

INTEGRATING AND LEVERAGING METADATA IN A SHARED ENVIRONMENT: THE UNIVERSITY OF MACAU EXPERIENCE

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ABSTRACT

Library cataloging and metadata have been evolving since the mid-1990s, at the emergence and development of the World Wide Web and communication technologies. The purpose of the paper is to have a brief review of the development history of the cataloging and metadata practices of the University of Macau (UM) Library, in order to demonstrate the transitive changes from traditional cataloging to the promotion and preparation for structured data management, including the shift from static and single-source catalog to dynamic and multi-sources discovery platform. The value of the library's bibliographic data is in sharing and reusing data locally, regionally and globally. Library cooperation and continuing education of the library staff are essential to this goal. A recent project entitled *MALA Hub* is introduced in the paper as well. It is a region-wide academic resource sharing project that initiated and launched its first phase in 2019, with the sponsorship of Macau SAR Government. The purpose of the project is to pool together, disclose, and share with each other all kinds of resources available for the nine library members of Macau Academic Library Alliance (MALA) in Macau, including physical pieces, consortium subscribed resources, individual library paid resources, open access resources, and in-house developed digital resources from the libraries and the community. In addition, derived from the MALA Hub by leveraging metadata integrated on the Hub, are several topic-specific resource portals suggested by the government and the community. The first topic-specific portal, Portuguese Portal (covering all available resources in Portuguese language), was launched at the end of 2019. More portals are planned to be launched in the near future, such as the Macau Study Portal, and the Specialized Collections Portal, among others.

This project was implemented by adopting a commercial discovery platform. There are mainly three tiers in the framework of the project, namely, (1) Central Portal: integrating the resources and relevant metadata obtained from all the MALA members, open access resources, etc., (2) Individual Portals: the local discovery systems for gathering and storing all the resources and relevant metadata from individual library members of MALA, where seven individual discovery platforms have been established and assigned to the seven individual libraries of MALA, and (3) Topic-Specific Portals: by leveraging and defining particular criteria for the metadata consolidated from all the MALA members (including open access resources), topic-specific portals could be designed in a flexible way. Benefits and issues in planning and implementing the project are discussed and a possible framework for effective metadata management and collaboration in a shared environment is being developed.

There is this quote from Sidney Sheldon about libraries that I like: “Libraries store the energy that fills the imagination. They open up windows to the world and contribute to improving our quality of life.” Yes, libraries contribute to improving our quality of life. Sheldon couldn’t be more correct.

In this paper, I will be sharing something about the development of the University of Macau (UM) Library and its recent projects about metadata standards and resource sharing.

Macau is located on China’s southern coast. It is a small city with high population density. Ninety six percent of its citizens speak Chinese or Cantonese. Two percent speak Portuguese. Tourism contributes significantly to its economy. Macau is an international multicultural city.

The University of Macau, founded in 1981, is the only international public comprehensive university in Macau. English is its major medium of instruction. Some programs are also taught in Chinese or Portuguese.

In 1982, the UM Library was equipped with a mainframe computer and converted most of its English card catalog into computerized data. In 1993, it adopted Dynix as its initial automatic library system. During the late 1990s, it introduced the CD-ROM tower. It commenced subscribing to e-journals on CD-ROMs and web-based resources. Then, in 2004, it adopted Innovative Millennium, a highly integrated library system which made a one-stop-search hybrid library at UM. In recent years, the Library adopted the Discovery Service and also in last year, it migrated to the LSP Alma.

What have we learned when we have gone through these transitions? We found that bibliographic data from our library’s collection is the legacy of a library, no matter what kind of platforms that a library adopts.

The development of the UM library also followed the Greiner’s organization growth model. We are now in the highest phase of *Growth Through Alliances*.

In 2014, the Macau Academic Library Alliance was formed and the UM Library joined this alliance since then.

Here is an investigation of the current status of the library metadata creation integration and management by using the 4M1E analysis. We are user-demand-oriented and we emphasize on interactive user experience. 4M1E stands for *Man, Machine, Material, Method, and Environment*. For *Man*, we focus on staff professional knowledge and workplace training and also the work motivation and job engagement. For the *Machine*, that’s the tool that we use where we are doing the routine metadata management. For the time being, LSP is very popular. For *Materials*, we have different metadata sources internally or from the worldwide network. Also, the international and local cataloging standards are part of our materials. For the *Method*, we focus more on the workflows and collaborations. The guidelines, best practices, and some shared experiences are important as well. For the e – *Environment*, the related imaging technologies are critical like 5g, 6g, big data, semantic web, and data. There are also some concerns and inferences locally and globally.

There is a saying “Think Globally, Act Locally”. In many cases, we have the global or country standards or policies translated into practices or policies in local libraries. For

example, the IFLA and ALA guidelines or standards, you may adopt them into your local library procedures. The reverse is also true, as some lower level projects or initiatives could also drive the development and changes at the higher levels. For example, we can look at the program for Cooperative Cataloging at the Library of Congress, as well as the IFLA Names of Persons Projects. These projects collect the cataloging conventions for different countries. This was started in 1996 and we are now updating those files from different countries.

We also have specific examples where we have translated global cataloging standards. First, we translated the RDA and adopted it into our local policies. Another one would be the Names of Persons from IFLA's cataloging session. Last year, we simply updated the file for Greece and the file for Chinese names. In the file for Chinese names, it includes three parts: one part is from Mainland China, the second part is from Hong Kong, and the third part is from Macau. We incorporated all of these conventions into files and posted them on the websites of IFLA so that librarians from different countries can consult them easily online. The file for the Russian Federation has likewise been updated in 2016. There is also a file for Kazakhstan, but it was done in 1977, so the file should be updated.

In terms of the current action plan for the Cataloging Section of IFLA, we have four focus areas. The first one is about the consistency between the standards. Currently, there are quite a lot of standards or guidelines that are being developed or prepared so it is important to keep the consistency between them. Secondly, identifying the key competencies for metadata librarians is critical. The third area is to promote the section's key documents on an international scale. It is crucial to do the translations for those guidelines and documents into different languages. The fourth focus is on authority control and ID management. The project, Names of Persons is also included in this focus. We recently held a virtual event about the emerging metadata standards, which is publicly available online.

IFLA generally uses the term *standards* to refer to the following types of documents: conceptual models, resources for description, format codes, guidelines, and best practices. We also have some emerging metadata standards at IFLA. For example, the Library Reference Model (LRM) is either a conceptual model, and ISBD is an IFLA content standard which is going to be revised to align to the LRM. UNIMARC or MARC standard would be the coding format.

Another project we have is a resource sharing activity in Macau. MALA hub is a regional academic resource sharing project initiated in 2019 with the support from the Macau government. It's a project for the Macau Academic Library Alliance, which basically aims at library resource sharing among members and promoting the use of the alliance's subscribed databases. We likewise would like to support and enhance the teaching and learning activities at the city level and increase collaborations among members.

There are three parts to this project. The first part is the MALA Hub, which is the central portal. The second part is the seven discovery portals for the individual institutions. Lastly, the third part is the subject portals. As for the system framework for the project, it provides the discovery platforms for individual libraries for their own use. We then put together all these metadata, including some open access resources, into the central portal

as a union catalog. And then on top of the union catalog, we also have the features for interlibrary loan services among members and with the outside world.

Derived from the Central Portal, we also developed some subject protocols. One example is the Portuguese portal. We put together all the Portuguese language resources into the portal for easier use and further promotion.

The MALA Hub Project also has a goal for quality education in Macau.

By scanning the big environment and looking forward, we may have some future challenges for the metadata management. One example would be the impact of emerging technologies on metadata creation and management, data analytics, indexing, and discovery.

Another one would be the changing rules for metadata librarians, such as the identity management research information system and open data. We also integrate across various sectors such as archives, museums, cultural or heritage projects, and the digital humanities. We also investigate the iSchools' curricula. Do they meet the potential needs of the libraries and users' growing expectations? How about the continuing education and professional skills for staff? As librarians, we should get ready to learn and change.