Institutional repository of CSIR-NML and the global information seeker

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CSIR-National Metallurgical Laboratory (NML) Jamshedpur established its institutional repository – Eprints@NML in September 2009. The study looks at the use of the repository based on the repository log data. It was found that NML Scientists received 1847 enquires for their articles/projects until September, 2012 which motivated them further to enrich the repository by uploading their research outputs. As a result, by the end of September 2012 there were 5071 uploads as against 3972 documents uploaded in December 2011. A total of 27, 40,343 hits were received from different countries during August 2011 to September 2012 and a cumulative total of over 4.86 million hits since inception. The maximum number of hits was 0.27 million in August, 2012. More than 75% of NML scientists/researchers have registered with Eprints@NML for uploading their documents. The top twenty countries accessing the repository were United States, India, Russia, China, UK, Hong Kong, Germany, Netherlands, Iran, Japan, France, Italy, Canada, Korea, Ukraine, Brazil, Poland, Australia, Turkey and South Africa.

Introduction

The institutional repository can boost the visibility of an institution and enable global access to the research output of the institution. Institutional repositories, by capturing, preserving and disseminating collective intellectual capital, serves as a meaningful indicator of an institution's scientific quality. It concentrates the institutional product credited by a researcher, making it easier to demonstrate its scientific, social and financial values[1].

There are many libraries world over that cannot afford to subscribe and provide access to expensive journals to their readers. The repositories have helped in providing access to information resources by bridging the gap created by budgetary constraints of organizations. Besides grey literature such as R&D reports, thesis/dissertations, presentations, posters, lectures, graphs, teaching materials etc., can also be deposited into the institutional repository[2].

The CSIR-National Metallurgical Laboratory (NML), Jamshedpur, India established in 1950 under the aegis of the Council of Scientific & Industrial Research (CSIR), India has been catering to the needs of Indian researchers and industries in the area of minerals, metals and materials (www.nmlindia.org) through the pioneering vision of the first Indian Prime Minister of Republic India, Pandit Jawaharlal Nehru. It is the oldest among metallurgical research laboratories in India having highly qualified engineers, technologists and researchers. Over the last sixty two years, lots of R&D results / reports / publications / patents etc. were generated and most of these documents were brought out by the laboratory in print format. Therefore, these documents had a limited circulation. Considering the value of these printed documents, it was planned to develop a system which will have a global access and knowledge sharing to information seekers.

Further, the exceptional research legacy (since 1950) of CSIR-NML was gradually getting mutilated and disappearing from the resource base. Accordingly, it was strongly felt that an ICT based institutional repository be established to provide open access to the laboratory's scientific products and research activities. CSIR-NML-Knowledge Resource Centre motivated the scientists and researchers to upload their research papers on the Eprints platform created at NML[3,4].

Eprints—The open source software, developed at Southampton University in the United Kingdom and used for creating digital repositories was opted at CSIR-NML and Eprints 3.1.3 was selected. A

dedicated server was procured and installed in the NML-Knowledge Resource Centre (KRC). Eprints software was then installed and customized (Fig.1).The repository was given a name Eprints@NML[5] and launched its services in September 19, 2009 (Fig. 1).

The present study has been undertaken to examine the growth and impact of the CSIR-NML institutional repository.

Objectives of the study

- To identify the growth rate of the repository holding;
- To understand about the information seekers of the repository;
- To examine the types of documents available in NML Eprints; and
- To know the frequency of use and downloads by the seekers.

Methodology

The data for the study was obtained from the Eprints@NML[6] and University of Southampton website[7]. The performance reports of the laboratory and inputs of the scientists regarding their publications were also used and analysis was done using MS-Excel 2007.

Analysis

Target group

There are four broad categories of users of the NML institutional repository. They are, (i) Global Academics (Worldwide Universities, IITs, NITs, Engineering colleges, and likewise), (ii) Research Institutions/Laboratories (CSIRO Australia, CSIR, DST, DRDO, IGCAR, and many more), (iii) Industries, and (iv) Knowledge seekers (individuals, NGO, consultants, private firms and general public).

Growth of NML Eprints

In September 2009, there were 12,363 hits from 7 countries and 6,333 pages of downloads from the repository. A list of full-text requests of individual NML paper was directly emailed to the corresponding authors for onward action. NML scientists and Eprints team received more than 9,965 enquires till
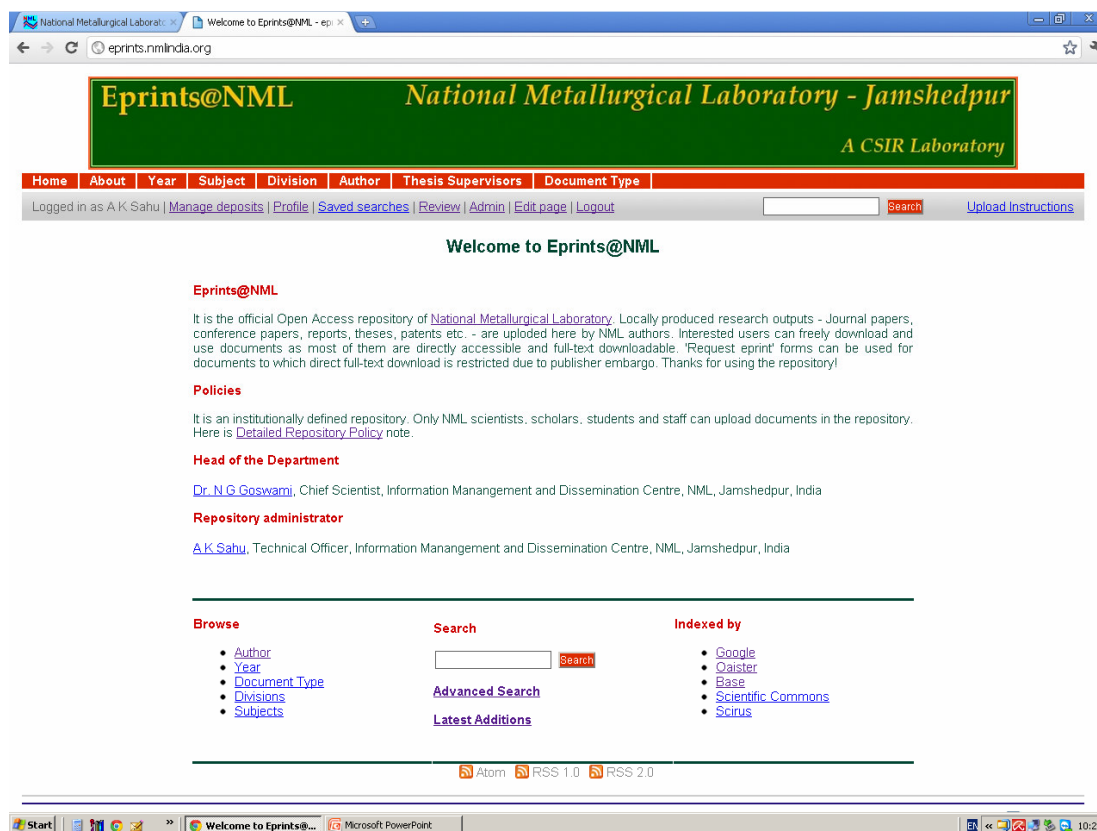

Fig. 1—A view of CSIR-NML Eprints portal

September 2012. By the end of September 2012 there were 5071 uploads as against 328 documents in 2009. Accordingly, the access to the repository also increased phenomenally as shown in Fig. 2.

A total of 27,40,343 hits were received from all over the world during August 2011 – September 2012 and 4.86 million hits since inception. A maximum number 0.27 million hits were received in August 2012. More than 75% of NML scientific and technical staffs have registered with Eprints@NML for uploading their documents.

Country-wise access of NML Eprints

During the period September 2012, the repository had visitors from as many as 143 countries (Fig. 3). The top twenty countries are – United States, India, Russia, China, UK, Hong Kong, Germany, Netherlands, Iran, Japan, France, Italy, Canada, Korea, Ukraine, Brazil, Poland, Australia, Turkey and South Africa.

In August 2012, a twenty-one fold increase in hits was recorded since inception from 143 countries. Fig. 4 shows that nearly half the hits to the repository
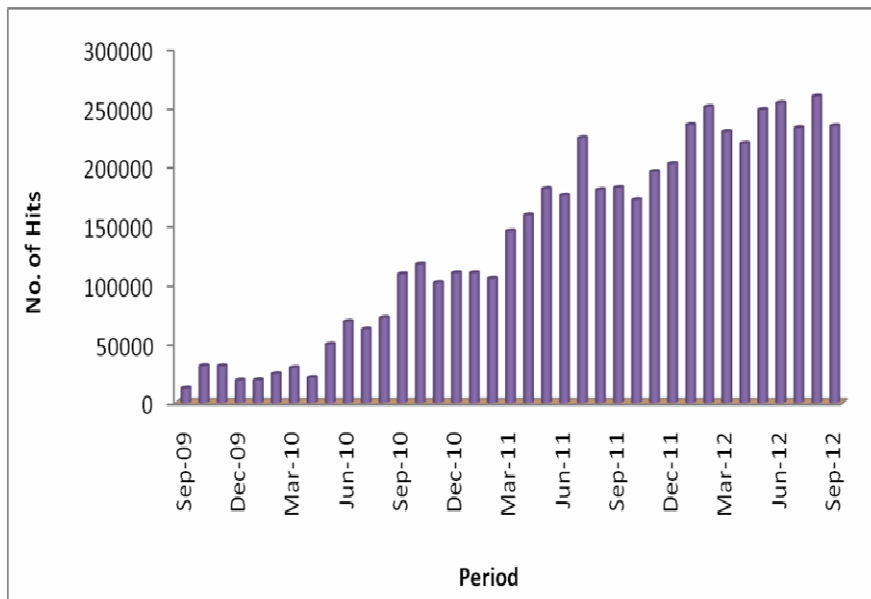

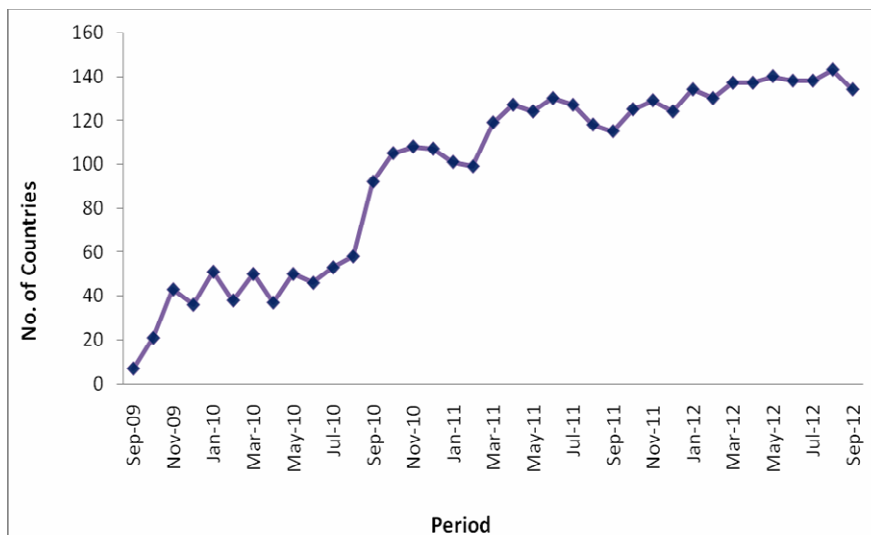Fig. 2—Showing growth of NML Eprints in terms of hits

Fig. 3—Access of NML Eprints

was from USA. About 10% of the visitors were from India and the rest of 43% hits were from the remaining 141 countries.

Research publications, citations and NML IR

Web of Science and Scopus databases have indexed a total of 1566 papers from CSIR-NML for the period 1986-2012. But Eprints@NML has a total of 5071 documents. The number of citations increased from 6660 to 10363 which accounted for 55.6% rise over last two years. This could be due to the increasing global visibility of NML's research output through NML institutional repository.(Fig.5)

Overcoming early challenges

Getting the repository populated was a challenge. Some of the challenges and how they were overcome are given below:

- Uncertainty and fear on copyright issues were overcome by organizing workshop and training programme.
- Initially, the authors were reluctant to deposit their documents in open access NML Eprints. The same was overcome by personal contact and counseling.
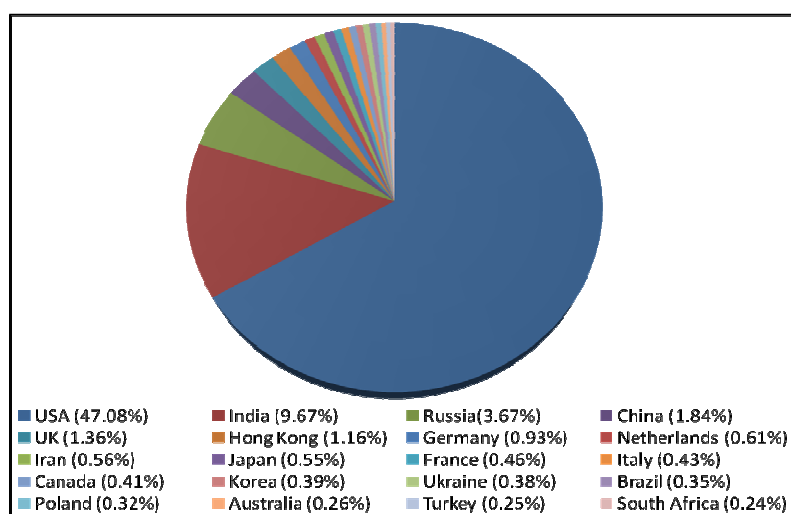
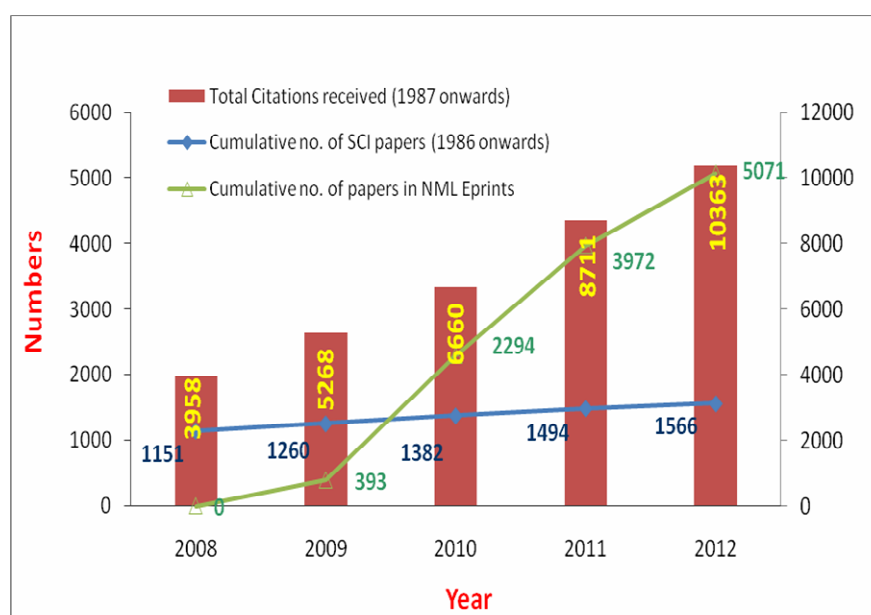Fig. 4—Top twenty countries accessing NML Eprints repository

Fig. 5—Research publications, citations and NML IR

- Uncertainty about who gets attribution, impact and scholarly credit were overcome by counseling and showing impact in individual's citation value.

- Workshops / Trainings were continuously held which motivated the authors and researchers to come forward with their intellectual products in uploading them for global exposure.

- E-mails were sent to individuals convincing them to upload their papers. Assistance for scanning and uploading them with proper indexing etc were provided.

The Eprints open source software is an excellent tool for creating and maintaining OAI-compliant repositories. The best thing about it is that it can be set up easily even by those who are not too knowledgeable about computers and software. The only thing is the repository team should ensure that the hardware and software components related to the repository are up-to-date. Depending on the magnitude of publications being handled, a dedicated team is a necessity[8].

Privacy policy

Due to the restricted nature of the ongoing projects at NML, policy decision regarding the level of accessibility and the publications to be archived has been defined by the management at CSIR-NML. With due publicity and training, scientists were encouraged to upload their papers to the IR. The publisher's copyright and archival policy is checked http://www.sherpa.ac.uk/romeo.php?all=yrs) before depositing the full papers to the NML Institutional repository. Once the document is deposited, it is stored in the buffer. Each document has to be reviewed before it is archived. A detailed policy is available at http://eprints.nmlindia.org/policies.html.

Conclusion

The Council of Scientific and Industrial Research (CSIR) has mandated open access in all its constituent establishments and also has a policy on open access. The National Metallurgical Laboratory, one of the 37 laboratories of CSIR, as per the CSIR open access mandate has set up the institutional repository discussed here. As per Registry of Open Access Repositories, NML institutional repository ranks 5th in the country and 2nd among CSIR laboratories as on July 31, 2012 (source: http://roar.eprints.org). It contributed to 55.6% increase in the organisational citations value over last two years and this enhanced the scale of world wide exposure of NML. It is about time that all R&D and academic institutions in the country set up institutional repositories.

References

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