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IMPLEMENTING FRBR IN LIBRARIES: KEY ISSUES AND FUTURE DIRECTIONS by Yin Zhang and Athena Salaba. New York: Neal-Schuman Publishers, Inc., 2009, xiv, 154 p. ISBN-13 978-1555706616. \$75.00.

(Disclosure: The reviewer took part in the Delphi study discussed in the book, and his OpenFRBR is one of the software projects described.)

Functional Requirements for Bibliographic Records (FRBR) dates from 1998, but *Implementing FRBR in Libraries* is only the fourth book on the subject, following a special issue of *Cataloging and Classification Quarterly* edited by Patrick Le Boeuf published as *Functional Requirements for Bibliographic Records (FRBR): Hype or Cure-all?* (2005); Arlene Taylor's collection *Understanding FRBR: What It Is and How It Will Affect Our Retrieval Tools* (2007); and *FRBR: A Guide for the Perplexed* by Robert Maxwell (2007). Events have outstripped the book in two areas (Resource Description and Access (RDA) and the Semantic Web) but thorough research by the authors combined with the sedate pace of FRBR work means it is still accurate, complete, relevant, and useful. It has three goals: "to provide an overview of the current status of FRBR development, to identify the key FRBR issues that need to be addressed, and to point to future directions of FRBR development." It succeeds on all three, most especially the first, in a very structured and methodical way.

The book is a one outgrowth of a 2006-2010 research project that Zhang and Salaba, professors at the School of Library and Information Science at Kent State University: "FRBR-Based Systems to Effectively Support User Tasks and Facilitate Information Seeking" (<http://frbr.slis.kent.edu/>). Part of that work was a Delphi study (an iterative method of surveying experts in a field to arrive at a consensus of what is important), and they nicely summarize its results in this book. The survey is fully described in Zhang and Salaba's "What Is Next for Functional Requirements for Bibliographic Records? A Delphi Study" (*The Library Quarterly* 79 (2), April 2009) if the reader seeks more.

The authors divide FRBR's current state into five parts: the model itself and how it is reviewed and revised; FRBR-related standards such as RDA; how FRBR is applied to different materials and collections; FRBR-aware software and systems; and research and user studies. Each of those has its own chapter, and they are wrapped by introductory and concluding chapters. Each chapter has a full bibliography. There are two appendices: a helpful list of acronyms and an annotated eight-page list of FRBR implementations.

After beginning with a review of FRBR, chapter two discusses FRBR and its sisters FRAD (Functional Requirement for Authority Data) and FRSAD (Functional Requirements for Subject Authority Data) as conceptual models. Their entities, relationships, and user tasks are described, and there is a summary of post-1998 work to clarify issues about the expression entity and aggregate works and to align FRBR with the museum world. Critical issues to be dealt with include clarifications about works (for example, the long-standing problem of when a new expression should be considered a new work, or vice versa), the idea of a superwork, and some fine but important points about attributes. The Delphi study participants identified the FRBR model itself as the area with the most problems, saying it must be tested and validated on real data from real situations.

Chapter three covers how FRBR will affect cataloguing. The International Cataloguing Principles have been rewritten on a FRBR foundation, and there is interesting work going on involving Dublin Core and linked data, but the major effect of FRBR on cataloguing today is RDA. Here the book is now

inevitably slightly out of date, but there is a good summary of the issues and criticisms involved. A section on encoding standards covers MARC, ONIX, and RDF, and there is a section about ways MARC might be used to encode FRBR. The Delphi study rated “developing cataloguing rules in line with FRBR” as the top priority of work needed. RDA will be the biggest test of this.

Chapter four looks at how FRBR can be and has been applied to different materials and collections. It gives broad, brief looks at how FRBR can be used with different formats and disciplines (works of art, classical texts, hand-press material, film, serials, and more) and in different settings (libraries, consortia, online archives, museums, etc.). FRBR will need to be customized and adapted to suit the particular needs of any such applications.

Chapter five, on implementations, is the longest, and will be an excellent reference for anyone wanting to know the current state of FRBR implementations and to see it in action—or, at least, the limited amount of action it is in even a dozen years after it was first described. The authors list two “full-scale” systems (WorldCat and the UCLA Film and Television Archive), five prototypes, and eleven software packages for building catalogues. The projects (some with screenshots) are analyzed according to their approach to the FRBR model, the collections they handle, how they FRBRize existing records, the user interface, user testing, and technical details. The top critical issue about implementation is building and testing FRBRization algorithms, according to the Delphi study.

The brief sixth chapter, about research, summarizes work done in the four preceding areas. The section on research gaps is particularly interesting, user testing being the major failing. The authors say that “very few FRBR projects had actually conducted or reported user studies on their developed FRBR systems.” The Delphi study identified this as an important need, and it is part of the authors' own research. At a fundamental level, they say, “[t]he assumption behind the FRBR model is that it will better support user tasks. However, there has been a lack of empirical studies that validate this assumption.”

The concluding chapter summarizes the previous chapters and lists the ten most important issues FRBR faces, according to the Delphi study. The first five are: the development of updated cataloguing rules; finding ways to store records and data built on FRBR; building reliable FRBRization tools; developing and testing implementations; and conducting user studies. Work on most of those is proceeding well, the authors say, and there are three areas that lay ahead: a deeper integration of the user's perspective; use of FRBR beyond library catalogues; and open source implementations. The book ends by reiterating the importance of user needs, closing with “it is essential to incorporate and reflect user perspectives for a truly successful FRBR implementation.”

Zhang and Salaba have delivered a thorough, methodical, and well-researched work. It suffers slightly from a tendency to tell the reader what is going to be said, then saying it, then summarizing what was just said, then summarizing it again later, but the repetition may help readers interested in only one particular chapter. Due to the sometimes preposterous length of committee names in the library world, some parenthetical citations run to two-and-a-half lines, and the book seems like it would be a few pages shorter had acronyms been used. Nevertheless, these quibbles aside, the book will be a useful reference and survey for anyone wishing to know more about where FRBR is today, what work has been done on it, and what important issues it faces. Its stress on user needs is worth remembering.

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