Chapter 5

Current Initiatives Aimed at Mitigating Access Issues

Metadata Initiatives

Faulty and incomplete metadata is one of the primary culprits of e-resources access disruptions. In response, the National Information Standards Organization (NISO) has launched several initiatives to standardize the way e-resource metadata is represented and transmitted between organizations. We discuss a few of those initiatives in this section.

Knowledge Bases and Related Tools (KBART)

The NISO Knowledge Bases and Related Tools Recommended Practice (NISO RP-9-2010) was originally created in 2010 to address the myriad metadata problems associated with OpenURL linking failure (NISO, n.d.). The recommended practice focused on standardizing the e-journal metadata elements that needed to be communicated from content providers to the link resolver/knowledge base vendor in order to make the link resolver work. It also established the methods and frequency by which these metadata elements should be transmitted. However, as the role of knowledge bases within the discovery landscape grew, the scope of KBART expanded to tackle e-resource metadata issues beyond OpenURL. In 2014, KBART was updated to include standardized metadata elements for consortia, open-access publications, e-books, and conference proceedings (NISO RP-9-2014) (KBART Phase II Working Group 2014). And in 2019, the KBART standing committee introduced a proposal for Phase III that would expand the standardized metadata elements to include additional e-resources content types, such as audio, video, and data sets, as well as metadata for more granular items, such as article and chapter level entitlements.

While the KBART recommended practice is regarded as a successful endeavor in and of itself, helping to improve the quality of knowledge bases and thus discovery services industry-wide, its related recommended practice—KBART Automation—may prove even more instrumental in mitigating access disruptions. Adopted in 2019, the KBART Automation recommended practice (NISO RP-26-2019) utilizes the KBART format to enable content providers to send institution-specific holdings reports to that institution's knowledge base via an automated API process, thus allowing "knowledge base-powered systems to more accurately reflect content accessible at a particular institution and its unique holdings, with little interaction or ongoing maintenance from library staff" (KBART Automation Working Group 2019, v). Not only does this more direct communication have the potential to reduce the amount of time library staff spend monitoring and maintaining access entitlements in the knowledge base, it may also reduce the number of errors introduced during the maintenance process. In turn, end users are less likely to run into paywalls or denials of access due to incorrect knowledge base selections.

However, KBART Automation does come with a few downsides. Without the need for manual maintenance, librarians may become less aware of what updates are being made to the knowledge base on their behalf. As Derouchie, Ashmore, and Van Gorden point out, "Librarians would have fewer opportunities to review and identify any discrepancies in data. New workflows may need to be implemented to allow the librarian to detect and resolve these discrepancies" (Derouchie, Ashmore, and Van Gorden 2021, 120). Furthermore, automated holdings may allow for less customization and choice over the content being

activated in the knowledge base, such as with promotional or time-limited offers of free content.

Open Discovery Initiative (ODI)

The Open Discovery Initiative (NISO RP-19-2020) was initiated in 2011 to establish a set of recommended best practices for index-based discovery services (Open Discovery Initiative Standing Committ8ee 2020). The focus is primarily on mitigating issues stemming from centralized discovery indexes (as opposed to knowledge bases) and on promoting transparency around the content and indexing level of metadata being ingested and displayed to users. In particular, it sets out the technical recommendations for metadata transfer between content providers and discovery vendors to ensure timely and consistent updates; recommendations on communicating to library stakeholders the content availability, metadata display rights, and degree of indexing for ingested metadata; standards for fair and unbiased linking; and how usage statistics should be gathered and reported to discovery service customers.

One of the most beneficial aspects of this recommended practice is the increased transparency for content coverage within discovery service indexes. Because the metadata supplied by content providers undergoes normalization and merging processes during ingestion, the records presented to end users in their search results often contain metadata elements from multiple providers. As explained in the recommended practice, "For a journal article . . . its full text might be contributed by the primary publisher, citation data from the providers of an aggregated database, and abstracts or controlled vocabulary terms may be provided by yet another provider" (Open Discovery Initiative Standing Committee 2020, 2). This mix-and-match approach, while at times beneficial for users, makes it difficult for libraries to evaluate the degree of exposure their acquired content has within the index. Gaps in coverage may exist within a collection a library assumes is fully and robustly covered. Further complicating this issue are the private agreements content providers have with the discovery vendor, which influence how, when, and to whom the metadata can be exposed (e.g., only to subscribing institutions or to everyone). If this recommended practice is widely adopted, libraries will have access to reports regarding the coverage and index of their collections and can take steps to mitigate issues around missing or hard-to-find items.

E-book Bibliographic Metadata Requirements in the Sale, Publication, Discovery, Delivery, and Preservation Supply Chain

The NISO Recommended Practice for E-ebook Bibliographic Metadata (NISO RP-29-2022) establishes best practices for naming, identifying, and describing e-books in order to ensure effective and consistent communication across stakeholder organizations (NISO E-book Bibliographic Metadata Requirements in the Sale, Publication, Discovery, Delivery, and Preservation Working Group 2022). The recommended practice identifies the minimum requirements for e-book metadata, including five essential elements (titles, names, dates, book identifiers, and subjects) as well as three version-specific metadata elements: format, constraints on use, and Uniform Resource Identifier (URI) or Internationalized Resource Indicator (IRI). If widely adopted, these best practices will allow libraries to more easily identify and manage their e-book holdings within various knowledge management systems.

Video and Audio Metadata Working Group

The NISO Video and Audio Metadata Working Group was formed in 2019 to evaluate what metadata elements are needed to sufficiently identify and describe online media content. The working group aims to create a new NISO recommended practice that will serve as a guideline for the creation and dissemination of metadata for administrative, semantic, technical, use rights, and accessibility information. If widely adopted, these recommended practices will improve the dissemination, discoverability, and indexability of video and audio content in both library and stakeholder systems. The working group will provide a draft of its recommended practices for public comment in 2022.

Unique Electronic Resource Package Identifiers Working Group

The Unique Electronic Resource Package Identifiers Working Group is a newly proposed NISO working group whose aim is to "evaluate and create recommendations for unique package identifiers that provide disambiguation across the supply chain" (NISO 2021). Currently, purchased or licensed e-resource packages are identified by name only. This leads to confusion among stakeholders, who may struggle to identify packages on past invoices, within licenses, or in a knowledge base, especially when those names have changed over time. By recommending best practices for unique identifiers for e-resource packages, the working group hopes to alleviate that confusion and improve the efficiency and accuracy of the work of all stakeholders. They also anticipate this work will support the adoption of KBART Automation. This working group is currently in the formation stages. The roster is scheduled to be announced in 2022.

Access and License Indicators (ALI)

The NISO Access and License Recommended Practice (RP-22-2015), approved on January 5, 2015,

aims to address two pain points around e-resource access: identifying "free-to-read" content and providing information on what reuse rights might be available to the reader regarding that content (NISO Access and License Indicators Working Group 2021). The working group developed two metadata fields, expressed in XML as `<free_to_read>` and `<license_ref>`, that publishers and content providers could include alongside standard metadata describing a work. These fields could then be used on the publisher's platform or transmitted to downstream systems, such as aggregators, A&I services, and discovery layers, to display icons or verbiage indicating the work's access status to the end user.

While both metadata fields have the potential to mitigate access issues, the `<free_to_read>` field is likely to show a more immediate effect. The term "free-to-read" is used within the recommended practice to refer to any work "that is accessible to read online without charge or authentication (including registration) to any person with access to the internet" (NISO Access and License Indicators Working Group 2015, 1). The term was adopted instead of "open access," which can carry a variety of meanings and nuance. The free-to-read field fills an important gap in metadata—particularly for articles—by not only identifying freely accessible content but also, with the use of start and end date attributes, taking into account changes in access status "where content was free-to-read for a period of time or after a particular date," such as with embargoes or other delayed access models (NISO Access and License Indicators Working Group 2015, 5).

Before the introduction of this metadata field, access status was typically conveyed to the discovery layer from a link resolver knowledge base or an ERMS and, as a result, was managed at a journal or volume level rather than the article level. This would lead to confusion by end users when accessing hybrid journals, where some but not all articles are made freely available to readers. Widespread adoption of this metadata field for articles would help alleviate the frustration end users feel when encountering hybrid journals and other complex access models, where articles change their access status over time. In turn, this may result in less user error when reporting denials of access to library staff.

Authentication Services

Complicated library authentication systems historically have been a pain point for end users and librarians alike. Services have emerged in recent years aimed at alleviating the frustration. We highlight two here.

The IP Registry

The IP Registry is a service offered by PSI Ltd., a for-profit company based out of the UK. Libraries can register their IP address ranges with the service for free, and the service in turn disseminates the ranges via API to participating publishers and content providers. This service aims to save the time and effort of librarians by acting as a centralized location for them to check and update their institutional IP ranges. It also aims to benefit publishers by ensuring they receive timely, validated IPs through an automated process, thus preventing errors from manual IP entry.

SeamlessAccess

SeamlessAccess is a free service aimed at streamlining and securing the remote user authentication process. An outgrowth of the Resource Access for the 21st Century (RA21) initiative, SeamlessAccess promotes the use of federated identity management (FIM) instead of IP addresses to handle user authentication. For libraries and academic institutions that use a FIM authentication tool, such as InCommon (Shibboleth) or OpenAthens, it provides a consistent log-in experience for users on participating content and discovery platforms. This includes equipping platforms with a uniform WAYF (Where Are You From) searchable menu, standardized institution metadata, and a persistence service so users do not need to reauthenticate when visiting another SeamlessAccess-enabled platform.

SeamlessAccess has the potential to reduce access issues related to IP authentication and further streamline the FIM log-in experience. If widely adopted by libraries and content platforms, it may lessen user error around the authentication process, which currently relies on end users utilizing different software and navigational starting points, such as VPNs or proxied URLs, depending on their physical location. It also has the potential to reduce the impact of security breaches on content providers and libraries because FIM authentication is inherently more secure than IP authentication.

Other Initiatives

Transfer Code of Practice

The NISO Transfer Code of Practice (RP-24-2019) is a set of best practices for when an electronic journal is transferred from one publisher to another (NISO Transfer Standing Committee 2019). Originally developed as a UKSG initiative in 2006, Transfer was later adopted by NISO as a recommended practice in 2014 and updated to its current version in 2019. Transfer helps to ensure continuous access of electronic

journals during the publisher transfer process by establishing what information at minimum needs to be communicated to various stakeholders, including customers, readers, content recipients, and transfer partners, and within what time frame. The Transfer Alerting Service (TAS) was developed to support this communication. Through TAS, libraries can sign up for e-mail alerts of upcoming journal transfers, as well as search a database of previous transfers.

> Librarians are encouraged to try the enhanced transfer alerting service and contact any librarians on the standing committee if they have questions. If there are any publishers that are not currently Transfer-compliant, please let a standing committee member know so that the publisher can be contacted about becoming compliant. (Copeland 2019, 160)

TAS is currently hosted by the ISSN International Centre.

Content Platform Migrations

The NISO Content Platform Migrations Recommended Practice (RP-38-2021) aims to mitigate access disruptions that occur when publishers change content-hosting platforms by outlining actions stakeholders should take when performing the migration (NISO Content Platform Migrations Working Group 2021). The recommended practice covers items related to linking (redirects, link resolvers, authentication), content migration, metadata migration (KBART, MARC, ISSN/ISBN), user and administration accounts, usage statistics, and stakeholder communication.

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