

Preface

CONTEXT OF THE BOOK

The emergence of digital libraries provides an unprecedented opportunity for broader and easier access to a variety of information resources and new potential for their use. Just like there are different definitions in terms of what constitutes a digital library, different approaches have been applied to the development of the main components of digital libraries—the collection, digitalization, organization, design, preservation, retrieval, and evaluation of digital libraries. The field of digital libraries is constantly changing with the introduction of new formats, standards, technologies, best practices, and the evolving concepts of digital library design, evaluation, preservation, and digital curation. There is a strong need for a new book that addresses the changes that have taken place in the past five years in the field of digital libraries and that presents current research and developments in the world of practice.

Existing books on digital libraries contribute greatly to the research and practice of the field; however, they are often out of date and leave many unanswered questions. The limitations of current digital library-related books can be summarized as follows:

- Fail to cover all the key components of digital library development
- Focus only on either the theory component of digital library research or the practical aspects of digital library development
- Fail to include new technology development and applications in digital libraries

This book is written to address the need for updated and multifaceted scholarship and practice in the area of digital libraries.

OBJECTIVE OF THE BOOK

The objective of the book is to present a comprehensive overview of different approaches and tools for each component of digital library development, as well as to discuss the social and legal issues associated with digital libraries and the application of new technologies and standards. In particular, the authors incorporate a thorough discussion of new formats, standards, technologies, best practices, and the evolving concepts of digital library design, use, evaluation, preservation, and digital curation into the book. The book integrates current research and best practices in digitization and construction of digital collections and provides both the United States and international perspectives on the development of digital libraries.

STRUCTURE OF THE BOOK

This book consists of the following four parts:

Part I (Chapter 1) offers an overview of digital libraries and the conceptual and practical understanding of digital libraries. Chapter 1 provides an overview of the evolution of digital libraries, as well as key concepts, frameworks, major developments, and projects of digital libraries. The benefits and challenges of each period of digital library development are reviewed.

Part II (Chapters 2–7) presents approaches and tools for each component of digital library development ranging from collection development to interface design. Chapter 2 offers definitions, selection criteria, collection policies, and legal issues of digital collection development. Moreover, it also analyzes the trends of collection sharing and large-scale digitization and their corresponding challenges. Chapter 3 outlines workflows, standards, and best practices of the digitization process of static media. It also reviews technical factors, imaging equipment, and minimum recommendations for preservation-quality conversion of static media including the new trend of rapid digitization. Chapter 4 identifies various standards, approaches, and challenges of sound and moving image digitization. It focuses on digitization as a reformatting strategy for preserving audiovisual collections. In addition, it includes the discussion of digitization equipment, technical factors, and formats relevant to audio and moving image conversion. Chapter 5 discusses diverse metadata schemas for knowledge representation and organization, and the metadata building process. It covers not only theoretical aspects of metadata but also the practice of designing and implementing metadata in digital collections. It further discusses user-generated tagging and linked open data in the context of describing and sharing DL resources. Chapter 6 introduces the development and selection of different types of proprietary and open access digital library content management systems. It concentrates on functionality, interoperability, and other design requirements of these content management systems. Chapter 7 shows the iterative process in the design and implementation of a user interface from the conceptual design, prototype design, and customized design to usability testing. It also discusses how to design DLs for people with disabilities.

Part III (Chapters 8–10) discusses the users, search behaviors, preservation, and evaluation of digital libraries. Chapter 8 highlights different types of user needs and their use of digital libraries. It emphasizes search tactics, search strategies, and usage patterns. Most important, factors affecting digital library use are analyzed, from the user's personal infrastructure to types of tasks and system design. Chapter 9 discusses research and practical approaches to digital preservation in the digital library context. It examines the challenges, goals, and strategies in preserving digital objects, and presents a set of practical guidelines, standards, and technical solutions for preserving digital content. Chapter 10 addresses why evaluation is important, when to evaluate, what to evaluate, how to evaluate, and factors hindering the evaluation. It includes the evaluation objectives, approaches, stages, dimensions, criteria, measurements, data collection methods, and challenges.

Part IV (Chapter 11) highlights the challenges and new developments of digital libraries. Chapter 11 emphasizes future directions and opportunities for digital library research and development. In particular, it examines the new areas of digital libraries development, such as large-scale digital libraries, social media applications in digital libraries, multilingual digital libraries, and digital curation. The challenges that researchers and practitioners face and corresponding topics for further research are also identified and proposed.

UNIQUE FEATURES OF THE BOOK

Compared to the published books on digital libraries, the unique features of this work include:

1. This book integrates both research and practice concerning digital library development, use, preservation, and evaluation. The combination of current research and practical guidelines is a unique strength of this book. The authors bring in-depth expertise on different digital library issues and synthesize theoretical and practical perspectives relevant to researchers, DL

practitioners, and students. Professor Iris Xie has conducted digital library research for more than 15 years, and has focused projects on interface design, user studies, digital library evaluation, and social media application. Professor Krystyna Matusiak who was a digital librarian for about 10 years, has built 20 distinct digital collections.

2. This book provides a comprehensive overview of the lifecycle of digital library design, use, preservation and evaluation, including collection development, digitization of multimedia resources, metadata, digital library development and interface design, digital information searching, digital preservation, and digital library evaluation. It provides up-to-date guidelines for digitization of static as well as time-based media.
3. This book reviews empirical studies of digital libraries from a variety of aspects, including many of the authors' own works: a study of blind users' help-seeking situations in interacting with digital libraries, and the implications for interface design for blind users (Chapters 7, 8); a Delphi survey of digital library evaluation criteria and measures from different stakeholders of digital libraries (Chapter 10); and a study of social media applications in digital libraries (Chapter 11.)
4. This book offers guidance regarding each component of the lifecycle of digital library development, use, preservation, and evaluation. For example, it presents detailed information regarding how to evaluate digital libraries, specifying types of evaluation dimensions, criteria, measurements, and data collection methods.
5. This book introduces new developments in the area of digital libraries, such as large-scale digital libraries, social media applications in digital libraries, multilingual digital libraries, digital curation, linked data, rapid capture, guidelines for the digitization of multimedia resources, etc.
6. This book identifies challenges and problems that are associated with the lifecycle of digital library creation, use, preservation and evaluation, along with suggestions for overcoming these challenges. In addition, further research questions in relation to these challenges are discussed in Chapter 11.
7. This book offers a comprehensive bibliography for each chapter.

TARGET AUDIENCES

This book is intended for researchers, designers, librarians, archivists, teachers, and graduate students who are interested in digitization, digital library development, management, use, and evaluation. The comprehensive literature review on theory and practice of digital libraries will provide a foundation for education, research, and practice. The implication discussion offers guidance for designers and librarians in designing and evaluating digital libraries for the general public, as well as for specific user groups. This book can also serve as a textbook for digital library education in library and information science programs as well as affiliated programs.

Members of the following associations would be the primary readers for the book: (1) Association for Information Science and Technology (ASIST), (2) Association for Computing Machinery (ACM), (3) a variety of library associations, such as the American Library Association (ALA), Special Library Association (SLA), Digital Library Federation (DLF), etc. (4) IEEE Computer Society, (5) Association for Library and Information Science Education (ALISE). The secondary audience could include researchers and practitioners from other related disciplines (e.g., computer science, engineering, health, education, etc.) who are interested in digitization, digital library design, use, and evaluation.