

## Research Article

# Development of ICT in Five Private University Libraries of West Bengal in New Town Area: A Study

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## A B S T R A C T

This present study has been conducted to analyze the ICT application in library automation of five private Universities situated in the New Town area in West Bengal. To finish the investigation, a well-structured questionnaire was created. The study's conclusions provide important information on the library's ICT infrastructure and information services of five private Universities situated in the New Town area. It has been tried to find out different sections where automation has been completed and the sections where automation is under progress. The article tried to reveal the budget allocation, staff pattern, library use, software, hardware system, etc. Based on content analysis square measure provided at the end of the paper for the development and implementation of the automation and e-awareness program. Based on the findings, it was noted that the library does not have enough internet nodes or bandwidth, hardware, or software resources.

The university's campus LAN has not yet fully expanded to take use of the advantages of the digital information environment. Finally, it highlighted the problems associated with ICT applications and suggests some probable solutions at the end.

**Keywords:** University Library, Library Service, Information and Communication Technology (ICT), E-resources, IT infrastructure

## Introduction

### Background of the Study

Implementation of ICT has become very necessary to access, process, store, transmit and manipulate the data. It involves the use of the computer with the help of various hardware and software with other necessary systems. Most of the persons associated with academics and many other professions have become associated and also dependent on the technology-based study system. ICT is the gateway

to communicate with world information.

In the content of library, ICT is very essential to accomplish all kinds of housekeeping operations. Important library works are acquisition, circulation, cataloguing, retrieval. Technology helps to retrieve data quickly.

The five private Universities which are selected for the study are newly established. Those are also trying to get achievement in the academic field. So the study has tried to reveal the ICT infrastructure and service to the students.

## Statement of the Problem

In the period of ICT, library utilizes various kinds of data and technological resources to fulfill the demands of library users. With the assistance of the most recent technological advancement, libraries presently are moving towards electronic/ online administrations dependent on Information and Communication Technology (ICT). Private University libraries are considerably more progressed in utilizing and giving ICT-based data to their users. Thinking about this angle, researcher has attempted to direct the investigation of Private University libraries in the New Town area. The investigation will emphasize on the utilization of different sorts of Information and Communication Technology (ICT) Resources and give ICT-based administrations by various Private University Libraries in the New Town area.

## Objectives of the Study

For characterizing the objectives of the study, care must be taken the goals of the investigation are well inside the extent of the exploration visualized by him/ her.

Following are the objectives of the study:

- To find out the availability of private universities in New Town area
- To find out the information sources, systems, services available in private universities in the New Town area
- To find out the Information and Communication Technology assets/ infrastructure accessible in the Private University libraries
- To find out the ICT-based library and information services available for the users in Private University libraries in the New Town area
- To find out the problem faced by these Private Universities in the New Town area
- To find out the probable solutions for overcoming the problems

## Review of the Related Literature

Chavan and Naik (2017) discussed in their paper the impact of ICT developments on library services in engineering colleges of North Karnataka by students. Information gathered through the survey strategy the population included students of BE and M.Tech of engineering colleges of North Karnataka. Study discovered that most of the students were utilizing of ICT applications for get this e-books, e-journals, email, utilizing web through services in the library.

Brahma (2014) pointed out the issues and possibilities of library automation. The study covered the Bodoland Territorial Council area of Assam. The idea of betterment of the present system was also revealed.

Jan (2017) explained the collection and library services of

some Universities which were situated in J&K and Delhi. This study also revealed the usage and influence of ICT in developing the collection.

Sharma (2007) pointed out the role of IT revolution which has all around changed the capacities and working of the present day libraries and information centers from manual to digital and certainly the modern technology used to create digital libraries has been even more revolutionary. With the advent of computer and optical technologies available for mass storage has shifted mostly to electronic media. Presently with the electronic transformation the computer can call up a different of databases, indexes, catalogues, CD-ROMs, as well as books, journals and even manuscript collections from different libraries, Information Centers and Research Institutions and the networking revolution is facilitating in large scale data communications network. Under the current conditions library and information services managers have a wide arrangement of PC based solutions from which they can choose the best blend of services and access to worldwide stored knowledge to meet the need of their customers from various disciplines, including research, business, trade and industry. No doubt the advanced IT revolution is gradually transforming the role of digital libraries and enabling their users exploits the facilities available in a scientific manner.

Kumar and Tripathi (2018) discussed how teachers, researchers and students access, pursue and use digital books in Jawaharlal Nehru University, Delhi, India. The study has identified factors that encourage or discourage the use of e-books in academic libraries.

Islam and Islam (2006) discussed the Information and communication Technology (ICT) in libraries: A new dimension in librarianship. Currently library service is very much depends upon ICT. These papers also explored the modern technologies in libraries recognizing old and new technologies. This paper attempted to distinguish different parts of ICT which were utilized or being utilized in libraries and information systems. The study also distinguished accurate motivations to use PC and related innovations in libraries. It additionally outlines the capacities; effects and difficulties of ICT based library systems.

Mathew and Sornam (2007) conducted a study on "Use of e-Resources among P.G. Students of Kerala Agricultural University". The findings of the study revealed that most of the respondents used e-Books, e-Journals, abstracts/ indexes, theses and dissertations and OPAC. The majority also faced problems of searching and downloading articles, power failures and lack of infrastructure facilities. The study suggested that the library working hours should be increased, more provision for database search, creating awareness among the students about the different online resources.

Jestin and Parameswari (2002) in a paper entitled 'Challenges for library professionals in India in the new millennium', referred the term 'technology' to computer technology, communications technology and information technology. According to them, a librarian who was aware of all these three technologies can face the challenges of the new millennium. To meet these challenges, the authors suggested that the library professionals should have thorough and depth knowledge regarding resource sharing, networking, library software etc.

## Methodology

### Scope and Coverage of the Study

Five Private University Libraries which are situated in the New Town area have been chosen for the study. These are:

1. Amity University (AU).
2. Sister Nivedita University (SNU).
3. St. Xavier's University (SXUK).
4. Techno India University (TIU).
5. University of Engineering and Management (UEM).

### Methods used

There are several techniques are used to collect data. The descriptive survey method has been taken to conduct the study. The field survey technique has been utilized to get a satisfactory measure of information. It comprises of questionnaires, interviews, observation methods. Firstly the questions are formulated, defined and developed then the questionnaire was circulated to the targeted universities library along with an introductory letter for the respondent to understand the reason for the survey. The data have

been collected through survey method, Questionnaire method, face to face interview.

## Data Analysis and Findings

Table 1, depicts that, in the year 2012, Techno India University was established in the State of West Bengal. Again in 2015, two (02) universities like University of Engineering & Management and Amity University were established. In the year 2017, St. Xavier's University and in 2018, Sister Nivedita University was established.

Table 2, shows that all five University libraries had Rs.1 - 5 lakhs budget allocation for traditional resources. Regarding ICT resources, Techno India University, University of Engineering & Management and St. Xavier's University had budget allocation of Rs. 6-10 lakhs. Amity University and Sister Nivedita University had budget allocation of Rs.1-5 lakhs.

Table 3, shows that Techno India University has maximum number of e-books (25,000) and subscribed to 4000 journals and magazines, J-Gate and ProQuest. It also holds 500+ CD/ DVD/ FLOPPY. UEM subscribed 21,000 e-books and 6,000 e-journals, also subscribed to J-gate, EBSCO. It keeps 400+ CD/ DVD/ FLOPPY, 80 Audio/ Video Cassettes. AU subscribed 5,000 e-books and 17300 e-journals, also subscribed to EBSCO, keep 1200+ CD/ DVD/ Floppies. St. Xavier's University subscribed 10,000 e-books and 6,000 e-journals, also subscribed to J-gate, keep 107+ CD/DVD/ FLOPPY, 151 Audio/ Video Cassettes and 95 Microforms. Sister Nivedita University subscribed to 3,000 e-books also subscribe to J-gate, keeps 50+ CD/ DVD/ FLOPPY.

**Table 1. Year-wise Establishment of Universities in New Town Area**

Name of the Universities	Year of Establishment	Location
AU	2015	New Town
SNU	2018	New Town
SXUK	2017	New Town
TIU	2012	Salt Lake
UEM	2015	New Town

**Table 2. Status of Allocation of Budget in the Private University Libraries in New Town Area**

Name of the Universities	Traditional Resources				ICT Resources			
	1-5 lakhs	6-10 lakhs	11-15 lakhs	16-20 lakhs	1-5 lakhs	6-10 lakhs	11-15 lakhs	16-20 lakhs
AU	√	-	-	-	√	-	-	-
SNU	√	-	-	-	√	-	-	-
SXUK	√	-	-	-	-	√	-	-
TIU	√	-	-	-	-	√	-	-
UEM	√	-	-	-	-	√	-	-

**Table 3. Status of e-Resources of the Private University Libraries in New Town Area**

E-Resources	AU	SNU	SXUK	TIU	UEM
E-Books	5000	3000	10,000	25,000+	21,000+
E-Journals and Magazines	17,300+	-	6000	4,000 (Package)	6,000 (Package)
E-Databases	EBSCO	J-gate, ProQuest	J-gate	J-gate, ProQuest	J-gate, EBSCO
D/DVD/Floppies	1200+	50+	107+	500+	400+
Audio/Video Cassette	-	-	151	-	80
Microforms	-	-	95	-	-
E-Thesis	-	-	-	-	-
Video	-	-	-	-	-
Others	-	-	-	-	-

Table 4, shows that out of 5 private university libraries, majority (4) university libraries subscribed to DELNET. Two libraries namely UEM and AU subscribe EBSCO. Three libraries namely Techno India University, University of Engineering & Management and Amity University subscribed IEEE. Techno India University, University of Engineering & Management, St. Xavier's university and Sister Nivedita University all four subscribed J-Gate. NDL is subscribed as repository by Techno India University, University of Engineering & St. Xavier's university.

Table 5, shows the automation status of the various

library operations of the given libraries. The acquisition process was partially automated in four libraries, one library is not automated. The cataloguing, circulation, administration and OPAC modules were fully automated in all the given libraries. Serial control was fully automated in three libraries and partially automated in two libraries.

Table 6, shows that 04 University libraries used KOHA software in library automation, except Techno India University where LIBSYS software was used in library automation.

**Table 4. Status of Online Journals/ Magazine/ e-Database of Private University Libraries in New Town Area**

Online Journals/E-Databases	AU	SNU	SXUK	TIU	UEM
DELNET Springer link	-	√	√	√	√
Wiley Black well	-	-	-	-	-
ELSEVIER	-	-	-	-	-
EBSCO	√	-	-	-	√
IEEE	√	-	-	√	√
Science Direct	-	-	-	-	-
J-Gate	-	√	√	√	√
NATEL	-	-	-	-	-
Others	-	-	NDL	NDL	NDL

**Table 5. Automation status in the Private University Libraries in New Town Area**

Housekeeping Operations	AU	SNU	SXUK	TIU	UEM
Acquisition	Not Automated	Partially Automated	Partially Automated	Partially Automated	Partially Automated
Cataloguing	Fully Automated	Fully Automated	Fully Automated	Fully Automated	Fully Automated
Circulation	Fully Automated	Fully Automated	Fully Automated	Fully Automated	Fully Automated
Serials Control	Fully Automated	Partially Automated	Fully Automated	Fully Automated	Fully Automated
Administration	Fully Automated	Fully Automated	Fully Automated	Fully Automated	Fully Automated
OPAC	Fully Automated	Fully Automated	Fully Automated	Fully Automated	Fully Automated

**Table 6. Software used in Library Automation in the Private University Libraries in New Town Area**

Name of the Universities	SOUL	LIBSYS	KOHA	CDS/ISIS	Others
AU	-	-	√	-	-
SNU	-	-	√	-	-
SXUK	-	-	√	-	-
TIU	-	√	-	-	-
UEM	-	-	√	-	-

Table 7, reveals that no library used any repository software like DSpace, Greenstone, Fedora etc in their libraries.

Table 8, shows that two universities namely SNU and TIU were connected with INFLIBNET, remaining three i.e. AU, SXUK and UEM were connected with DELNET. No library

was connected with any other networking system.

Table 9, shows that Sister Nivedita University, St. Xavier's University and Techno India University were using Broad Band service. University of Engineering & Management and Amity University were using Reliance Jio.

**Table 7. Open Source (Digital) Software for Repository or Institutional Repository used in the Private University Libraries**

Name of the Universities	DSpace	E-Prints	Fedora	Greenstone	MySQL	Any other Software
AU	N	N	N	N	N	N
SNU	N	N	N	N	N	N
SXUK	N	N	N	N	N	N
TIU	N	N	N	N	N	N
UEM	N	N	N	N	N	N

\* N=No

**Table 8. Membership of Library Network in the Private University Libraries in New Town Area**

Name of the Universities	INFLIBNET	CALIBNET	DELNET	BONET	ADINET	Any other
AU	-	-	Y	-	-	-
SNU	Y	-	-	-	-	-
SXUK	-	-	Y	-	-	-
TIU	Y	-	-	-	-	-
UEM	-	-	Y	-	-	-

\* Y= Yes, N= No

**Table 9. Internet Service providers in the Private University Libraries in New Town Area**

Name of the Universities	BSNL	Reliance Jio	VSNL	ERNET	TATA	Broad Brand
AU	-	√	-	-	-	-
SNU	-	-	-	-	-	√
SXUK	-	-	-	-	-	√
TIU	-	-	-	-	-	√
UEM	-	√	-	-	-	-

Table 10, describes that all the libraries have OPAC service, self-help, notification service and were linked to E-library. No library had provided documentation service. No library had own library web site. Only St. Xavier's University had its own library web site.

Table 11, describes that SNU and TIU had 10 computers with internet connection and 10 CD drives. Remaining three libraries i.e. AU, SXUK and UEM had 12, 11 and 65 computers respectively with internet connection. AU, SXUK and UEM had 12, 11 and 65 CD drives respectively.

All the 5 libraries had 1 server, AU, SXUK, TIU and UEM had single modem. UEM library had 80+ and SXUK had 151 audio video cassettes. All the libraries had CD/DVDs and Floppies, but SNU library has very low numbers of CD/DVDs and Floppies. SXUK library had 95 microforms and remaining 4 libraries i.e. AU, SNU, TIU and UEM don't have any microforms. SNU, TIU and UEM libraries had individual photo copier and AU and SXUK libraries had 2 Photo copier machines. TIU and UEM libraries had 3 printers, AU and SXUK libraries had 2 printers and SNU library had only 1

**Table 10. Availability of Information Services in the Private University Libraries in New Town Area**

Name of the Universities\	Own Website	OPAC	Documentation	Self Help	Notification	Link to E-Library
AU	-	√	-	√	√	√
SNU	-	√	-	√	√	√
SXUK	√	√	-	√	√	√
TIU	-	√	-	√	√	√
UEM	-	√	-	√	√	√

**Table 11. Availability of Information and Communication Technology (ICT) in the Private University Libraries in New Town Area**

Collections	AU	SNU	SXUK	TIU	UEM	Percentage
Computer	12	10	11	10	65	100%
Comp. Cont. to Internet	12	10	11	10	65	100%
CD Drive	12	10	11	10	65	100%
Server	1	1	1	1	1	100%
Modem	1	-	1	1	1	80%
A/V Cassettes	-	-	151	-	80+	40%
CD/DVD/ Floppy	1200+	50+	107	500+	400+	100%
Microforms	-	-	95	-	-	20%
Photo copier	2	1	2	1	1	100%
Printers	1	1	2	3	3	100%
Barcode Reader/Scanner	2	1	2	3	3	100%
UPS	6	5	10	5	10	100%
Telephone	2	1	2	4	1	100%
Fax	1	-	-	-	-	20%
TV/LCD/LED	3	-	1	1	-	60%
Laptop	2	1	1	1	1	100%
CCTV Camera	10	3	7	5	6	100%
RFID	-	-	1	-	-	20%
Wi-Fi Router	4	2	3	3	4	100%
Speakers Headphone/Ear Phone	40	-	2	-	50	60%
Projector	1	1	3	1	1	100%
Pen drive	1	1	2	1	1	100%
Any Other	-	-	-	-	-	0%

printer. All the libraries had barcode scanner, two libraries (TIU & UEM) had 3 scanners, two libraries (AU & SXUK) had 2 scanners and SNU library had 1 scanner. All the libraries had UPS but SXUK and UEM libraries had highest number of UPS. All the given university libraries had Telephone, computer and internet.

TIU library had 4 telephones; AU and SXUK libraries had 2 telephones, remaining two libraries (SNU & UEM) had 01 telephone. Only AU had Fax facility. AU library had 3 LED TVs; SXUK and TIU libraries had 1 LED TV. Four libraries i.e. SNU, SXUK, TIU and UEM had 01 laptop and 01 library (AU) has 02 laptops. All the given libraries had CCTV facility. Only SXUK library run RFID system, remaining four libraries (AU, SNU, TIU & UEM) don't had RFID facility. All the libraries

had Wi-Fi facility. One library i.e. UEM had 50 head phones for users, AU library had 40 headphones, SXUK library had only 02 headphones for users and SNU and TIU libraries don't have any headphones. All the given libraries had projector and pen drive facility.

Table 12, shows that all the given libraries provided the housekeeping operations like Data processing, Circulation, Cataloguing and serial control, but AU and SNU library do not provide Acquisition service through ICT.

Table 13, shows that all the selected libraries under study provided OPAC, e-Database, e-books, e-Journal, e-Mail Alert, CD-ROM Searching, Online searching, Online Networking, Photocopying, Document scanning service, Document printing service and Online Information Service.

**Table 12. Status of Library Housekeeping Activity in the Private University Libraries in New Town Area**

Housekeeping Activities	AU	SNU	SXUK	TIU	UEM	Percentage
Data Processing	√	√	√	√	√	100%
Acquisition	X	X	√	√	√	60%
Circulation	√	√	√	√	√	100%
Cataloguing	√	√	√	√	√	100%
Serial control	√	√	√	√	√	100%

**Table 13. Status of Library Housekeeping Activity in the Private University Libraries in New Town Area**

ICT Based Services	AU	SNU	SXUK	TIU	UEM	Percentage
Inter University Loan	X	X	X	X	X	0%
Online Resource Service	X	X	X	X	X	0%
OPAC	√	√	√	√	√	100%
E-Database	√	√	√	√	√	100%
E-books	√	√	√	√	√	100%
E-Journals	√	√	√	√	√	100%
E-Mail Alert	√	√	√	√	√	100%
Current Content	X	X	X	X	X	0%
Indexing	X	X	X	X	X	0%
Abstracting	X	X	X	X	X	0%
CAS	√	X	√	X	X	40%
SDI	X	X	X	X	X	0%
CD-ROM Searching	√	√	√	√	√	100%
Online searching	√	√	√	√	√	100%
Online Networking	√	√	√	√	√	100%
Document Delivery Service	X	X	X	X	X	0%
Photocopying	√	√	√	√	√	100%
Document Scanning Service	√	√	√	√	√	100%
Document printing service	√	√	√	√	√	100%
Online Info. Service	√	√	√	√	√	100%
Newspaper clipping scanning service	X	X	X	X	X	0%

Amity University, St. Xavier's University provided CAS service. No library provides SDI service, Inter University Loan, Online Resource Service, Current Content, indexing and abstracting services, Document Delivery Service and Newspaper clipping scanning service.

### Major Findings

- All most all the libraries have computerized issue return system. They also maintain card side by side. Only techno India does not follow any card system. Even it doesn't use book cards
- All the university libraries are providing Rs.1 to 5 lakhs for traditional services. Two of them (AU and SNU) are providing Rs.1 to 5 lakhs for ICT application and three (SXUK, TIU and UEM) are providing Rs. 6 to 10 lakhs for ICT applications
- All the libraries subscribe e-resources, like e-book and e-journals. They subscribe J-Gate, IEEE, EBSCO etc. They also keep CD/ DVD/ Floppies. Only St. Xavier's University keeps some microforms
- They all provide OPAC facility to search the documents through computer
- Only TIU Library purchases Libsys as ILMS, other four libraries use koha for ILMS
- Except SNU and TIU remaining all three university libraries subscribe DELNET
- No library has repository software, like D-space or Green stone
- While examining availability of ICT, all private University libraries have computers and are all connected to Internet
- All of the universities have CCTV and WIFI facility
- All the libraries are very new. So they need more time to overcome the problems. The libraries are not fully automated. ICT is applicable in some portion of the library housekeeping operations
- Five private university libraries use computerized system for issuing reading materials to their users. The four university libraries i.e. AU, SNU, SXUK and UEM also follow the card system except TIU. Only SNU library follow the register system but others university not follow this system

### Conclusion

The study highlighted on ICT application offered in selected private universities in New Town area, to find out their resources, collections and equipments available for the use of students. All five universities are enabled with e-resources and provide digital services.

All the university libraries are more or less automated with Koha and Libsys and all 5 university libraries use anti-virus software to ensure safety.

Almost all the university libraries are equipped with computers, printers, barcode readers, scanners. RFID system

is operational at SXUK library, no other universities has RFID system.

Five university libraries have got bibliographic databases. They also have access to online databases to retrieve information.

It can be concluded that utilization of ICT in private university libraries is satisfactory in spite of restricted distribution of ICT in libraries.

\*\* ICT implementation in libraries will alter both the physical environment of the libraries and the users that utilize them. The fundamental issues with the expansion of ICT in university libraries, however, are a lack of infrastructure, effective planning, oversight. The operation of the library and the provision of effective and efficient library services are significantly altered by library automation. The automation of libraries is still in its infancy. The difficulty for library staff is to balance the purchase of print and electronic materials to fulfill user demand. Through automation, library staff can manage operations more efficiently and give customers top-notch service. ICT application in library operations is a phenomenon that cannot be avoided, there is no way for university libraries to escape it. The results of this study have given valuable information that will help library professionals and university authorities make informed decisions about how to use ICT-based resources and services more frequently.

### Suggestions

The following are some suggestions which can make the private university libraries more competent, more efficient and effective one:

1. AU and SNU libraries require more budgets for ICT resources as well as traditional resources.
2. SNU needs more computers for digital section and also requires a separate digital section.
3. SXUK library follows very strict rules which do not make the library freely accessible for outside users.
4. Besides the SXUK library, the RFID system should be introduced in four other university libraries i.e. AU, SNU, TIU and UEM.
5. All the five libraries require institutional repository software for document digitization.
6. All the five libraries need to acquire more hard copy journals, as well as e-books and e-journals.
7. Libraries ought to be financed from all sources, so libraries can buy more ICT apparatus.
8. Libraries ought to give online journals/ magazines/ e-database for their users.
9. Libraries should use most recent software for their users.
10. Libraries should buy and give more ICT application to their users.
11. Libraries ought to give all housekeeping activities by ICT to their users.



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