■ THE USER IN FOCUS: AN INCLUSIVE APPROACH TO THE PRESENTATION OF DIGITAL COLLECTIONS OF GLAM INSTITUTIONS

by Lorisa Andreoli, Yuri Carrer, Gianluca Drago, Giulio Turetta, Antonella Zane

Abstract: *This paper describes the experience gained at the University of Padova Library System on modelling, creation, management and preservation of digital collections with Phaidra, the Digital Asset Management tool created and developed by the University of Vienna, for GLAM institutions (Galleries, Libraries, Archives, Museums). There is also an examination of the motivations and strategies for creating a model for the presentation of the collections aimed at enhancing the cultural heritage of libraries, archives and museums of the University and local partners (Ca' Foscari University of Venice and Università Iuav di Venezia) and intended for use by a specialised audience as well as by the general public. Future challenges include the repository certification and the enrichment of the search functionality.*

Contents

1. Introduction

The University of Padova has always been committed to the preservation and valorisation of the cultural heritage found in its library, archival and museum collections, artistic objects and scientific collections. Even since the early 2000s, several digitising projects curated by libraries were initiated with the intent of safeguarding the originals of valuable documents, often difficult to access, and promote digital services related to online use of digital collections. The University Library System thus decided to conduct an analysis on architectural and functional requirements of a system which could manage both storage and the presentation of objects and digital collections. They assessed both commercial products and open source projects[1] and examined websites of the digital collections of various universities and cultural institutions. One of the projects under consideration was Phaidra[2] (Permanent Hosting, Archiving and Indexing of Digital Resources and Assets), a system created and developed by the University of Vienna for the long-term preservation of digital objects, based on the open source repository system Fedora[3].

Based on a convergence of interests, organisational sizes and openness to collaboration, the Library System began working with the University of Vienna's project. A key moment for initiating this cooperation was the receipt of three Erasmus Staff mobility grants in 2009 for a librarian and two IT specialists. This experience allowed us to closely study an international project as well as have frequent opportunities for discussions about Phaidra developments with Austrian colleagues, an approach that helped inform the choice of adopting Phaidra at the University of Padova.

An agreement between the two universities for the use and development of Phaidra was signed in 2010. The Library System's choice took into account the availability of established technology for storing digital items, cost containment, the innovative aspect of the platform and the prospect of collaboration with European partners.

The collaboration between the two universities has enabled the sharing of the platform and the exchange of experiences and expertise on a European level, each with its own identity and specificity recognisable in the different website presentations of Padova (https://phaidra.cab.unipd.it/) and Vienna (https://phaidra.univie.ac.at/).

Over time, the Phaidra community has expanded to include new partners to its current configuration[4]. At the Italian level, the Università Iuav di Venezia and Ca' Foscari University of Venice have joined the Phaidra sy-

stem and they have published their digital collections in Padova's Phaidra installation since 2014.

The Library System has also partnered with museums and archives which, along with libraries, are responsible for the safeguard and promotion of cultural heritage.

Not only can such organisations store and manage their digital objects in Phaidra, but librarians, museum curators, archivists researchers and scholars can also use the platform as a storage environment, and for the organisation and sharing of their materials and research data.

Since Phaidra is a freely accessible system, any visitor can do research, browse digital collections and, unless otherwise indicated, display and re-use digital objects.

2. The "Phaidra – Digital Collections" website

The creation of digital collections requires a dual focus on content creation as well as their online presentation, which should be centred on the user experience.

The Library System ensures the quality of the digital collections by prioritising projects that meet the criteria of documenting historical, artistic and cultural heritage, and that ensure the quality and detail of the digitised files and the completeness of the metadata.

In order to clarify the competences and responsibilities of those involved in digitisation projects from the outset, the roles needed for their implementation were defined: scientific director, project manager and technical referee. In particular, the scientific director, assisted by the project manager, decides on the selection of documents and defines the quality of the metadata.

The organisation of the digitisation processes coordinated by the Digitisation Projects Service was strategically important. They developed a project file template and digitisation guidelines[5], undertook surveys of various types and cost analyses and provided support in the preparation and implementation of digitisation projects. Since 2014, the University Library System has supported and financed more than 20 digitisation projects. Currently, Phaidra stores 331.000 digital objects.

In order to make this wealth of online content accessible, on various topics of appeal to a wider audience, it was necessary to modify the site design to enhance its use and facilitate retrieval. Anyone who landed on the original site, found themselves in front of a simple search window and,

without knowing in advance what the contents of Phaidra were, had to endure a gruelling experience which was often ineffective in finding information. It was a bit like going into a closed stack library and having to guess which books could be ordered at the counter.

But it didn't necessarily need to be like that. A repository can be an archive for long-term storage, and a storage of research data, but also a showcase of the cultural heritage of an institution, a region or a discipline. The latter is the one that can also most appeal to the wider audience – perhaps casual, but no less motivated in their search for information – provided there is a suitable design that guides also inexperienced visitors through the understanding and retrieval of content.
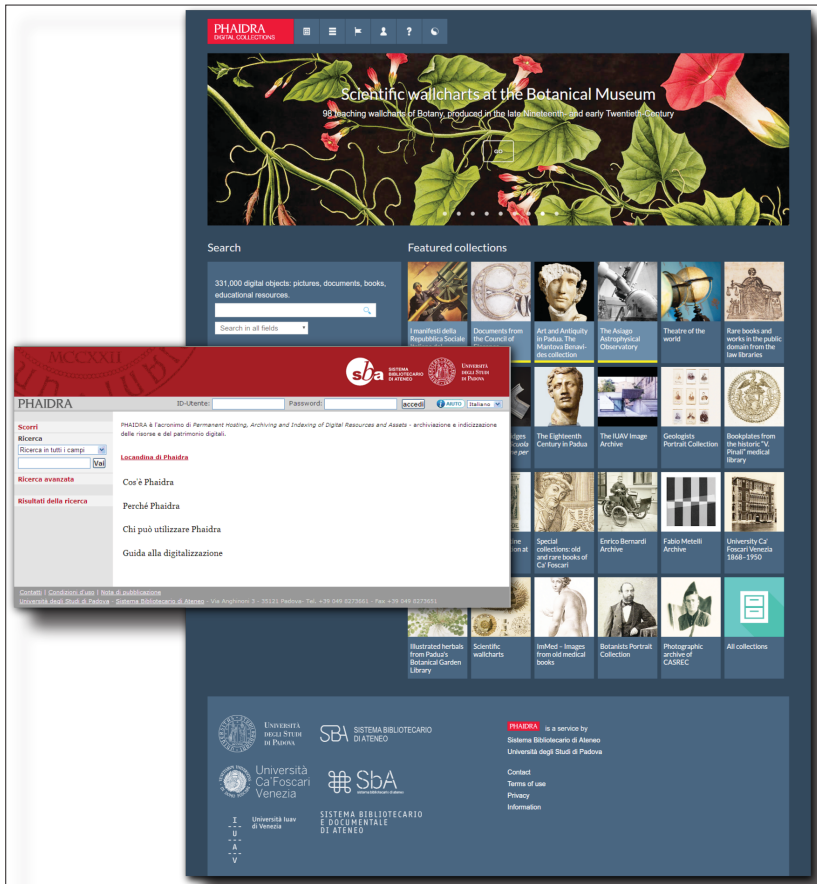
Fig. 1: The original Phaidra design compared to the current one

In view of this, a paradigm shift was made from a design focused on research to one based on navigation, or, if you will, from the closed stack library to an open library organised for homogeneous collections. With this objective, both the graphic layout of the site as well as the architecture of the information have been redesigned.

Since "a picture is worth a thousand words", Phaidra has given great importance in its new design to the graphic-visual element of the site (beginning with the scrolling of images on the home page) that is further highlighted by the contrast with a dark background.

The slider provides an overview of site content, selected on the basis of their attractiveness but also as a way to represent the diversity of contributions and content, while the small boxes below, containing thumbnail images, introduce the latest or most important collections. Hovering on the previews, they gradually reveal the collections and invite the visitor to delve into their contents; or to go further into the page of "All Collections"[6] and from there to enter the selected collection – i.e. the page that contains the descriptive summary of its contents, highlighting the points of major interest and any multimedia content – leading the visitor step-by-step through a navigation system that will hopefully be rewarding and profitable.

The ability to organise collections in sub-collections as well as the ability to create relationships between different objects are also used to support exploration, encouraging in-depth study or opening up unexpected, new connections through the content.

3. Dialogue with the GLAM environment and other services

Phaidra is an open system that interacts with the outside by storing data in the repository and, at the same time, presenting this data in order to promote its dissemination.

In the context of cultural heritage valorisation projects, active collaborations with GLAM institutions (galleries, libraries, archives, museums) and departments were established in order to expand the range of types of documents accessible to users and to enrich the Phaidra content.

Since Phaidra had to include heterogeneous subjects which are still committed to the preservation of cultural heritage, Phaidra's objective was to be incorporated within the process of cataloguing and digitisation of the objects, defining the necessary requirements so that the digital version of these could be archived in the repository.
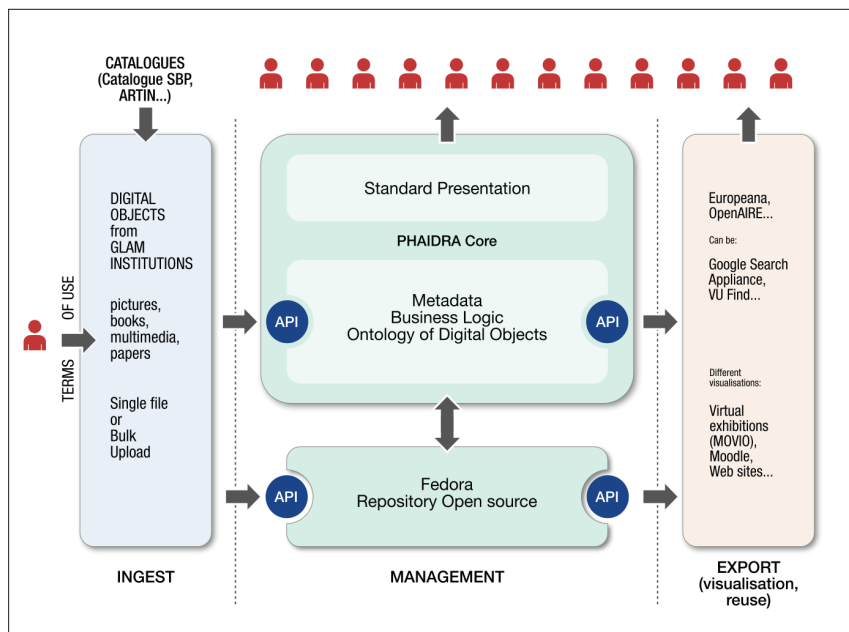
Fig. 2: The Phaidra digital environment (Source: *I dati della ricerca in ambito umanistico*, symposium held in Padua, November 24, 2016)

The collaboration with the University Museum System began with the definition and analysis of the types of existing museum assets and their corresponding descriptive metadata[7], continuing with the implementation of data exportation from the museums' catalogue database and their ingestion into Phaidra, leading to their presentation on the site.[8]

With archives, the analysis of the metadata structure provided in the EAD XML standard[9] was undertaken. Based on this analysis, a procedure was developed that goes through the archive in its logical structure, bringing it back into a structure of collections and sub-collections which is typical of Phaidra.

With libraries, a procedure was designed for the extraction of bibliographic metadata in the (UNI)MARCXML[10] standard from the Library Management System aimed at associating the metadata to the corresponding digital objects for bulk upload to Phaidra. The connection to the digital objects in Phaidra can be found in the metadata of the University library catalogue: hence its display in the metadata shared in the national library catalogue and those published in the international

Fig. 3: Example of a museum object presented in the Phaidra website, with descriptive metadata derived from ICCD

WorldCat catalogue of which the libraries of the University Library System are members.

The synergistic collaboration with GLAM institutions made it possible to deposit thousands of digital objects in Phaidra, to define a reusable workflow on other databases as well and to present these objects in a systematic manner within user-navigable collections. The goal of exhibiting the rich and comprehensive metadata, suitable for presentation on the site as well as through dissemination through harvesting by external parties such as Europeana Collections[11] where some Phaidra collections have already been published, and aggregators like MINT[12] was achieved. In order to achieve this, Phaidra adopted the OAI-PMH[13] protocol to display the metadata of digital objects in accordance with the Dublin Core schema[14].

A set of public APIs[15] (REST-compliant[16]) used to provide search services, content management of digital objects and sampling and handling of metadata is also available on Phaidra. Anyone who wants to develop an application that presents digital objects in a customised way, can freely use these APIs. An example of such an application is the "Collection Viewer"[17], developed for sharing and browsing digital collections in Phaidra in an external site through embedding.

4. Conclusions

Over the years, Phaidra has proved to be the best technology choice because of its nature as an open system capable of extending its functionality to meet the challenges that have gradually arisen: from promoting digital collections to interface customisation of a user-centred site, from interoperability and dialogue with other systems and services to the creation of a network of local and international collaborations between GLAM institutions.

In the short- and medium-term, activities will focus on two areas that can contribute to sustainability and usability of the system: the first is centred on repository certification[18] by accredited bodies in order to ensure a secure and reliable environment for the storage of data by specialised users; the second, made possible by recent developments at the University of Vienna, is aimed at creating a faceted search and navigation mode that is more friendly to the wider public.

Fig. 4: A collection of wallcharts displayed in the Collection Viewer within the biological-medical library website, "Vallisneri"

Lorisa Andreoli
University of Padova, Library System
E-Mail: lorisa.andreoli@unipd.it

Yuri Carreer
University of Padova, Library System
E-Mail: yuri.carrer@unipd.it

Gianluca Drago
University of Padova, Library System
E-Mail: gianluca.drago@unipd.it

Giulio Turetta
University of Padova, Library System
E-Mail: giulio.turetta@unipd.it

Antonella Zane
University of Padova, Library System
E-Mail: antonella.zane@unipd.it

1 The products analysed were: ARCHIteca, Codex [ml], ContentDM, Digitool, Dolphin, MetaMAG, Sistema Teca and another company's digital library design with open source software (CERN document server Invenio and CMS Plone). Open source software tested include: Eprints, Fedora and Greenstone.
2 For a description of Phaidra, see P. Budroni, M. Höckner: Phaidra, a Repository Project of the University of Vienna. http://phaidra.univie.ac.at/o:245909 and R. Ganguly: Phaidra Ecosystem. http://phaidra.univie.ac.at/o:527326
3 http://fedorarepository.org/
4 https://www.phaidra.org/
5 https://phaidra.cab.unipd.it/static/linee-guida-digitalizzazione-EN.pdf
6 https://phaidra.cab.unipd.it/collections/featured
7 http://www.iccd.beniculturali.it/index.php?en/269/metadata
8 The experience of working with the Museum System is documented in: L. Andreoli, M. Fornasiero, A. Menegazzi, S. Talas: Defining university

museums' objects for the web, in XVI Universeum XVI Conference Proceedings, Athens, 11–13 June, 2015 (in press).

9   https://www.loc.gov/ead/
10 http://www.loc.gov/standards/marcxml/
11 https://www.europeana.eu/portal/en/about.html. See E. Bianchi, L. Tallandini, A. Zane: The European project Linked Heritage and the ongoing training of cultural professionals. http://digitalia.sbn.it/article/view/1321/888
12 http://mint.image.ece.ntua.gr/redmine/projects/mint/wiki/Wiki
13 https://www.openarchives.org/pmh/
14 http://dublincore.org/documents/dces
15 https://github.com/phaidra/phaidra-api/wiki/Documentation
16 Representational State Transfer based on stateless, client-server, cacheable HTTP communication.
17 http://bibliotecavallisneri.cab.unipd.it/collezioni-digitali/zoologische-wandtafeln-von-prof-dr-paul-pfurtscheller
18 https://www.coretrustseal.org/