CHAPTER 22

From Open Metadata Practice to Open Metadata Policy: Developing An Open Metadata Sharing Framework

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Introduction

Open metadata (also referred to as metadata sharing or open metadata sharing)* involves ensuring that library metadata is openly available and reusable to the widest extent possible, often achieved through applying an open license(s), either in a statement or to datasets of metadata or catalogue records, or both. Open metadata sharing offers immense possibilities that encourage collaboration, innovation, and research and formalizes the longstanding sharing and reuse practices of the library metadata community. This chapter describes how open metadata sharing connects to, supports, and is supported by other open movements and discusses the necessity and importance of open metadata sharing within the library community. Further, this chapter offers a glimpse into the history of the open metadata movement in Canada and the United States specifically, though the implications of open metadata sharing are broader, as well as insight into the challenges that library institutions may encounter in their effort to participate in fulsome open metadata sharing. Lastly, we share a case study of the University of Alberta Library (UAL)'s process in approaching and creating an open metadata sharing framework.

* For consistency of use in this chapter, we use "open metadata sharing."

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Open Metadata and Open Movements

According to the Open Data Handbook,[1] open movements "seek to work towards solutions of many of the world's most pressing problems in a spirit of transparency, collaboration, re-use and free access." These movements include open data, open science, open government, open scholarship, open publishing, open peer review, and others. These open movements are built on the principles of openness, participation, and collaboration, and on a belief that the common good is not only served by and enriched by open and transparent sharing of information in all its forms.[2] Open metadata also falls under the umbrella of open movements, but is perhaps uniquely situated as being both supported by and supporting the other open initiatives.

Open movements involve making content and data that "can be freely used, modified, and shared by anyone for any purpose"[3] freely available. A critical piece of this puzzle is metadata. Metadata is what makes that data findable and accessible; it is what allows humans and machines to know what is out there that they may want or need to use. Metadata also provides the necessary information to understand what data or content are and whether or not they are suitable for any given need or interest. Importantly, metadata is what outlines how that data or content can or cannot be used. The services and infrastructure that underlie the various open initiatives are heavily reliant on metadata, and so it is critical for metadata to exist and for that metadata itself to be open.

The open metadata movement, in turn, can be supported and bolstered by the other open movements. Metadata has long been understood as "data about data"[4] and as critical to describing information objects for findability, accessibility, and usability, as described in the previous paragraph. However, whether as individual records or instances or in aggregate form, metadata is increasingly seen as having inherent value in and of itself, as a knowledge product that can be "created and gathered, shared, manipulated and transformed, interrogated, and visualized."[5] Metadata creators, including "libraries, publishers, universities, scholars or social reference management communities have an important role to play in supporting the advance of humanity's knowledge."[6] The metadata that libraries create or curate is critical to their public and educational missions, not only enabling them to carry out their core functions of helping communities create, share, and use information but also allowing others to understand those functions and their impacts. Thinking of metadata as knowledge that is a part of the common good makes the application of the principles of the open movement to metadata seem both obvious and logical.

Moreover, there is a democratic role for open data where "[a]ccess to the entirety of the intellectual output of a society is an important condition of the democratic debate and a citizen's informed decision-making. This access is, of course, not possible if said output is not described with the appropriate metadata."[7] Just as within library collection development something is not truly a part of the collection until it is described and made available, similarly, open scholarship would be troubled if no one can find it, and for this, open metadata is needed.

History and Importance of Open Metadata Sharing

Resource description—the practice of creating library metadata or catalogue records—is complex work. Unfortunately, the complexity of the work and particularly the reliance on open sharing of bibliographic data to support library workflows is not often well understood. As indicated by Flynn in *Open Access Metadata, Catalogers, and Vendors: The Future of Cataloging Records*:

> *OA [Open access] metadata enables sharing cataloging records in order to improve cataloging efficiency and quality as well as promoting timelier, more consistent access to information. It ensures that any library can obtain needed records in a timely manner to better their library and users, while also allowing libraries to contribute records themselves.*[8]

However, while open metadata policy and collaboration on it are more emergent, open metadata has been part of resource description practice since the shift from catalogue cards. From the outset of the move from cards to online catalogues, an encoding method was needed for sharing bibliographic metadata from one system to another, leading to the development of the MARC (Machine Readable Cataloging) standard in the 1960s by Henriette Avram, and "[b]y 1971, the MARC record had become the defacto standard for sharing bibliographic cataloging in the United States and within a few years it had been adopted worldwide."[9]

Along with the technical infrastructure for data sharing, policy and practice developed early as well through universal bibliographic control (UBC). A fundamental concept for UBC is that in order to retain all published heritage worldwide, it must also be made accessible through full description. As such, to support this and share the resource burden of accomplishing said objective, "[e]ach National Bibliographic Agency (NBA) is responsible for producing authoritative bibliographic and authority data for resources published in its own territory and making this data available internationally to libraries and other NBAs."[10]

UBC has not simply been a theoretical notion either. Indeed, "[d]uring the 1970's IFLA [International Federation of Library Associations and Institutions] established an office for Universal Bibliographic Control following several years of discussion about the importance of international sharing of bibliographic data to help reduce costs and to encourage greater cooperation worldwide. That office became known as UBCIM (Universal Bibliographic Control and International MARC)."[11] Moreover, while much emphasis for UBC initially centred on NBAs, more generally, if perhaps less formally, this concept extends to other libraries (not strictly NBAs) worldwide, sharing the burden of resource description and contributing to the overall description of published heritage.

This is also closely related to the International Cataloguing Principles, where 2.10 on interoperability states that "[a]ll efforts should be made to ensure the sharing and reuse of bibliographic and authority data within and outside the library community. For the exchange of data and discovery tools, the use of vocabularies facilitating automatic translation and disambiguation is highly recommended." Additionally, 2.11 on Openness states that "[r]estrictions on data should be minimal in order to foster transparency and conform to Open Access principles, as declared also in the IFLA Statement on Open Access. Any restriction on data access should be fully stated."[12] This is crucial as it sets the stage for open library metadata, given that since libraries started moving from card catalogues to computers, libraries have created standards and practices with open sharing not just in mind but also as a requirement to function.

Since the very formation of online catalogues, resource description standards and practice have been built on supporting interchange and open sharing of data. As captured by Koskas, referring to UBC, "In a way, the principles that presided over its conception and development have become such a fundamental part of bibliographic activities in libraries as to become perhaps largely implicit to librarians."[13]

Moreover, the development of MARC and other library standards to support the open interchange of data rapidly saw efficiency in workflow. The case study by Andrews and Kelley for the adoption of OCLC at Texas Tech is a good example of these, demonstrating the adoption (through OCLC in that case) of metadata re-use supporting efficiency.[14] The success of copy cataloguing, the use of Z39.50, "a client/server based service and protocol for Information Retrieval"[15] commonly used for the exchange of MARC data, and data pools like OCLC, rapidly led to not just an assumed usage of open metadata but also a reliance on it to achieve a certain brutal efficiency in resource description workflows.

This implicit or even assumed availability of open metadata has brought us to this point where renewed focus on open metadata policy is required in the face of efforts to monetize and close down such practice. As outlined by Courtney et al. in "No One 'Owns' That: Metadata, Copyright, and the Problems with [Library] Vendor Agreements," "While there are many players in this space, Online Computer Library Center (OCLC), the organization that most prominently coordinates metadata sharing, has recently increased their claims to having a

proprietary interest in library metadata."[16] As a result, while the same principles are important to consider as libraries navigate this landscape with other vendors, publishers, and institutions, OCLC is also a focus of some of the discussion below.

One key example of efforts that infringe on the previously typical standard of open metadata sharing has been OCLC and the controversial application of the OCLC WorldCat Rights and Responsibilities (WCRR) in 2010,[17] which replaced the "Guidelines for the Use and Transfer of OCLC-Derived Records" that had been in place since 1987.[18] The initial proposed changes to the 1987 guidelines were met with strong concern from the library community regarding the new restrictions on record use and transfer and concepts of singular ownership over metadata, where there had previously not been such restrictions or conceptions in the policy.[19] Concerns relating to "unresolved issues regarding bibliographic metadata use and reuse" remain, particularly as library technology continues to evolve.[20]

The case of WCRR is also a prime example of agreements being a key consideration for the sharing of bibliographic metadata. As described by Courtney et al., the case of OCLC v. Clarivate highlights this, as the lawsuit was not based on copyright infringement but instead based on tort, with "[o]ne claim for tortious interference with a contract, and the other claim for tortious interference with business relationships."[21] While ultimately this case did not go to trial, there was a clear implication that libraries themselves were in breach of contract with respect to the WCRR. Courtney et al. raise concerns as, given the legal action taken, the implications are both that the libraries were in breach of contract and that the WCRR policy is viewed as legally enforceable by OCLC leadership, which they demonstrate is not certain at this point.[22]

As outlined earlier, libraries operate in an environment where the open sharing of bibliographic metadata is essential for operations. While awareness and adherence to policies and agreements are important, the spectre of facing legal action against libraries for the sharing of bibliographic metadata is gravely concerning. Moreover, increasingly, such concerns add further pressure for libraries to move from practice to clearly outline open data policies on the one hand but also to carefully consider agreements that curtail the open sharing of bibliographic metadata and weigh the benefits of any associated agreement in terms of products and services against the potential risks, both legal and operational in terms of limits on reuse. To put it another way, with libraries operating in ecosystems dependent on open interchange, any dependencies on bibliographic metadata with constraints on re-use can increasingly be seen as risks that need to be managed.

In the context of the OCLC v. Clarivate case, the International Coalition of Library Consortia (ICOLC) and American Library Association (ALA) Joint Statement on the Metadata Rights of Libraries was issued:

> *Given how important it is for libraries to use, re-use, and share such metadata freely, current industry trends are troubling. Limited choice in affordable metadata service options, along with restrictions imposed on metadata use, re-use, and sharing across collaborations, platforms, system types, and providers, are impeding libraries' rights and ability to innovate and collaborate to serve their users effectively.*[23]

As argued above, the ability to leverage shared bibliographic data is a key support for core operations of all libraries, not just for underfunded or smaller ones, and any efforts by organizations looking to limit this threaten to destabilize core operations everywhere.

Finally, looking towards the future, other technological innovations place further pressure on the situation, given an ever-increasing need for open bibliographic data. Using one example, with libraries worldwide working on linked data implementations, we can expect an ongoing shift from the use of a record covered by a given policy to entity-based description supported by Resource Description Framework (RDF), where re-use will need to be assessed for separate statements about a resource. Here, without leveraging linked open data for web-scale interchange, the technical challenges of entity-based attribution for data used across communities will be difficult to manage.

The Growth of the Open Metadata Movement

The movement of open metadata sharing centres on the imperative for libraries to clearly set and communicate their own standards and vision for data sharing, data interoperability, intellectual property, and innovation.[24] The movement of sharing public-facing policies or frameworks, often using open licenses, to communicate openness around metadata sharing began in the early 2010s and has since seen slow but steady growth.

While sharing library metadata has been common practice within the metadata community for decades, as discussed above, in the early 2010s, university libraries, national libraries, and other knowledge organizations began to develop theory and best practices around more formalized metadata sharing.[25] The University of Michigan was one of the earliest adopters of open metadata sharing, dedicating a large amount of its bibliographic data to the public domain through a CC0 public domain dedication in 2010.[26] Shortly after, in January 2011, guidelines to help set a standard for open metadata sharing were published, recommending the use of explicit open licenses for all published metadata, and, particularly in cases where data is publicly funded, to use a license that permits the broadest reuse and repurposing of data, such as a public domain dedication waiver.[27] Since then, several American university libraries have released public statements, or "open metadata policies," including Harvard University Library, Columbia University Library, University of Pennsylvania Library (Penn Libraries), Princeton University Library, University of California Library – Special Collections, University of Florida Library, Washington University Library, and Yale University Library. [28]

Apart from bibliographic metadata, guidance for sharing metadata that supports open access publications and the scholarly communications ecosystem has also been developed and shared in the form of the Principles for Open Scholarly Infrastructure (POSI).[29] These principles understand metadata to be foundational and critical infrastructure for open scholarly communications, and they also call for metadata to be shared as openly as possible within privacy limits, preferably through CC0 public domain dedication.[30]

Despite over a decade passing since the beginning of this movement, widespread uptake of open metadata or metadata sharing is still in its early stages. In Canada, for example, the University of Alberta Library is, at the time of writing, the first university library institution in the country to create an open metadata sharing framework or policy.[31] Challenges that the open metadata movement must grapple with are the murky waters caused by 1) lack of a legal definition to determine whether or not metadata (or certain parts of metadata) may or may not be protected by copyright, 2) variation in terms of use in contracts pertaining to outsourced metadata, and 3) the fact that there are many different types of metadata within libraries (whether bibliographic, archival, or metadata supporting digital collections or digital repositories), and each have differing sources and differing considerations to address before proceeding with open sharing, which are explored below.

Navigating Copyright, Contracts, and Open Licenses

Selecting and applying an appropriate open license to library metadata is a tangible way to clearly communicate usage guidelines for sharing metadata; however, open licenses can only be applied to content over which the assumed copyright holder is certain to retain copyright. Whether library metadata is protected by copyright in the first place remains a somewhat grey area that differs based on legal jurisdictions and their interpretation of originality. In Canada, facts are not original and cannot be protected by copyright; insofar as metadata relates only facts, perhaps it would be deemed public domain by Canadian courts.[32] However, there are aspects of metadata that require a level of subjectivity and analysis, such as assigning subject headings and call numbers, which could be deemed to go beyond facts alone.[33] Based on the landmark Supreme Court of Canada case, *CCH Canadian Ltd. v. Law Society of Upper Canada*,

the threshold of originality rests on whether the creation of a work, or "expression of an idea," required an intellectual exercise of both skill and judgment.[34] Viewed in this frame, it may be possible that, in Canada, certain parts of library metadata could be found to hold copyright. However, copyright protection must balance the interests of both the public and the copyright holder,[35] as set out in the Supreme Court decision in *Théberge v. Galerie d'Art du Petit Champlain inc.*;[36] with the consideration that library metadata is typically created through public funding and is intended to support public information retrieval and discovery, perhaps library metadata would not be found to hold copyright protection in Canada. Nonetheless, without a definitive stance upheld by law, one way for libraries to proceed with open licensing of metadata is to first undertake a risk assessment, determine the sources of their metadata (whether in-house or outsourced), assess if there are any usage guidelines attached, and determine if any contractual terms must be considered before openly sharing their metadata.

Comparatively, the threshold of originality in the United States (US), as set out in *Feist Publications, Inc., v. Rural Telephone Service Co.*,[37] is determined based on the amount of creativity involved in a work's creation.[38] In the case of library metadata, it could be argued that it may not be protected by copyright in the US, as even subject analysis and assignment of call numbers are carried out based on rules and guidelines and decidedly not creativity.[39] Courtney et al. offer a detailed and comprehensive analysis of the copyrightability of metadata, with reference to US copyright law and surrounding case law.[40] Nonetheless, as with Canada, barring a legal decision on whether library metadata may or may not be protected by copyright, libraries wanting to pursue open metadata sharing can utilize open licenses to waive certain or all copyright protections that they may or may not hold over their metadata.[41]

The standard best practice for open data licensing is to use the most open and least restrictive license possible, such as the Creative Commons Zero (CC0) public domain dedication; to ensure the maximum reuse and interoperability, CC0 is frequently cited as a best practice for licensing open metadata.[42] Institutions may opt to communicate the open availability of their metadata, whether with a CC0 public domain dedication or through a statement with similar intent, and include a request to attribute the source according to scholarly norms, without making attribution legally binding.[43] Examples of institutions or organizations that have chosen this route include the Canadian Research Knowledge Network (CRKN), New York Public Library, Harvard University Library, Princeton University Library, Columbia University Library, University of Washington Library, and the University of California Library Special Collection.[44] Other open licenses can include restrictions that make attribution a legal requirement, such as the Creative Commons Attribution license (CC-BY) or the Open Data Commons Attribution license (ODC-BY).[45] Creative Commons also offers an open license that restricts any commercial uses, in addition to requiring attribution (CC-BY-NC).[46] While attribution is understood to be good scholarly practice, legal requirements for attribution are cited as barriers to use that could lead to the creation of impractical files of metadata to describe metadata (also referred to as attribution stacking), particularly in cases where users are mixing metadata from multiple sources—a standard practice in resource description/metadata creation.[47] Ultimately, in selecting an open license for open metadata, libraries must consider their jurisdiction's copyright law, related jurisprudence, their institution's goals for wider metadata use, such as interoperability, as well as other factors that may influence their choice in open license, including terms of use from contractual agreements related to their metadata.

Case Study: University of Alberta Library (UAL) Process of Creating an "Open Metadata Sharing Framework"

Discussions on approaching the sharing of UAL metadata in a more systematic way began in 2015. The conversation was initially focused on how best to share metadata record sets that

UAL had created or curated. In particular, there was keen interest in posting these record sets in a place that would be accessible to anyone interested in them, which was a shift from our previous practice of sharing these in the OCLC community space, where non-OCLC members could not access them, and providing guidance on how we believed they could or should be appropriately repurposed. Based on a very cursory scan of what other libraries and institutions were doing at the time, as well as brief conversations with staff from the University's Copyright Office, we planned a page within our website that would include various metadata records sets and a statement along the following lines: "The University of Alberta Library believes that the vast majority of metadata is not copyrightable. However, in the case of discrete record sets, a Creative Commons Attribution-Non-Commercial ShareAlike 4.0 License will apply." In early 2016, the first few record sets were made available under this license through the library's open data portal.[48] These record sets described both physical and digital collections and were either original to UAL or extensively enhanced and enriched records originally from elsewhere.

Over the next several years, additional record sets were added to the UAL open data portal using this same approach. Fast forward to 2022, and several initiatives that UAL was (and is) engaged with, including the Program for Cooperative Cataloging (PCC) and SHARE-VDE: (SVDE), were actively developing open metadata policies. This was an opportunity for the library to consider our own interests and needs, both individually and as a member of such collaborative initiatives, and to provide input on policies that would align with our values and commitment to open access and open data. And it raised questions for us in terms of our own metadata and whether it was once again time to revisit the development and articulation of our own open metadata framework. Recognizing that doing so would require focused attention, we proposed that an academic library resident position be devoted to gaining an understanding of the current landscape, consulting with interested teams and units within the library, and developing a framework or policy for metadata sharing. The project began in July 2023.

While the intention has been, and still is, to include all UAL metadata—that is, catalogue metadata, repository and digital collection metadata, and archival finding aids—within the framework, we recognize that each category comes with its own opportunities and challenges that need to be addressed. For example, privacy or ethical issues with openly licensing and/or sharing repository metadata in the form of open datasets may need to be explored, as it is likely to include names of theses and dissertations authors and, if openly licensed, has the potential of being used to train generative AI large language models. Understanding the current metadata sharing approaches and carrying out the necessary consultations within any of these areas would be a large project in and of itself, and so we agreed that we should begin with one type of metadata. Given the rapidly developing work within the cataloguing community around metadata sharing, we agreed that catalogue records (i.e., MARC records) would perhaps be the most logical place to begin.

To start the project, we set out to gain a broad understanding of trends in the open metadata sharing ecosystem by conducting an environmental scan, which included a literature review, a "strengths, weaknesses, opportunities, and threats/risks" (SWOT) analysis, and an examination of as many institutions' public facing open metadata policies/guidelines as could be found at the time of writing. What resulted was a detailed analysis identifying trends, such as using separate open licenses based on different sources or different types of metadata held within academic libraries, the prevalence of encouragement to attribute paired with CC0 public domain dedications among academic libraries, and CC0 alone being utilized more frequently by national libraries or other types of knowledge organizations. Carrying out the environmental scan, sparked the necessity to delve into Canadian-specific research around whether metadata may or may not be protected by copyright according to the Canadian Copyright Act, and into any light that related jurisprudence could shed on the subject as well. From there, we settled into a process wherein, for each metadata dataset under consideration, we would first research trends and practices of other institutions regarding that type of metadata, followed by carrying out a risk assessment that would take into consideration copyright concerns and any terms of contracts associated with the particular metadata. This process

will be iterative and ongoing as more metadata datasets are considered and shared. Further steps, which are intended to be carried out, include technical decisions on how to share our metadata datasets (whether MARC formats, BIBFRAME formats, or others) and through which platform (common options tend to be Dataverse, an HTML website, or GitHub).

The Open Metadata Framework was endorsed by the UAL senior leadership team in June 2024, and the framework has been shared via the library's website.[49]

Conclusion

Open metadata sharing and the open metadata movement seek to formalize and ensure the continuance of longstanding practices of metadata record sharing, re-use, re-mixing, and openness that support not only the practices and workflows of metadata creation and resource description but also the core functions of libraries as a whole. Although challenges remain in navigating contractual terms associated with certain metadata and copyright considerations across different jurisdictions, utilizing open licenses for metadata or publicly sharing policies or frameworks asserting the intended openness and re-usability of library metadata can help to ensure that practices of library metadata sharing continue into the future, embodying the library ethos of open access and bolstering the work of other open movements in turn.

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