

# Personal Spaces in the Context of OAI

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## Abstract

*We describe MiBiblio 2.0, a highly personalizable user interface for a federation of digital libraries under the OAI Protocol for Metadata Harvesting. (OAI-PMH). MiBiblio 2.0 allows users to personalize their personal space by choosing the resources and services they need, as well as to organize, classify and manage their workspaces including resources from any of the federated libraries. Results can be kept in personal spaces and organized into categories using a drag-and-drop interface.*

## 1. Introduction

The vast repositories comprised by digital libraries pose challenges for user access due to their complexity and dynamism. It is highly desirable to have personalizable interfaces for organizing and classifying digital resources. As part of our digital libraries program, we have proposed the notion of *personal spaces*, which are digital library areas defined by users to organize information that is required to perform information-intensive activities or that is relevant to their individual preferences and needs. They may include information units that are used frequently, tasks performed regularly, personal agents and different maps of the library generated as a result of navigating through collection. We introduced this notion and reported on a couple of prototypical implementations in [1, 2]. In this paper we report on the evolution of our personalized interfaces in the context of a federation of digital libraries.

## 2. Federated personal spaces

Access to multiple digital collections should be simple and transparent to the user. By making personal spaces aware of the availability of federated resources, the user does not need to explicitly visit each of the underlying repositories. Instead, this is accomplished by a cooperative interface that presents all available resources in a uniform fashion.

The conventional approach to interoperability is for a number of organizations to agree that their services will be built according to certain specifications (which are often selected from formal standards). Organizations that build systems to this specifications form a federation. We have been exploring our notion of federated personal spaces in the context of a federation of digital libraries that operate under OAI-PMH. Three cooperating institutions participate

in our project but the approach is extensible to all OAI-PMH collections. We briefly refer next to each of the participating collections:

*U-DL-A:* Our digital library program has produced a system architecture that integrates a wide range of collections and services for a highly distributed community of users [3]. “University Digital Libraries for All” (U-DL-A) is the term we use to refer to our overall program. Our digital theses repository, one of our main collections, is publicly available through an OAI-PMH server.

*Marian and ENVISION:* Virginia-Tech has been building the MARIAN digital library infrastructure. MARIAN is a distributed multi-task system. ENVISION is a system that provides support for visualization of the results produced by MARIAN. Digital theses and other documents are available through an OAI-compliant service [4].

*Phronesis:* The Monterrey Institute of Technology (Mexico) has produced Phronesis, a software system that functions as a tool for the creation of distributed digital collections [5]. Some of the collections, comprising technical reports in various areas, have also been made accessible via an OAI server.

## 3. MiBiblio 2.0

MiBiblio2.0 is a component that was developed as a part of the U-DL-A program. This personalizable interface allows for accessing different services provided by the digital library and makes it possible to search information elements in the federation of digital collections comprised by U-DL-A, Phronesis and MARIAN. Users personalize their interface by choosing from a list of icons that represent the various services provided by the digital library. Services include, for instance, book recommendations, annotations, access to digitized materials, and the theses collection.

Figure 1 illustrates the main interface of MiBiblio 2.0. In the figure, the user has selected the services mentioned previously plus “books on loan”, which shows books borrowed from the physical library and their due dates, as well as the RDU service, which provides access to the digital reserve section of the library.

One of the main services MiBiblio 2.0 offers is an *organizer*, which is a tool that allows for the representation of categories defined by the user and represented as folders, as illustrated in Figure 2. Documents coming from any of the federated collections can be included in the organizer using a drag-and-drop interface and accessed at

any time. Other available services include a personal calendar and library news, which keep the user up to date on new library resources. A personal space thus assists the user in handling the complexity of the federated digital libraries and becomes an area where users feel at ease to manage resources that are relevant to their individual tasks.

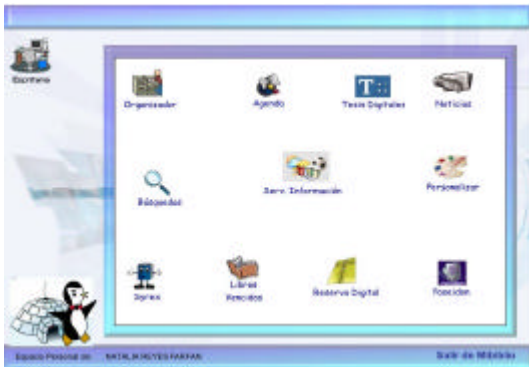


Figure 1. The interface of MiBiblio 2.0.

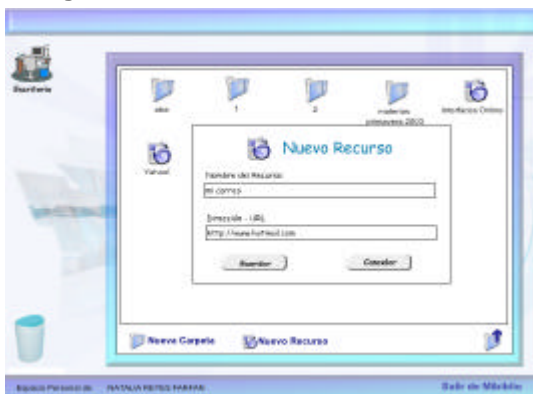


Figure 2. The organizer of resources.

In MiBiblio 2.0, access to federated collections is accomplished by relying on a distributed search platform we refer to as MAIDL. This platform implements distributed information retrieval through mobile agents that travel around the nodes in the federation seeking information that may be relevant for user queries [6].

The interface look and feel was created using Flash. As a development tool, Flash allows for great flexibility in the handling of animation, interaction and navigation. Given the constant interaction of the user with the various services, it is necessary to continuously access information residing on the server of MiBiblio2.0 to obtain documents in XML format.

## 5. Results

In order to evaluate the functionality of MiBiblio2.0, we selected a representative sample of students, faculty and library staff users. The interface has been well accepted and most of the users have been eager to have it as their main access for digital libraries in the future. The most attractive tool of MiBiblio2.0 for the users has been the *organizer*, as they think it is very useful to keep information organized according to personal criteria regardless of the location of the resources in the federation and to have a graphical representation of this organization. MiBiblio 2.0 is being released during the Spring Semester for general use.

## 6. Ongoing Work

Digital libraries in our federation continue to add new services and collections. We are currently working on mechanisms to automate the incorporation of new services into personal spaces. We also are integrating information retrieval services based on XML so access to metadata is standardized in future applications.

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