

Full Length Research

Designing and Configuration of Institutional Digital Repository through OPUS: An Integrated Open Access Framework

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Digital resource is increasing in this modern age due to increase in technological impact and its peripherals. IDRs will additionally include digital materials that subsist outside the physical and administrative bounds of any one digital library. IDRs will include all the processes and accommodations that are the backbone and nervous system of libraries. However, such traditional processes, though composing the substratum digital library work, will have to be revised and enhanced to accommodate the differences between incipient digital media and traditional fine-tuned media. One of the most immensely colossal issues in engendering IDRs will be the building of digital accumulations. Conspicuously, for any digital library to be viable, it must eventually have a digital amassment with the critical mass to make it genuinely subsidiary. One thing IDRs will not be is a single, consummately digital system that provides instant access to all information, for all the students of all libraries and also from anywhere in the world. In this research paper researcher chooses OPUS, popular digital library software that can create and manage the digital environment in libraries. It is helpful both for the students and librarians also because they are able to access, download and upload the relevant documents. Within a coordinated digital library scheme, some prevalent standards will be needed to sanction IDRs to interoperate and apportion resources. OPUS is institutional digital repository open source software that can easily manage and upload all the documents of different file types available in libraries. It also provides tools for creating digital collections for storage and dissemination of intellectual sources for academic institutions.

Keywords: OPUS, Institutional Digital Repository, Open Access, Metadata, Publish interface, Search interface, and Site link interface

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INTRODUCTION

The concept of repository is a part of digital library or content management system. It can be classified in two ways such as subject and institutional based in which digital contents have been deposited for maximum use of

these resources for different purpose. Most of the repositories have the common characteristics like learning, research and administrative tasks and in this stage by using the open source standards or software,

IDRs have been developed for easy access the multiple resources. Import and export is easily possible by using the open source standards and it also stores metadata and full-text for the easy retrieval of information from a particular websites including lot of contents and sub-contents. Generally content can include research outputs such as journal articles or research data, e-theses, e-learning objects and teaching materials, and administrative data. Online archive or digital resource management is one of the important tasks in managing an institutional repository. It also supports or maintains the other digital documents including datasets, administrative documents, course notes, learning objects, or conference proceedings besides journal articles, theses, etc. Management of web content and linking the electronic resources can be developed by self-archiving. It consists of different facets and elements of any institutional repository like collecting, housing, classifying, cataloguing, curating, preserving, and providing access to digital content—analogue with the library's conventional function of collecting, housekeeping, classifying, curating, preserving and providing access to analogue content. In IDRs, organization of the different types of files like PDF, DOC, audio, videos, image formats and other formats also. All these tasks can be performed by any open source software. In this respect OPUS is considered to be the software to build IDRs. OPUS is an open source user friendly software package and it is compatible with the General Public License for creating Open Access repositories which is also compatible with the Open Archives Initiative Protocol for Metadata Harvesting. It also provides tools for creating digital collections for storage and dissemination of intellectual sources for academic institutions.

OBJECTIVE OF THE STUDY

The main objective of the study is to design and customize open access Institutional Digital Repository through OPUS in which researchers and academicians of an institution concerned can deposit, edit, browse, index their institutional research output to their IDRs with a single window search interface.

Related Study

Both national and international literature regarding this study have been consulted to find out the scope of the study and some of notable related studies have been recorded below—

In 2017, Sengar, Lohiya and Rai presented a paper on CSIR Institutional Digital Repository in a national conference held in Pune and they commented on CSIR IDR as a case study (Sengar, Lohiya & Rai, 2017). Both

the authors Fortier & Laws made their focus on Marquette University's institutional repository and they told about an innovative concept on marketing of IDR in this digital era (Fortier, Rose & Laws, Emily, 2014). Passehl-Stoddart and Monge in their paper aims to highlight five IDRs collections emphasis on undergraduate students and showed how IDRs create an opportunity to build student-centric collections. Hamersly Library of Western Oregon University developed an institutional repository with collections based on the university's undergraduate education. In this repository, students are encouraged to publish their original articles, presentations and creative works (Passehl-Stoddart & Monge, 2014) Manjunatha and Thandavamoorthy in their paper present the trend of researchers of Karnataka University for deposition of their intellectual output to IDR. They showed that the most of the science and technology scholars become aware of IDR and they were willing to deposit their papers to IDR. On the other hand, the Humanities and Social Science researchers are reluctant to deposit their intellectual output to the institutional repository (Manjunatha & Thandavamoorthy, 2011).

Ashok Kumar stated that Institutional Repository (IR) is the prime source of digitized intellectual output deposited by research scholars. He also observed that the most of the research and development institutes and few academic institutes in India host their IR to provide service to users (Ashok Kumar, 2009). Royster in 2012 stated in his paper about the different aspects of OARs and the licensing policies attributed on OARs in this regard (Royster, 2012). Robin in his paper in VINE stated about Institutional repository and its features and development (Yates, 2003). Both Laxminarsaiah, Ashalatha & Rajgoli, Iqbalahmad U. and Zahid showed in their paper how to build and develop Institutional repository through open source software (Laxminarsaiah ; Rajgoli; Iqbalahmad ,2007 & Zahid , 2010). Chen & Jieh in their paper stated the innovative features of Institutional digital Repository and its development and creation though open source software (Chen, & Jieh, 2009). In the light of this study the following papers have been noted--Mandal in his paper 2015 states about thesaurus construction tool and he in 2016 his paper studied on search indexing tool (Mandal, 2015 & Mandal, 2016). In his paper in 2017, Mandal developed a domain specific cluster for college libraries (Mandal, 2017). Chakrabarti and Mandal in their paper on DOAB showed how single window search facility of books is helpful for researchers (Chakrabarti and Mandal, 2017). In a letter from the secretary of UGC dated the 16th August, 2016 { D.O.No.F.I -112016 (Secy) } , it is stated that UGC requested IIT Kharagpur to build a National Digital Library which will harvest all metadata content from other Institutional Digital Repositories in India (UGC, 2017). National Knowledge Commission led by Sam Pitroda proposed to set up Indian Institutional Digital Repository

and suggested that the higher education and R&D sectors should frame guidelines and open access policies to improve accessibility of research (NKC,2007). Moreover, Developing Library Network (DELNET, 2017) and Information Library Network (INFLIBNET, 2017) have initiated for the establishment the IDRs.

METHODOLOGY

OPUS is an open source software and very user friendly. So it is chosen for building Institutional Digital Repository. According to need and demand of repository users, it is customized for easy access the electronic resources. The whole operation is performed in Ubuntu operating system as it is secure and safe to use.

Designing and Customization of Institutional Digital Repository

Designing and customizing the institutional digital repository can easily be possible by using the OPUS open source popular software. It is very simple and user-friendly for customizing the important areas in IDR as follows:

- I. Admin Interface
- II. Publish Interface
- III. User Interface
- IV. Browse Interface
- V. Search Interface
- VI. Site Link Interface
- VII. OAI request interface

I. Admin Interface

This is the admin interface of institutional digital repository. There are many parameters available in OPUS admin interface for designing and developing the integrated framework of any libraries. Now, these essential components can be classified in twelve parameters such as document, review, persons, collections, series, licenses, languages, information for DNB, access control, setup, settings, and system information. The Figure 1 is represents the admin interface of OPUS for the development of institutional digital repository of any libraries or institutions.

II. Publish Interface

Basically there are two sections in publish interface such as metadata and full text documents. It is possible to upload the all types of files by using publish interface. The Figure 2 represents the publish interface in OPUS.

This is very essential for developing the institutional digital repository for publication of documents.

III. User Interface

This is the user interface of OPUS and here any users can easily access the digital resources. It is possible to display the total number of documents available in a particular repository. The Figure 3 represents the user interface of OPUS and it consists of 148 documents available in this repository.

IV. Browse Interface

This is very simple and easy process to browse a particular facet and sub-facet available in this repository. The Figure 4 is represents the browse interface of OPUS. Any user can browse the different items such as years, institute, collections and so many fields and sub-fields also.

Further it can be divided in any many facets and sub categories e.g browse by institute and it also displays how many documents are available under a particular repository for the better management of information resources. The Figure 5 represents the browse by institute in OPUS.

V. Search Interface

The search interface can be classified in two categories such as simple search and advanced search in OPUS for institutional digital repository. It has many search facilities such as navigation, tagging, and federated searching. Through this interface users can easily retrieve the number of documents as author, year of publication, title, subjects and so many metadata. The Figure 6 represents the search interface of OPUS for searching the different documents in any institutions and libraries also.

VI. Site Link Interface

Researchers can easily manage references by downloading the BibTex and RIS format. Users have easily accessed the metadata as well as full text pdf files from this interface. Apart from these it also gives additional features such as release date, last modified, and share information among the Google Scholar. The Figure 7 is represents the site link interface of OPUS for managing the digital information resources both for local and global users.

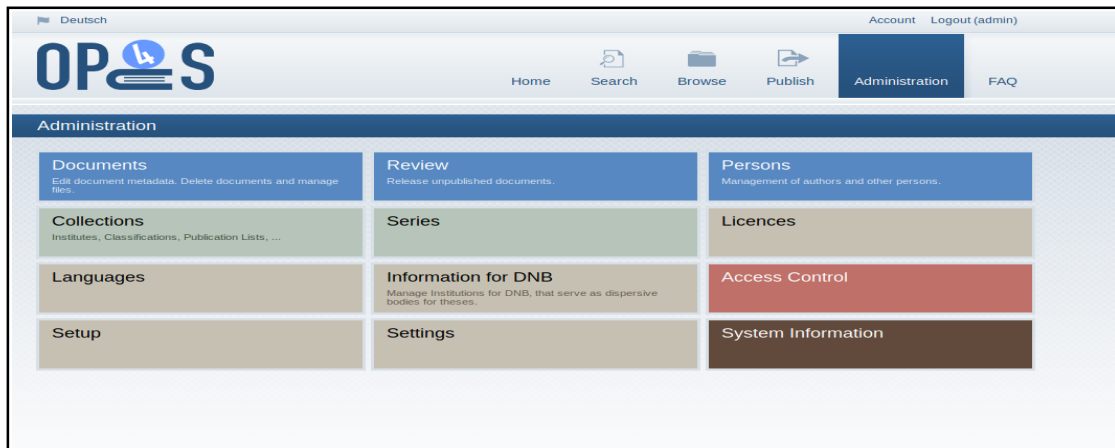


Figure 1: Admin interface of OPUS in IDR

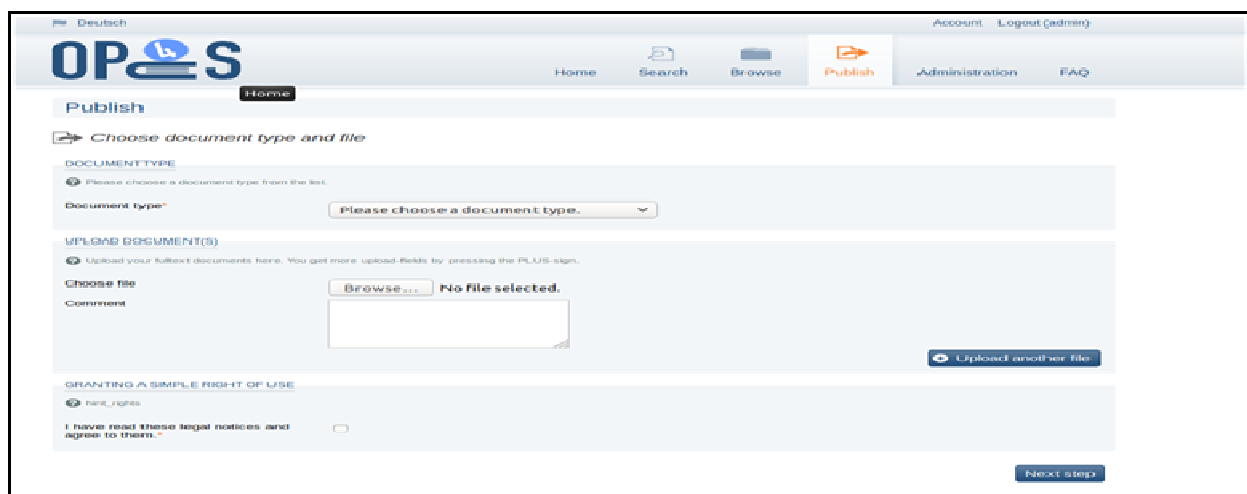


Figure 2: Publish interface of OPUS in IDR



Figure 3: User interface of OPUS in IDR

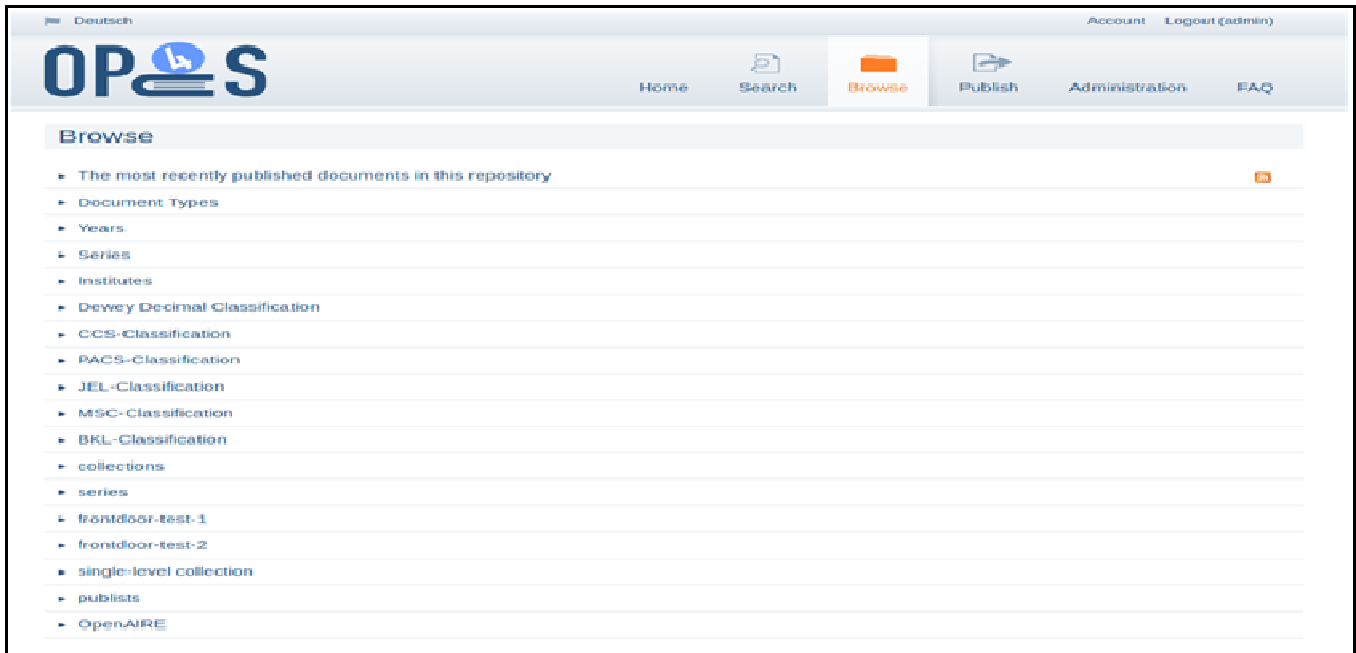


Figure 4: Browse interface of OPUS in IDR

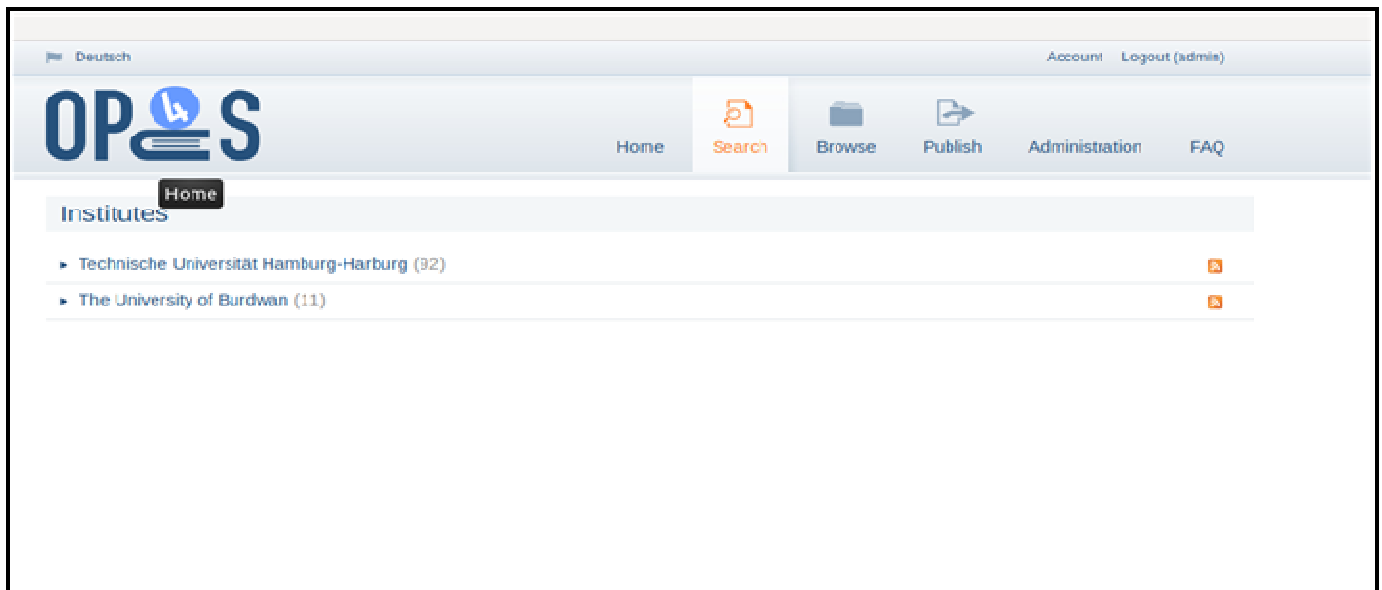


Figure 5: Browse by institute of OPUS in IDR

VII. OAI request interface

It fully supports the Open Archiving Initiatives for metadata harvesting in different requests such as OAI request with verb Get Record (oai_dc) ; OAI request with verb Get Record (oai_pp) ; OAI request with verb Get Record (EPICUR) ; OAI request with verb Get Record (XMetaDissPlus) ; OAI request with verb Identify ; OAI request with verb List Identifiers ; OAI request with verb List Metadata Formats ; OAI request with verb List

Records (with from-date) ; OAI request with verb List Records (with OAI set) ; OAI request with verb List Sets ; OAI request with verb List Records (with Open Aire set). These OAI requests are represented in the Figure 8. OAI request result is being displayed in the Figure 9. It also displays the full Dublin Core metadata descriptions of each and every facet. It is possible to harvest the metadata and full text resources by using the OAI-PMH tools for the management of digital resources.

Deutsch Account Logout (admin)

OPUS Home Search Browse Publish Administration FAQ

REFINE 148 search hits 1 to 10 Export

Sort by Year Year Title Title Author Author

Author

- Doe, John (7)
- Kwik, King Han (7)
- Schneider, Gerold A. (5)
- Bechtle, Sabine (3)
- Hapke, Thomas (3)
- Herber, Ralf-Peter (3)
- Klocke, Aindl (3)
- Mgbemere, Henry Ekene (3)
- Thieme, Hans (3)
- Ang, Siang-Fung (2)
- + more

Year of publication

- 2011 (22)
- 2009 (14)
- 2010 (14)
- 1978 (9)
- 2008 (7)
- 2012 (7)
- 1979 (6)
- 2018 (6)

Citations behaviour of Indian scientists from an interdisciplinary research institute: A case study of CSIR-NILST (2018)
Nishy, P ; Rana, Madan Singh ; S, Mini

The effect of key characteristics of the title and morphological features of published articles on their citation rates (2018)
Alimoradi, Foad ; Javadi, Maryam

A preliminary investigation of editorial gatekeeping of CSIR-NISCAIR Journals (2018)
Garg, K.C. ; Pali, Shikha

Developmental features of biomedical bibliographic databases (2018)
Subramanyam, N. ; Krishnamurthy, M. ; Asundi, A.Y.

The status of the University of Khartoum Institutional repository (2018)
Abdelrahman, Omer Hassan

Analysing the effects of cultural dimensions on the quality of library websites (2018)
Chakraborty, Sarthak

Figure 6: Search interface of OPUS in IDR

State: **Published** Release Date: 2018/01/12 Last Modified: 2018/01/12 07:10 Edit Files Administration

The effect of key characteristics of the title and morphological features of published articles on their citation rates

Foad Alimoradi, Maryam Javadi

The title is one of the most important parts of the article because it is the first contact that reviewers and readers have with the paper. This study aimed to evaluate the effect of key characteristics of the title and morphological features of articles on their citation rates. One thousand two hundred and fifty one articles published in eight ISI-indexed reputable journals were analyzed. A form was designed to collect information on the number of citations in the Scopus, characteristics of the title and morphological features of each article. The results revealed that the title type, number of words and characters in the title were not correlated with the number of citations ($P>0.05$). Also, the authors' country of origin and mentioning time in the title were not associated with the number of citations ($P>0.05$). A significant relationship was found between types of articles and number of citations ($P<0.001$); the average number of citations for review articles was higher than original articles. The average number of authors was positively and significantly correlated with the average number of citations ($P<0.001$). Moreover, the average number of citations was considerably higher in the articles with no reference to the place of the study in the title ($P<0.001$). The results showed that some characteristics of the articles and their titles such as types of articles, number of authors and reference to the place in the title affect the citation rates of published articles.

Metadaten

Author:	Foad Alimoradi, Maryam Javadi
Parent Title (English):	The effect of key characteristics of the title and morphological features of published articles on their citation rates
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Date of Publication (online):	2016/02/14
Date of first Publication:	2018/01/12
Publishing Institution:	School of Life
Release Date:	2018/01/12
Tag:	Citation rate ; title of characteristics ;
First Page:	74
Last Page:	77
Licence (German):	CREATIVE COMMONS - CC BY - NACHRECHTUNG 4.0 INTERNET

DOWNLOAD FULL TEXT FILES

ALIS 63(1) 74-77.pdf (30KB) citation rate

EXPORT METADATA

BibTeX RIS

ADDITIONAL SERVICES

Figure 7: Site link interface of OPUS in IDR

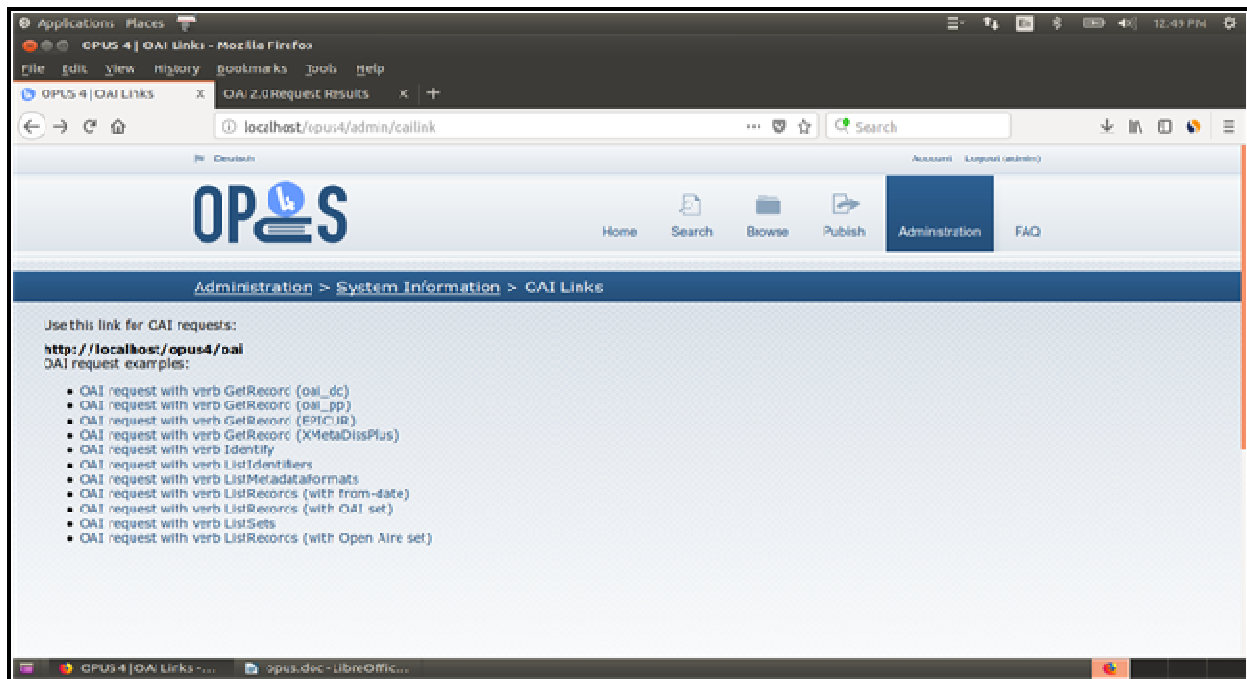


Figure 8: OAI link interface of OPUS in IDR

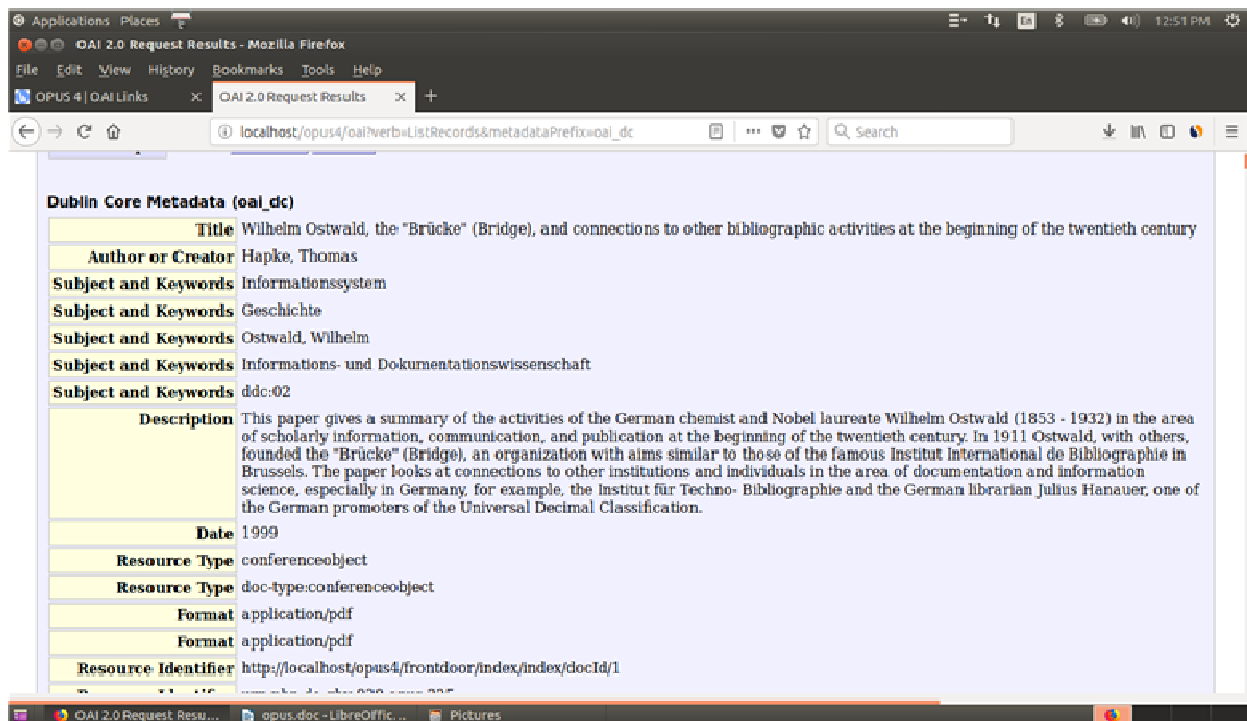


Figure 9: OAI request result interface of OPUS in IDR

CONCLUSIONS

In IDRs, a large number of resources are available to academic community for easy searching at any time

anywhere. The awareness programs, training and workshops should be organized and funded by the leading organizations like UGC, CSIR etc. to educate and instruct the faculty members, researchers and scientists

and all other working bodies to adopt the open access approach and make awareness regarding the creation of IDRs. It is noteworthy that the academicians, researchers are not at all fully aware of the IDRs and the maintenance of IDRs has not also properly been done. A mandatory order should enforce to harvest the metadata of IDRs to Digital Library .A central repository should be built by using open source software to harvest metadata from various IDRs to provide a single window search facility to the academicians and researchers. The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long as an Internet connection is available. A major advantage of IDRs is that people can gain access information. The same resources can be used simultaneously by a number of institutions and patrons. This may not be the case for copyrighted material; a library may have a license for "lending out" only one copy at a time; this is achieved with a system of digital rights management where a resource can become inaccessible after expiration of the lending period or after the lender chooses to make it inaccessible (equivalent to returning the resource). The user is able to use any search term (word, phrase, title, name, and subject) to search the entire collection. IDRs can provide very user-friendly interfaces, giving click able access to its resources. Digitization is not a long-term preservation solution for physical collections, but does succeed in providing access copies for materials that would otherwise fall to degradation from repeated use. Sometimes data entered under the organizations of particular full text resources such as books, conference proceedings, journals and etc., so, it is possible to search the organizations name just click on the option of organizations and all the organizations are to be appeared alphabetically. This is the attractive and interesting indexing in user interface of OPUS because here all the users can easily access their documents based on contents of a books or any other types of resources of libraries. If the user clicks on browse button option all the metadata and full text resources will come. So, the users can easily access or search their necessary books with full text resources in different subject both homogeneous and heterogeneous.

REFERENCES

- Ashok Kumar, N. (2009, March). *Institutional Repositories in India*. Paper presented at the National Seminar on Strategic Information Management in the Digital Era, Tamil Nadu (India). Retrieved from <http://eprints.rclis.org/17511/> (Accessed on 21.10.2017)
- Chakrabarti, Abhijit & Mandal, Sukumar. (2017). Overview of Open Access Books in Library and Information Science in DOAB. *International journal of Library and information Studies*, 7(4),185-192. Retrieved from http://ijlis.org/img/2017_Vol_7_Issue_4/185-192.pdf (Accessed on 08.12.2017)
- Chen, Kuanghua & Hsiang, Jieh. (2009) .The unique approach to institutional repository: Practice of National Taiwan University. *The Electronic Library*,27(2), 204-221. Retrieved from <https://doi.org/10.1108/02640470910947>(Accessed on 08.12.2017)
- DELNET. (2017). About DELNET. Retrieved from <http://www.delnet.org> (Accessed on 09.10.2017)
- Fortier, Rose & Laws, Emily. (2014) . Marketing an Established Institutional Repository: Marquette Libraries' Research Stewardship Survey. *Library Hi Tech News*, 31(6), 12-15.
- INFLIBNET. (2017). About INFLIBNET. Retrieved from <http://www.inflibnet.ac.in> (Accessed on 11.10.2017)
- Laxminarsaiah, Ashalatha & Rajgoli, Iqbalahmad U. (2007) .Building institutional repository: an overview. OCLC Systems & Services. *International digital library perspectives*, 23(3),278-286. Retrieved from <https://doi.org/10.1108/10650750710776413> (Accessed on 05.12.2017)
- Manjunatha, K. & Thandavamoorthy,K. (2011) . A study on researchers' attitude towards depositing in institutional repositories of universities in Karnataka (India). *International Journal of Library and Information Science*,3(6),107-115.Retrieved from <http://www.academicjournals.org/ijlis.on> 22.10.2017 (Accessed on 05.11.2017)
- Mandal, Sukumar . (2016). Use of Search Indexing Tools in Library Automation: A Comparative Analysis. *International Research Journal of Multidisciplinary Studies*, 2 (6), 1-13.
- Mandal, Sukumar (2017). Development of Domain Specific Cluster : An Integrated Framework for College Libraries under the University of Burdwan. *Library Philosophy and Practice* (Peer Review e-Journal)
- Mandal, Sukumar (2015). MultiTes: A Knowledge Organization Thesaurus Construction Tool for College Libraries under the University of Burdwan. *International Research Journal of Interdisciplinary & Multidisciplinary Studies (IRJIMS)*, 1 (8), 63-79.
- NKC. (2017). About National Knowledge Commission. Retrieved from [http:// www.NKc.org](http://www.NKc.org) (Accessed on 05.12.2017)
- Passehl-Stoddart, E, & Monge, R. (2014). From Freshman to Graduate: Making the Case for Student-Centric Institutional Repositories. *Journal of Librarianship and Scholarly Communication*, 2(3),1130. Retrieved from <http://dx.doi.org/10.7710/2162-3309.1130> (Accessed on 12.12.2017)
- Royster,P.(2012).Open-Access journals and institutional repositories. *Library Conference Presentations and Speeches*,82.Retrieved from http://digitalcommons.unl.edu/library_talks/82 (Accessed on 25.12.2017)

Sengar, K.P.S.;Lohiya, R.K.& Rai,V. (2017, February). CSIR Knowledgebase: An assessment of CSIR *Institutional Digital Repositories of India. Paper presented at the National Conference on Library Innovations for Excellence,Pune(India).*
UGC. (2017). *About UGC initiatives. Retrieved from http://ugc.ac.in/new_initiatives/etd_hb.pdf (Accessed on 23.10.2017)*

Yeates, Robin (2003). Institutional repositories. *VINE*, 33(2), 96-101, Retrieved from <https://doi.org/10.1108/03055720310509064> (Accessed on 15.12.2017)

Zahid Hossain Shoeb, (2010). Developing an institutional repository at a private university in Bangladesh, *OCLC Systems & Services: International digital library perspectives*, 26 (3), 198-213, Retrieved from <https://doi.org/10.1108/10650751011073634> (Accessed on 05.11.2017)