

# GYANKOSH

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# INNOVATIVE LIBRARY SERVICES: TOOLS AND TECHNIQUES IN THE DIGITAL ERA

D D Lal <sup>1</sup>

**Abstract**

*The main emphasis of our life today is technology. The impulse to stay linked to the outside world through technology does, in fact, influence a great number of areas of our behaviour. Children and teenagers no longer desire to spend a few quiet hours reading at the library. Instead, they prefer a speedy, technological fix for everything. The younger generations need to be attracted by newer, more intriguing techniques because information seeking behaviour is continually evolving in this digital age. This also holds true for using the library. Educating young users about the library's resources and services is a problem for today's librarians.*

*This article explains what the new-era librarian can do to try to solve this problem. There are various ways to turn this threat into an opportunity. This also emphasises the various ways that a library might draw in young people by making information quickly available at their fingertips. The chance to use the library in a different way will encourage reading among children and the younger generation both directly and indirectly.*

*The digital environment has revolutionized the way that libraries operate, providing new opportunities and challenges for library services. Innovative Library Services in the digital environment have emerged to meet various challenges, such as Virtual Services, Mobile Services, Data Services, Collaborative Services, and Personalized Services etc. Innovative Library Services in the digital environment are changing the way that libraries operate and providing new opportunities for libraries to serve their communities. By leveraging digital technologies and data, libraries can provide more accessible, relevant, and effective services to their patrons, supporting their lifelong learning and research needs.*

**Keywords:** *Innovative, Library, Services, ICT, Digital, Technology, Communication;*

**Introduction**

The major goal of libraries and information centres, which are non-profit organizations, is to provide people with timely, reliable, and affordable information. When all functions and services are offered to users electronically, libraries and information centres are said to have these features. ICT use in libraries and information centres has made it possible to provide consumers new services in the digital sphere. In addition to e-books, e-journals, bulletin boards, newspaper clippings, personnel control information, and library marketing & promo services like charts utilizing instant messaging, resource sharing through consortium, new arrival services, CAS, SDI, etc., there are many other examples of digital library services, including e - mails, web forms, text-based

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chat services, web-based services, ask-a-services, digital robots, and cooperative services.

The successful use of information technology can mean the difference between success and failure in today's world, especially in the areas of information management, business, and governance. Because of the competition posed by reputable information sources like Google, Amazon, Wikipedia, Myspace, etc., there is considerable question regarding the future of libraries. Information and communication technology (ICT) innovation has also changed how libraries and information services are provided.

Social media, which are increasingly used by users in the twenty-first century and include LinkedIn, Facebook, Twitter, Google+, and others are important to libraries and provide new issues for them as they try to meet the expanding requirements of their patrons. Data can now be accessed without restriction from anywhere at any time in the digital age. Social interactions take place on social media between individuals who are connected or affiliated in some way. It includes, among other things, blogs, facebook, social networks, podcasts, mashups, YouTube, rss, flickr, tag clouds, folksonomy, wikis, myspace, and twitter.

The newest trends are being used by libraries nowadays, especially in western nations, to increase customer satisfaction and popularity of their services. These days, everyone is talking about library 2.0, 3.0, and innovative services and their applications.

**These are the some of innovative library services in current digital environments:**

- (1) **OPAC and Web OPAC for Searching library materials:** A database of a library or collection of libraries called the Online Public Access Catalogue allows any library user to access it and learn about the study materials (such as books, CDs, DVDs, cassettes, videotapes, articles, etc.) that are accessible in the library or libraries in question. With the use of Web OPAC, library patrons can access OPAC from the comfort of their homes. Users can save time with such an innovative solution.
- (2) **RFID Systems:** An electromagnetic field-based wireless system called Radio-Frequency Identification (RFID) uses radio waves. This system tracks and automatically recognises the chip that is attached to the library's books and materials. It is one of the self-service programmes where a library patron can take the books he needs and automatically have the library record the books' identification, the patron's name, as well as the date the book was issued.

- (3) **QR Code:** Sometimes referred to as 2D codes, 2D barcodes, or mobile codes, the QR (Quick Response) code is a matrix barcode that can be read by smartphones and mobile phones with cameras. These codes may be connected to videos, music, websites, or other data. The libraries can use this number to identify online electronic holdings of print items or subject guides in stacks or even the magazine/journal section. Visualead, QR-Code Monkey, QR-Code Generator, QFuse, and Unitag QR are some excellent tools for creating QR codes.
- (4) **M-Library:** Nowadays, practically everyone owns a mobile device. The provision of library materials via a mobile device, or M-library, is therefore a crucial responsibility for the library professional. This M-Library can help with the implementation of issue/return/renewal notice and reference service by Text messaging and phone call, which are both strongly compatible with mobile devices. This can help with library portals, Online public access catalogue, Discovery service, Remote access, as well as the process of implementing these features.
- (5) **Cloud Computing:** Cloud computing, which allows information to be made reachable from anytime, anywhere, and from any device through the internet, is now a growing sector in the library that will improve services for its users. Some services offered by the library are cloud-based, including remote access, a discovery service, and an anti-plagiarism tool.
- (6) **Electronic Resource Management System (ERMS):** It is crucial for any library to adopt ERMS to manage electronic resources in a systematic manner and to make the best use of them. Numerous ERMS programmes are available, including TDNet ERM Solution, Alma, CORAL, and Innovative ERM.
- (7) **Content Management System (CMS):** There are a number of software programmes available to create a dynamic library portal, including LibGuideIt, Joomla, Drupal, and Wordpress under Content Management System.
- (8) **Artificial Intelligence (AI):** Artificial intelligence is the simulation of human intelligence by technology, particularly computer systems. These include reasoning-using rules to arrive at approximations or firm conclusions-learning-acquiring knowledge and rules for utilising it and self-correction. Machine vision, voice recognition, and expert systems are some specific uses of AI. A voice-enabled, embodied artificial intelligence (AI) chatbot named "Plutchik" recently came into being. It is capable of conducting extremely complex medical searches within and across the NCBI suite of databases. Virtual Reference Librarians

is a term that can be used to describe this technology in libraries (Chatbots).

- (9) **Virtual Reality (VR) and Augmented Reality (AR):** The Virtual reality (VR) is the computer-generated replica of a three-dimensional (3D) picture or environment that allows a person to communicate with it in a manner that appears real or physical using specialised electronic devices, such as with a helmet with a display inside or gloves fitted with sensors. Augmented reality (AR) is the use of technology to superimposes digital data on a picture of something.
- (10) **Gesture-based Computing:** Interfaces that let users engage with digital resources using their bodies rather than standard input methods like a keyboard, mouse, game controller, or voice recognition. Users with impairments may have greater or simpler access thanks to this interface. People with visual impairments or other disabilities may have far greater access to computer systems in libraries thanks to this technology. Action recognition interfaces are being created for reading facial expressions, gestures, head and body motions, and eye movement (or enhanced).
- (11) **Crowdsourcing:** By incorporating a large portion of the public and allowing them to add comments, tags, and reviews, libraries can use this technology to improve the quality of its data, information, and resources. With a vast and varied collection, this outcome improves the quality of information and fosters a sense of civic ownership and accountability for cultural legacies and untapped knowledge. For this, the library can make use of Web 2.0 and Zooniverse.
- (12) **Internet of Thing (IoT):** It is a computer idea that envisions a time in the future when commonplace physical objects would be able to connect to the Internet and recognise one another. It keeps track of programme attendance and room usage to check the humidity levels in particular collections. It provides information on library resource use and a map showing the busiest regions.
- (13) **3D Printer:** The library has a 3D printer that patrons can use to build three-dimensional solid objects from digital files. In this printing method, material is added in layers until the desired object is made.
- (14) **Learning Management Systems (LMS):** Implementing learning management systems like Moodle, MyClasses, Torch LMS, as well as Easy Campus for the management, documentation, reporting, tracking, and delivery of online/electronic educational technology (also known as e-learning) education courses or training programmes are another way the library can assist the organization.



- (15) **Web 2.0:** Although the library profession has already used this technology to a large extent, it is crucial to update with current information and tools. The increase of types of direct networked operator participation, such as the production and dissemination of information and online content, was made possible by the second generation of tools and services made available online. This tool can be used by the library to store and distribute material electronically. The tools for this technology are email, blogs, forums, wikis, social networks (such as Facebook, Twitter, and LinkedIn), search engines (such as Bing, Google, and Yahoo!), and systems for connecting, publishing, producing, and interrelating with pictures/images, music, sounds, and videos (such as Google Voice, Flickr, Skype, Podcasts, Videocasts, YouTube, Windows Live Messenger etc.), as well as RSS Feeds.
- (16) **MakerSpace:** The purpose of makerspaces in libraries is to support individuals in accessing resources that aren't typically available in their homes, to provide opportunity for them to collaborate on projects with others, and to provide social spaces for both creative and practical activity. They are advertised as places that emphasise active participation, play, and above all, pleasure. By expanding makerspaces to knowledge spaces, the library makerspace. Woodworking, laser cutting, computer programming, robotics, 3D printing, self-publishing, welding, and collaborative workspaces are some of the makerspace resources that libraries provide.
- (17) **Remote Access and Single Sign-on:** Libraries have the option to use RemoteXS to implement remote access to electronic resources. Outside of the campus, users can access and download full-text electronic materials. The remote access is an authentication and authorization service for one-time access. Libraries may also choose different remote access solutions, such as EzProxy, VPN, Shibboleth, OpenAthens, etc., depending on their needs.
- (18) **A to Z Link and Open URL Link Resolver:** The user can access full-text resources using Open URL link resolver, i.e., 360 link, using the A to Z link and open Link Resolver. Other products like SFX, OCLC Link Resolver, EBSCO Link Resolver, etc. can also utilise this technique.
- (19) **Institutional Repository (IR) Services:** An institutional repository is a digital platform for collecting, preserving, and disseminating the scholarly output of a particular institution. Library services in institutional repositories include activities such as collecting, organizing, and making available the research and other scholarly output of an institution in a centralized online location. This includes

materials such as preprints, published articles, conference papers, theses and dissertations, data sets, and other digital resources. The goal of institutional repository services in libraries is to provide a centralized platform for managing and sharing institutional knowledge, promote the visibility and impact of the institution's research, and preserve the institutional legacy.

**(20) Library Portal:** For easy access to a variety of information, including resources (print and electronic), services, rules and regulations, news, events, and indexes, the library can create a portal. It is advised that library portals be clear, streamlined, simple to use, and age-appropriate in terms of text colour and contrast. Jargon from the field of library science that may be difficult for users to understand should also be avoided.

**(21) Web-scale Discovery Service (WSDS):** A web-scale discovery service is a type of library technology that provides users with a single search interface for accessing a wide range of library resources, including physical and digital collections, databases, and other information sources. The goal of web-scale discovery services is to provide a more user-friendly and efficient way for patrons to search for information, by allowing them to search across multiple collections and sources with a single query. This type of service typically uses advanced indexing and search algorithms to deliver relevant results from a large and diverse set of resources, and can provide a centralized access point for a library's collections and information sources. The goal is to provide a more streamlined and convenient way for patrons to find the information they need, without having to navigate multiple search interfaces or platforms.

Additionally, the OPAC and library portal have incorporated the one search box. The user can save time by using this service to quickly find the information they need across a wide range of sources and formats. A library may choose from a variety of other discovery service technologies, including EBSCO Discovery Service, VuFind, Primo Central, Worldcat Discovery Service, etc., depending on their needs.

**(22) Integrated Library Management System (ILMS):** An Integrated Library Management System (ILMS) is a software platform that automates and integrates various library functions and processes, such as cataloging, circulation, acquisitions, serials management, and patron management. An ILMS typically includes a centralized database to store information about library collections and patrons, as well as modules for circulation, cataloging, acquisitions, serials management, and patron management. The goal of an ILMS is to provide libraries with a streamlined and efficient way to manage their collections and

patron interactions, as well as to improve access to library resources for patrons. An ILMS can also help libraries to manage their budgets and resources more effectively, and to track usage statistics and trends. Overall, an ILMS is designed to support the day-to-day operations of a library, and to improve the efficiency and effectiveness of library services.

- (23) **Google's Custom Search Engine (GCS):** It enables anyone to build their own search engine. In order to remove any undesirable websites or material, search engines can be designed to look for information on specific themes selected by the inventor. Additionally, creators can add their unique search engine to any website or blog. Users receive high-quality, pertinent search results because they are based on Google's core search technology.
- (24) **Popular Aisles:** The pressure pads under the floor can be utilised by the library to count patrons and determine which area of the building is used the most efficiently. The librarian can use this to enhance their collection and identify potential areas that could use better signage.
- (25) **Library Utensils:** "Library utensils" is a general term that can refer to various tools and supplies used in libraries for various tasks and functions. This can include physical tools for handling and organizing library materials, as well as supplies for library patrons, such as pencils, pens, paper, and other writing materials. Some examples of library utensils might include book trucks for transporting books, bookends for holding books upright, book jackets for protecting books, library cards and card catalogs, book markers, and library stamps for marking books as property of the library. Additionally, some libraries may provide other supplies, such as computers, printing and scanning equipment, and multimedia resources, as part of their offerings to patrons. The specific library utensils used will vary depending on the needs and resources of a particular library. This tool can be made available by the library to its patrons in the reading room so they can translate words in print books and create digital highlights.
- (26) **Popular Aisles:** "Popular aisles" in a library typically refers to the areas of the library where patrons frequently visit and spend time. These areas may include sections of the library with popular or high-demand materials, such as the fiction section, the children's section, the reference section, or the newest arrivals section. The popular aisles may also include areas with comfortable seating or study spaces, computer workstations, or multimedia resources. The specific popular aisles in a library will depend on the library's collections, services, and patron demographics. The goal is to provide patrons with access to the materials

and resources they need, in a convenient and accessible location within the library.

**Some more tools and techniques of the “Innovative Library Services” in the Digital Environment:**

- E-book and Audiobook Collections
- Online Reference Services
- Virtual Programming and Events
- Mobile Services
- Data Services
- Collaborative Services
- Personalized Services
- Digitization and Preservation Services
- Open Access Repositories
- Digital Library Portals
- Makerspaces in the Library
- Digital Scholarship Services
- Virtual Reality Services
- Social Media Services
- Crowdsourced Collection Development
- Library Analytics and Metrics Services
- Chatbots and AI-powered Services
- Gamification and Interactive Services
- Data Visualization Services
- Library APIs and Web Services
- Cloud-based Services
- Augmented Reality Services
- Learning Management Systems
- Library Resource Discovery Services
- Library Management Systems
- Linked Open Data Services
- Library Science Research Services
- Social Networking and Community Services
- Library Management Software
- Library Podcasts and Webinars
- Digital Humanities Services
- Citizen Science and Community Engagement Services
- E-reader Lending Services
- Remote Access to Library Resources
- Library Consulting and Professional Development Services
- Library Newsletter and Blogs

- Library Outreach Services
- Social Library Services
- Digital Preservation and Archiving Services
- Library Technology Training Services
- Institutional Repository Services
- Library Social Media Management Services
- Knowledge Management Services
- Data Management and Curation Services
- Geospatial Services
- Research Data Management Services
- Library System Interoperability Services
- Library Mobile Application Development Services
- Multilingual Library Services
- Digital Library Assessment Services.

#### **Steps for implementing of Innovative Services in a Library:**

- Assess needs and goals: Identify the needs and goals of the library and its patrons, and determine which innovative services will best meet those needs.
- Develop a plan: Develop a comprehensive plan for implementing the innovative services, including a timeline, budget, staffing requirements, and technology requirements.
- Build partnerships: Build partnerships with other libraries, technology vendors, and community organizations to leverage resources and expertise.
- Engage with patrons: Engage with patrons to get their input on the new services and gather feedback on their experiences.
- Train staff: Provide training for staff on the new services, technologies, and best practices for implementation.
- Implement and evaluate: Implement the innovative services and evaluate their effectiveness, making adjustments as needed.
- Continuously improve: Continuously monitor and evaluate the innovative services and make adjustments as needed to ensure they meet the needs of the library and its patrons.

It's important to note that implementing innovative services in a library requires a long-term commitment to change and adaptation. The specific steps and resources needed will depend on the goals and needs of the library, as well as the available resources. It's also important to engage with patrons and other stakeholders throughout the process to ensure that the innovative services are meeting their needs and expectations.

### **Structure & Planning for Innovative Services in Library**

The structure for innovative services in a library depends on various factors, such as the size of the library, the resources available, and the goals and needs of the library and its patrons. Here are some common structures for implementing innovative services in a library:

- **Dedicated staff:** Assign dedicated staff members to focus on implementing and maintaining innovative services, such as a technology librarian or a digital services team.
- **Cross-functional teams:** Form cross-functional teams made up of staff from different departments, such as circulation, reference, and technology, to work together on innovative services.
- **Partnerships with outside organizations:** Partner with other libraries, technology vendors, and community organizations to share resources and expertise.
- **Technology committees:** Form committees made up of staff, patrons, and other stakeholders to provide input and direction on technology and digital initiatives.
- **Library advisory boards:** Utilize library advisory boards to provide input and guidance on innovative services and technology initiatives.
- **Patron feedback mechanisms:** Implement mechanisms for gathering feedback from patrons on the effectiveness and impact of innovative services, such as surveys, focus groups, and suggestion boxes.

The specific structure for implementing innovative services in a library will depend on the goals and needs of the library and its patrons, as well as the available resources. The most important thing is to have a clear understanding of the goals and needs and to engage with patrons and other stakeholders throughout the process.

### **Conclusion**

To stay relevant to their communities, librarians and other information professionals are being creative. To develop a generation of library and information science professionals who can outperform rivals in the service of library and information service delivery, an innovative method is required. Online business support for new businesses, web design services, podcasting, electronic publishing, online information search services, short message alerts services, online training and workshops, digital references services, database production/distribution services, online entertainment services, mobile application services, and digital marketing services are just a few examples of the various ways of the innovative services.

The cutting-edge library services offered in the digital era are strongly related to the future of library and digital information services. An innovative digital environment should be created by librarians in order to deliver efficient digital library services.

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