

Building an OAI-Based Union Catalog for the National Digital Archives Program in Taiwan

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Abstract. On January 1st 2002, the National Science Council of Taiwan launched a National Digital Archives Program (NDAP). To share the digital collections of all the archive participants, search via a union interface, and allow the general public access to the collections, it is urgent to build a union catalog of the National Digital Archives. In this article, we define its functions and the system architecture, and explain the problems we encountered in developing the OAI-based union catalog system.

1 Introduction

The National Digital Archives Program (NDAP) has, as participants, Academia Sinica, National Taiwan University, National Central Library, National Palace Museum, National Museum of Natural Science, National Museum of History, Historica Sinica, Taiwan Historica, and dozens of other academic groups. How the digital resources of the participants should be shared, how to allow searching of the entire archives from one single interface, and how to show the public the entirety of the archives, are very important issues.

To share the digital resources built by the participants, the construction of a union catalog is of priority. The next question is how to show the digital resources (fulltext, image, sound, and visual) through metadata. A union catalog can be built on two models: a collective union catalog or a distributed virtual union catalog. The former has the advantage of offering better search results, but has a high construction cost.[1] The latter has a low construction cost, but poor search results. To retain the advantages of both models and avoid their drawbacks, a new protocol for distributed harvesting of metadata – Open Archives Initiative (OAI) was born in the digital era. Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) provides a simple solution for harvesting the metadata of different databases automatically, in batches, or in different distributions, and also constructs a collective union catalog.

2 OAI-Based Union Catalog for the NDAP

The program invited several participant representatives to form the OAI test-bed team, to build the NDAP union catalog with OAI-PMH, and to handle system technology. Although OAI-PMH is a simple and easily designed protocol, some problems have not yet been considered in the actual union catalog system design. For example, how should the databases of different units be connected, how to convert metadata of different formats to Dublin Core, how to harvest digital objects through metadata, and how to design the data service end interface. Figures 1 and 2 show the system structures of the service and data providers that we have defined for the national union catalog.

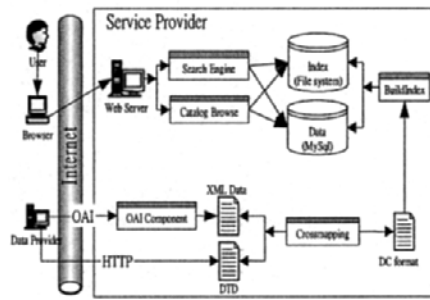


Fig. 1. System structure of service provider

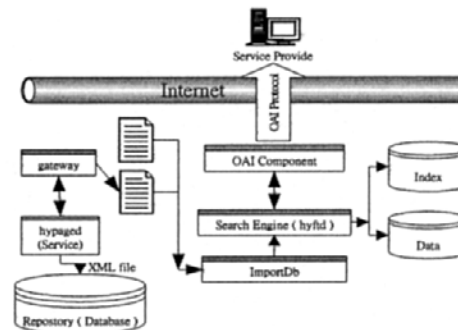


Fig. 2. System structure of data provider

3 Problems Encountered

For the union catalog, participants have to convert their metadata to Dublin Core and XML, and then deposit them in the Data Provider. Without consensus about the format and content value of metadata, most institutions used various formats to develop their systems and consequently have difficulty following completely the above procedure. This makes it hard for the Service Provider to harvest metadata and causes imprecise results when searching the union catalog.

Acknowledgements. We would like to acknowledge the support for this project from the National Science Council of Taiwan under contract NSC 91-2422-H-001-3203. We also thank Mr. Ya-ning Chen and Ms. Shu-jiun Chen for their advice, and all the research assistants of this project: Kuo-shen Su, Ming-jie Liu, Huei Oyang, Chen-ji Chang, Hsing-ron Pan, Hsueh-yun Yian, Jao-ru Chen, Hsiao-ying Hung, Huai-wen Chang, and Tai-hsin Hsu.