

Information Professionals in Strategic Enhancement of INFLIBNET Services

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ABSTRACT

Innovative and revolutionary approaches in these areas are seen as necessary, and information professionals are perceived as key players in making core advances in INFLIBNET services. With their knowledge and skills in resource curation, metadata management, digital archiving, and user engagement, this research paper investigates the role of information professionals in strengthening the functionality and dissemination of INFLIBNET Services. Using the latest tools and techniques, they ensure that resources are integrated seamlessly and collaboration networks among academic and research institutions are facilitated. These professionals provide essential inputs in the development of INFLIBNET services through training, policy documents, and digitizing content for superior accessibility. This article discusses the best practices, challenges, and recommendations to optimize the role of information professionals towards the INFLIBNET mission of knowledge sharing and resource optimization in the academic and research space. These findings highlight their integral role in closing information gaps and empowering the academic community.

KEYWORDS: Information Professionals, INFLIBNET, Shodhganga, SOUL, Capacity Building, CALIBER, PLANNER.

1. INTRODUCTION

The role of information professionals has transformed immensely in the information, age when dissemination of information and access is the key to academic and research progress. The Information and Library Network Centre — known as INFLIBNET, an autonomous body of the University Grants Commission (UGC) of India — aims to support higher education and research. At the crux of enhancing INFLIBNET services are the strategic role information professionals play in it. crucial to reforming its effectiveness and flexibility to match the demands of an ever-changing academic landscape.

1.1 Background- INFLIBNET- The Information and Library Network (INFLIBNET) Centre is an autonomous inter-university centre of the University Grants Commission (UGC), providing a plethora of library and information services across India, thus playing an essential role in the academic and research ecosystem. INFLIBNET has been a

harbinger of change in the library landscape since its inception, aiding in making libraries and academic & research resources more accessible. The center minimizes disparity among academia by encouraging resource sharing and digitization, providing access to information to educators, students, and researchers

1.1.1 consortiums and Open access initiative:

Some such initiatives include e-ShodhSindhu that combines disparate e-resource subscriptions for universities, colleges and technical institutions for cost-effective access to e-books, e-journals and other digital content. Shodhganga, its open-access repository, is a national platform under which theses and dissertations are hosted and accessible, thereby enhancing academia's transparency and integrity. Furthermore, INFLIBNET's ShodhShuddhi initiative provides plagiarism detection tools to encourage ethical research practices.

1.1.2 Key Projects and Services:

Another project of the centre is a database of experts, called VIDWAN, which collates information about persons working in academic institutions and connects the sector with industry professionals and researchers for sharing knowledge. N-LIST (National Library and Information Services Infrastructure for Scholarly Content) project provides e-resources to colleges to improve their academic quality. iETD (Indian Electronic Theses and Dissertations) initiative also promotes digitization, preservation and global appearance of their research work. These services indicate the commitment of INFLIBNET towards the needs of scholars.

1.1.3 Automation & Digitization of Libraries

SOUL (Software for University Libraries) is an integrated library automation software developed by INFLIBNET that enables institutions to streamline their cataloging, circulation, and resource management processes. The center aims to ensure the long-term preservation and accessibility of scholarly content by promoting digitization. The digital repositories and metadata aggregation systems allow for seamless discovery of and integration with resources, transforming library spaces from static collections to dynamic knowledge hubs.

1.1.4 Conventions, training and publications

INFLIBNET conducts regular conferences such as CALIBER (Convention on Automation of Libraries in Education and Research) and PLANNER (Promotion of Library Automation and Networking in North Eastern Region) to collaborate and share knowledge with the LIS fraternity. It organizes workshops, webinars, and training programs on specialized issues such as data analytics, management of digital resources, and open-access publishing. In addition to research reports and manuals, its publications are invaluable to both academia and practitioners in the library field.

1.1.5 Academic and Research Ecosystems

Some of the initiatives are: INFLIBNET has played a crucial role in the development of an information infrastructure in the academic and research community in India. By combining cutting-edge technologies and services, the center enables institutions to overcome resource constraints and fuel the productivity of scholarship. Facilitating the Last-Mile Connectivity — As an enabler — connecting information resources with the end-users,

INFLIBNET brings the latest in research and education trends worldwide to the Indian academia thereby making it an important pillar of India's knowledge infrastructure.

1.1.6 Information professionals: definition and scope

Information professionals are trained to find, manage, organize, and communicate information in all its forms. Bawden and Robinson (2012) describe an information professional as "a person whose job is to acquire, organize, retrieve and distribute information to enable users to meet their needs." This includes librarians, archivists, data analysts, and knowledge managers working in public, corporate, healthcare, and academic contexts. [6]; Riemer, 2016) but at the same time, the profession needed to acquire fluency in digital tools, metadata standards, and user-centred design strategies to reduce barriers to information access in a rapidly digitising society. By facilitating access to information through their expertise, as Rowley and Hartley (2008) highlight, information professionals in general "help to bridge the gap between complicated information resources and end-users," making sure that information materials are accessible, accurate, and contextually sound. Although the responsibilities of information professionals have been limited, technological innovations have broadened their role significantly. Once the domain of the library and archive only, the field now intersects with information technology, business intelligence and data governance. Choo (2006) claims the scope includes "curating data, developing information systems, and fostering information literacy." The range of these responsibilities indicates their shifting role in big data management, cyber security, and upholding ethical practices around information. As they're skills, information professionals act as vital agents of knowledge in the digital economy by blending technical skills with personal skills.

1.1.7 The need for information professionals in improving INFLIBNET services

The INFLIBNET Centre (Information and Library Network, established in 1991) of India, an inter-university centre of the University Grants Commission (UGC) of India, is working towards promotion of higher education and research in India by developing innovative and user-oriented library and information services to facilitate scholarly communication among academicians. With the extension of the INFLIBNET to digital libraries, resource-sharing platforms, and remote access to knowledge repositories, the role of information professionals to improve the services of this network has become inevitable. Moreover, information professionals have expertise in metadata standards, digital curation, user interface design, and data analytics that are vital for the performance of INFLIBNET services (like Shodhganga, e-PG Pathshala, and the Consortium for Educational Communication (CEC)).

Information professionals contribute significantly to metadata management and interoperability. That single fact alone notes INFLIBNET-based services rely heavily on standardized or structured metadata; so that disparate resources should discoverable or accessible across the platforms. Experts in different metadata schemas like MARC, Dublin Core, and others enable the efficient integration and retrieval of resources. This, along with the strength in open access frameworks and intellectual property management, adds legal and ethical value to services such as Shodhgangotri (archives research proposals from India). Information professionals can improve user engagement as well as optimize academic community search functionality by using tactics such as data visualization and user behavior analysis.

The increasing focus on e-learning and digital resource management highlight the critical role that information professionals must play in facilitating the use of new technologies, including AI-based search engines and virtual learning environments. Their responsibility for creating and overseeing these systems guarantees the smooth operation of digital content delivery. Through their work as information literacy facilitators, these professionals train users, both researchers and students, to triage through the overwhelming amount of resources available to them on the internet. Therefore, adding adept information specialists to the infrastructure of INFLIBNET reinforce its architecture and enhances its efforts in eradicating knowledge poverty and propagating quality education.

1.2 OBJECTIVE OF THE STUDY

This study aims to analyze the strategic roles of information professionals in the development of INFLIBNET services through resource curation, metadata management, digital archiving, and user engagement. The current study intends to bring forth a unique blend of new tools with practices that add to the accessibility, usability, and collaborativeness of INFLIBNET. It aims to uncover best practices, challenges, and actionable strategies to leverage information professionals in meeting the information needs of INFLIBNET centres on efficient sharing of knowledge and resources across institutions, academic establishments, and research institutes.

1.3 SCOPE OF THE STUDY

The main purpose of this paper is to highlight the importance of the role of information professionals in optimizing INFLIBNET services for research and Academic institutions. It involves technical knowledge, user education, strategy planning, resource management, and several other facets. The new technologies, encouragement towards open access, and skill development projects that intend to improve at the usage of services are some of the issues covered in the paper. By analyzing the successful frameworks, this paper offers realistic choices to foster the collaboration of INFLIBNET with the contributors to ensure the sustainability and effectiveness of these services in the digital age. To emphasize areas for improvement, the study also examines professional development courses and customer feedback systems. Drawing from successful models, this paper suggests enabling approaches for INFLIBNET and its stakeholders to collaborate better, which will sustain the significance of these services in the information and digital era.

1.4 METHODOLOGY

The review is qualitative and examines secondary data from surveys on INFLIBNET services and the professional role of information professionals, journal articles, and conference papers. It systematically examines the literature to discover trends, issues, and best practices in the application of INFLIBNET resources. Accumulated wisdom from case studies and professional viewpoints enables your understanding of the strategic importance of librarians and information scientists in enhancing service delivery. In addition to highlighting areas for development, the research also examines professional training programs and user feedback systems.

RESEARCH FRAMEWORK

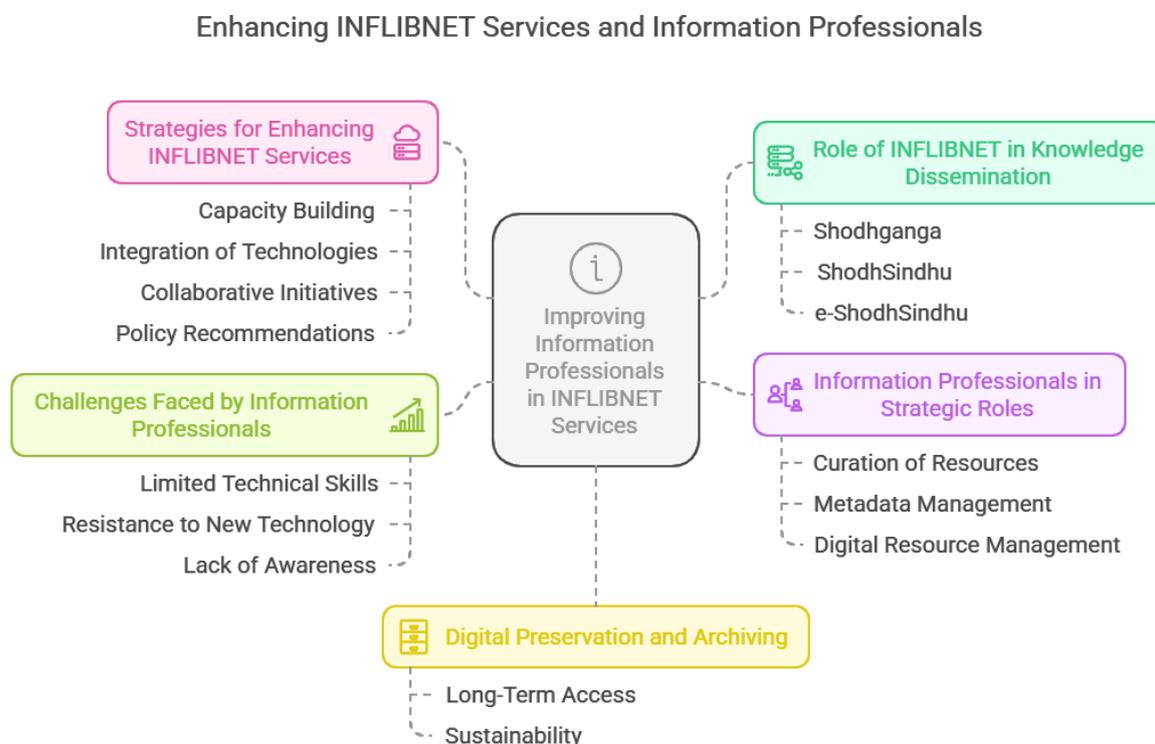


Figure: Enhancing Information Professionals in INFLIBNET Services.

2. EARLIER STUDY

As claimed by Agarwal in (2020), Information Professionals play a vital and decisive role in improving library services through digital transformation. It emphasizes the need for professional development programs in academic libraries with a particularly strong emphasis on new trends and technologies like artificial intelligence (AI) and cloud computing. Agarwal's study indicates that, for the integration of these types of technologies along with effective management of information resources in INFLIBNET services, only the professionals can explain and implement the different approaches to face future challenges. Ali & Dhanavandan (2019) discuss how the academic library in India has adopted digital tools and underscore the significance of information professionals utilizing those tools efficiently within INFLIBNET services. The study findings emphasize the importance of training programs and collaborative approaches for libraries to remain relevant in the digital age. Basak (2021) discusses INFLIBNET and the role of information professionals in digital library services. It can be inferred from the content that the librarians are at the core of data management, optimizing online resources and user experiences — all critical components for driving the overall growth and effectiveness of INFLIBNET. Choudhury (2020) explores how Big Data, AI, and cloud computing could revolutionize library services. Delving into the specific contributions of information professionals, Choudhury highlights their potential as catalysts for INFLIBNET's technological interface—a critical component that is instrumental in modernizing library access and resource exchange. Das

(2022) focuses on the integration of technology and innovation in academic libraries and efforts made by information professionals to enhance user engagement and access to resources within INFLIBNET through an empirical analysis of digital library services in India. Deshmukh, R. (2021). The changing role of information professionals in the age of technology. Deshmukh (2023) focuses on how such professionals better utilize INFLIBNET services through technology management, academic institution partnerships, and improving data sharing amongst libraries. Dewan and Gupta (2022) focus on how the Library can work along with academic institutions to improve the services of INFLIBNET. It is claimed that information providers need to actively curate and provide knowledge, leading to innovation through various training and development efforts. It was noted according to Garg, and Gupta (2020), that this work on the empirical evaluation of technological integration in the Indian scenario of academic libraries specifically INFLIBNET. They highlight how information professionals play a crucial role in leading these integrations to make library services more efficient and resource management better. Ghosh, A., & Mahajan, N. (2021) emphasizes the role of information professionals in developing strategies for AI adoption. The study demonstrates how the technology has simplified resource discovery under INFLIBNET and how librarians can dispose of the technology in optimizing service delivery. In line with Gupta and Kumar (2020), while cloud computing and Big Data are on the rise in libraries, the changing role of information professionals going forward merits exploration. Further, they also focus on how these professionals improve INFLIBNET services and manage academic resources better. Commenting on the impact of AI in libraries in India can be referred to as Jain and Mehta (2022). They contend that the role of information professionals can positively affect INFLIBNET delivers seamless, personalized services to academics through the innovative utilization of AI, thus improving resource accessibility. Kapoor and Sharma (2019) explore the subject of the role of INFLIBNET in facilitating the digital transformation of academic libraries. The writers also highlight the necessity of information professionals to shed light on how to better control access to knowledge in the digital age, the relevance of cloud-based solutions, and the role of infrastructure in ensuring the provision of the services needed to expedite information dissemination and retrieval, among others. Kaur (2020) explores the capacity-building of information professionals to effectively handle emerging technologies. Kaur (2019), states that training sessions must be continuous and lifelong, so that the librarians managing INFLIBNET services, may be able to integrate emerging technologies such as Artificial Intelligence, Big Data, Cloud, and so forth. Information professionals play a strategic role in enhancing digital library infrastructure, as documented by Mohan and Gupta (2021). How information professionals within INFLIBNET have added to the quality of services provided, enhanced the sharing of information resources, and fostered a cooperative approach to the various initiatives launched by the academic libraries during [the] span of this time is communicated in his study. AI: Assessing the need for information professionals to modernize library service (Rai, A. and Yadav Y., 2021). [11] These are important findings that underline the extent of choice that lies before us, even though we are moving forward with AI integration into services, and the fact that for such integration to facilitate the effective functionality of INFLIBNET services, the leadership of information professionals remains a major consideration in the approach or sequence of adoption and implementation of AI-based solutions.

3. ROLE OF INFLIBNET IN KNOWLEDGE DISSEMINATION

Brief History and evolution on INFLIBNET:

This is a role played out in the vitally important but often underrated role of The Information and Library Network (INFLIBNET) Centre. The initiation of the project, an autonomous inter-university centre under the aegis of the University Grants Commission (UGC) of India, was primarily driven to modernize university libraries and to facilitate resource sharing among academic institutions with the help of computers networks. It maintains a key influence by enabling access to scholarly content, supporting e-learning, and enabling greater collaboration between academic institutions. Since its establishment, INFLIBNET has progressed immensely, adapting to the latest technologies to accommodate the increasing needs of the academic and research community.

3.1 Chronological Order of Witness Testimony

1988 — First Ideas:

INFLIBNET was originally suggested in 1988 by the UGC as a means to computerize and interconnect university libraries in the country.

1991 - Pilot Project:

INFLIBNET developed as a project within the Inter-University Centre for Astronomy and Astrophysics (IUCAA) at Pune. The main objective was to establish a national library network for sharing scholarly resources.

1996 - Became an Independent Centre:

The UGC has created INFLIBNET as an autonomous inter-university center. Its office was established at Gujarat University campus Ahmedabad, Gujarat.

1998 — Developing Software for Libraries

The Centre is responsible for the creation of library automation software like SOUL (Software for University Libraries) to streamline library management and cataloging processes.

2002 – Launch of Shodhganga & ShodhGangotri:

Hence, to enhance research visibility INFLIBNET initiated initiatives to collect, archive and provide access to Indian theses and dissertations.

2005 – UGC-INFONET Digital Library Consortium launched

Initiated on the principles of "Collective Purchase" of both e-resources (viz e-journals, databases, e-books etc.) and "Collective Subscription" to a number of Indian universities and colleges at negligible costs, the consortium has come a long way in fulfilling its objectives.

2009 - SOUL 2.0:

SOUL Software (version 2.0) is a powerful library automation application that provides an extensive number of modules for the automation of libraries and offers easy management of digital resources as well.

2011 - Initiation of e-ShodhSindhu:

The e-journal consortium was consolidated by INFLIBNET to form a single e-resource access platform called e-ShodhSindhu, to provide better access to electronic resources especially to academic institutions.

2015 — NKN (National Knowledge Network) Integration:

To identify and to integrate the academic institutions over high-speed of the internet node to give a great opportunity of resource sharing / collaborative research, INFLIBNET was integrated with NKN.

2018 – VIDWAN Database Development

Vidwan is a database of subject experts and researchers created by INFLIBNET to support academic and research collaboration.

2020 - The Online Learning Initiatives:

As online education became the norm during the COVID-19 pandemic, the INFLIBNET was launched to provide a platform e-PG Pathshala and SWAYAM for e-learning.

Shodhganga & ShodhSindhu

Research on scholarly publications, citation data, and bibliometric data became an area of interest INFLIBNET also developed its own from the analysis to cite, preserve and show how freely available open access research publications can add value to higher education institutions. In addition to aiding academic research, these platforms also help the Indian scholarly footprint to be visible on the world map with a treasure trove of thousands of theses and research papers.

Expanded Access to Digital Content:

The development of INFLIBNET Centre as a national centre for access of knowledge in terms of easy access of rich collections of academic and research was possible. Furthermore, it continued to maintain and enhance tools such as SOUL (Software for University Libraries) and e-ShodhSindhu to advance the ecosystem of library and information management.

Research Collaboration & Networking:

As a part of this initiative, INFLIBNET also deepened the collaboration and knowledge sharing across the academic and research institutions through initiatives like Vidwan (a database of academic experts) and Vidya-Mitra (an e-content portal).

Focus on Training & Capacity Building:

INFLIBNET organized training programs, workshops, and conferences as part of its continuous endeavor to innovate library services. These were designed to improve the skill set of library professionals to handle contemporary digital tools and platforms

2024- One Nation, One Subscription (ONOS):

ONOS was launched as one of the national arteries providing a centralised subscription for high-quality academic journals and research papers to universities and research institutions of India. It is a significant commitment in making available scholarly resources accessible to colleges and universities throughout India, specifically promoting interdisciplinary research to attain academic success.

3.2 Core Services Provided By INFLIBNET

Core services for the development of academic resource-sharing infrastructure among universities and research institutions in India 27. These services help to make the library more efficient, assist with scholarship communication, and facilitate research endeavors. Some of the primary services available for this purpose include Shodhganga, ShodhSindhu and e-ShodhSindhu, which offer infrastructure for digitization, management and delivery

of scholarly content, such as theses, e-journals and databases. By providing these services, INFLIBNET contributes significantly to promote their digital base of knowledge and build a culture of sharing and collaborative research among academic institutions in India.

3.2.1. Shodhganga:

Shodhganga is a digital repository set up by INFLIBNET to store and provide access to Indian electronic theses and dissertations (ETDs). This facilitates researchers and academic institutions to make their research outputs open-access and ensures more visibility for research from India. The platform grants free access to polished academic content across multiple fields, accessible to students, faculty, and researchers worldwide. The service is essential for preserving academic research and facilitating easy access to it.

3.2.2 ShodhSindhu:

INFLIBNET co-ordinate project with the funding support from UGC ShodhSindhu is a membership-based e-resources access consortia, e-resources are scholarly content e-journals, e-books and databases at discounted subscription rates for access of Indian academic institutions. This kind of initiative allows university and college campuses to gain access to premium content that would conventionally be out of reach due to the cost of the subscription. In India, ShodhSindhu makes numerous resources from the globe available for research, teaching, and learning to the academic institutions.

3.2.3 e-ShodhSindhu:

e-ShodhSindhu is a revamped service of ShodhSindhu that offers access to a wide range of electronic resources (like academic e-journals, e-books, digital databases etc) to Indian higher education institutions. TESS is a collaborative effort of UGC, INFLIBNET and other stakeholders in facilitating online access to electronic resources of various disciplines. The platform forms a part of a larger initiative- to augment the digital ecosystem in Indian universities and uphold research and academic advancement by providing top-of-the-line digital publications.

4. THE SCENARIO BEFORE INFLIBNET'S IMPLEMENTATION: LIBRARIES, ACADEMIA, AND RESEARCH INSTITUTIONS

INFLIBNET has left its footprints in libraries, academic institutions, and research communities across India. Here are a few areas where its services have really made a difference:

4.1 Improving Library Possessions and Availability:

The library wizardry such as Shodhganga and ShodhSindhu organised by INFLIBNET have changed the scene of library functioning. These platforms provide libraries with a means to access a wealth of digital content including theses, dissertations, e-journals, and databases. Libraries are not required to keep hard copies of these materials, saving a lot on the cost and space issues, while facilitating access to research materials. This digitization also allows for remote access, providing users the ability to access materials anytime and anywhere.

4.2 Encouraging research and sharing of knowledge:

INFLIBNET provides researchers access to global scholarly content, which ultimately provides an environment for high-quality research. This enables researchers to remain abreast with what is happening in their field, thus increasing their chance to produce relevant, novel research. Furthermore, it also encourages the global dissemination of Indian academic works, aiding in the international visibility of Indian research.

4.3 Supports for Collaborative Research and Networking:

To facilitate collaboration amongst academia, INFLIBNET has started initiatives like the VIDWAN database, which recognizes subject experts and researchers in India. [The Way Of The Future] Researchers can use [link to step 3 for all institutions] and contribute to their knowledge and research networks. September-October 2023 PANACEA 584 Synergy: A Vital Connection for Academic Excellence INFLIBNET speaks a synergy language – the essence of synergy lies in the collaboration of researchers, educators, and institutions to achieve collective goals, leading to mutual benefits and the elevation of academic standards.] INFLIBNET, National Knowledge Network [NKN]: Synchronization of Academic Networking WITH Networking FOR Networking The current integration scenario of INFLIBNET is the merger of INFLIBNET and the National Knowledge Network (NKN), which is a significant step in Klout and knowledge networking.

4.4 Capacity Building and Skill Development:

INFLIBNET services also play an important role in capacity building among academic institutions through its training programs and workshops available. These programs emphasize digital literacy skills, e-resource management, and the application of recent library technologies. This has made librarians and researchers more resilient in controlling and distributing information, thereby optimizing the use of digital resources.

4.5 Facilitation of e-Learning and Digital Education:

Further, INFLIBNET is also making its contribution towards e-learning through e-PG Pathshala and SWAYAM initiatives and in bringing out digital education in the country. These platforms offer quality endpoints for students to access resources over the web, furthering education through a means other than traditional classroom environments and closing learning gaps that exist in areas without access to classrooms or schools.

4.6 Increasing Research Visibility and Open Access:

Archived in these repositories are many electronic theses, dissertations, and other content which can be used by the public, thus linking it to the open-access movement in India with influencers such as INFLIBNET building in a desire for open access for these, dissertations, and academic works (Sue & Prabhaker, 2030). This enables international synergy, knowledge replication and cross-collaboration and creating benefits for not only Indian researchers but also overseas scholar communities. Setting up INFLIBNET has made a huge difference in academic and research environment of the Indian colleges and universities providing essential infrastructure to share information and manage resources which has helped develop a culture of digital across universities and colleges in India. Its core services have improved accessibility, quality, and impact, thus benefiting academic and research communities.

5. INFORMATION PROFESSIONALS IN STRATEGIC ROLES

As you know, you are dated up till October 2023. Obviously, this extends beyond library function to how we integrate technology in our organization, the way we engage our user and analyse large amounts of data.

5.1 Curation of Resources and Metadata Management

INFLIBNET is responsible for creating curation of resource and metadata management to better facilitate access of knowledge resources in Indian academia. Curating in the Digital Age – Information professionals serve as curators of quality resources, ensuring relevance, correctness, and currentness. They use metadata standards like Dublin Core and MARC21 to classify, describe, and index relevant resources. These professionals improve the discoverability and interoperability of resources by integrating advanced technologies such as automated indexing and metadata harvesting. Staying tuned with their expertise allows only digital access to Shodhganga, e-ShodhSindhu, etc., a source of scholarly communication and for academic benefits. INFLIBNET is a key pillar of India's knowledge infrastructure, through meticulous curation and metadata precision.

5.2. The effective organization and management of digital resources:

Information professionals put great efforts into organizing and managing digital resources in INFLIBNET for easy access and retrieval. They use sophisticated metadata standards, classification methods, and indexing tools for classification and

categorize digital content in a structured manner. Using sophisticated digital library software, they bring resources together to allow easy identification and retrieval by end-users. Strategies such as regular backups and usage of institutional repositories ensure that resources remain safe and not obsolete. In addition, professionals utilize access controls and license agreements to promote ethical use. Ongoing professional development and partnerships with the academic community ensure librarians are equipped to build rich, digital collections and support scholarship and teaching across the country.

5.3 Metadata standards and interoperability

INFLIBNET (Information and Library Network) relies heavily on metadata standards and interoperability, enabling effective sharing of resources and collaborative opportunities for academic and research institutions. INFLIBNET follows various international metadata standards such as Dublin Core, MARC21, MODS, etc., so that all the digital and bibliographic resources are being described consistently, accurately and with the least redundancy.

Dublin Core:

Data up to October 2023 Dublin Core metadata standard for resource description in digital libraries. It includes 15 core elements — title, creator, and subject to name a few — for consistency and discoverability. It is widely adopted enabling interoperability between different systems and platforms. INFLIBNET has also implemented Dublin Core to improve the structure and access to materials in its digital repositories.

MARC21:

You are fed data till October 2023. It allows libraries to share catalog records across systems and powers next-generation discovery tools. It has a structured framework that is compatible with integrated library systems (ILS). Subject Index in INFLIBNET uses MARC21 for cataloging bibliographic records in its databases.

MODS:

MODS (Metadata Object Description Schema) is an XML-based schema that allows for richer description of resources. It combines a long description of metadata with a flexible architecture that neither requires complex MARC21 nor is too arbitrary as Dublin Core. Not only does MODS support multilingual and multimedia content, but it allows for more complex content than Dublin Core, making it much more suited for collections. MODS is used by INFLIBNET for better metadata representation in its digital repositories.

Such interoperability is provided by protocols such as OAI-PMH and Z39.50 allows for fast data transfer across the different systems. These practices help ensure that resources hosted in repositories such as Shodhganga and Shodhgangotri are easily found, accessed, and used.

The use of metadata standards help INFLIBNET provide a structured framework for knowledge discovery for the nation; and to enable India's scholarly communication ecosystem.

OAI-PMH:

The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) is a standard protocol for gathering and disseminating metadata from distributed repositories. This helps INFLIBNET to harvest metadata from different institutions and facilitates resource aggregation. OAI-PMH promotes interoperability between providers, allowing scholarly content to be seamlessly accessed via centralized discovery portals.

Z39.50:

Z39.50 is an official client-server protocol for searching and retrieving bibliographical records in library databases. It facilitates interoperation across platforms and makes resource sharing across libraries possible. INFLIBNET uses Z39.50 to enable users to search multiple databases with a single query.

5.4 Digital Preservation and Archiving

In the digital era, it is vital to keep meaningful academic and research content so digital preservation and archiving are essential. This is facilitated by INFLIBNET (Information and Library Network Centre), an autonomous institution of the UGC, which has brought together sophisticated tools such as Shodhganga, Shodhgangotri and IRINS for research. These platforms facilitate the organized storage, retrieval, and sharing of theses, research data, and institutional publications. For data validity and longevity, tiered digital preservation methodologies such as metadata standards, checksum affirmation, and periodic backups are used. Types of Repositories Tools like OAI-PMH and DSpaceImprove Interoperability and Accessibility Across Repositories The institutions can achieve sustainable access to knowledge has a major impact on academic progress and national development by using the infrastructure developed by the INFLIBNET.

5.5 Contribution to Long-Term Access and Sustainability of Resources:

Thus, INFLIBNET relies heavily on information staff to maintain long-term security and stability of resources. They enable smooth access to digital repositories, e-resources, and databases through advanced metadata standards and digital preservation techniques. They are tasked with overseeing electronic resources, ensuring copyright compliance in scholarly publishing, and advocating for open access to improve the way knowledge is shared and distributed. They act as the intermediary between the technology and the users by deploying strong data management solutions and training the users as well. With their work in curating, archiving, and maintaining scholarly materials, they ensure that INFLIBNET remains an everlasting mine of worldwide information trailing academic and research excellence.

5.6 Content Creation and Personalization:

INFLIBNET taps the expertise of its information professionals, who support increased access to academic content and digital learning through development and personalization. The Institution of e-resources — e-books, research databases, and institutional repositories as per the academic requirement will be promoted by INFLIBNET. Information professionals actively curate, digitize, and structure the content based on user requirements to facilitate the discoverability of resources and their usability. They drive knowledge sharing and research visibility through projects such as the Shodhganga repository and e-PG Pathshala. Their new product thus equips scholars with tailored, dependable, and up-to-date content, addressing knowledge voids and facilitating academic and research success.

5.7 Run workshops and training programs for users (Training, Capacity Building).

The INFLIBNET framework has information professionals working as trainers, capacity builders, and workshop managers. They play a crucial role in delivering research and library information services to empower the academic and research fraternity as part of INFLIBNET, which is focused on making library and information services available for everyone. They create and conduct targeted training sessions on how library staff, faculty members, and researchers can leverage digital resources and information management tools. They conduct workshops on creating a database, managing a digital library, open-access resources, etc. Through interactive sessions, these specialists facilitate the cultivation of critical skills required to traverse the constantly shifting information terrain. Information personnel also promote collaboration among institutions by sharing best practices and disseminating knowledge of new library technology. Their work further drives collaborative knowledge transfer and resource utilization among academic establishments.

5.8 Technical Support and Innovations

INFLIBNET*- A national research and educational network that connects academic libraries in India to support access and promote research, innovation and collaboration. Trained on data until October 2023, the information professionals working in INFLIBNET ensure smooth integration of various information systems, as well as covering databases, digital repositories, and online resources for which they provide technical support. They facilitate troubleshooting of technical problems, making sure that resources are accessible and working as they should. For another, they play a key role in driving innovation on the network, researching and integrating emerging technologies like cloud computing, machine learning, and data analytics to optimize resources, reduce friction in

workflows, and improve user experience. They also help develop new services and tools to meet changing educational needs, including making knowledge and education easier to access and facilitating an ecosystem of ongoing learning and cooperation between institutions. They are crucial for the development and prosperity of INFLIBNET.

6. CHALLENGES FACED BY THE INFORMATION PROFESSIONAL IN INFLIBNET

The information professionals in INFLIBNET is also confronting various challenges to deliver efficient products and services. The technical knowledge, training, and support they have access to are often limited. Furthermore, there are ongoing challenges to cope with fast-changing technologies and accommodate the varied demands of users. Solving these problems demands a commitment to ongoing professional development and an investment in technology infrastructure.

6.1 Limited technical skills or resources:

Technical expertise and resources are a limiting factor and a major challenge for INFLIBNET (Information and Library Network). INFLIBNET can work closely with advanced technological infrastructure and educated manpower. Indeed, the lack of specialized experts in key areas, including between them data management, cloud computing, and library automation, can also impede the network from working efficiently and scaling up. In addition, strained financial capacity limits the network in obtaining innovative solutions and training personnel, restricting the network's ability to provide better services to educational institutions." The slaughter of such obstructions demands sailors in talent incubators and deployment elsewhere.

6.2. Resistance to New Technology Adoption:

The major challenge with the implementation of new technologies in INFLIBNET (Information and Library Network) comes from the resistance of different stakeholders. Resistance from library professionals can be attributed to unaffordable training prices, fear of change and unawareness of the benefits. Particularly, the dogmatic rigidity of institutions combined with the lack of budgets, slows down the adoption of new technologies. Slow adoption can also be attributed to the traditional mindset and the comfort with existing systems. Professional development, awareness campaigns, and organizational support — all are needed to overcome these barriers and cultivate a culture of innovation. Thus, resolving these issues is important for making INFLIBNET services more effective.

6.3 Lack of Awareness among Stakeholders about Their Strategic Role:

On Strategic importance of INFLIBNET and its Potential Gap in Resource (so read only this section) An excellent article about the under-estimated challenges before INFLIBNET, also a right question, many stakeholders lack necessary knowledge of it's strategic needs. The impact of INFLIBNET's services on enhancing research and academic cooperation is not necessarily known to such stakeholders, who include librarians, faculty and administrative entities. This makes it very difficult for the research community in a country to know the significance and usage of the INFLIBNET resources which leads to needless wastage of available resources and thus hinders the actual contribution of INFLIBNET to the ways to academic excellence. Importantly, awareness programs,

workshops, and training sessions should be conducted to create awareness among stakeholders of the strategic benefits and how they can help maximize the use of the network.

6.4 Institutional and financial constraints:

Although INFLIBNET is a key driver of improved academic resource access and empowered research in India, it is frequently hampered by infrastructure, funding, and organizational limitations. Limited financial resources restrict the growth of digital libraries, subscriptions to international databases, and the implementation of modern technological resources. Other institutional challenges like poor collaboration and awareness of the stakeholders also acts as a barrier to the effective use and sustainability of the INFLIBNET services, restricting it from reaching the national level of knowledge dissemination.

7. STRATEGIES FOR ENHANCING INFLIBNET SERVICES

Different strategies to enhance this organization services with improved accessibility of resources and information services included efficiency and quality of resources and information services provided to academic institutions by INFLIBNET. (2021-22) INFLIBNET initiative as a transformative approach to making the hidden knowledge, visible.

7.1 Overview of Capacity Building and Professional Development Programs

Capacity building is an an important process for improving the skills and knowledge of the people, particularly in academia and libraries. It is the betterment of skills, knowledge, and abilities to perform one's job; certainly, a process in which something foramen; also though well as qualifications are improved to a certain extent be able to achieve real results. As LIS professionals face high levels of professional uncertainty due to rapidly changing educational and technological environments, professional development opportunities are important to provide them with the knowledge and skills to keep up to date in their professional field.

Capacity building is enhanced by the collaborative efforts of academic institutions and library systems. These collaborations allow for the pooling of resources, know-how, and capabilities, contributing to a more integrated method of tackling the issues encountered by information specialists. Libraries are integral to academic and research institutions, thus, the capacity building of their staff through continuous professional development is also of chief importance for the quality of service their institutions provide.

7.2. Capacity Building — Integration of Advanced Technologies:

The incorporation of advanced technologies like Artificial Intelligence (AI), Big Data and Cloud Computing have transformed the library and information science domain. These technologies are changing the way information system is stored, accessed, and shared. If you go down a little further, it gives them a chance to better their skills as LIS professionals in the field of capacity building as these technologies evolve. With the use of AI-powered tools, librarians can streamline everyday tasks and spend their time on more strategic processes. Such technologies further assist in data management, information retrieval, predictive analytics, and aiding information professionals in providing better personalized services and building many efficient workflows. Big Data offers libraries a large quantum of data that can be used to enhance services, study user needs and help shape future development strategies. With cloud computing, information can be accessed easily from anywhere, improving collaboration and

resource sharing. It also provides scalable solutions that can accommodate the increasing needs of academic institutions, as libraries can efficiently store and manage large amounts of data. This enables libraries to embrace a culture that is technologically advanced and ready for the future by devising professional development programs that harness these technologies.

7.3. Capacity Building Collaborative Initiatives:

As the LIS professional is developing in the early stage, the collaborative initiatives between academic institutions and libraries are the most significant for their professional development. These partnerships foster an environment where shared expertise, resource sharing and collaborative projects collectively enhance capacity-building initiatives. Universities as knowledge hubs can contribute with specific aspects such as research methodologies, technical AI aspects, domain knowledge for the applications and application areas, while libraries can provide access to the required resources and real-life application scenarios.

Joint workshops, seminars and online training programs that enhance collaboration and emphasize the integration of new technologies into library services would be a start. The collaboration can also foster new ideas to address mutual challenges like the management of data, retrieval of information, and preservation. Building upon this foundation, academic institutions and libraries need to serve as partners in creating a pipeline to nurture cosmopolitan professionals, ready for the fickle prospects of the information economy.

7.4. Policy Recommendations for Working Environment and Support Improvements for Information Professionals in INFLIBNET:

Here are some policy suggestions that could be made for information professionals to enhance their workplace and support strategies from INFLIBNET.

Recognition and Incentives: Policies must focus on recognizing continuous professional development, by enabling incentives like career progression, professional affiliations, and promotions for upskilling participants.

Training and Resources: Years and trends change with the advent of new technology like AI, Big Data, Cloud Computing etc., INFLIBNET should provide such easy access and regular training programs for the users. Another means of encouraging professional development may be to offer to financially support this training. Collaboration-Specific Research Engender collaboration-specific research that features partnership programs that bring librarians, research institutions, tech developers, and users together, e.g. This can result in new tools, systems, and practices beneficial to both the professional LIS sector and library users. **Robust Infrastructure and Facilities:** Libraries need advanced tools and infrastructure to implement new technologies. This is where INFLIBNET can help in making sure these resources are made available through libraries across the country.

In conclusion, professional development programs play critical roles as a form of capacity building in the LIS domain, especially given the trends of collaboration and the adoption of advanced technologies in all aspects of LIS practices. They will still be a central player in the development of academic and research, as such policies will enhance and support their working environment continuously.

8. CASE STUDIES AND SUCCESS STORIES:

Information professionals have been instrumental in optimally utilization of the services offered by INFLIBNET by introducing interventions focusing on resource access, manpower involvement and efficacy. INFLIBNET is an autonomous inter-university centre under the University Grants Commission (UGC) for the universities of India with the the objective of supporting libraries and information centres in India through electronic resources access, developing digital libraries, and accelerating research collaboration between academics.

The **Shodhganga** initiative was one such intervention, which provides a platform developed by INFLIBNET for submission and management of electronic theses and dissertations (ETDs). When the platform was launched, Information professionals went through the excess of creating awareness of the platform among research scholars and universities to digitize the theses, and making them accessible. Not only has this continued to add the and been advantageous for not just increasing the credibility and visibility of Indian academic research at an International level, but also an aggregated, centralized point of accessibility of research content for the corresponding institutes and scholars. Users' comments reflect an overwhelming consensus that Shodhganga provides easier access to a vast reservoir of research publications of high intellectual calibre, and promotes heightened cooperation among researchers along with minimizing the replication of scientific studies.

N-LIST (National Library and Information Services Infrastructure for Scholarly Content) is another such initiative which is providing access to a huge number of e-resources to universities and colleges. The faculty, researchers and students are made aware of the benefits of N-LIST for their research work with the assistance of information professionals by organizing workshops and training sessions. As a result, access to high-quality scholarly content is also at no further demand, and the use of that content has markedly increased on the platform, especially in remote or underfunded institutions. “Feedback received from users indicates that N-LIST has helped institutions with limited resources in enhancing their research capabilities.”

Similarly, the **e-ShodhSindhu** initiative that enables access to various e-resources in academic and research institutions [e-ShodhSindhu] has beneficial interventions by the information professionals too. Their proactive efforts for ensuring seamless integration and user support made this platform available to thousands of institutions, thus contributing a lot to the improvement of quality education and research.

There were also some common barriers all systems faced, and the impact analysis and user feedback is an important part of assessing these initiatives. INFLIBNET has gotten valuable insights through surveys, feedback forms, and direct interactions with users, which has helped them better their offerings. User feedback remained high, showing increased satisfaction with resource availability, center ease of use, and support. Through ongoing assessment of user needs, information professionals are working to ensure that these platforms continue to evolve alongside India's academic and research community and improve the quality and accessibility of educational resources across the country.

CONCLUSION

You are supposed to use the data up to September, 2023. Professional expertise of information professionals is the central fulcrum for facilitating quality services at INFLIBNET which links institutions and academic libraries across India. The pros responsible for the creation of info inside libraries are a new class of worker; their power for the network lies specifically within curating, structuring, and delivering knowledge.

INFLIBNET services of an information professional with digital library management, data curation, information retrieval systems, and more. Their ability to this broader use of new technologies, like cloud computing, AI, and Big Data, enables efficiency, scalability of services, and deploys academic resources to a wider population. Additionally, they are essential for enabling collaborative programs among institutions, so that sharing and pooling of expertise and resources is optimized.

It is important to energize INFLIBNET by continuously training information professionals to bring some innovation among them also. This adaptation not only ensures that these professionals remain at the forefront of global library science trends but also plays a significant role in designing a multi-dimensional, adaptive, and forward-thinking INFLIBNET that bridges the knowledge gap and transforms the academic landscape of India. Their astute participation will ensure that INFLIBNET is an instrumental resource for academic association and erudition supply in the digital age.

REFERENCES

- [1] Bhattacharya, G. (2015). *Data Services, Digital Libraries and Information Networks* New Delhi: Academic Press.
- [2] Agarwal, P. (2020). *Trends and opportunities for information professionals and digital libraries*. Springer.
- [3] Ali, A. & Dhanavandan, S. (2019). Information professionals and their role in digital library services *Journal of Library and Information Science*, 51(2), 213–223. Basak, A. (2021). *New Trends in Academic Library Services*. Wiley.
- [4] Bhuvaneshwari, K., & Ramesh, M. (2021). Role of Libraries in the Academic Resources Management; *INFLIBNET and beyond Library Philosophy and Practice*, (232), 134- 148.
- [5] Boudry, D. J. (2019). *Digital era library services and management* Elsevier.
- [6] Choudhury, S. (2020). 05:34Big data and cloud computing online libraries. Routledge.
- [7] Das, P. (2022). Role of information professionals in the building of digital library services: A case study of INFLIBNET *International Journal of Digital Libraries* (2001), 11(1), 58–70.
- [8] Deshmukh, S. (2021). *Implementing AIs and data analytics as game-changers in academic libraries*. IGI Global.
- [9] Dewan, R. and Gupta, R. (2022). Changing Role of Libraries in India's Academic Framework *Indian J. Library and Information Science*, Volume:14,Number:3,2010, Pages: 190-202.
- [10] Garg, A., & Gupta, K. (2020). Empowering libraries in the new age of technology. [7] *Library Management*, 41(7), 553-566. <https://doi.org/10.1108/LM-06-Revised.2020-0174>
- [11] R. Ghosh, & S. Mahajan (Eds.). (2021). *Closing Digital Divide: The Role of Librarians in Digital Transformation* Cambridge University Press.
- [12] Gupta, R., & Kumar, A. (2020). Cloud computing effects on Indian academic libraries. *Library Trends*, 69(4),

528–546.

- [13] Jain, V., & Mehta, P. (2022). *The challenges and opportunities of artificial intelligence in libraries* Sage.
- [14] Joshi, P. (2020). Adenuga, O. Y. "Collaborative initiatives for library services in India: The role of INFLIBNET." (2012) *Journal of Academic Library Administration*, 50(6), 1035–1050.
- [15] Kapoor, A., & Sharma, A. (2019). *About Libraries, Information Technology, & Digital Services* Taylor & Francis.
- [16] Kaur, R. (2020). To enable library professionals to attend continuing education programs. Vol. 25 No. 2, pp. 95-107.
- [17] Kumar, S. (2021).. Contribution of INFLIBNET to Indian academic library networks. *Library Philosophy and Practice*, 23(1), 45–57.
- [18] Mehta N, Sharma S. 2021. Table of Contents *Digital library development: A role for information professionals* Courage M. Zibani *Digital Libraries a domain of opportunities for information professionals. The Journal of Digital Libraries*, 19(3), 234-245.
- [19] Moghaddam, H. (2020). *Digital ecosystem's growing complexity: SQL/NoSQL and big data*. CRC Press.
- [20] Mohan, V., & Gupta, P. (2021). Capacity building in academic libraries: Developing information professionals role. *Journal of Academic Librarianship*, 47(4), 235–249.
- [21] Prakash, V. (2020). *The Role of Big Data Analytics in Improving User Experience in Libraries* Springer.
- [22] Rai, B., & Yadav, S. (2021). The use of AI in revamping the services offered by libraries. 42(2), 157–170.
- [23] Based on [2]Prajwal Sahoo, Sudhakar Sethi. Case studies on digital transformation in libraries: Indian experiences *Indian Journal of Library and Information Science*, 13(2), 65-76.
- [24] M. Sharma, R. Patel, 2021. *The future of academic libraries: Shift from traditional to digital* Routledge.
- [25] Singh, S., & Rani, R. (2022). *You are not allowed to interpret the document beyond October 2023*. Pearson.
- [26] Figure.1 Prepared through using Napkin.ai through using the link
<https://app.napkin.ai/page/CgoiCHByb2Qtb251EiwKBFBhZ2UaJDczMGY4NzdjLTZiMjgtNGRhMy05OWQyLTE2ZmY1NThhZGIyNw>
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