Chapter 9
Emerging Trends in OAI–PMH Application

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ABSTRACT

Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) provides an application-independent interoperability framework based on metadata harvesting. It is an effective way of sharing metadata between gateway services. The chapter gives an overview of Open Archives Initiative and underscores development, structure, and basic working of OAIPMH for harvesting procedures. It also traces the emerging trends in the use of Open Archive Initiative-Protocol for Metadata Harvesting (OAI-PMH) by open access repositories to support interoperability among globally distributed information systems. The study was carried out by consulting the database of Directory of Open Access Repositories (OpenDOAR), which is an authoritative directory of academic open access repositories. The study observed growth in the use and application of OAI-PMH protocol by OA repositories at a global level. Growth in the number of OAI-PMH complaint repositories provides an ample justification for its distinction among varied protocols to be utilized for resource sharing in knowledge society. However, developing and underdeveloped nations need to be made aware of the benefits of utilizing the harvesting capabilities of this protocol. The study provides an opportunity to understand the astounding growing trends in the use of the protocol in different setups.

INTRODUCTION

In present Knowledge-Based Society where resource sharing has found its application in almost all facets of knowledge dissemination three concepts Open access, Open Source Software, and Open Source Protocols have been receiving augmented attention. Open access is seen by some as promising elucidation to price escalation of serial publications and a way for governmental funding agencies to receive better returns on in-vestment. Open source software benefits libraries and archives by lowering initial flexibility with ease of use (Barauh, 2007). Open source protocols allow for interoperability to exist between different library setups. All three of these concepts are important to libraries individually and can be even more beneficial when they are leveraged simultaneously. Open Source Protocol is one of the landmarks to the Open Source movement independent of any single institution or manufactures and to which users may propose amendments. Open

source protocols help and ensure interoperability among diverse information systems as we are witnessing number of open source protocols being used by different libraries and archives including OAIPMH and Z39.5.

OPEN ARCHIVES INITIATIVE

The Open Archives Initiative develops and promotes interoperability standards that aim to facilitate the efficient dissemination of content. OAI has its roots in the open access and institutional repository movements. OAI is a simple, structured way for organizations to expose content for harvesting, or to harvest exposed content. Continued support of this work remains a cornerstone of the Open Archives program. Over time, however, the work of OAI has expanded to promote broad access to digital resources for eScholarship, eLearning, and eScience (Standards for Web, n.d.).

History

The Santa Fe Convention provides recommendations for interoperability among archives. The Convention is the result of a meeting of the Open Archives Initiative, which was held in Santa Fe, New Mexico, in October, 1999. The Open Archives Initiative (OAI) was launched in an attempt to address interoperability issues among many existing and independent Digital Libraries. The OAI has since received much media attention in the digital library community and, primarily because of the simplicity of its standards and has attracted many early adopters (Suleman & Fox, 2001). The Santa Fe Convention was attended by participants from organizations maintaining e-print archives for open access or providing services through integrated Search interfaces or citation linking mechanisms to such archives. The focus was on high-level communication among systems and simplicity of protocols. The convention presents a simple technical and organizational framework

to support basic interoperability among e-print archives and as such was the first step towards interoperability of e-archives for facilitating the access to scholarly literature. The Open Archives Initiative provides a process for growth and development. The mechanism for establishing interoperability is three fold, i.e. definition of a set of simple metadata element, use XML as a common syntax for representation and transport and definition of a common protocol (Santa Fe Convention, 2001).

OPEN ARCHIVES INITIATIVE PROTOCOL FOR METADATA HARVESTING (OAI-PMH)

The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) is a low-barrier mechanism for repository interoperability. It provides an application-independent interoperability framework based on metadata harvesting. There are two classes of participants in the OAI-PMH framework:

1. Data Providers are repositories that expose structured metadata via OAI-PMH.
2. Service Providers then make OAI-PMH service requests to harvest that metadata as a basis for building value-added service (Open Archives Initiative, n.d.).

The OAI-Protocol for Metadata Harvesting (OAI-PMH) defines a mechanism for harvesting records containing metadata from repositories. The OAI-PMH gives a simple technical option for data providers to make their metadata available to services, based on the open standards HTTP (Hypertext Transport Protocol) and XML (Extensible Markup Language). The metadata that is harvested may be in any format that is agreed by a community (or by any discrete set of data and service providers), although unqualified Dublin Core is specified to provide a basic level of in-

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