries in Pakistan together with librarians' level of knowledge in IT and their attitudes toward IT in libraries. The study revealed not only a low level of IT usage, but also a low level of IT knowledge among librarians.. Kaur, Amripal & Nandan, Naresh (2000)⁷ made a study to determine the impact of IT on university libraries: A case study of Bhai Gurdas Library, GNDU, Amritsar. The authors have inferred that the use of new information and communication technologies in the Library has facilitated the library's computerization and helped in creativity in house database of the collection, generate current awareness services from the databases of books and periodicals and provide E-mail and internet service. But complete information of this library into an information center is yet to be achieved.

Objectives of the Study:

The following objectives have been pursued for the purpose of the study on Information Technology (IT) Application and Usage in Central University Libraries of UP (India):

1. To study the application of Information Technology (IT) in university libraries in UP in terms of house keeping activities as well as IT-based services provided to the users.
2. To determine the extent of providing status of IT in the university libraries of UP.

Methodology of the study:

A set of questionnaires was designed for librarians, for collecting information regarding usage and application of information technology. The questionnaires were tested through conducting pilot study at Maulana Azad Library, AMU, Aligarh. Germane suggestions made by the librarian were incorporated while finalizing the questionnaire. The questionnaire was sent to the four central university libraries of U.P. by mail. After short span of time, reminders were also sent but were unfortunately not entertained. Then the researcher visited personally the referred university libraries so as to ensure prompt returns and this in return created a chance for personal contact and observations. The researcher also got the opportunity of having personal interviews with the librarians and acquisition librarians and also got the questionnaire duly filled up. The survey per se was designed to be as simple as possible to answer, given the complexity of topic. Many "Yes/No" and single-word response were included; opportunity was provided for additional comment on any given question, and fuller explanation was encouraged.

Survey, Analysis and Interpretations:

The first question was drawn up related to availability of different kinds of computers and their usage, and the use of CD drives, OPAC terminals and Network (Table 1). 100% responses came from the referred libraries. They communicated that they have no mini computer whereas personal computers are available in all central university libraries of AMU, BHU, ALU and BBAU. The total numbers of PCs in AMU are 87; BHU-100, ALU-35 and BBAU have 6 computers. 75% respondents i.e., AMU, BHU and ALU librarians have confirmed having CD Drives whereas 25% respondents i.e., BBAU has no such kind of facility Online Public Access Catalogue terminals is only available in AMU (25%) whereas in BHU, ALU and BBAU there are no OPAC terminals. Computers network is available in AMU, BHU and ALU whereas BBAU has no computer network. 50% respondents i.e., the librarians of BHU and ALU confirmed that they have CD-network. The remaining 50% respondents i.e., AMU and BBRAU have negated CD-Network availability. (Table-1)

Table - 1

Availability of Computers, Drivers, OPAC, Network

Why were these changes made?	Yes				No				Total Population	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	100%	
									Yes	No
Mini Computer	---	---	---	---	N	N	N	N	0	100
No. of personal computers	87	100	35	06	----	----	---	---		
CD Drives	Y	Y	Y	---	----	---	----	N	75	25
OPAC Terminals	Y	--	--	---	-----	N	N	N	25	75
Computer Network	Y	Y	Y	----	-----	----	---	N	75	25
CD Network	---	Y	Y	----	N	---	---	N	50	50

Source: Questionnaire

Another question was framed by the researcher to thread bare examine the operating system used by the referred libraries. It is observed from Table 2 that all the respondents i.e., (100%) have confirmed that they are using windows. Whereas 25% respondents i.e., AMU is exceptional which users MS-DOS. UNIX operating system has not been used by any libraries under review.

Table - 2

Operating System Used in Libraries

Operating System	Yes				No				Total Population	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	100%	
									Yes	No
MS DOS	Y	----	---	---	----	N	N	N	25	75
UNIX	---	---	---	--	N	N	N	N	0	100
Windows	Y	Y	Y	Y	--	---	---	--	100	0

Source: Questionnaire

A question processor was framed to know whether used by the referred libraries under review (Table-3). Total respondents i.e., the librarians AMU, BHU, ALU and BBAU have corroborated that they use only MS-Word whereas Word Perfect, Word Star, AmiPro are not used by any central university libraries under survey.

Table - 3

Word Processor Used in Libraries

Word Processor Used	Yes				No				Total Population	
									100%	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	Yes	No
Word Perfect	----	--	---	--	N	N	N	N	0	100
Word Star	---	---	--	---	N	N	N	N	0	100
MS Word	Y	Y	Y	Y	---	---	---	--	100	0
AmiPro	----	---	---	---	N	N	N	N	0	100

Source: Questionnaire

Three central university libraries i.e., AMU, BHU and ALU under survey are found to use the library software for maintaining collection and services and other functions. 75% of the librarians of AMU, BHU and ALU also demonstrate that they are using library software i.e., Library.

Upon the question of computerized library operations, 75% respondents of BHU, ALU and BBAU under survey answered that Acquisition, Circulation, OPAC, and Serial control are not used. 75% of the respondents including AMU, BHU and ALU have echoed that cataloging and retrospective conversion is being made use of. Budgeting and statistical report are not used by any libraries under survey as have been reported by the librarians respondents under review. The respondents have also reported that they are implementing library automation in phases (Table-4).

Table - 4

Computerized Library Operations

Computerized Library Operations	Yes				No				Total Population 100%	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	Yes	No
Acquisition	Y	---	---	---	----	N	N	N	25	75
Cataloguing	Y	Y	Y	---	---	---	---	N	75	25
Circulation	Y	---	---	---	---	N	N	N	25	75
OPAC	Y	---	---	---	----	N	N	N	25	75
Retrospective Conv.	Y	Y	Y	---	---	---	---	N	75	25
Serials Control	Y	---	---	---	---	N	N	N	25	75
Budgeting	----	----	---	---	N	N	N	N	0	100
Statistical Report	---	---	---	---	N	N	N	N	0	100

Source: Questionnaire

A question was also served to the respondents with regard to computerized facility offered to the user's (Table-5). It is discernible from the table that 75% of the libraries of AMU, BHU and ALU provide computerized facility to the users. The OPAC facility is being provided by only library i.e., AMU and the remaining 75%. ALU, BHU and BBAU do not provide OPAC facility. As regards providing CD-ROM search facility to user's 50% respondents of ALU and BHU echoed that they cater to this service and the remaining 50% respondents i.e., AMU and BBAU denied providing CD-ROM search facility : Internet, Online search and E-mail services are provided by 75% of libraries of AMU, BHU and ALU. BBAU is a lone university library which is not providing this facility to users.

Table - 5

Computerized Facilities Offered to Users

COMPUTERIZED LIBRARY OPERATIONS	Yes				No				Total Population 100%	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	Yes	No
Computers provided to users	Y	Y	Y	-	-	-	-	N	75	25
OPAC	Y	-	-	-	-	N	N	N	25	75
CD-ROM Search	-	Y	Y	-	N	-	-	N	50	50
Internet	Y	Y	Y	-	-	-	-	N	75	25
Online search	Y	Y	Y	-	-	-	-	N	75	25
E-mail	Y	Y	Y	-	-	-	-	N	75	25

Source: Questionnaire

A question was devised by the scholar to pester out the digitization of collection and networking development in libraries under survey. The question was placed to the referred librarians, the answer received from them were divergent (Table-6). It is interesting to observe that only 25% respondents i.e. ALU has digitized about 50% collection of books. Manuscripts have been 100% digitized in AMU and BHU, whereas ALU and BBAU have no response with regard to manuscripts. Other forms of documents which may be pages from rare journals have been digitized to the time of 15% and 10% in AMU and BHU respectively. In any correlated question to be cognizant about the software used in digitization, only 25% i.e. AMU responded that it use's Adobe-7 while remaining 75% i.e., BHU, ALU and BBAU have no response.

Table - 6

Digitization of Collection

Digitization of Collection	% of				SW Used			
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU
Books	-	-	50	-	-	-	-	-
Theses	-	-	-	-	-	-	-	-
Manuscripts	100	100	-	-	Adobe-7	-	-	-
Other (please specify)	15	10	-	-	-	-	-	-

Source: Questionnaire

The researcher has designed two questions as regards types of Internet connection used in the library and in the participation of networks by them at National Level (Tables 7 and 8). 100% respondents are found to have used leased connection for internet connectivity in their libraries. Out of the total respondents 75% are the members of INFLIBNET i.e. AMU, BHU and ALU. BHU and ALU are also participating in DELNET where as BBAU has not been participating in any kind of networks.

Table - 7**Type of Internet Connected Used in the Library**

Type of Internet connection	Yes				No				Total Population 100%	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	Yes	No
Leased	Y	Y	Y	Y	---	---	---	--	100	0
Dial-up	---	--	--	---	N	N	N	N	0	100
VSAT	---	---	--	---	N	N	N	N	0	100
ISDN	---	---	---	---	N	N	N	N	0	100
Radio Modem	---	---	---	---	N	N	N	N	0	100
		--	---	---						

Source: Questionnaire**Table – 8****Membership of Networks**

Member of networks	Yes				No				Total Population 100%	
	AMU	BHU	ALU	BBAU	AMU	BHU	ALU	BBAU	Yes	No
INFLIBNET	Y	Y	Y	---	--	--	--	N	75	25
DELNET	---	Y	Y	---	N	---	---	N	50	50
ERNET	---	---	---	---	N	N	N	N	0	100
NICNET	---	---	---	---	N	N	N	N	0	100
INET	---	---	---	---	N	N	N	N	0	100

Source: Questionnaire

Table 9(a) regarding the IT based service orientation summarizes that in terms of the IT based services the newly centralized universities i.e. ALU and BBAU are comparatively lacking behind the centralized universities in terms of IT and IT Enabled Service applications, such as, DVD ROM services, online service, Mini Computer, CD Drivers, OPAC terminals, Computer network, CD network, Licensed operating system, Licensed word processor, LIB software, Library automation implementation, Digitized your collections, Broad band servers, DELNET, and other computerized services. Out of the total responses, the centralized universities secured 39 affirmative responses and only 14 responses have been received in negative. Whereas in the case of newly centralized universities, only 20 respondents answered in affirmative with regard to availability of IT and IT Enabled Service applications and 33 answered in negative about facilities of such services. The overall assessment of the referred central universities shows that 55% of the response is favorable whereas 44% is worked out to be unfavorable for availability of IT based services. For more pragmatic inferences table 3 (b) has been framed for the test of the hypothesis.

Table 9 (b) differentiates the both categories in which the total frequency after scaling reveals the real picture with 133 and 95 respectively for centralized and newly centralized universities. The mean, (44 and 31) SD (63 and 29), CV% (142 and 91) substantiate the statement that the newly centralized universities are lacking behind in terms of availability of IT based services.

However the Chi value of 20.27 which falls over the table value of 5.99 @ 5% level of significance results in the acceptance of alternative hypothesis where the significant relationship between the both are assumed. Any how the coefficient of skewness has critically analyzed the observation and found to be negative (less than '0') in newly centralized universities and positive (more than 0) in case of centralized universities. The acceptance of alternative hypothesis has become statistically feasible in case of newly centralized universities clubbing of the ALU which is olden and traditional university of India with some of the IT and IT enabled services already being provided. The BBRAU the *de-novo* centralized university still has to do a lot in the sphere of providing IT and IT enabled services to the users. The lack of planned funding, inadequate budget plans, are the major reasons attributable to this backdrop. These universities are emerging after 2005 in which the time constraint for the up-gradation of IT and IT enabled services can also be pointed out.

Table 9(a)

IT application

IT application	No of response						Total population 100%		
	Centralized universities (AMU, BHU)			Newly centralized universities (ALU, BBAU)			Yes	No response %	No
	Yes	No response	No	Yes	No response	No			
CD/DVD ROM services	1	0	1	1	0	1	50	0	50
Online service	2	0	0	1	0	1	75	0	25
UGC Infonet consortia	2	0	0	1	0	1	75	0	25
Access to online journals/ databases and documents	2	0	0	1	0	1	75	0	25
Provide user training to access online journals/ databases	2	0	0	1	0	1	100	0	0
Mini computer	0	0	2	0	0	2	0	0	100
CD drives	2	0	0	1	0	1	75	0	25
OPAC terminals	1	0	1	0	0	2	25	0	75
Computer network	2	0	0	1	0	1	75	0	25
CD network	2	0	0	0	0	2	50	0	50
Licensed operating system	2	0	0	2	0	0	100	0	0
Licensed word processor	1	1	0	1	1	0	50	50	0
Lib software	2	0	0	1	0	1	75	0	25
Acquisition	1	0	1	0	0	2	25	0	75
Cataloguing	2	0	0	1	0	1	75	0	25
Circulation	1	0	1	0	0	2	25	0	75
Management	0	0	2	0	0	2	0	0	100
Retrospective conv.	2	0	0	1	0	1	75	0	25
Serials control	1	0	1	0	0	2	25	0	75
Budgeting (IT)	0	0	2	0	0	2	0	0	100
Statistical report	0	0	2	0	0	2	0	0	100
Library automation implementation	2	0	0	1	0	1	75	0	25
Computerized facilities offered to users	2	0	0	1	0	1	75	0	25
Digitized your	2	0	0	1	0	1	75	0	25

collections									
Broad band servers	2	0	0	2	0	0	100	0	0
INFLIBNET	2	0	0	1	0	1	75	0	25
DELNET	1	0	1	1	0	1	50	0	50
Total and average percentage	39	1	14	20	1	33	54.6 3	01.85	43. 52

Source: Libraries Survey

IT application Table 9(b)

IT application Impact	Scaling	Centralized universities (AMU, BHU)	Newly Centralized universities (ALU, BBAU)	Mean percentage
YES	3	117	60	54.63
No Response	2	2	2	01.85
No	1	14	33	43.52
Total		133	95	100
Mean of frequency		44.33	31.67	
SD		63.22	29.02	
CV%		142.59	91.65	
Skewness		1.66	-0.21	
Standard error of Skewness		1.23	1.23	
Chi		20.27		
Level of Significance		0.05		Sig @ Degree of Freedom 2=5.99

Source: Table 9(a)

Findings of the Study:

a comparison between the old centralized and newly centralized universities in terms of IT and IT enabled service applications, such as, DVD ROM services, online service, mini computer, CD drivers, OPAC terminals, computer network, CD network, licensed operating system, licensed word processor, LIB software, library automation implementation, digitized collections, broad band servers, and other computerized services. It is also being revealed that there is a bit difference between the two old centralized and newly centralized universities especially in BBRAU the *de-novo* centralized university. It has to do a lot in the sphere of providing IT and IT enabled services to the users. The lack of planned funding, inadequate budget plans and the time constraint for the up-gradation of IT and IT enabled services are the major reasons attributable to this backdrop.

Conclusion:

Libraries are a center of disseminating information and involvement of IT is a crucial aspect and affects profoundly both organizational structure and the library purpose and service. Hence, libraries and librarians have little choice but to adapt and adopt IT for library operations, especially for collection development activities and information services generation. Despite its enormous potential, information technology—be it optical disc technology or computers and communications technology is not utilized to its full potential by libraries and information centre. It is necessary that information professionals examine and design appropriate strategies in the selection and encourage the use of emerging technologies in order to enhance the productivity in library operations like collection development and management, and also in improving the quality of services to the users. In this process of re-appraisal, it would be helpful to try the six R's of selecting new technologies, namely, review the mandate or mission of the library or information centre; refocus the direction to keep in step with the clients and the information environment; redefine your client's needs; relate with the staff and suppliers who are providers of external information; software and technology; revamp the activities and services; and recreate by using the tools of the future, i.e., new technology.

So far as the services are concerned only AMU has OPAC terminals. AMU, BHU and ALU have computer network. Only BHU and ALU have CD-network. AMU, and ALU are using libsys software and BHU is using Genlib for maintaining their collection, management and services whereas BBAU is not using any kind of software. . The computerized library operation i.e. Acquisition, Circulation, OPAC and Serial Control are not used by BHU, ALU and BBAU. In AMU, BHU and ALU cataloging and retrospective conversion are being made use of. Budgeting and statistical report modules are not used by any library. Only ALU has digitized the collection of books approximately 50%. AMU and BHU have been digitized 100% o their manuscripts collection. They have also digitized 15% and 10% pages from rare journals. AMU, BHU and ALU are the members of INFLIBNET along with it BHU and ALU are also the members of DELNET.

Suggestions:.

- Library should participate in consortia's at national as well as international level.
- In an era of globalization any library cannot fulfill all the demands and needs of their user's individually; therefore it is recommended that they must participate in resource sharing and networking process and mechanism.
- Feedback should be sought from the users and the services need to be evaluated regularly to decide their utility.

- In order to increase use of on-line resources by the user's, it is recommended that frequent "information literacy" programmes should be conducted by the library to educate the users on the effective use of internet and e-resources.
- In information age society libraries must be equipped with ITES.
- Libraries must be fully computerized
- Libraries must be developed databases for their collections.
- On-line Public Access Catalogue (OPAC) should be available in BHU, ALU and BBRAU libraries.
- Web-OPAC should be started in all the libraries under study.
- CD-ROM workstation should be available in the libraries.
- Old and important materials should be digitized
- Library should acquire high-speed connectivity to overcome the problem of slow downloading.
- In-house databases should be developed by the libraries
- To provide on-line services efficiently and effectively, number of computers should be increased in the library in all the universities.
- The staff of library must be skilled enough to assist the users when they face any problem in accessing on-line services.

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