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Rubi Baishya

*Research Scholar, Dept. of Library and Information Science, Gauhati University, Guwahati, Assam,*  
rubibaishya1990@gmail.com

Narendra Lahkar

*Former Professor and Head, Dept. of Library and Information Science, Gauhati University, Guwahati, Assam,*  
nlahkar@gmail.com

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# **Prospects of Introducing Modern ICT Tools and Techniques for Extending Library Services in University Libraries of Assam: A Study**

Rubi Baishya

Research Scholar

Dept. of Library & Information Science

Gauhati University, Guwahati- 781014

Email:rubibaishya1990@gmail.com

Prof. Narendra Lahkar

Former Professor and Head

Dept. of Library and Information Science

Gauhati University, Guwahati- 781014

Email: nlahkar@gmail.com

## **Abstract**

***Purpose:** Information explosion and advent of modern ICT have changed the Library environment to a large extent. Libraries are to play great role to serve the user community in right direction and the use of modern ICT tools and techniques has made situation more user oriented. Of course, due to certain constrains, all types of modern ICT tools can't be applied by the libraries for extending services to their user community. This situation is in existence in case of university library system also. The present study is made on "Prospects of using modern ICT tools and techniques for extending library services in university libraries of Assam".*

***Study design/methodology/approach:** The study is confined to three university libraries of Assam taking into account three specific parameters. For the study, primary and secondary sources have been used. Prescribed questionnaire for library professionals, visiting libraries, discussion with both senior and junior library professionals have been used for collecting primary data. Review of literatures has been done for getting information on modern ICT tools and techniques.*

**Findings:** *Though ICT tools have been used by the university libraries under study to some extent, due to some constraints like limited resources, infrastructural inadequacy and lack of skilled professional staff, the libraries are not yet able to use the modern tools and techniques fully. There are enough scopes of using ICT tools and techniques for providing library services of which social media sites, WhatsApp, cloud computing, etc can be cited, and use of these tools are found to be cost effective and people are accustomed in using them.*

**Originality/value:** *This study finds no major problem in using modern ICT tools and techniques in university libraries of Assam. By using these tools and techniques in extending library services to its user community will certainly help in enhancing the library service quality in the days to come.*

**Keywords:** ICT Tools; University Libraries; Digital Library; Social Networking Sites; Cloud Computing.

## **1. Introduction**

The conventional libraries with physical document collection and extending services to their users manually have been changed to new paradigm because of the uses of Information Technology devices for performing their day to day activities. The modern libraries are more dynamic in nature which allows the users for accessing the library resources and exchange of wide variety of information overcoming the geographical barrier. Because of the use of ICT in the works and services, libraries are redesigning their approaches in various directions enabling them to meet the user's demands beyond the four walls of library and try to support of the community accepting the challenges in the new environment.

It is obvious that presently ICT has become inseparable part of society and is being used in all fields of knowledge; in the case of dissemination of the library resources, everyone prefers to access information using latest technology rather than the traditional way in getting their required information. The change is inevitable and libraries are also changing to meet the challenges. Use of ICT in performing library jobs has become a must in that context and libraries are also shifted accordingly towards that direction. Use of modern ICT tools in library services has provided considerable scope through which libraries can relate to their user communities and become an essential part of evolving information society.

## **2. Significance of the study**

Explosion of information in different directions and the development of ICT have directly impacted on the information seeking behavior of the people in general and library users in particular. Library users are in need of their required information more specific in shortest possible time. This is one of the main reasons for use of ICT in libraries in order to facilitate the use of library resources by the users in right perspectives. In spite of the demand of extensive use of ICT in performing library jobs, due to some constraints, all the modern ICT tools cannot be used by all the libraries in their day to day functioning. Different types of libraries, including the university libraries are facing the same situation. The present study is made on the basis of such discussion where in "Prospects of using modern ICT tools and techniques for extending library services in university libraries of Assam" has been focused.

## **3. Objectives of the study**

- a) To identify the present state of university libraries under study;
- b) To study the prospects of using modern ICT tools for extending library services.

## **4. Area of the study**

Presently, there are nineteen universities of Assam: two central universities, twelve state universities and five private universities (MHRD, 2018; UGC, 2018). For the pilot study, the researcher has limited the study to three University libraries selected as follows:

- a) One University Library which is functioning in traditional mode: Kumar Bhaskar Varma Sanskrit and Ancient Studies University, Nalbari, another one
- b) University library functions in automated environment and also with RFID Technology: Krishna Kanta Handique State Open University, Guwahati; and the other one
- c) University library functions in automated environment and also with digital library: Cotton University, Guwahati

## **5. Methodology**

The present study is a descriptive study. Data have been collected from both primary and secondary sources and presented in a tabular format for interpreting them to get concrete information. For collecting the data, the researcher used different tools viz: a. prescribed questionnaire for library professionals, b. visiting libraries, c. discussion with both senior and junior library professionals. Review of literature is also conducted for collecting information on the use of modern ICT tools in library services.

## **6. Modern ICT tools and techniques for library services**

Availability of advanced technologies give libraries the ability to offer improved, customer-driven services to their users. Following are some of the modern ICT tools and techniques that can be used for providing library services to its user's community.

**a) Web 2.0:** Web 2.0 is the second phase in the Web's evolution. Web 2.0 harnesses the Web in a more interactive and collaborative manner, emphasizing peers' social interaction and collective intelligence, and presents new opportunities for leveraging the Web and engaging its uses more effectively (Murugesan, 2007).

**b) Library 2.0:** Library 2.0 is a loosely defined model for a modernized form of library service that reflects a transition within the library world in the way that services are delivered to users. The focus is on user-centered change and participation in the creation of content and community. The concept of Library 2.0 borrows from that of Business 2.0 and Web 2.0 and follows some of the same underlying philosophies. This includes online services like the use of OPAC systems and an increased flow of information from the user back to the library (Library 2.0, 2020).

**c) Digital Library:** Digital libraries are systems providing user with coherent access to a very large, organized repository of information. The term Digital library in broad sense is a computerized system that allows users to obtain a coherent means of access to an organized electronically stored repository of information and data (Saxena, 2002).

**d) Library Digitization and Institutional Repository (IR):** Library digitization is the process of utilizing computers, databases, multimedia equipment, networks, video equipment and web technologies to electronically collect, classify, copy, compress, scan, store and transform conventional library information resources (Essays, 2013)

**e) Social Networking Sites (SNS):** A social networking service is an Internet-based platform used in building and developing social relations among people. It provides means by which user can interact online with people of similar interests (Sadiku, Omotoso & Musa, 2019). Some widely used SNS are Facebook, Twitter, Google +, MySpace, LinkedIn, Blog, Wiki's, YouTube, Flickr etc.

**f) Web OPAC:** A Web OPAC is a library catalog on the Web or Intranet. Users can search the required information by connecting to Uniform Resource Locator (URL) of Web OPAC anytime during the day and from anywhere in the world. A different definition can be seen on the Internet according to which a 'WEB OPAC is an independent program designed separately from the Library Program. It is programmed to facilitate the library's members to access the OPAC, through their own search, for the ease of borrowing, instead of searching through the card catalog. In addition, members would also be able to request for the information about borrowing, reservation, etc., related to their own library profile, as well as to make automatic reservations (Kulkarni, 2003).

**g) Really Simple Syndication (RSS):** RSS is an XML file that summarizes information items and links to the information sources. It informs users of updates to blogs or Web sites they're interested in (Murugesan, 2007).

**h) Radio-Frequency Identification (RFID):** RFID is a generic term for technologies that use radio waves to automatically identify people or objects from a distance of several inches to hundreds of feet. This is a automatic identification technology by which any object can be identified automatically (Chechi, Kandu & Kaur, 2012).

**i) WhatsApp:** WhatsApp is a free instant messenger application for smart phones that allow to user to send text messages and multimedia files.

**j) Mobile App:** Mobile app are shorthand for application or software that typically runs on a mobile device.

**k) Cloud Computing:** It is another modern IT tools that libraries can used to operates the ILS from the cloud to reduce cost and maintenance of the local server.

**l) QR Codes:** With the help of Camera equipped phone, it can be used to scan the QR code displayed by any library. Users can simply scan the QR code to know about the library working hours, resources available in the particular library.

## 7. Data Interpretation and discussion of the surveyed libraries

To know the services extended by surveyed libraries of Assam, a well structured questionnaire is designed keeping in mind the objectives of the study. The collected data are tabulated and interpreted to derive the reasonable information.

### 7.1 University Libraries under study

**Table 1: University Libraries under study (Chronological) (N: 3)**

Sl No	Name of the University	Location	Name of the Library	Code Used (in the study)	Yr of Estb
1	Krishna Kanta Handique State Open University	Guwahati	Central Library, Krishna Kanta Handique State Open University	CLKKHSOU	2005
2	Cotton University	Guwahati	Dr. Surya Kumar Bhuyan Library, Cotton University	SKBLCU	2011*
3	Kumar Bhaskar Varma Sanskrit & Ancient Studies	Nalbari	Kumar Bhaskar Varma Sanskrit & Ancient Studies Library	KBVSASL	2011

**\*Formerly Cotton College (1901)**

**7.2 Resources available in the surveyed libraries (as on March, 2020)**

**Table 2: University Library Resources (N: 3)**

<b>University</b>	<b>Books</b>	<b>Current Periodicals</b>	<b>CDs/ DVDs</b>	<b>Others</b>	<b>NB: Others include</b>
CLKKHSOU	18900	36	66	77	Theses, Reports, Audio and Video Cassettes.
SKBLCU	140101	50	400	3839	Bound volumes journals, reports, maps, archival materials.
KBVSASL	8000	5	Nil	Nil	Nil

Out of three selected university libraries SKBLCU has highest number of books, current periodicals and CDs/ DVDs as well as large number of bound volumes journals, reports, maps, archival materials.

**7.3 Library users**

**Table 3: Library Users (N: 3)**

<b>University Library</b>	<b>Students</b>	<b>Research Scholar</b>	<b>Faculty Member</b>	<b>Officer</b>	<b>Other staff</b>	<b>Total</b>
CLKKHSOU	NA	45	40	20	70	<b>175</b>
SKBLCU	5000	348	300	250	60	<b>5958</b>
KBVSASL	680	10	34	27	2	<b>753</b>

Above Table represents that number of users is high in case of SKBLCU which includes students, research scholars, faculty members, officers and other staffs.

**7.4 Library Staff**

**Table 4: Library Staff (N: 3)**

<b>University Library</b>	<b>Prof</b>	<b>Non-Prof</b>	<b>Total</b>
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CLKKHSOU	3	0	<b>3</b>
SKBLCU	2	10	<b>12</b>
KBVSASL	1	1	<b>2</b>

SK BLCU has highest number of library staff than other two university libraries.

### 7.5 Library services

**Table 5: Library Services (N: 3)**

Services	CLKKHSOU	SKBLCU	KBVSASL	Total
Circulation	Y	Y	Y	<b>3</b>
Abstracting and Indexing Service	N	N	N	<b>0</b>
Reference Service	Y	Y	Y	<b>3</b>
Referral Service	Y	Y	Y	<b>3</b>
Reading Room Services	Y	Y	Y	<b>3</b>
Current Awareness Service (CAS)	Y	Y	Y	<b>3</b>
Selected Dissemination of Information (SDI)	Y	Y	Y	<b>3</b>
Document Delivery Services (DDS)	N	Y	N	<b>1</b>
Inter Library Loan	N	N	N	<b>0</b>
Reprographic Service	Y	Y	Y	<b>3</b>
Translation Service	N	N	N	<b>0</b>
Other	N	N	N	<b>0</b>
<b>Total</b>	<b>7</b>	<b>8</b>	<b>7</b>	

Above table 5 represents that out of selected 3 university libraries only SKBLCU provides maximum number of services to its user's i.e circulation service, Reference Service, Referral Service, Reading Room Services, Current Awareness Service (CAS), Selected Dissemination of Information (SDI), Document Delivery Services (DDS), and Reprographic Service. But

indexing and abstracting service, translation service and inter library loan are not provided by any of these university libraries.

### 7.6 Integrated Library Management Software

**Table 6: Use of Integrated Library Management Software (ILMS) (N: 3)**

University Library	SOUL2.0	Koha	Libsys	Other
CLKKHSOU	✓	✗	✗	✗
SKBLCU	✓	✗	✗	✗
KBVSASL	✓	✗	✗	✗

All the selected university libraries use only SOUL2.0 software for management of their library activities. Though KBVSASL install SOUL2.0 but its library housekeeping activities are still operating manually.

### 7.7 Modern ICT tools and techniques in library services

**Table 7: Using modern ICT tools and techniques in library services (N: 3)**

Name of the Tools and techniques		CLKKHSOU	SKBLCU	KBVSASL	Total
Digital Library		Y	Y	N	2
Digitization and IR		Y	Y	N	2
RSS		N	N	N	0
RFID technology		Y	N	N	1
Web Opac		N	Y	N	1
Social networking sites	Facebook	N	Y	N	1
	Twitter	N	N	N	0
	LindInd	N	N	N	0
	Instagram	N	N	N	0
	Youtube	N	N	N	0
WhatsApp		Y	Y	N	2

Library blogs	N	N	N	<b>0</b>
Any other (pl. specify)	N	N	N	<b>0</b>
Mobile App	N	N	N	<b>0</b>
Cloud computing	N	Y	N	<b>1</b>
Any other (pl. specify)	N	N	N	<b>0</b>
<b>Total</b>	<b>4</b>	<b>6</b>	<b>0</b>	

The above table represents that out of three selected university libraries only SKBLCU uses different types of ICT tools for rendering its services to users. But KBVSASL has still not using any ICT tools for delivering services to its users.

#### **7.8 Problem for using modern ICT tools and techniques**

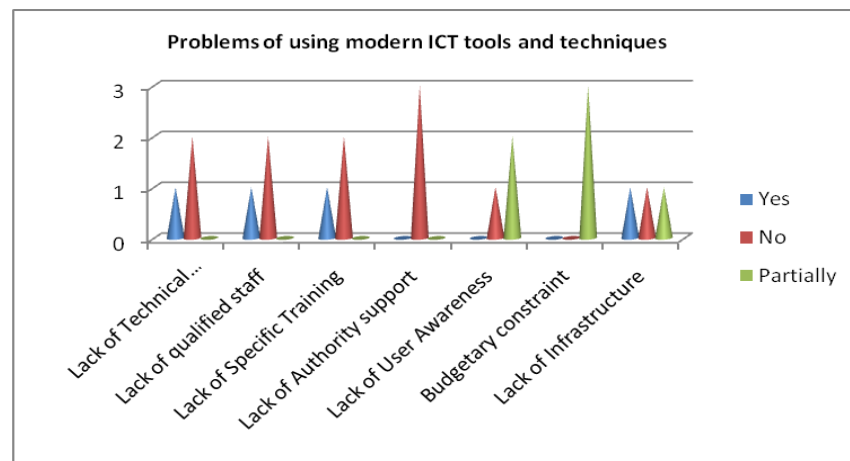
**Table 8: Problem for using modern ICT tools and techniques (N: 3)**

<b>Problems</b>	<b>CLKKHSOU</b>	<b>SKBLCU</b>	<b>KBVSASL</b>
Lack of Technical knowledge	No	No	Yes
Lack of qualified staff	No	No	Yes
Lack of Specific Training	No	No	Yes
Lack of Authority support	No	No	No
Lack of User Awareness	Partially	No	Partially
Budgetary constraint	Partially	Partially	Partially
Lack of Infrastructure	Partially	No	Yes
Others	No	No	No

**Table 8 (a): Problem for using modern ICT tools and techniques**

<b>Problems</b>	<b>No. of Libraries (N: 3)</b>		
	<b>Yes</b>	<b>No</b>	<b>Partially</b>
Lack of Technical knowledge	1	2	0

Lack of qualified staff	1	2	0
Lack of Specific Training	1	2	0
Lack of Authority support	0	3	0
Lack of User Awareness	0	1	2
Budgetary constraint	0	0	3
Lack of Infrastructure	1	1	1



**Figure1: Problem for using modern ICT tools and techniques**

From the above table 8(a) and figure1, it is clear that though authority support in using modern ICT tools in library but the main problem faced by these surveyed libraries is budgetary constrain. Lack of adequate infrastructure, lack of specified training, lack of technical knowledge and qualified staff also creates some problems in using ICT tools for proving services to users.

### **8. Prospects of using modern ICT tools and techniques for extending library services**

After surveying the sample university libraries of Assam it has been found that libraries are facing some problems in using ICT tools for providing services to its users (as shown in table 8). Though presently these libraries are using to some extend the ICT tools and techniques for rendering services to users(as shown in table7) but there is still need to introduce new ICT tools for extending library services so that the varied information needs of user community can be fulfilled in right time in right way. In this regard librarian needs to take initiative to develop such an infrastructure where the users can ask question freely as well as access the

library services. He/she will have to learn major tools and techniques of ICT in order to embrace non-textual information and power of pictures, moving images, sights and sounds, to connect users to expert discussion and conversations, to use the latest tools of communication to connect contents, expertise, information coaching and people.

The university authorities should give emphasis on improving infrastructure of the libraries so that ICT environment can be created in the library and try to prepare a plan of action to meet the diverse need of the users. As budgetary constrain is the main issue in using ICT tools in the surveyed libraries, so use of social networking sites may prove beneficial to users because these are most popular and most frequently used technology by people. For example Face book, Twitter, LinkedIn, YouTube etc can be used for extending services to its user's community. With the help of it, LIS professionals can create a page to reach to new users and interact with users to know their information requirements. Libraries can also link some specialized library applications to Facebook. Twitter platform can be used to give users immediate information on the on-going events. Users can send Instant Messages (IM) on complaints or ask questions on a particular issue and get a feedback on the spot using twitter. YouTube is another tool that can serve the purpose of disseminating upcoming events such as important highlights of inaugural lectures, conferences and workshops. Librarian can upload the library profile in You Tube that enables the user community to know about the library and its services. LinkedIn can be applied in connecting users with specialists in their particular field of interest. Librarians can use this platform to render specialized services such as Selected Dissemination of Information (SDI).

Application of mobile app is important aspect for increasing libraries relevance and engaged users community. In this context library as well as university authorities of respective universities of Assam should take step in developing Library mobile app so that users can easily get access to their relevant information through their mobile device. Through this app one can get services like searching a catalogue, SMS notification service, database browsing etc. Moreover WhatsApp can be used for providing alerting service and current awareness service to specific group of users.

Apart from these, there is scope to introduce different ICT tools and techniques viz RFID technology, cloud computing, QR code in university libraries of Assam. With the help of RFID technology, irrespective of the availability of staff user can issue and return the books as per their requirements. Keeping in mind the budgetary issue, cloud computing can be used as it is less expensive and required no expensive software. It not only reduces cost but also create a digital environment where users have access to high quality educational resources.

## **9. Conclusion**

From the above discussion it has been found that of the university libraries under study, the SK Bhuyan Library of Cotton University is using most of the ICT tools and techniques for extending services to the users and the Central Library, KKHSOU is also adopted the ICT Tool largely. The KBVSAS Library has not used any ICT tools till date. The study reveals that though SOUL2.0 ILMs software is installed in KBVSAS Library, housekeeping operations are being carried out manually and the facilities of automation yet to avail in library works and services by the library. The study reveals an encouraging picture from the part of university authorities; the authorities of all of University Libraries have expressed their desire to introduce ICT devices to the extent possible. It is because of different barriers faced by the authorities including budgetary constraints; infrastructural inadequacy and lack of skilled professional staff the libraries are unable to use the modern tools and techniques.

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