Metadata standards and web services in libraries, archives, and museums: An active learning resource

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METADATA STANDARDS AND WEB SERVICES IN LIBRARIES, ARCHIVES, AND MUSEUMS: AN ACTIVE LEARNING RESOURCE. Erik Mitchell. Santa Barbara, CA: ABC-CLIO, 2015, 290 pp., ISBN: 978-1-61069-449-0, $75.00, e-book ISBN: 978-1-61069-450-6, $75.00.

Since the birth of the web over 25 years ago, both the information resources described by libraries, archives, and museums and the systems used to make resources discoverable are increasingly digital. Erik Mitchell examines how metadata standards support the design and implementation of web services. Intended for an audience of LIS graduate students, the book also lends itself to use by information professionals seeking to expand and deepen their knowledge.

This "active learning resource" understands digital information organization as a design activity. In order to design information systems and services, it is necessary to understand their raw materials, as well as the constraints and affordances of the metadata standards used to build web services. The book's introduction identifies and defines three building blocks of information systems and services: organization, technology, and interaction. Chapters 1–4 lay a broad foundation for understanding these building blocks, from how users seek information to how content is modeled in a cultural heritage context, and touches upon different ways that content is served up. Mitchell anchors these broad principles in specific examples, such as HTML, HTTP, MARC, and integrated library systems. Chapters 5–7 delve into the book's main topics. After mapping out a typology of metadata standards—structure, content, value, and exchange standards—Mitchell discusses the ways that these standards underpin web services that make metadata accessible to both users and web applications. The final chapter makes a series of assertions regarding future trends in metadata, information systems, and information use. This conclusion, almost like a collection of brief op-eds, leaves readers imagining different possible configurations of the three building blocks of information systems and services.

Although more courses are being offered on web information organization, no textbook until now filled this particular niche. In addition to this book, Mitchell has made freely available worksheets and course design materials intended for a graduate course on metadata and web services at bit.ly/metadatastandards. These materials are a rich resource for instructors planning courses and for practitioners who are guiding themselves through this text. More explicit relationships between chapters of the print book and the worksheets would be useful.

While libraries, archives, and museums (LAMs) are each identified in the title, the aim of this book is not to examine the complementary yet distinct needs of these institutions. Rather, specifying LAMs emphasizes the difference between the role of metadata standards and web services in cultural heritage institutions and their role in finance and technology businesses.

On the whole, Mitchell's coverage of the literature is comprehensive, including key journal articles on information systems, as well as the standards embraced by LAM and web communities of practice. One foundational principle treated only in passing is the network architecture of the web. Absent of a more holistic discussion of the affordances of different architectural styles, mentions of SOAP (Simple Object Access Protocol) and REST (Representational State Transfer protocol) may come across as alphabet soup to the entry-level reader. Reference to Roy Fielding's dissertation, "Architectural Styles and the Design of Network-based Software Architectures" would provide needed context.

Occasionally, more vivid examples of the impact of good design of information systems would enliven the text. For example, in Chapter 6: Serialization, Mitchell provides responses to queries of the Internet Archive and the Digital Public Library of America (DPLA) submitted using the cURL command line tool, which exemplify metadata exchange in the LAM context. Examples of the kinds of web applications that can be built on top of the generative platform of

DPLA web services—such as browsing books by color or language—or the types of scholarly inquiry that are facilitated by being able to batch download OCR output of materials found in the Internet Archive would drive home the impact of good design of LAM web services built on metadata standards.

Mitchell is a systems thinker. His experience as a digital library practitioner, PhD education in information science, and experience instructing MLIS graduate students enables him to serve as a translator between theory and practice, dense standards and day-to-day design decisions. Graduate students and professionals in academic and public libraries, archives, and museums will find this book worthwhile as a resource for grasping the design principles that underlie web services in a cultural heritage context.

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