



**APPLICATION OF ICT IN LIBRARY: WITH SPECIAL REFERENCE TO BURDWAN
UNIVERSITY CENTRAL LIBRARY IN WEST BENGAL**

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Abstract:

Advancement of ICT in the library has changed the way of information and communication. Nowadays libraries are adopting new and innovative technologies for quickest and approachable information dissemination. The present study gives the technology awareness and use of technologies in the library. This paper discusses library operations and services using varieties tools of ICT with special reference to central library of Burdwan University. The current study highlights the area of library activities, operations and services where ICT can be applied. Generally this paper explains how to perform the different technologies in library operational work and how the library services are quickly delivery their services with the help of technologies such as RFID reader, Quick Response code, CCTV, OPAC etc. applied in the paper. This paper discussed library operation introducing housekeeping operation with various technologies.

Keywords: ICT, Library Services, Library Operations, Library Automation Software, Burdwan University Central Library, Digital Library.

Introduction:

Information and communication Technology (ICT) is a comprehensive concept that includes computer technology, communication technology and repro-graphic, micro-graphic and printing technology. ICT means information transfer & share by the technologies, in which information is delivered through electronic gadgets, devices and signals. The information such as spoken, words, text, photographs, live sense and sounds is first converted into signals and then sent through electronic links with the help of ICT. ICT involves with sending, receiving and processing information in electronic form. Due to information overload, information explosion and remarkable growth of knowledge, there is need to use ICT for improving library operations and services. ICT includes networks and applications. Satellite telecommunications, wireless and broadcasting networks with ICT, internet, database management system and multimedia tools are the applications of ICT. The concept has brought a phenomenal changes in the collection of data/information, store, preserve, manipulate, retrieve and



dissemination. ICT makes library operations and services faster, easier, accurate, cheaper and effective. Remote search, access is enabling through network system. It helps to manage information overloaded as information manipulation and retrieval is made easier in computer systems. Computerization reduces space and reduces paper.

ICT play a pivotal role for sustainable growth and development of library operations and services and due to covid-19 pandemic situation physically visit of library is totally stoped, so with the help of technologies librarian and library professionals are delivery their services to their patrons & most of the housekeeping operations have completed using software and technologies. In this way libraries are shifting from traditional to hybrid, central library of Burdwan University also shifted from traditional to hybrid. Information and Communication Technology (ICT) replace the manual work and enhances the function, activities, operations and services of the library. Library management system of Central library of Burdwan University has revolutionary changed from housekeeping operation to users orientation programme to introduce the technologies and library software with high speed internet connectivity. Central library provides various library operations and services using ICT in their library such as access to OPAC, Web OPAC and MOPAC, library housekeeping operation, automated circulation, e- resources, e- theses, repro graphic service, databases, repository service using D- space etc. Using technology and software in library cost of the library materials is minimal, space is also reduced, users can access library materials any time anywhere. So increase the operational activities and improve the services quality using ICT in library. The Burdwan University central library is situated in the middle of the campus, it is a three- storied building. Opening time of the central library is as usual its natural time i.e. from 8.00 a.m. to 7.00 p.m. from Monday to Friday and from 10.00 a.m. to 5.00 p.m. on Saturday, except holiday. ICT play an important role for traditional activities have transmitted to automated of central library, it also offers institutional repositories, provide CAS, SDI, new arrival of documents and other value added information services and training, orientation programmes for library staff and library users. This study attempts to assess the Burdwan University central library is changing their operational works from traditional to hybrid and delivery their services with the help of technologies.

Literature Review:

Thein Thein Soe (2020): explain teaching and learning with ICT in library in the 21st century. Education policies have been revolutionized introducing ICT in library system in the 21st century. Access to information, search and downloaded require information is very easy using ICT with high speed internet connectivity from anywhere in the globe. So information is gathered, transfer using technology. Technology-based teaching and learning which are deals with the utilization of technologies for teaching and learning in libraries.

Bharathi K and Sujata HR (2019): described that digital libraries of Engineering Colleges affiliated to the Visvesvaraya Technological University (VTU) in the state of Karnataka, India. Students and faculty members use digital information resources or digital contents for their project works and study. The study depicted that with mean value of 2.28 ± 0.89 . The Mann Whitney test shows that there is a significant difference in utilization



between student and faculty members $asp=0.000<0.01$, which implies that digital information resources are used to a larger extent by faculty members and than by students. An impressive 88.9% of respondents are of the opinion that digital library services are superior to conventional library services. The digital library utilization and its purpose are correlated using Pearson correlation and its significant value $r=0.489$, $p=0.000<0.01$ proves that user dependency on digital information resources is positively increasing in the respondents' activities has an impact on their academic pursuits.

Madaiah Krishnamurthy, Roopa and Subhash Reddy (2018) studied and investigated that e- resources, software are used in Engineering college libraries. Librarian and library staff also changed their professional attitude to take orientation/training for handling e-resources and software in their library. They provide library operation and services to the patrons rapidly and efficiently in the 21st century. The study depicted 150 Engineering colleges in Karnataka, India. E- resources collection development & its effective used by the librarian has been described in the study. Most of the library are provided digital library services & meet the users need. **Bhoi,**

Narendra Kumar (2017): described ICT use in library for library operations and library services. Use of ICT tools, social media, library security, QR code, digital library, resource sharing, library automation software and various library services provided using ICT in library.

Biswajit Das and Juran Krishna Sarkhel (2017) Studied and investigated that how to perform Private Engineering College Libraries in West Bengal. Every Private Engineering College Library brief description has been given by the authors.

Rajawat (2016) studied that information technology facilitates improved management of physical and financial resources. The advances in technology and its availability at lower cost, has also raised expectations of users from librarians and libraries. The new information technology, on one hand, facilitate wider access to information for the library users, on other hand, it facilitates wider dissemination of information products and services generated by the library. The availability of network facilitates resource sharing and high speed communication with other libraries.

Sengupta and Mete (2015) explained that ICT includes computer, network, hardware, software, tools and technologies etc. Library activities, functions, operations and services are provided with the help of ICT. When such technologies are used for educational purposes, namely to support and improved the learning of students and to develop learning environments, ICT can be considered as a sub field of educational technology.

Akhtar Hussain & Lavanya N.(2014): The paper examined the application of technologies in library operations & services at Indus Business Academy, Bangalore. Impact of ICTs, aims and objectives, use of Internet, and hindrance of the users in using the ICT in library and information centre. Explained the satisfaction level of users regarding research work using such technologies.



Gajanan P. Khiste D.B. Maske Dharmaraj K. Veer (2011): they described the utilization ICT, purpose of ICT in library operations and services, profitable benefit of ICT to library, Role of library professionals to use ICT in library and information centre, application of ICT on Library and information centre. Working environment in libraries with the help of ICT. Users get their require information very fast using ICT.

Objectives of the Study:

This study is designed and carried out with the view to determined the following objectives:

- To explore the knowledge of the super excellent application of ICT for faster library operations and services.
- To explain various tools of ICT used in library and information centre.
- To trace the advancement of ICT in Library.
- To give instruction the library staffs for library automation using ICT.
- To describe a new avenue for online cataloguing (OPAC) and classification.
- To describe the use of OPAC and Web OPAC, MOPAC as search platform to library e-resources.
- To enhance the awareness between librarian and users on the use of OPAC, Web OPAC and MOPAC for library resources.

Implementation of ICT Tools & Technique:

Central Library of Burdwan University apply tools & technique for searching and accessing information. Following are the ICT tools for searching, accessing and downloading information for communication purpose of the users.

Computer as a Communication Tool: central library of Burdwan University is a hybrid library. Information widely transfer and share through computer. Advent of Computer in library has revolutionary changes the way of communication. Information search, access and download through computer is easy.

Software Technology: Set of instructions that tell the computer what to do. Software accelerate the library work, software used for library operations and services. Burdwan University central library used latest KOHA, D- space software. KOHA used for library automation such as accusation, classification, cataloguing, circulation, serial control and report etc. KOHA is an open source library management software. Automated issue/return has been started through latest KOHA in the circulation counter of Burdwan University central library. Another important services are provided using OPAC, web OPAC, MOPAC etc. email notification for over due books. D- space is a digital management software, it is a repository software.

Communication Technology: Burdwan University central library use e-mail for providing require information at right time. Central library is using this live tool to alert for return, renewal and overdue of library document. Picture, sound, text, image etc. Send and receive from anywhere in the globe as soon as possible using



electronic devices and high speed internet connection. E- mail can be consider such type of communication medium.

- Voice mail: it is a kind of emerging electronic device which supplies voice through mail. It assists to send the mail through voice as soon as possible. No need to write a letter/ text.
- Mobile phone: mobile phone replaces the telephone due to handy, portability and easy to use mobile phone. MOPAC library services provide for the patrons of the university. Users ask their queries regarding their required information over mobile phone, even they can renewed, reserved their necessary document. Users also know the new arrivals of the documents in the library.
- Fax: In this digital form the documents scanned & transferred using communication technique. This device is used commonly official purposes. Central library of Burdwan University send official letter, communicate with the vendors fro various purposes such as document order and bill payment etc.
- Video conferencing: two or more then two participants at difference places using network/internet conduct conference & exchange their opinions & transmits information. The participants are also using mobile camera, micro phone and speakers on the devices. To conduct user orientation program this tool is used in the central library. Due to covid -19 pandemic situation, this is needful for the users regarding e- resources.
- Internet: Central library of the Burdwan University manage their operational work and provide information resources and services through internet. Internet is the main component of ICT. Due to covid -19 pandemic situations without internet library would not provide services. It is the network of networks that electronic devices, it provide vast range of e- resources, e- theses & dissertations and services such as automated circulation using latest KOHA , check-in & check-out, electronic mail alert for renewal & overdue charges, transfer and sharing e- file.

Library Security & Privacy: One of the role of ICT is security, privacy and surveillance of library resources/materials through electronic devices. Privacy and security of the library e- contents must be under control by using various technologies such as RFID, CCTV etc.

- RFID Technology: RFID is one of the best technology invention in modern library for privacy and security of e-resources. Modern library have adopted RFID technology to provide effective, efficient and enriched services. By providing quick , easy and user friendly services RFID maintain the fourth law of library science. Central library of Burdwan University also used RFID technology for their privacy and security of e- resources.



- Closed - Circuit Television (CCTV): Closed - Circuit Television plays an vital role as video surveillance in modern library. Librarian of the Central library of Burdwan University observes the whole activities of libraries through the CCTV. It also looks after the library professionals & patrons, what are they doing in the library premise. CCTV protects the resources from theft, mutilation.
- Quick Response (QR) Code: QR code technology is just like the Bar code technology. QR codes are used to the library for promoting their services. QR code used for faster access to information with high resolution camera of mobile phone. QR saves the resources from theft.

Digital Library Project: Computer and network is the main components to form a digital library. Central library of Burdwan University have internet connectivity with computers and mobile phones. Central library of this University converted and modified their printed documents into digitized content. Digital library as online library or internet library contain digital objects such as text, image, audio/video and digital media formats. The digital content of Central library of Burdwan University may be store locally and access remotely through computer networks. These information store, retrieve and manipulate systems are able to share/transfer information with each other. Digital library project have started after discussed every policies of Institutional Digital Repository (IDR). Greenstone Digital Library (GSDL) and scanner have installed. Teachers, faculties and other staffs have informed to provide their publications, learning objective, bio-data for continuous uploading in the digital library project. Central library organized a training programme for the awareness the scanning and uploading in GSDL. Central library gathered documents from every department time to time and upload in the Digital Library Project. GSDL collect and store all kind of digital contents that make include faculty publication, lecture notes, researcher's theses, student's dissertations, PG level question papers, NET/SET up to date question answer, learning objects, project report, gray literature and necessary photographs etc. Successfully and effectively uploaded from every terminals with very good user interface, so central library select GSDL for digital library project. Central library kept, preserve & conserve manuscripts and old write ups for future use in Digital Library Project. Burdwan University are using D- Space (Digital Space) and GSDL software for university digital repository. D- space is very much popular as its simple workflow and consistency. To serve the different communities information needs of Burdwan University 24x7 digital repository software (D- Space, GSDL) help them. In the time of covid-19 pandemic situation it supplies a new avenue for acquired their require information. E- resources of Burdwan University central library are available under e- shodh Sindhu consortium. We can search, access all the e- resources through <http://buweb.buruniv.ac.in>

Resource Sharing: The position of E- resource centre is north east side of Central library of Burdwan University. E- resource centre is well equipped with computers and high speed internet connectivity. E- resources can be subscribed under e- Shod Sindhu (earlier UGC Infonet) project by the University. Users can access, search and download their require information. beside this some other e- resources are also subscribe by the University for their patrons. 1661 theses have been digitized under UGC shodganga project. Patrons are



request to visit <http://shodhganga.inflibnet.ac.in> for electronic theses. ICT is very important for co-operative acquisition, co-operative processing (Cataloguing and Classification), sharing both human and material resources (e- resources), networks, joint training of staffs etc.

Application of Library Automation Software: Use of library automation software in library reduces the human involvement for operations, services and other activities. Library automation replaces the manual works and introduce machine to provide better operations and services. Use of this technology library provides maximum operations and services with minimum time and lowest cost. Central library of Burdwan University are using latest KOHA (Open source software) integrated library management software. Latest KOHA & Debian Software version used in the central library of Burdwan University. Debian GNU/Linux , free and open source software. KOHA software performs acquisition, cataloguing, classification, circulation, serial control, stock verification etc. These are the library housekeeping operation. The applications of ICT in the central library of Burdwan University are as follows:

- **Acquisition:** Order of library documents, duplicate copies should be checked and price of the materials are checked very effectively and efficiently by the technology. Librarian received users demand for purchasing library materials through online have become very easy. For purchasing library materials Central library of Burdwan University publish tender time to time through online and off line. Invoices can be downloaded from the websites.
- **Cataloguing:** Bibliographic details of library resources are kept in catalogue card. With the help of ICT remote access is possible through OPAC, Web OPAC and MOPAC. Without cataloguing to search and find library materials is very difficult. The cataloguing work has been made very easy with the help of technology and software. Central library of Burdwan University are using OPAC, Web- OPAC and MOPAC for searching, access and download the library materials from the remote place. Resources such as books, journals, microfiche, cartography, audio, video, CDs, pamphlets and theses etc. are catalogue through online software.
- **Classification:** With the help of technological development Burdwan University central library classifying their documents through online tool. Whole bibliographical record of the central library resources can be received through online catalogue tool. Central library provide classification details in their catalogue record, online resources of the central library can be classified. Web, web dewey, OCLC Classifying are the online classification tools.
- **Serial Control:** journals, periodicals are the important current documents of the central library of Burdwan University. The following tasks can be carried out with the help of software for serial control such as

1. Present holding (journals) of the central library.



2. Tracing issue to the patrons and missing volume.
3. Periodical list preparation according to their university budget.
4. Preparation of University budget for periodical subscription.
5. Publishers, vendors will be provided online letter for journal subscription.
6. Subscription of nascent online journals.
7. New arrivals of journals, periodicals and magazines etc.

- **Circulation:** Circulation section of Central library of Burdwan University remain open from 10.30 a.m.to 4.30 p.m. every day except holiday. Circulation section now uses technology & software to provide easily services to their patrons. Library materials issue/return is the main function of circulation section. In covid situation patrons are getting their required information through electronic devices using internet. Nowadays, users depend on the library software, OPAC, Web OPAC, MOPAC & mobile phone, etc in the central library for the everyday activities of circulation.

In the circulation section the following below tasks and duties are shown by using ICT

1. Issue, return
2. E-mail alert and reminder letters for overdue books, journals.
3. Renewal
4. Display of new arrivals.
5. Library materials reservation.
6. Library user's card.
7. User orientation programme.
8. Statistic of check- in & check- out per day.
9. Assisting users in searching OPAC, web OPAC and MOPAC.

- **Stock- taking/Verification:** One of the most important work is stock- verification in library. Library use computer for stock verification. Stock or library e- resources are available in the library is copied through RFID reader and data are stored. These gathered data are compare with the available data in library automation software. In this way we can find how many books/journals have lost and damage in the library.

Library Services Using ICT : :The central library of Burdwan University are provided the following library services using information and communication technology (ICT).

1. OPAC – E-resources can be search and access through web OPAC. Users can get their required e- resources through e- Shodh- Sindhu consortium. So users must have visit the website <http://buweb.buruniv.ac.in>. Mobile phone is handy, portable, easy to use, so users are accessing their require information through MOPAC using mobile phone. File transfer, sharing information is easy with mobile phone. Screen shorts are an important service of mobile device.



2. Reference service: In the reference section of the central library the role of ICT are as follows:

- User asks their queries using computer, laptop with internet connection through e-mail and get answer from reference librarian quickly and easily.
- Reference services are supplied to the users through online electronic devices.
- **Repro-graphic Service:** Repro-graphic section is situated in the ground floor of the central library of Burdwan University. Photocopy and reproduction of documents using technology has become accessible. Printed document are converted into digital form with the help of technology such as scanner, software. This service is provided to the library patrons for photocopy of some pages of books, journals and other reading materials at nominal prices.
- **Document Delivery Service:** Computer and internet are used for document delivery services. The documents are converted into digital content with the help of technology after that these can be received at anywhere in the world using electronic gadgets. Document can be retrieve and disseminated to the user on demand.
- **Bibliographic Services:** Computer and internet are convenient with bibliographic services. This service is provided on demand of the researchers/scholars. This service is provided two ways, one is this service without abstract and another is with abstract or brief description of the document.
- **Database Search Guide:** E-resources or data can be searched and retrieved from database. Basically libraries provide the library searching guidance through the website. Searching guidance help to the scholars for their required e- resources.
- **Bar code processing with RFID compatibility:** Library materials track, locate, store, access and shared in an online platform. RFID also provide strong surveillance, security and privacy of digital contents.
- Remote search, access & download e-resources through online provided by e- Shod Sindhu.
- For the benefit of the users especially researchers & faculties online e- resources are supplied with the help of technologies.
- Remote search & access to e- resources of central library of Burdwan University using online provided by Shodganga (e- theses and dissertations).



- Central library of B. U. is one of the subscriber of National Digital Library of India.
- Due to covid-19 pandemic situation physically visit to the library is stoped, so training/orientation programme for the library staffs has been arranged time to time for providing better services using software & technologies.
- 24x7 D-Space used for NET/SET Question papers and other competitive examinations etc .
- Plagiarism checking through 'URKUND' software.

Findings:

Application of ICT in library the findings are as follows:

- Users are getting their require information through various technologies with high speed internet connectivity.
- Latest software such as latest version of KOHA, D- space with Debian operating system provide the information to the patrons without loss and damage of data/information.
- Easy to access OPAC through laptop, mobile phone and any other electronic gad-gates from anywhere any time in the globe.
- Now a day's electronic devices use is increasing in libraries due to handy, portability, easy to search access and download required information within 24×7 round the clock wise from anywhere.
- ICT changing the relationship between library, resources and users by expanding library services and posing new challenges to user.
- E- resources can be search, access and download from many electronic devices any time in the world, only need username, password that is login the particular library.
- Security and privacy of the library is very important because 24×7 resources are available on web to prevent damage and loss of data.
- Financial constraints are the major hindrance for the growth of technologies at central librar . of Burdwan University. As a result the implementation of ICT facilities for central library are not getting adequate support from the university.



- The LIS professionals should provided with the training for online communication tools (blog, podcast, wikis, RSS, content management, etc.) to make them confident users. This also empowers librarians with high specialized knowledge and skills.
- The dearth of technological expertise among staff members of libraries and increasing staff reductions in library.
- Technologies have potential to facilities teaching and learning in a great extension.

Conclusion:

The use of internet increases rapidly, future of internet depends on technology due to tremendous use of electronic devices. So, this is the golden opportunities of the libraries to re-thinking and re- modelling library operation and services to adopt the emerging technology facilities in their libraries. As a result application of technologies to provide library services will open new avenue. Use of emerging technologies has become a boon in modern libraries. To adopt new tools and technologies in the libraries, libraries change their outlook and become dynamic in nature and to develop new kind of relationships with users. Burdwan university central library have well equipped collections & used technology to provide better services to their patrons. Latest KOHA, OPAC, Web OPAC, MOPAC facility is available in the central library. E- Resources are available under E-Shodh Sindhu Consortia E- resources can be search, download and accessed from the university central library and E - resources subscribed by the university. Electronic theses and dissertations are available in UGC Shodhganga Project. So library reached to the users hand with a finger-trips.

Recommendation:

- Infrastructure: introduction of ICT in libraries, infrastructure has been changed from traditional to hybrid. Libraries would be well equipped with modern tools and technologies for library operations and services.
- Trained manpower: Application of emerging technologies in libraries need well trained library professionals. Librarian should have knowledge of hardware and software. How to access resources in libraries, so orientation or training programme should be conducted frequently.
- Cost: Initial cost for purchase, installation of technologies, hardware and software are quite high. Due to financial crisis most of the libraries are not adopted hardware, software, many more accessories and electronic gadgets etc. So central government, state government and UGC should provide adequate funds.



- No geographical restriction: users can access information from anywhere and time, so data may be missed, damaged, and librarians should be very wary about library resources. So need strong security surveillance of the library.
- Green Library: To reduce negative effects and increase positive effects in the library using ICT in library.

References:

- Anunobi, C. V., & Edoke, B. E. (2010). Use of ICT facilities for serials functions in Southern Nigeria Federal University Libraries. *Library Philosophy and Practice (e-Journal)*, 355.
- Ghuloum, H. (2012). The utilisation of new ICT services in academic libraries in the state of Kuwait: An interpretive case study (phd). Salford : University of Salford. Retrieved from <http://usir.salford.ac.uk/26690/>
- Haneef, M. (2009) "Application of Information and Communication Technologies in Special Libraries in Kerala (India), *Library Review*, 56(7) , 603-620.
- Bhoi, N. K. (2017). Use of information communication technology (ICT) and library operation: An Overview. *International Conference on Future Libraries: From Promises to Practices*. 445-454.
- Singh, A. (2013). ICT and its impact on library and information services: A case study of Kendriya Vidyalaya Libraries. *International Journal of Science and Research*, 4(1), 754-770.
- Hussain, A.(2013). *ICT Based Library and Information Services*. Ess Ess publications, New Delhi,(ISBN No. 978-8170006947)
- Tekale K.U., Veer D.K.,& Rathod S.N. (2010, January). 'Impact of information communication and technology on library and library services. *Academic Libraries on New Horizons Conference Papers Seventh State level Conference of Library and Information Science Study Circle, Amravati*, pp. 133-136.
- Ahmad, N. and Fatima, N. (2009). Usage of ICT products and services for research in social sciences at Aligarh Muslim University. *DESIDOC Journal of Library & Information Technology*, 29(2), 25-30.
- Central Library of Burdwan University: The University of Burdwan. (2016). Retrieved from <http://www.buruniv.ac.in/>



- Central Library of Burdwan University: The University of Burdwan. (2016). Retrieved from <http://shodhganga.inflibnet.ac.in/>