Chapter 2

REVIEW OF LITERATURE

Literature search is a vital part of all research. There are several benefits of such a search. It provides a source of research ideas, gives an orientation to what is already known, helps to develop a conceptual framework, indicates as assessment of feasibility and provides information on the research approach to be used.

The aim of the study was to document the efforts now in progress i.e. Open access movement with sharp focus on Institutional repositories, which is one of the important means of achieving open access. The main objective of this study was to identify the wide range of practices involved in developing and managing an institutional repository and to investigate knowledge, practice and opinions about the IR among the users of the institutions having institutional repositories.

The present study examined institutional repositories developed in India from two perspectives: IR Development and Management; and Users of institutions having IR. Relevant literature on both aspects were consulted. Over the past five years, the implementation of IRs has been growing rapidly and the publications on IRs have flourished accordingly. Therefore this chapter is divided into three sections namely IR Development and Management, Users of institutions having IR and Institutional repository initiatives in India.

The section on IR Development and Management begins with Scholarly communication and then moves on to the specific areas of Institutional repositories. While the section on Users of institutions having IR begins with general studies on authors and then sheds light on specific areas such as Experience of IR, Contribution to IR and Opinion about IR.
2.1 IR Development and Management

Literature on IR Development and Management could be largely divided into studies as follows:

2.1.1. Scholarly communication
2.1.2. Open access movement
2.1.3. Concept of Institutional Repository
2.1.4. Issues of IRs / Basic components of IR
   a) Timeline
   b) Exploratory activities
   c) Anticipated benefits
   d) Management
   e) Contributors
   f) IR System / Software
   g) Number, types and rate of growth of digital documents
   h) Inhibiting factors

2.1.1 Scholarly Communication

A few studies specifically related to scholarly communication were located. The significant article by Van de Sompel, Payette, Erickson, Lagoze, and Warner (2004) explored characteristics of the established scholarly communication system, and observed emerging trends after studying changing nature of research. They tried to distill some core characteristics of a future scholarly communication system.

Pöschl (2004) discussed the failure of traditional journal publishing and peer review to provide efficient scientific exchange and quality assurance in today’s highly diverse world of science. He also proposed the most promising way to improve matters is a two-stage (or multi-stage) publication processes with interactive peer review and public discussion in new and traditional scientific journals.

Several studies explained how an IR would be a new strategy for facilitating changes in electronic scholarly communication (Chan, 2004; Crow, 2002; Lynch, 2003; Shearer, 2003).
2.1.2 Open Access Movement

Awre (2003) described the advent and development of the open access movement. He also argued that this movement poses a challenge to traditional journal publishing like no other before and it is inevitable that current practice in publishing and purchasing will be affected. Buckholtz, Dekeyser, Hagemann, Krichel, and Van de Sompel (2003) gave the historical overview of Open Access Movement. The paper described how the effects of open Access (OA) are being addressed, and what OA will mean for publishers, librarians, and intermediaries.

Pellizari (2003) examined strengths and weaknesses of the Open Access strategy in general and, more specifically, of the Open Archives Initiative, discussing experiences, criticisms and barriers. Peter Suber (2004b) gave a brief overview of Open Access especially for those who are new to the concept. Association of Research Libraries (2003) in their article highlighted the key points to consider in thinking about and discussing open access. This article gave examples of open access implementation and provided sources for more information.

Davis et al. (2004) examined different aspects of the Open Access and offered recommendations for Cornell University Library's involvement in the arena of Open Access publishing. They concluded that the Open Access and subscription models can coexist and are in fact likely to do so for the foreseeable future. Peter Suber (2004a) in his report gave a brief overview of significant happenings of Open access movement of 2003.

Meyers (2004) in her report highlighted the critical events that have taken place as the issue had developed over the last few years, and provided extensive quotes of all published perspectives relevant to the open access concept. Lamb (2004) reviewed various models of open access publishing and recommended strategies for traditional journal publishers.

A book edited by Jacobs (2006) “Open Access: Key Strategic, Technical and Economic Aspects” covered various aspects of open Access. The twenty chapters of this book were grouped into five sections: Open access—history, definitions and rationale; Open access and researchers; Open access and other participants; The position around the world; and The future.
2.1.3. Concept of IR

A growing body of literature regarding IRs has emerged since 2002 when major research universities in the U.S., such as MIT and the University of California launched their own IR systems. Following are important research papers / reports which has made significant contribution in the IR literature and gives valuable input to IR developers, research scholars etc.

In 2002, Crow published a paper which provided an overview of the major issues that institutions and consortia need to address during an implementation of an institutional repository. The paper argued that IRs provide a critical component in reforming the system of scholarly communication—a component that expands access to research, reasserts control over scholarship by the academy, increases competition and reduces the monopoly power of journals, and brings economic relief and heightened relevance to the institutions and libraries that support them. IR have the potential to serve as tangible indicators of a university’s quality and to demonstrate the scientific, societal, and economic relevance of its research activities, thus increasing the institution’s visibility, status, and public value.

Johnson (2002) gave his own opinion advocating IRs, arguing that they will enhance scholarly communication. These two papers raised the question of why scholars should support a new publishing model.

Lynch (2003) defined and described the current developments in institutional repositories and tried to explain why IRs are so deeply and strategically important to the enterprises of scholarship and higher education.

Lynch listed three concerns for IRs: that they will be used as tools for administrative control, that they will be burdened by irrelevant policy baggage (e.g. peer-review or gate-keeping policies), and that at least some IRs will fail to be supported, diminishing the perceived value of all IRs. These three concerns represent potential threats to successful population and management of IRs.

Publisher and Library / Learning Solutions (2004) reported information on all aspects of IRs such as issues facing those establishing IRs, problems of faculty take-up of self-archiving services, and intellectual property rights. Other issues included organisation and management, funding and business models, accession policies, metadata, long-term preservation and access.

Shearer (2004) conducted a survey to determine the status of the institutional repositories at CARL member libraries. She reported that majority of the CARL libraries that are planning an IR intend to use the DSpace software. She also argued that content recruitment remains one of the biggest barriers for the implementers at CARL libraries. She reported that most of the CARL institutional repositories are being managed by one or two staff members on a part-time basis and have few dedicated resources for the institutional repository. In continuation Shearer (2005) conducted another survey to evaluate the content, policies, software platforms, and advocacy activities of member IR’s.

Lynch and Lippincott (2005) surveyed academic institutions to examine the current state of IRs in the United States. They found that out of 97 universities categorised as Carnegie "doctoral universities", 40% already operated IRs. Among non-implementers, 88% were found to be in the planning stage of IR implementation. This finding indicated that IRs are becoming a component of the technical infrastructure in doctoral research institutions. Whether they become a part of the intellectual infrastructure depends on the extent of faculty contribution. IRs were found to be used for a variety of materials beyond eprints. Responses indicated a strong preference for libraries as sole administrators of IRs.

Another study by Westrienen and Lynch (2005) examined 13 countries, excluding the US. Barriers of IR efforts were highlighted. This study argued that content recruitment is the central issue for most institutional repositories.

Bailey et al. (2006) published the executive summary of “Institutional Repositories”. Their research indicated that over half of ARL libraries may have IRs by the end of year 2007. Less than one-quarter responded that they have no plans to implement an IR. Institutions had generally taken less than one year on implementation.
Kennan and Wilson (2006) reviewed the current literature and discussed institutional repository (IR) and open access (OA) issues, to provide examples from the Information Systems (IS) literature. They proposed the use of IS literature and further research to understand about IR implementations by library managers.

A major study by Davis and Connolly (2007) reported findings of their study regarding the IR at Cornell University. They conducted in-depth interviews with eleven faculty members in the sciences, social sciences and humanities, to explore their attitudes, motivations, and behaviors for non-participation in institutional repositories. They found that Cornell's DSpace is largely underpopulated and underused by its faculty. Many of its collections were empty, and most collections contained few items. Lack of functionality in DSpace contributed to lack of use; in particular, the poor quality of its discovery tools.

The noteworthy study done by Markey, Rieh, Jean, Kim, and Yakel (2007) investigated the implementation of IRs in academic institutions to identify models and best practices for the administration, technical infrastructure, and access to digital collections.

There were few articles which documented the development of IR at their institutions such as at MIT (Smith, 2002), the University of Glasgow (Nixon, 2002), the universities of Edinburgh and Nottingham (Pinfield, Gardner, & MacColl, 2002) University of Bath (Martin, 2003) and University of Southampton (Hey, 2004).

### 2.1.4 Issues of IRs

**a) Timeline**

Markey et al. (2007) queried to know how much time was required for planning and pilot testing and the date when IR become operational i.e. available to authorised users for submission and searching of digital content.

**b) Exploratory activities**

Markey et al. (2007) discussed various exploratory activities that institution exercised before implementation of IR such as attending IR software implementation training & workshops, demonstrating operational IRs to institution's decision-makers etc.
c) Anticipated benefits of IR

Hayes (2005) discussed how IR supports research, learning, and administrative processes. Especially discussed were the benefits IRs offered to the institutions, staff and students. Pickton (2005) suggested undoubted benefits to institutions in building up of repository as they are able to greatly extend the amount of material they can offer to their researchers. Johnson (2002) in his article commented on short-term and on-going benefits of IRs for universities and their faculty and how it is advancing the transformation of scholarly communication.

Gibbons (2004) presented compelling reasons for why an organisation would want to establish an IR including providing an infrastructure for preservation of digital content, lowering the barrier to document distribution, creating a centralised digital showcase in which research, teaching, and scholarship can be highlighted, and facilitating wider distribution. Yeates (2003) also listed the benefits of IRs, such as: extending the range of knowledge sharing. He also focused on leveraging existing investment in information and content management systems and making more flexible ways of scholarly communication available. Pickton and Barwick (2006) discussed in detail benefits of IR to the institution and authors.

Rieh, Markey, Yakel, Jean, and Kim (2007) who carried out an empirical study examined how library directors and others involved in IRs articulate their benefits. According to the authors early identification of explicit benefits and value would assist IR staff in justifying the establishment of an IR to the larger university and provide a framework for IR development. The results of the survey and interviews demonstrated that IRs require a digital curation perspective in order to achieve the major benefits college and university libraries envision for them.

d) IR Management

Staff

Robinson (2007) identified staff and skills required for developing repository such as to manage the repository budget, services, familiarity with software, ability to customize software, preservation and metadata etc.
Similar views were expressed by Bell, Foster, and Gibbons (2005), Carver (2003), Jenkins, Breakstone, and Hixson (2005), Lyon (2003). They described how librarians are involved in IR development, and how they provide a wide range of necessary functions, including overcoming publisher and academic resistance, providing good metadata standards, and pushing for inclusion in external search services. Bailey (2005c) in his paper oriented reference librarians, library administrators, and others to IRs and open access, providing a context for understanding how reference librarians' jobs may be transformed by the emergence of IRs.

**IR funding / Cost**

According to Barton and Waters (2004) costs of Institutional Repository programme depends on the scope of service requirements and the available resources. In their workbook they had described the primary cost factors and issues to consider when building a budget or cost model for institutional repository service.

However, staff costs including time spent drafting policies, arranging licensing agreements, developing guidelines, promoting the repository, training and supporting users and creating metadata, may be significant (Crow, 2002; Horwood, Sullivan, Young, & Garner, 2004).

**IPR**

JISC funded a one-year project called RoMEO (Rights Metadata for Open archiving). RoMEO, which took place between 2002–2003, specifically looked at the self-archiving of academic research papers, and the subsequent disclosure and harvesting of metadata about those papers using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) by OAI Data and Service Providers. The project highlighted a number of concerns about publishers' copyright agreements, which - if dealt with - could greatly improve an author’s rights under the current journal publishing system (Gadd, Oppenheim, & Probets, 2003b).

Willinsky (2002) examined contradictions in how copyright works with the publishing of scholarly journals. This paper reviewed the specifics of publishers' contracts with editors and authors, as well as the larger spirit of copyright law in seeking to help scholars to better understand the consequences the choices they make.
Chapter 2: Review of Literature

between commercial and open access publishing models for the future of academic knowledge.

**IR policy**

Gutteridge and Harnad (2002) discussed policy decisions which should be made when implementing an archive, and also suggested a possible policy based on their experience.

Arthur Sale (2006a) tried to understand researcher behavior in depositing research articles in open access institutional repositories. He suggested that repository managers should invest in promotion and follow-up for 2-3 years after a mandatory policy is promulgated, after which the behavior becomes routinised.

Another paper of Arthur Sale (2006b) analysed the impact of high-level institutional policy decisions on population of the individual repositories. The paper showed that just like research article repositories, voluntary ETD deposition results in repositories collecting less than 12% of the available theses, whereas mandatory policies are well accepted and cause deposit rates to rise towards 100%.

**Promotion**

Jenkins, Breakstone, and Hixson (2005) discussed various attempts that they had made at the University of Oregon to increase user awareness about their IR such as by making links to the Scholars Bank through the online catalog, creating a record for the IR and cataloging individual items in the repository. They also suggested that reference librarians have vital roles to play in helping to recruit authors to submit their content to institutional repositories, as well as in educating users to search such repositories effectively and retrieve the scholarly content from them.

Mackie (2004) described some strategies that can be used to help populate an institutional repository. He argued that filling a repository for published and peer-reviewed papers is a slow process, and it is clear that it is a task that requires a significant amount of staff input from those charged with developing the repository.
Mark and Shearer (2006) listed number of promotional activities managers can exercise such as passing out brochures, conducting presentations to faculty committees, publishing articles in the library or campus newsletters/newspapers etc.

Assessment
Westell (2006) in his paper discussed variety of assessment techniques such as input activity, usage, and citation analysis.

Xia and Sun (2007) evaluated the success of open access self-archiving in several well-known institutional repositories. Two assessment factors were applied to examine the current practice of self-archiving: depositorship and the availability of full text. This research discovered that the rate of author self-archiving was low and that the majority of documents had been deposited by a librarian or administrative staff. Similarly, the rate of full-text availability was relatively low, except for Australian repositories.

Peer-review and Quality Control
According to Day (2003) the focus of an institutional repository should be on content that is either peer-reviewed or not, the choice being left to those who develop their collection policies. In order to ensure a certain level of quality control, some institutions may decide to separate peer-reviewed e-prints from those that have not been reviewed. The importance of this varies between subject disciplines.

Houghton, Steele, and Henty (2003) and Genoni (2004) highlighted the important issue of quality control in their papers.

e) IR Contributors
Crow (2002) suggested in his paper that works of faculty authors typically represent an institutional repository's critical mass of intellectual output. However, there are, of course, other populations within the institution-including students and non-faculty researchers-whose works may be highly relevant and valuable to the repository program, if not crucial to its success.
Chapter 2: Review of Literature

f) IR System / Software

A workbook by Barton and Waters (2004) contained detail guidelines on the developing of Institutional Repository. It also offered practical advice as well as work sheets one can use to get started with own repository programme.

A dozen of IR software’s were described in workbook by Barton and Waters (2004) with technical features. According to Lynch (2006) making a decision can be complex and involves careful thought about factors such as what the repository will contain, how it will be used, the features that are wanted, and the local technical environment.

There were two articles which compared IR software’s (Budapest Open Access Initiative, 2004; Canadian Association of Research Libraries, n.d.). Powell (2005) attempted to identify some of the technical criteria that might be used to evaluate the different institutional repository (IR) software platform options, particularly in terms of the ‘machine’ interfaces that the repository offers.

The report of Open Access Repositories in New Zealand project (OARINZ) project, (2006) discussed the technical evaluation of six Open Source Repository system/s including DSpace and EPrints. The report recommended that DSpace could be accommodated within the national network of New Zealand because DSpace scored well in the overall evaluation.

Digital preservation issues such as fear of technological obsolesce and need of preservation were discussed in few articles (Pinfield & Hamish, 2003; Jones & Beagrie, 2002). Several key initiatives were addressing digital preservation issue such as SHERPA (http://www.sherpadp.org.uk/index.html) and the Digital Preservation Coalition (DPC) were the most prominently initiatives. An excellent site for learning about digital preservation was the Preserving Access to Digital Information (PADI) (http://www.nla.gov.au/padi/about.html) site published by the Australian National University. They offer a concise guide to the most often discussed strategies for digital preservation – migration, adherence to standards, encapsulation and emulation – along with additional resources for in-depth information.
There were papers (Lagoze & Van De Sompel, 2001; Suleman & Fox, 2001) described in detail about technical standard for metadata harvesting and its applications.

The detail information about interoperability standard - Open Access Initiative Protocol for Metadata Harvesting (OAI-PMH) was available on their website (http://www.openarchives.org/OAI/openarchivesprotocol.html).

g) **Number, types and rate of growth of digital documents**
According to Crow (2002) institutional repositories were particularly well-suited for various types of gray literature and other fugitive and unpublished material. Such gray literature forms a part of the informal scholarly communication process.

Genoni (2004) in his paper addressed the issue of content in repositories, and suggested that librarians need to approach the task of content development by applying some of the procedures and skills associated with collection management within more traditional environments.

Hirwade and Hirwade, (2006) enumerated variety of materials an Institutional repository may contain produced by the researchers of the institution such as preprints, postprints, teaching, material etc.

McDowell (2007) evaluated IR deployment in the U.S. since 2005 and its rate of growth. The results indicated that the rate of growth per IR per six weeks was average low of 4% and a high of 44%.

h) **Inhibiting factors / IR Challenges**
Chan (2004) examined emerging trend of university based IRs designed to capture scholarly output of an institution and maximize the research impact of this output. The relationship of this trend to the open access movement was discussed and challenges and opportunities for using IRs to promote new modes of scholarship were provided.

Alma Swan (2008) in her paper discussed impediments to Open Access in India such as lack of awareness, copyright restrictions etc.
Chapter 2: Review of Literature

2.2 Users of institutions having IR

In this section the literature has been discussed under the following broad subheadings:

2.2.1 General studies on authors of open access journals / archives
2.2.2 Experience of IR
2.2.3 Contribution to IR
2.2.4 Opinion about IR

2.2.1 General studies on authors of open access archives / journals

Rowlands, Nicholas, and Huntingdon (2004) surveyed the views and attitudes of 3787 senior researchers from 97 countries in relation to what they wanted from the journals regarding publication of their articles at a time of change and uncertainty. They found that authors’ attitudes towards the open access movement were generally positive, although there were significant reservations about quality and preservation in an increasingly digital information landscape.

In continuation, another survey was conducted by Rowlands and Nicholas (2005) reported on the behaviour, attitudes and perceptions of 5,513 senior journal authors on a range of issues relating to a scholarly communication system. Key findings suggested that research community is now much more aware of the open access issue. The proportion of authors publishing in an open access journal has grown considerably from 11 per cent (2004) to 29 per cent in 2005.

Another significant study was done by Pelizzari (2004) “Academic Authors and Open Archives: A Survey in the Social Science Field”. This study discussed the following issues: authors’ general attitudes towards electronic publications, use or non-use of IR, attitudes towards copyright and reasons for contribution or non-contribution of documents to IR.

Swan and Brown (2004) studied authors who had published their work in open access journals vis a vis authors who had not done so.
Some studies surveyed authors (Houghton, Steele, & Henty, 2003; Swan et al, 2005) regarding their requirements, views and usage of scholarly publishing including their attitudes to IR.

Westrienen and Lynch (2005) surveyed institutional repository deployment in thirteen nations: Australia, Canada, the United States and ten European countries – Belgium, France, the United Kingdom, Denmark, Norway, Sweden, Finland, Germany, Italy and the Netherlands. They explored how national policies and strategies were shaping this deployment.

Joint Information Systems Committee (JISC) and the Open Society Institute (OSI) surveyed journal authors. Their main aim was to investigated the authors’ awareness of new open access possibilities, the ease of identification of and submission to open access outlets, their experiences of publishing their work in this way, their concerns about any implications open access publishing may have upon their careers, and the reasons why (or not) they chose to publish through an open access outlet. The study reported that almost two-thirds of respondents were familiar with the open access concept. The primary reason for choosing an open access outlet in which to publish is a belief in the principle of free access to research information. These authors also perceived open access journals as being faster than traditional journals, having a larger readership and thus resulting in higher numbers of citations to their work. More than half (55%) of the authors who had published their work in open access journals had not paid a fee (JISC/OSI, 2004).

2.2.2 Experience of IR

Swan and Brown (2005) surveyed 1296 academics worldwide to determine the current state of play with respect to authors’ self-archiving behaviour. The survey also briefly explored author experiences and opinions on publishing in open access journals.

Wojciechowska (2007) had conducted a survey of mathematical and computer science community (128 lecturers and researchers) belonging to twelve research centers in France. The paper provided information about the knowledge of open archives, information search, experience in self-archiving and copyright awareness of French researchers in mathematics and computer science.
Chapter 2: Review of Literature

Watson (2007) investigated authors’ publishing behaviours, attitudes, concerns, and their awareness and use of their institutional repository (IR), Cranfield QUEprints. The findings suggested that despite a reasonable amount of advocacy many authors had not heard of QUEprints and were not aware of its purpose.

2.2.3 Contribution to IR

A number of studies explored what inspires scholars to publish research and to go on and self archive in IR (Houghton, Steele, & Henty, 2003; Swan et al., 2005).

Shearer (2003) conducted CARL institutional repositories survey to determine IRs contribution to input activity and their use. She suggested that the success of IRs will be determined eventually by "their uptake and use by researchers". She argued that the success of an IR should be determined by its use, and one of the measures of usefulness is contribution of content. Although potential contributors include faculty, students and staff in universities, faculty members were considered the crucial contributors of scholarly content. However, several studies noted that it was difficult to get faculty members to contribute (Chan, 2004; Foster & Gibbons, 2005).

Foster and Gibbons (2005) had interviewed 25 professors at the University of Rochester in order to investigate the factors affecting their contribution. In this study they identified reasons why faculty did not submit their content. The most important reasons were copyright infringement worries and disciplinary work practices (e.g., co-authoring or versioning). Faculty members developed their own routines to create and organise documents. Therefore faculty members perceived that IR contribution involved additional work, such as metadata creation for contributed objects.

Pickton and McKnight (2005) investigated the potential role for research students in institutional repository at Loughborough University. More than half of the respondents selected ‘it is a good way of disseminating my work to the research community and beyond’. Half of the respondents selected ‘to get feedback or commentary’.

Kim (2006) in his survey discussed the problems surrounding faculty contribution to Institutional Repositories (IRs) and proposed a theoretical model for studying the diverse factors surrounding this issue.
Through in-depth interviews with eleven faculty members in the sciences, social sciences and humanities, Davis and Connolly (2007) explored their attitudes, motivations, and behaviors for non-participation in institutional repositories. Authors emphasized that reward systems, traditions, and norms are different across disciplines.

2.2.4 Opinion of users about access, copyright and management of IR

Swan and Brown (2003) investigated the authors’ awareness of new open access possibilities, the ease of identification of and submission to open access outlets, their experiences of publishing their work in this way. Also their concerns about any implications open access publishing may have upon their careers. The reasons why (or not) they chose to publish through an open access outlet were also studied. They found that the majority of authors felt that journals’ publishers should make articles available electronically for free. Later, they found that 92% of OA authors were saying that the ‘principle of free access for all readers’ was an important reason for publishing in OA journals (Swan & Brown, 2004).

Bates, Loddington, Manuel, and Oppenheim (2006) gathered views on the use of an institutional repository (IR) for the deposit of teaching and learning materials by academic staff in UK Higher Education (HE) institutions and by specialists in the field of Teaching and Learning (T&L). Authors found that over half of the participants were in favour of peer review and about one third wanted to give password access to registered users.

The traditional assignment of copyright to publishers was discussed as a possible impediment to the success of institutional e-print repositories in the article written by Day (2003).

From a survey of authors and publishers Gadd, Oppenheim, and Probets (2003b) found that around a third of academics were not sure who owned the copyrights of a research paper. The same study showed that while 41% of the surveyed academics freely assigned copyright to publishers, almost half (49%) did so reluctantly. They proposed that one way of solving at least some of the copyright issues of institutional repositories would be for universities and other educational institutions to assert copyright ownership of the research outputs of employees.
Chapter 2: Review of Literature

Gadd, Oppenheim, and Probets (2003a) investigated RoMEO project that surveyed 542 academic authors in 57 countries across a variety of disciplines. Some 60% thought they initially owned copyright of their papers, though 32% admitted they didn’t know. Half i.e. 50% said 71-100% of their papers were co-authored, thus creating scope for disagreement on self-archiving. More than 60% were happy for others to display, print, save, excerpt from, and give away their papers, so long as given attribution and quotes were verbatim. In fact, authors were prepared to grant more liberal terms for the use of their own papers than they actually expected to be available to themselves for the use of other papers.

Allard, Mack, and Feltner-Reichert (2005) identified six roles that are the responsibilities of librarians in the IR environment: understanding software, project planning and management, collection definition, metadata guidance, submission review, and author training. Similarly Horwood, Sullivan, Young, and Garner (2004) discussed role of librarians in the development and promotion of institutional repositories as well as skills needed by library staff.

2.3 Institutional Repository Initiatives in India

As the concept Open Access gained popularity in India, number of articles started being published about IR most after 2004.

One of the important articles written by the Rajashekar (2004) discussed the relevance of open-access publishing in developing countries; the potential for open-access publishing in India; and a few current open-access initiatives in India. He also proposed a possible technical model to organise open-access publishing in India.

A broad outline on the growth of open access archiving, in developing countries, focusing mainly on India and its benefits had been provided by Chan and his colleagues on Scidev.net (Chan, Kirsop, & Arunachalam, 2005). One more article by Chan and Kirsop (2001) and few articles by Professor Arunachalam were also important in this regard (Arunachalam, 2005; Arunachalam, 2006). Specific Indian initiatives especially open archive initiatives were mentioned in this context. Das, Sen, and Dutta (2005) covered in their article the types of content and software used in developing repositories. Some of the problems of the repositories were also highlighted.
Chapter 2: Review of Literature

An article written by Harnad and Swan (2008) discussed the Indian contribution to open access and increase in research impact. They recommended that India needed to adopt a national OA self-archiving mandate for all of its research institutions and funders. The recent article by Professor Arunachalam (2008) reviewed current status of scientific research and progress made in open access – OA journals, OA repositories and open course ware - in India.

A number of articles discussed the experience of developing and maintaining institutional repository (Doctor, 2007; Jayakanth, Minj, Silva, & Jagirdar, 2008; Jobish, Biswal, Minj, Raja shekhar, & Venkadesan, 2005; Krishnamurthy, 2005; Laxminarsaiah & Rajgoli, 2007; Madalli, 2003; Patel, Vijayakumar & Murthy, 2006; Sutradhar, 2006).

A paper by Ghosh and Das (2006) provided information about the present state of open access Literature by various institutions of the country. A chapter in a book written by Sahu and Parmar (2006) discussed OA archiving and especially the efforts to popularise OA archives.

One of the important research papers was by Fernandez (2006) who evaluated the growth and development of online research repositories in India within the broader framework of open access. She conducted interviews with information professionals responsible for creation and maintenance of online research repositories in India. Open access journals, e-print archives and e-theses repositories were covered with an emphasis on the sciences including the physical sciences, mathematics and the biomedical sciences. The study explored the background of participants, institutional culture, software selection, nature of funding, submission policies and future plans of the repositories.

National Knowledge Commission (NKC) on “Open Access and Open Educational Resources” recommended the increase of Open Access content from India and to increase the public awareness and utilisation of OA material (National Knowledge Commission, 2007).

There were some research papers which explored current status of Open Access journals in India (Pandita, 2005; Sahu, 2006; Sawant, 2008).
A book published by UNESCO authored by Anup Kumar Das (2008) gave very brief overview of institutional repositories in India. Unfortunately no qualitative research papers / reports or in depth study of Indian institutional repositories in this publication. Many of the articles available were descriptive not analytical therefore researcher did not find them very useful. No papers / reports were available on users of IRs that could have been used to compare with the findings of the present study.

Apart from the research articles bibliographies also helped to locate research articles and research reports. A bibliography titled “Scholarly Electronic Publishing Bibliography” compiled by Charles Bailey (2005b) was found to be important. This bibliography presented selected English-language articles, books, and other printed and electronic sources that were useful in understanding scholarly electronic publishing efforts on the Internet. There was a separate section on Repositories, E-Prints and OAI. Two more bibliographies by Ho and Bailey (2005) and by the Bailey (2005a) were also helpful in this regard.

Through understanding the research methods and findings from these articles the researcher could develop pertinent objectives and research methods.

The next chapter discusses the objectives of the current study.
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Chapter 2: Review of Literature


Chapter 2: Review of Literature

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Chapter 2: Review of Literature


Chapter 2: Review of Literature


Chapter 2: Review of Literature


Chapter 2: Review of Literature


Chapter 2: Review of Literature


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Chapter 2: Review of Literature

