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RESEARCH ARTICLE

OPEN ACCESS INITIATIVE AND OPEN *DOAR* AS A CHAMPION OF OPEN ACCESS REPOSITORIES IN THE WORLD

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ARTICLE INFO	ABSTRACT
	Institutional Repositories (IR) disseminates rich source of digitized material drafted and published by scholars. Many of the research institutions and universities across the world are facilitating open access (OA) to their intellectual outputs through their respective OAIR (Open access Institutional Repositories. Open Archive Initiative (OAI) based service provider harvest metadata from register OAI – compliant systems and build a central index on the harvested metadata .This central index serves as a discovery tool for end users, who need not be aware of the existence of distributed repositories. One such OAI based service provider is Directory of Open Access Repositories (DOAR). It is a union catalog of IR which gives access to OAIR in the world. This study has made an attempt to overview IR available on DOAR. DOAR is a metadata harvesting service provider which provides access to open access repositories in the world.

INTRODUCTION

The development of Information and Communication Technologies (ICT) in research and education sector has resulted in the availability, accessibility and efficient dissemination of information resources. In the scholarly world, Internet has become an information hub that contains all types of information resources such as books, journals, magazines, archives and manuscripts. It has changed the way we use and access information and knowledge. With availability of such huge and important digital resources, accessibility becomes essential to ensure the use of information resources, access may be open access or through subscription or purchase a part of it (Kumar, 2016). The revolution of Open Access since early 1990s has liberated libraries and information centers all over the world. More than ever librarians are experiencing a rise in prestige because of their ability to contribute to the digital management of information, which somewhat was being threatened by commercial information providers of the Internet era (Kiran and Chia). Open access archives help disseminate and enhance awareness among researchers of the availability of research-based literature (Zainab 2006) and increases the research impact (Foster & Gibbons, 2005) by making articles available, free of charge, to all those interested (Tonta, 2008).

In developing countries, academic librarians have begun experimenting with open source software in the creation of institutional repository (IR) systems in local libraries, using mainly Greenstone, Fedora, DSpace, or Eprints.

Open Access: Open Access (OA) was initiated in the developed countries and was marked by three notable declarations known as Budapest Open Access Initiative (BOAI) in 2002, (http://www.soros.org/ openaccess/ read.shtml), Bethesda statement in June 2003 (www.earlham. edu/~ peters/fos/bethesda.htm), and the Berlin declaration in October 2003 (http://www.zim.mpg. de/openaccessberlin/ berlin. decleration.html) and since then the issue is spreading through the world and many developing countries including India have joined the effort. OA has made significant progress in the area of public policy and support, copyright, publisher alliance and technology standards. Most OA definitions have key features in common i.e. open access exists where there is free, immediate and unrestricted availability of digital content. According to Suber and Arunachalam (2006) 'Open access to scientific article means online access without charge to readers or libraries. Committing to open access means dispensing with the financial technical and legal barriers that are designed to limit access to scientific research articles to paying customers'. Bjork (2004) defines OA as that a reader of a scientific publication can read it over the Internet, print it out and even further distribute it for non-commercial purposes without any payments or restrictions. At the most the reader is in some cases required to register with the service in question, which for instance can be useful for the service providers in view of

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the production of readership statistics. The use of the content by third parties for commercial purposes is, however, as a rule prohibited. Thus OA is simply the free online availability of digital contents, scholarly journal articles, research results, which authors publish without expectation of payment and is based on 'an ethical argument that research funded by the public should be available to the public' (Jeffery, 2004). OA operates within the legal framework and own the original copyright for their work. Authors can transfer the rights to publishers to post the work on the web or else can retain the rights to post their work on the archives. Open access requires several enabling technologies and metadata interoperability protocols like open source software for establishing and managing digital archives (e.g. dspace, e-prints, Greenstone), open source software for online journal publishing (e.g. OJS system from public knowledge project, University of British Columbia, Canada), metadata schemas and OAI Protocol for Metadata Harvesting (OAI-PMH) which collects the metadata and enables it to be searched.

Open Access Initiatives in India: OA was initiated in the developed countries and later many developing countries including India have joined the effort. In the wake of the open access movement, some policy frameworks have already been established by member communities to foster inclusive, plural and development oriented knowledge societies, a number of open access declarations /statement were made during the past decade, where the world leading research institutions agreed on the open access mandates. The United Nations – backed world summit on the Information Society (WSIS) strongly supported open access to information and Knowledge. Thus confirms that number countries of the United Nations will take appropriate strategic decisions to bring scholarly literature, produced from public fund research initiatives or state-supported researchers, under the umbrella of open Access. Some of the major open statements or declarations made during the past decade are given below:

- ARIIC Open Access Statement (Australian Research Information Infrastructure Committee) [www.caul.edu.au/scholcomm/OpenAccessARIICstatement.doc]
- Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities [http:// oa.mpg.de/openaccess-berlin/berlindeclaration.html]
- Bethesda Statement on Open Access [www.earlham.edu/~peters/fos/bethesda. htm] Budapest Open Access Initiative Statement [www.soros.org/openaccess/]
- ERCIM Statement on Open Access (European Research Consortium for Informatics andMathematics) [www.ercim.org/publication/Ercim_News/enw64/ ercim-oa.html]
- IFLA Statement on Open Access to Scholarly Literature and Research Documentation
- NKC Statements on Open Access (National Knowledge Commission, India) [http://knowledgecommission.gov.in/downloads/documents/wg_lib.pdf & http://knowledgecommissi on.gov.in/do wnloa ds/doc uments/wg_open_course.pdf]
- OECD Declaration on Access to Research Data from Public Funding Washington DC Principles for Free Access to Science: A Statement from Not-for-Profit Publishers [www.dcprinciples.org /statement.htm]

- Wellcome Trust Position Statement in support of open and unrestricted access to published research [www.wellcome.ac.uk/doc_WTD002766.html]
- WSIS Declaration of Principles and Plan of Action (World Summit on the Information Society) [www.itu.int/wsis/docs/geneva/official/dop.html & http://www. itu. int/ wsis/docs/g eneva/officiall/poa .html]

Open *DOAR:* Open DOAR is an authoritative directory of academic open access repositories. Each OpenDOAR repository has been visited by project staff to check the information that is recorded here. This in-depth approach does not rely on automated analysis and gives a quality-controlled list of repositories. As well as providing a simple repository list, OpenDOAR lets you search for repositories or search repository contents. Additionally, it provides tools and support to both repository administrators and service providers in sharing best practice and improving the quality of the repository infrastructure. Further explanation of these features is given in a project document Beyond the list. The current directory lists repositories and allows breakdown and selection by a variety of criteria - see the Find page - which can also be viewed as statistical charts. The underlying database has been designed from the ground up to include in-depth information on each repository that can be used for search, analysis, or underpinning services like text-mining. The OpenDOAR service is being developed incrementally, developing the current service as new features are introduced. A list of Upgrades and Additions is available. Developments will be of use both to users wishing to find original research papers and for service providers like search engines or alert services which need easy-to-use tools for developing tailored search services to suit specific user communities. Growth of the OpenDOAR Database – Worldwide Growth of the OpenDOAR Database Proportion of Repositories by Continent – Worldwide Repositories by Continent OpenDOAR is one of the SHERPA Services including RoMEO and JULIET, run by the Centre for Research Communications (CRC). Current development work is currently funded by JISC, with contributions from the CRC host organization, the University of Nottingham (http://www.opendoar.org/).

Open DOAR Fields: This section provides information and guidance on the fields in OpenDOAR records, especially for the things we have difficulty finding on repository websites (http://www.opendoar.org/help.html).

OAI-PMH: The OAI Protocol for Metadata Harvesting (OAI-PMH) is a machine-to-machine interface provided by most repository software platforms. This allows specialist search services such as BASE and CORE to harvest and process XML metadata for the items in your repository. OAI-compliant repositories have an 'OAI Base URL' in addition the URL for human users. For instance, University of Winnipeg's Winn Space Repository (http://ecommons.uwinnipeg.ca/) has the OAI Base URL http://ecommons.uwinnipeg. ca/oai/request . For further details, an excellent online tutorial on the OAI-PMH is available from the Open Archives Forum. Please supply us with the OAI Base URL for your repository. If you do not know whether you have one, or if you do not know what it is, you may need to contact your software supplier or technical development staff.

Number of items: The number records in your repository, which be subdivided into full text items (or their equivalents) and metadata-only records. Records counts are often surprisingly difficult to find. OAI-PMH can sometimes be used to count records, but this often slow and unreliable. Some repositories give the current total number of records on their home pages, the better cases giving separate figures for items with available full texts. In other cases, the record counts may have to be determined by adding up figures in a 'browse by...' page - e.g. the annual figures in an EPrints "Browse by Year" page.

To help us record accurate record counts, please provide us with one or more of the following:

The URLs of the web pages where you display the number of items in your repository

- Your OAI-PMH Base URL (see above)
- The URLs of 'browse by...' or contents pages, that could be use to determine your repository's size
- Just send us your current total
- Please note: We prefer URLs, because these will enable us to update your total automatically in the future.

Software

This field records the software platform used for the repository. It may be:

- a repository software package such as EPrints or DSpace
- a hosting service such as BePress, Open Repository, where the repositories are hosted on a shared commercial server
- the repository module of a Library Information System (LIS) such as ExLibris.
- the repository component of a research information system (RIS) such Symplectic Elements
- specially developed repositories based on a toolkit or technology such as Fedora
- a normal website maintained using a web authoring tools such as Dreamweaver or FrontPage, or a content management system (SMS) such as Drupal.

When supplying information to OpenDOAR, please give us the name of the sofware package or hosting service. If you are using the repository module of an LIS or RIS, please give is the name of the main system and any separate name for the component. For specially developed repositories and repositories that are websites, please give us the name of the principle technologies or tools you are using.

Policies

Every repository should ideally have policies on

- the re-use of metadata
- the re-use of full texts (or their equivalent)
- permitted content - i.e. the subjects and types of item that can be deposited
- submission requirements, including moderation of new items

- long term preservation of the data

Policies should be visible to users as downloadable documents or web pages in your repository. If you have not yet specified policies for your repository, the OpenDOAR Policies Tool may help you. Please send OpenDOAR the URLs of your policy web pages. You may also send us policy documents, together with the URLs of the web pages that have down links for the documents. English translations are also welcome, where necessary.

Contacts: OpenDOAR aims to have contact details for the administrators or managers for every repostory. These benefit of bona fide enquirers, and we use them ourselves to communicate with repositories and for OpenDOAR's moderated Email Distribution Service. It is possible to opt out of the Email Distribution Service. Email addresses are obfuscated to deter abuse by spammers.

The Emergence of Open *DOAR:* Open DOAR provides a quality-assured listing of open access repositories around the world. OpenDOAR staff harvest and assign metadata to allow categorisation and analysis to assist the wider use and exploitation of repositories. Each of the repositories has been visited by OpenDOAR staff to ensure a high degree of quality and consistency in the information provided: OpenDOAR is maintained by SHERPA Services, based at the Centre for Research Communications at the University of Nottingham (http://www. opendoar.org/about.html#blog).

Introduction to the service: By 2003, a multiplicity of Open Access research archives had grown up around the world, mushrooming in response to calls by scholars, researchers and open access advocates to provide open access to research information. There were then a number of different lists of repositories and open access archives, but no single comprehensive or authoritative list which recorded the range of academic open access repositories. Beyond these basic listings there was a need to move from cumulative lists to a more structured information service, cataloguing and describing repositories. Users need to know the scope and comprehensiveness of the information they find and be given features which facilitate the use of that information. For example, features to search, filter, analyse and query the descriptions of each repository. Repositories need to be categorised with clear information on their policies regarding tagging peer-reviewed/non-peer-reviewed material, their subject coverage, the constituency they draw on for content, their collection and preservation policies, etc. Where this information does not exist, repositories should be encouraged to provide it as a means to further improve their visibility and the use of the content that they hold. Therefore there was a need for a dependable listing of the academic e-print research repositories that were available world-wide, to underpin the outreach of the Open Access movement. OpenDOAR was been set up to provide this service and has grown consistently since then.

Service Scope: OpenDOAR is primarily a service to enhance and support the academic and research activities of the global community. OpenDOAR maintains a comprehensive and authoritative list of institutional and subject-based repositories. It also encompasses archives supported by funding agencies

like the National Institutes for Health in the USA or the Wellcome Trust in the UK and Europe. For our definitions of repository types, please see the footnotes for the relevant OpenDOAR statistical chart. Users of the service are able to analyse repositories by location, type, the material they hold and other measures. One key point about OpenDOAR is that this information is of use not only to users wishing to find original research papers but also for third-party service providers, like search engines or alert services, who need easy to use tools for developing tailored search services to suit specific user communities. The Centre for Research Communications at the University of Nottingham currently runs a suite of SHERPA Services for the Open Access community. SHERPA Services compiles and maintains the RoMEO service, which gives summaries of the archiving rights that different publishers allow authors to retain. To complement this, SHERPA Services also runs the JULIET service, which summarises the archiving responsibilities and requirements that funding agencies give as a condition of funding grants. OpenDOAR is the third part of this repository service, listing available open access repositories.

Service Aims

Open DOAR aims to:

- Survey the growing field of academic open access research repositories and categorise them in terms of locale, content and other measures.
- Produce a descriptive list of open access repositories of relevance to academic research.
- Provide a comprehensive & authoritative list for end users wishing to find particular types of, or specific repositories.
- Deliver a comprehensive, structured and maintained list with clear update and self-regulation protocols to enable development of the list.
- Play a prominent international role in the organisation of and access to open access repository services.
- Support Open Access outreach and advocacy endeavours within institutions and globally.

Going through the OpenDOAR: There are several user-groups for OpenDOAR including researchers, browsers, service-providers, data-miners, administrators and funders. Each of these possess their own expectations, needs and perspectives. The information gathered is therefore analysed and represented in such a way as to satisfy the information requirements of all of these groups. Given the ability to identify, sort and locate different repositories it is expected that new services and uses will develop. One example of this is the development of overlay journals; such emergent capabilities will be facilitated by the use of a comprehensive, structured and maintained list. OpenDOAR survey and statistics has helped to examine and clarify the emerging structure of the world-wide repository network. The work on classification and on metadata allows innovative and focussed search services, wherever they are based, to more efficiently identify required resources. As regards the listing itself, users can be assured of its sustainability, maintenance and authority.

Opening further: Several services use OpenDOAR as the basis for their search or harvest processes. Repositories

registered or included within OpenDOAR are more visible and will naturally have their contents more easily found by researchers. While search services can be aware of repositories for metadata harvesting through a basic list or register, with rapidly expanding numbers of sites individual repositories and pieces of content have become harder to find amongst a larger number of search results. With OpenDOAR allowing for repository listing by the content types it contains or the constituency it serves, a greater level of precision can be given to the searching process. In this way there is an increased chance for end-users to find a particular repository or for a search service to clearly flag an individual eprint or piece of research.

OpenDOAR in the past: The initial OpenDOAR was developed and maintained by the University of Nottingham as part of a portfolio of work in Open Access and repositories under the SHERPA umbrella. OpenDOAR was started and initially developed by a partnership of the University of Nottingham, UK and Lund University, Sweden, home of the DOAJ. The funders of the OpenDOAR project (OSI, JISC, SPARC Europe and CURL) asked the SHERPA team at the University of Nottingham to complete the original development work and since then the service has been based at the University, now included within the Centre for Research Communications.

OpenDOAR to the future : The current OpenDOAR activities are funded by JISC and internal funding. The Directory continues to be developed in functionality and content. During this time the list is being developed, as we are grateful to all of our contributors and overseas correspondents who do so much to support the service.

Service Management: Day to day management is under the control of the Service Manager, with oversight by the Service Director. The Centre for Research Communication Steering Group has oversight of project work: close liaison is maintained with project funders in the direction and scope of project work. OpenDOAR staff are in regular contact with users, repository managers, interest groups, funders and other interested parties around the world and are happy to take suggestions for developments and improvements to the service.

Funding: The importance and widespread support for the project can be seen in its original funders, led by the international Open Society Institute (OSI - now Open Society Foundations), which is a major player in advocacy for the spread of open access to the world's research findings.

The UK funding body JISC (Joint Information Systems Committee - now Jisc) also backed the initial 18 month project, as part of a larger programme of funding for repository development in UK institutions. There has been additional contributory funding from the Consortium of Research Libraries (CURL, now Research Libraries UK, RLUK) and from SPARCEurope - an alliance of European research libraries, library organisations, and research institutions. Jisc now continues to fund the development and provision of the OpenDOAR service. The OpenDOAR team would like to acknowledge the funding for the project work from these bodies with warm thanks, as without this support it would have been impossible to proceed.

Conclusion

OAI have emerged as a boon to 'Combat Serial Crisis'. The academic libraries should promote OA and also influence for the establishment of institutional repository of the parent Institution. The libraries by adopting OA can give more visibility to users. Many journals which it cannot afford to subscribe are made available under OA. The National Knowledge Commission has recommended increasing the Open Education Resources (OER) and Open Access (OA). The easy and wide spread availability of high quality of educational resources will improve the quality of education institution. The noble objective of OA has to be realized and the librarian has to encourage the users not only to be active consumer of OA but also active contributors to it, only then the OA model will fulfill its motto of free access to scholarly literature.

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