and approachable. Drawing on his understanding of the impact of adherence to standards—or the lack thereof—in libraries, Desmarais provides, especially in the chapter "XML and Its Potential for E-Commerce," great insight into the importance of establishing and adhering to standards to realize XML's full potential. His discussion of EDI is particularly thoughtful, reflecting his understanding of library acquisitions and fund management and the potential of XML for supporting EDI services. Although he understands the needs of libraries, Desmarais focuses almost exclusively on MARC and e-commerce applications. Four appendixes provide examples of SGML and XML used to store and generate MARC records, in particular to support the display of either Chinese characters or the transliterated text of a record. This emphasis tends to shift the reader's thinking away from other current uses of XML (with electronic books and journals, non-MARC metadata formats like the Encoded Archival Description, automated cataloging of electronic resources, etc.) and from developing new uses for XML beyond traditional library considerations. Few references are made to Appendixes 1–3, so perhaps they could have been shortened to make room for other materials. Although Desmarais mentions the development of other XML standards, such as the Chemical Markup Language, he does not discuss how these applications of XML will affect libraries and the work done in them. Desmarais also does not discuss how XML is likely to affect the library as an organization in nontechnical ways, such as workflow and funding.

Desmarais succeeds in explaining why we need to care about "the real goal of the [XML] markup: to clarify the document's underlying structure" (32), how this need differs from simply displaying text, and what advantages there are in using a powerful markup language. By focusing on the possible uses of XML within libraries, Desmarais avoids the vague assertions and abstractions that characterize many descriptions of XML and other markup languages. Although other good XML surveys exist, Desmarais's book is specifically oriented to libraries and will be most useful for readers wanting that perspective.—*Thomas P. Turner (tpt2@cornell.edu), Cornell University, Ithaca, New York*

Digital Libraries. By William Y. Arms. Digital Libraries and Electronic Publishing. Cambridge, Mass.: MIT Pr., 2000. 287p. $45 (ISBN 0-262-01880-8). LC99-14773.

Monographs that deal with the Internet, the Web, or digital libraries are often outdated by the time of publication, but reviewing William Arms's book *Digital Libraries* with this idea in mind would be inappropriate. In the introduction to the chapter on economic and legal issues, Arms describes his approach: "The discussion reflects my own viewpoint, which will probably need revision over time. However, I hope the basic ideas will stand" (99). The basic ideas of this book, contained in a comprehensive historical survey, an assessment of the state-of-the-art, and more importantly, of the accompanying culture should indeed stand the test of time.

The objective of producing a comprehensive review is worthwhile. Arms accomplishes his purpose through personal knowledge and reflections that are based on interaction with well-known individuals and institutions in the digital library community. Arms states that the text reflects his "own experiences and biases" (x) and examples that he knows personally, augmented by information from other individuals, as shown in the list of names in the acknowledgments. The examples may reflect Arms's personal experiences, but his discussion also makes it clear that he has interacted with a variety of digital library projects, researchers, and practitioners.

An examination of the individual chapters within *Digital Libraries* confirms its breadth of coverage. With topics ranging from technological ("The Internet and the World Wide Web") to sociological ("People, Organizations and Change"), the discussion covers the multidimensional aspects of digital libraries. Arms correctly points out that "digital libraries bring together facets of many disciplines, and experts with different backgrounds and different approaches" (1). While there are undoubtedly technical issues associated with digital libraries, his discussion also covers economic, legal, social, and cultural issues. Arms also describes the diverse groups that influence development of digital libraries, including computer scientists, librarians, archivists, lawyers, economists, and publishers. He strikes a balance between praise and constructive criticism of these communities—an approach that is most refreshing. Undoubtedly, each community has much to offer in the development of digital libraries, but each group can also benefit from a broader and greater understanding of the other players. When describing librarians and computer science researchers, Arms states that "Until recently these two communities had disappointingly little interaction; even now it is commonplace to find a computer scientist who knows nothing of the basic tools of librarianship, or a librarian whose concepts of information retrieval are years out of date" (3).

In the chapter "User Interfaces and Usability," Arms reminds us that the library user must assess the effectiveness, utility, and ultimately the success of digital libraries. His discussion might have included more emphasis on educators and instructional designers as an additional community for consideration. While discussions of instruction are included, an explicit treatment of educators' interaction with digital libraries would reflect the

growing realization that pedagogical issues should constitute a part of digital library development, not an additional consideration after the fact.

Digital Libraries offers a useful glossary of terms, but it is not the ideal resource for those seeking detailed descriptions of specific topics. This is not surprising given Arms's goals and objectives. His text is an excellent primer for individuals who require an introductory survey or wish to examine digital libraries in a holistic manner. Even with this emphasis, and acknowledging the difficulties of combining breadth and depth, it might be useful for readers to have more references and a bibliography for further investigation of individual topics.

I was especially eager to review *Digital Libraries*, given my professional situation. My academic background includes engineering and economics, but I work in a research facility within an academic research library. My exposure to electronic publishing, scholarly communication, and intellectual property issues in the academic community arises from involvement with Project Muse since its inception. Even from the perspective of this diverse experience, I discovered new insights, facts, and understanding in this book. Arms inspires new perspectives on familiar ideas, whatever the reader's background.

He weaves an interesting story regarding digital libraries, with historical context, a view of the digital library landscape, and a blueprint for further research and implementation. Whether read for its narrative, architecture, or artistry, William Arms's *Digital Libraries* is noteworthy. Much like Michael Lesk's *Practical Digital Libraries: Books, Bytes, and Bucks* (1997), Arms's book should now be considered required reading for anyone interested in digital libraries.—*G. Sayeed Choudhury (sayeed@jhu.edu) Digital Knowledge Center, Milton S. Eisenhower Library, The Johns Hopkins University, Baltimore, Md.*

The Future of Classification. Ed. Rita Marcella and Arthur Maltby. Aldershot, England: Gower, 2000. 144p. £55; $99.95 (ISBN 0-566-07992-5). LC99-46030.

With the intention of describing a vibrant future for classification, Rita Marcella and Arthur Maltby have gathered ten chapters whose authors include classification theorists of long standing such as Eric Hunter and A. C. Foskett, established academics such as Lois Mai Chan and M. P. Satija, editors of major classification schemes, and writers who bring other perspectives, especially from theory and computing. Some of the authors stress the strong points of classification, others discuss somewhat radical potential uses, and still others document concrete recent progress and its logical trajectory. The tone varies from cautious to enthusiastic, but none of it is unrealistic and most of it is frank. Most of the authors are or have been library school faculty, and most are from the United Kingdom. The chapters are organized starting from basic principles, many of which will be a review for professionals, continuing to theoretical views that offer fresh perspectives, particularly on the value of browsing, and moving logically to classification as an online tool. Three major classification schemes—the Library of Congress Classification (LCC), the Dewey Decimal Classification (DDC), and the Universal Decimal Classification (UDC)—merit a chapter each, and the concluding chapter documents the literature of classification and serves as a starting point for following up the ideas in the book.

In the United Kingdom, *The Future of Classification* is likely to be marketed as a textbook, but as an instructor in a Canadian context, I would not use it for this purpose. The book is interesting reading for North American professional librarians of all specializations—not just catalogers—because it reminds and challenges us regarding a powerful library tool. Since Charles Cutter and others of his time introduced the dictionary catalog, we have spent less effort on classification. Still, we know that library users frequently use the catalog to find a likely call number and then go to the shelves to browse—an activity impossible without classification. We also know that Web search engines commonly include a quasi-hierarchical classification for assisting searchers in navigation. We may scoff at the nature of these classifications (finding "feral cat control" under "pets" under "hobbies", for instance), but the fact that even poorly constructed classifications are popular should indicate the potential of well-constructed classifications.

Lest we forget the power of classification, *The Future of Classification* gives us the basics in readable form and then goes on to create a conceptual framework filled with suggestions of concrete approaches. The following sampler of ideas from this collection will entice readers into spending some time thinking about the merits and potential of classification:

- Classification is an exploratory device that allows creativity and serendipity as our subject heading searching does not.
- Classification in electronic form allows us to browse virtual shelves and make links across these shelves so that they are no longer only linear.
- Classification can be used as a switching device to link different languages, whether they are natural languages (English, French, Spanish, Mandarin) or controlled vocabularies (subject headings and thesauri).
- The two major North American classifications, LCC and DDC, are now both available in electronic form and are being used to classify electronic resources.
- Boolean searching on classification is possible in an electronic