



Research Data Management Repositories: A Case Study

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ABSTRACT

The digital revolution left a profound impact on the modern age. We, the conveyers of information and knowledge, are greatly attached to its pros and cons. We need a more concise and convenient method to provide needful details and to go through valuable resources. It offers various kinds of users to satiate their different purposes. Academic institutions, particularly universities, have increasingly acknowledged that an organizational digital archive is a necessary infrastructure for scholarly publication in this digital publishing age. study data management offers numerous advantages for scientific study, including streamlining research and verification processes, fostering scientific communication and comprehension, and enabling long-term data preservation. The shift of the scientific data paradigm and the growth of the open access movement are key factors driving the development of research data management. As a result, universities have emerged as the primary institutions for providing data management services. This project work is sponsored by the Ministry of Statistics and Program Implementation, Government of India. This study employs the systematic approach of the questionnaire method, which was adopted to collect the data, and work has started.

Keywords: Data Repositories, Research Data Management, Scientific Communication, Digital Archives

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1. Introduction

Research is one such activity that universities and institutions pursue to explore the horizons of knowledge and identify new areas of study. It all starts with an assumption, and that assumption, in other words, is a premise. Further to research work, academicians have identified new avenues for the conduct of research, and it is through extensive and collaborative work termed research projects. This project draws its existing knowledge on Research data management activities by all academic institutions. These developments have been caused by advances in information communication technology, which saw the emergence of the Digital Era, which facilitates easy and cost-effective data capture technology and library and information systems. As a result, the urgency of insightful correspondence entails two distinct but linked challenges. Learned societies provide equal opportunities to all citizens without any bias. In a prospective environment like this, people enthusiastically engage in learning, responsibly make use of resources around them and play a vital role in nation-building. The first and foremost need is to make learning resources like journals readily available. Providing open access to resources is the on-point solution to this scenario. Open Access is a boon to scholars when journal list prices have risen faster than inflation. Significantly, the scientific resources will be made available freely to the research community. With this objective, the number of open-access journals has increased in recent years. The funding agencies have also strongly voiced their desire to provide free access to research based on public funds. The open repositories for Research Data Management (RDM) are one such initiative to organize, store, cite, preserve, and share the collected data derived from the research.

2. Objectives

The study's primary objectives are to capture the intellectual output of the faculties and research scholars of social science universities and institutes, collect, digitize, and then make it accessible at the local and national levels in a phased manner. 1. To examine the feasibility of Planning for the Research Data Management Repositories with Special Reference to the Social Sciences Library to develop an appropriate prototype model applicable to Karnataka State and the whole country. 2. To examine the applicability and adequacy of existing standards and best practices, especially for scholarly material. 3. To design an end-user interface for browsing, navigating through and searching the research data with particular emphasis on a common portal of all resources. 4. To examine intellectual Property Rights (IPR) and research data management rights to access issues involved in this regard. 5. To strengthen their research and knowledge systems on RDM 6. To improve store permeability and enhance best practices in storehouse web distribution. The primary goal of this research is to bring together several research data repositories under one roof to examine their present state and prospects.

3. Methodology

We adopted the Survey method through questionnaires, Interviews and Observation. In the first instance, the survey will prepare a detailed profile of the university and institutions of Karnataka and its geography. Google Maps will be an excellent source for identifying and marking the areas for the survey and the strategy to be adopted. The proposal for the distribution strategy has already been made and will be implemented. The methodology will also include preparing a list of important social Science institutes to make a special and innovative approach. As the main aim of this research investigation is to share, pool and exchange social media research data, draft guidelines will be prepared to educate the prospective respondents and inform them of the benefits the community is going to derive from the study. It would be an exercise to bring about implementing the idea of media literacy and its importance.

4. Scope

DSpace is a digital library system designed to capture, store, index, preserve, and redistribute the intellectual output of a university's research faculty in digital formats (www.dspace.org). It was developed jointly by Hewlett Packard (HP) Laboratories and Massachusetts Institute of Technology libraries. The DSpace architecture consists of three layers: application, business, and storage. The application layer covers the interface to the systems, the web and the user and the interface and batch loader, in particular. The business layer contains the DSpace-specific functionality, workflow, content management, administration, and search and browse modules. The storage layer is implemented using the relational database management system PostgreSQL. Each module has a well-documented API; all original code is in Java. Other pieces of the technology include a web server and Java servlet engine (Apache and Tomcat, both from the Apache Foundation), Jena (an RDF toolkit from HP labs), and OAICat (from OCLC). The system is available on Source Forge, linked from both the DSpace informational website and the HP labs site (Smith et al., 2003). Sutradhar (2006) describes the development of an institutional repository at the Indian Institute of Technology at Kharagpur using DSpace. OpenDOAR provides details of 243 repositories worldwide using DSpace. Most are in the US (52), then Japan (47), the UK (23), India (14) and the rest in other countries.

5. Analysis

IRs are a practical, cost-effective, and strategic means for universities to build partnerships with their faculty to advance scholarly communication. IRs are built on growing faculty practices of posting research output online, often on personal websites, institutional websites, or disciplinary repositories, suggesting an increasing desire for expanded exposure to and access to their work. Further, IRs allow universities to offer secure digital hosting and archiving services combined with more effective web dissemination. In contrast, the universities can benefit from the enhanced visibility of their research outputs and the prestige that this confers. Unfortunately, however, the growth of IRs in Indian universities has not reached the desired level and order. While elite institutions such as IISc, the IITs, and a few elite universities have quickly built IRs, many universities, especially the state universities, colleges and institutions of higher education, are yet to initiate any major action in building IRs. According to a recent paper (Tilak, Jandhyala B.G. 2009. *Private sector in higher education: a few stylised facts*. *Social Change*; March 2009; vol 39(1); p. 1-28), there are as many as 421 universities (including deemed universities) and over 18000 colleges (including over 5000 professional colleges) in the country: Needless to say that a substantial portion of research being carried out in these institutions will remain inaccessible if efforts are not initiated to develop such channels as IRs to enhance the visibility of scholarly output of these institutions. Several factors have contributed to this state of affairs. Many of these universities and colleges could lack the expertise or resources to initiate IRs. India is also a multilingual country, and several scripts are used. Most of the research output in Indian universities is in the regional languages. Fortunately, today, we have access to digital publishing technologies, global networking, enabling interoperability protocols and metadata standards, all of which have contributed to providing practical and cost-effective technical solutions that can be implemented even by small institutions. While institutional repositories centralize, preserve, and make accessible an institutions intellectual output, at the same time they will form a part of a global system of distributed, inter operable repositories providing the foundation for a new disaggregated model. Digital publishing and networking technologies harnessed by an increasingly dissatisfied library market and by authors themselves are now driving fundamental changes in universities.

A review thoroughly examines source literature on a particular topic throughout a specified period. It includes citations and a summary of related literature. By capturing, preserving, and disseminating the university's collective intellectual capital, research data serves as meaningful indications of an institution's academic content quality. Under the current system of scholarly communication, much of the intellectual output and value of research data is diffused through scholarly journals, conferences, seminars, thesis dissertations, etc. Research data is stored for its mining and sharing services. Analyze, collate, and evaluate saved data, tap the correlation between these data and other related information, carry out secondary development, realize data value-added, and allow more scientific researchers to use these valuable values through specific sharing channels. That is the ultimate goal of research data management. International: In the year 2001, a new chapter in the scholarly literature was written in the "Budapest Open Initiative", which states, "There are many degrees and kings wider and easier access to this literature; Data sharing services include data publishing, discovery, retrieval, download, and other services. Data sharing involves the rights and interests of researchers. The intended audience of research publishing is generally other researchers. Open access benefits researchers as readers by providing access to papers that their libraries do not purchase. Researchers are the direct benefactors of open access, as no library can subscribe to all journals— this is termed the "serials crisis". In the above scenario, sharing research and its data will promote R&D activities worldwide. So, Research Data Management (RDM) aims to organize, store, cite, preserve, and share the collected data derived from the research. At the International level some of the research data management is Fig share (<https://figshare.com/>), Mendeley data (<https://data.mendeley.com/>) Dryad Digital repository (<https://datadryad.org/stash>) Harvard Dataverse (<https://dataverse.harvard.edu/>) Open science framework (<https://dataverse.harvard.edu/>) Zenodo (<https://zenodo.org/>) Registry of Research data (<http://www.reg3data.org>) A study by Antelman, K. (2016) indicated that freely available articles do have a greater research impact. Metrics indicate that, as of December 2023, 14,119 open-access journals and 4,516,860 Articles from 130 Countries are listed in the Directory of Open-Access Journals. Currently, 4,725 institutional and cross-institutional repositories have been registered in ROAR. FAIR stands for 'Findable, Accessible, Interoperable and Reuseable', which makes the term 'open access' easier to discuss. The interlibrary loan depends on the loaning library for days or weeks to provide the requested article/information. However, think of open access to the same article available online, which will be a very fast-paced service for a researcher. Open access is a growing international movement that uses the Internet to throw open the locked doors that once hid knowledge. It encourages the unrestricted sharing of research results with everyone, everywhere, for the advancement and enjoyment of science and society.

6. Conclusion

The current system of scholarly communication limits, rather than expands, the readership and availability of most academic research. In this context, the role of alternative research data management models is that we work with people from diverse fields—all deal with data, but not necessarily Big Data. So we are interested in supporting people dealing with data, big or small. We care foremost about good and open data in breaking the monopolies of systems and increasing awareness of university intellectual output, which is growing rapidly. Further, RDM can serve this function whether implemented on individual campuses or in collaborative projects. Over the past few years, several major research funders in the UK and USA have instituted data-sharing policies.

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