Book reviews

The future of enriched, linked, open and filtered metadata: making sense of IFLA LRM, RDA, Linked Data and BIBFRAME. Getaneh Alemu. London: Facet Publishing, 2022. 282 pp. ISBN 978 1 78330 492 9 (pbk), £58.35.

Metadata is closely related to open/database/periodical indexing, whereby index terms become metadata of a document upon being indexed to the document. Back-of-the book indexers may also take an interest in metadata at the book level, which involves the cataloging and classification of books. Also, anyone who is interested in how information is shared may be interested in metadata in general.

This recently published book by Getaneh Alemu, *The future of enriched, linked, open and filtered metadata*, focuses on metadata for digital shared content, and it is this kind of metadata that is perhaps the most relevant and of potential interest to the widest audience, not just indexers. Most people don't deal as directly with metadata as when they search and retrieve digital resources in libraries or on the Semantic Web part of the internet, which is the realm of linked and open data.

New approaches toward applying digital bibliographic metadata

The significance of the combination of the four principles of enriched, linked, open, and filtered metadata to improve access and usage of information resources is a new idea put forth by Alemu, at first in 2016 in his PhD thesis, in the article 'A theory of metadata enriching and filtering' in the journal *Libri* (**66**(4)), and then in this book, especially in Chapters 5–7. This follows, in Chapter 4, a review and critique of 'contemporary' cataloging and metadata principles, which are sufficiency, necessity, user convenience, objective representation, and standardization (p. 94).

Enriched metadata can mean different things, but for Alemu metadata enriching means adding descriptive metadata (i.e. indexing), which can be done at 'various stages during the information of the information resource lifecycle, involving several actors, including users' (p. 93), by different people in different roles, including users, to supplement the required metadata assigned by experts. Metadata enriching also involves adding links. Metadata enriching is further described in the final chapter, 'Crowdsourcing and user-generated metadata.'

Linked metadata, also called cross-linking, means connecting to other resources and other metadata, such as connecting a book to an author biography and its reviews. At one point, Alemu draws the comparison of metadata linking to *see* and *see also* cross-references in indexes (p. 112). Metadata linking to other resources is done by following Linked Data principles of the Semantic Web, which involve using URIs for each metadata property and each structured metadata value and following the RDF (Resource Description Framework) data model.

Open metadata means that linked data can be freely accessible and sharable to and from external sources, using open formats and licensing that permits commercial reuse. This includes complying with FAIR (findable, accessible, interoperable, and reusable) data principles and using simple APIs (application programming interfaces).

Filtered metadata, according to Alemu, is the selection of what metadata to display to suit user needs, especially if there is a large amount of metadata due to the addition of enriched metadata. Filtered metadata involves displaying 'to a contextually relevant, reconfigurable, and user-driven interface' (p. 153).

Newer library metadata standards

The subtitle of the book is 'making sense of IFLA LRM, RDA, Linked Data and BIBFRAME.' Like most indexing professionals, I didn't know what any of these standards were, other than having an idea about Linked Data. So I welcomed learning something new. Actually, these cataloging and metadata standards themselves are relatively new, so the degree of their adoption by libraries varies, and there is not much written about them in such an analytical and forward-looking view.

IFLA is the International Federation of Library Associations and Institutions, which publishes standards, among other activities. LRM is the Library Reference Manual, a standard published by IFLA in 2017, which is a high-level conceptual model for all aspects of bibliographic data.

RDA (Resource Description and Access) is a standard for descriptive cataloging jointly published in 2010 by the American Library Association, the Canadian Federation of Library Associations, and the Chartered Institute of Library and Information Professionals (CILIP) of the UK. RDA is the successor to AACR2 (Anglo-American Cataloging Rules) with the addition of instructions on how to catalog digital resources and database records besides traditional analog resources.

BIBFRAME (Bibliographic Framework) is a data model for bibliographic description designed in 2012 to replace MARC (Machine Readable Cataloging) bibliographic standards and released as version 2.0 by the US Library of Congress in 2016. BIBFRAME is based on three categories of abstraction (work, instance, item), and is expressed in the Semantic Web data model of RDF.

Linked Data is not a standard itself but rather a model involving a set of principles to support the Semantic Web. This comprises using URIs as names of things; using HTTP URIs so people can locate them, including links to other URIs; and providing useful information that follows RDF and other Semantic Web standards. Linked Data supports sharing, integration, and reuse of data. Linked Data can also be considered as an implementation of metadata linking (p. 118). LRM, RDA, and BIBFRAME all support Linked Data. The chapter on Linked Data discusses the benefits, the challenges, and the slow pace of library adoption of Linked Data. Alemu also makes recommendations for what he considers a conceptual shift by librarians in order to adopt Linked Data.

Metadata in general

The book's scope is somewhat broader than that of enriched, linked, open, and filtered metadata, as it also contains introductory chapters covering metadata types, principles, quality indicators, and uses. The first chapter, 'Introduction to metadata,' is broad and sufficiently introductory. It starts out defining metadata in a lengthy 14-page section, followed by sections on the history, standards, benefits, types, and specific use cases of metadata. Some introductory statements seem too simplistic, such as 'Google is first and foremost a metadata company,' and 'The keyword or phrase you enter is what we call metadata' (pp. 7–8). Other definitions of metadata are more helpful: 'Metadata helps answer the what, by whom, why,

when, and where questions,' and 'Metadata is the naming of information objects' (p. 11). I also like Alemu's statement that metadata 'is not an end by itself, but a means to an end, i.e. enabling access and use of information' (p. 14).

I found the second chapter, 'Metadata strategies and quality indicators,' especially valuable for providing practical information for planning and managing metadata. Metadata strategy covers metadata sources, costs, staffing, standards, systems, tools, ownership, management, licensing use, reuse, and sharing (p. 42). Metadata quality indicators include completeness, correctness, consistency, and duplication analysis (p. 48).

Book readability and features

The book is readable and generally appropriate for a varied audience of information professionals. Some explanations, though, seem slightly repetitive in different parts of the book. On the other hand, the repetition of explanations makes it possible to read selected chapters out of order, which is probably how many readers will approach the book, rather than reading from cover to cover. A more thorough introduction of some topics, such as Semantic Web recommendations, in a dedicated section would be desirable.

Alemu personalizes the text with a few notable examples from his own cataloguing experience, as cataloguing and metadata librarian at Solent University library, when he decided to enrich the metadata for certain books to make them easier to find. These case examples help make this book more practical and less theoretical, and it's also something that indexers can relate to.

The book includes a great deal of research, with numerous in-text citations and over 18 pages of references, which is characteristic of a scholarly work. This is likely because this book is based on a scholarly work, Alemu's PhD thesis, 'A theory of digital library metadata: the emergence of enriching and filtering' (available at https://tinyurl.com/y4zyro4r (accessed 14 April 2023)). By adding introductory chapters and making other editorial changes, however, Alemu has made this important topic accessible to a wider audience, and the non-scholar can quickly skim paragraphs that are full of citations. Furthermore, the sources that Alemu cites are not all scholarly, but also include authors who are practitioners in information and knowledge management.

Figures, tables, screenshots, code, and especially schematic diagrams of concepts, principles, and process are useful additions. Some tables are quite extensive, such as four pages of two columns of all the RDA work relationship elements (such as 'abridged as work'). As such, this book also serves as a reference. The book does not have a glossary, though, and this would have been quite beneficial, especially since certain concepts and standards (and their acronyms) are mentioned before their main discussion in a later chapter.

Unfortunately, the index is very poor. It seems to have been generated from occurrences of words or phrases on pages with no attention to actual concepts. There are also no subentries. For example, the entry 'Linked Data' has 33 undifferentiated locators. Mere passing mentions are included. Concepts are not grouped together. A typical example is the presence of the three entries 'enriched metadata' (with three locators), 'metadata enriching' (with 13 locators), and 'metadata enrichment' (with three locators), and none of these 19 locators are the same. Page ranges are based on sequential pages but not a continuous discussion, i.e. the topic was mentioned in a sentence on the top of page 2 and then again in a sentence at the bottom of page 3, and then has the locator pp. 2–3. There are a few *see also* references but no *see* references. With the lack of subentries, the metatopic of 'metadata'

is covered in numerous main entries, 27 of which start with the word 'metadata.' Some of these are rather obscure, including 'metadata is a growing organism' and 'metadata is for use.' There is no entry for 'metadata types,' but there is an entry for 'types of metadata.' The index is also not even complete. I found a single locator for 'taxonomies' in the index, but I found taxonomies discussed with at least as much information on other pages

Conclusions

Of the four metadata principles put forth in the book (enriched, linked, open, and filtered) it is metadata enrichment that Alemu discusses the most, and this helps make the book of interest to indexers, since metadata enrichment is essentially open, database indexing. Alemu even contrasts open ('continuous') and closed ('complete') metadata creation, not for books, but for bibliographic information: 'In contrast to creating a complete card catalogue or electronic bibliographic record, where metadata is often created in a "complete state", metadata enriching is a continuous process of adding, enhancing and improving metadata content' (p. 111).

While this book's primary audience is metadata librarians and other information professionals who manage digital collections, others curious about modern information sharing would also find this book worth reading. Despite the potentially intimidating title and subtitle for those outside the current library science field, this book is quite interesting and informative to a wider audience of information professionals and especially those who have ever done any database indexing.

I appreciated the book for its combination of explaining emerging standards, presenting the argument for making metadata more flexible and user-focused, and providing instructions on applying metadata. I also like that it is forward-thinking about 'the future of metadata.'

Heather Hedden
Taxonomist