

# Chapter II

## Information Security and Privacy in Digital Libraries

**Mohammed Nasser Al-Suqri**  
*Sultan Qaboos University, Oman*

**Esther O.A. Fatuyi**  
*Elsie Whitlow Stokes Community Freedom Public School, USA*

### ABSTRACT

*Deliberate exploitation of natural resources and excessive use of environmentally abhorrent materials have resulted in environmental disruptions threatening the life support systems. A human centric approach of development has already damaged nature to a large extent. This has attracted the attention of environmental specialists and policy makers. It has also led to discussions at various national and international conventions. The objective of protecting natural resources cannot be achieved without the involvement of professionals from multidisciplinary areas. This chapter recommends a model for the creation of knowledge-based systems for natural resources management. Further, it describes making use of unique capabilities of remote sensing satellites for conserving natural resources and managing natural disasters. It is exclusively for the people who are not familiar with the technology and who are given the task of framing policies.*

### ABSTRACT

Digital libraries became evident about a decade ago. They have created many opportunities as well as challenges. One of the biggest challenges for

digital libraries is to select appropriate technologies and software so they can continue to progress in providing accurate, secure, and timely information to its users. The purpose of this chapter is to provide a closer look at the challenges that digital

libraries face in the new Digital Age. It addresses the following issues: protecting the information infrastructure; identification and authentication in security and privacy; standards and policies; access and control of digital information; ethical decision making in design, implementation, and evaluation of digital libraries; and privacy, anonymity, and identity. The chapter concludes with future trends of security and privacy in digital libraries.

## **INTRODUCTION**

The future has always been regarded with fascination. For some people it is because of the perceived benefits that will be realized; for others because it will bring change and create problems that will need to be resolved. One thing that everyone agrees with, however, is that the future inevitably brings with it change, and life will, in some ways, be different. Today we live in a world economy and one in which great distances can be traveled much more quickly than 100 years ago. In like manner, the transmission of information has moved beyond print and now includes digital text and images. Libraries, as traditional providers of information and knowledge, are undergoing particularly challenging situations in transitioning from ownership of materials to accessing knowledge and information from networked, electronic sources, from providing users with the information that they are looking for to teaching users how to find the information for themselves, and from moving from an environment that has changed slowly over the past 150 years to one in which change is necessary, constant, and revolutionary.

While it can be said that all libraries are in some degree alike, they are also different in rather critical ways. Technology should be viewed as a tool and a means for accomplishing a task. The definition of the task to be performed must be identified by librarians taking a careful and ongoing assessment of users. The details of how

information delivery takes place will vary from environment to environment, but change will take place depending upon how libraries create (or react to) changes in their clientele, the work that is performed, and the availability and cost of technology. In fact, the big challenge for libraries is to use the evolution of the new technologies to their benefit, so these libraries can continue as information providers.

Digital libraries became evident about a decade ago. They have created many opportunities as well as challenges. One of the biggest challenges for digital libraries is to select appropriate technologies and software so they can continue to progress in providing accurate, secure, and timely information to its users.

Digital libraries, according to the **Digital Library Federation**, are “organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works, so that they are readily and commercially available for use by a defined community or set of communities.” Likewise, Ershova and Hohlov (2001) define it as “a distributed information systems ensuring reliable storage and effective use of heterogeneous collections of electronic documents -text, graphics, audio, video, and so forth. - via global data transfer networks in a way convenient for the end user.” In other words, digital libraries are organizations that would have all the information resources in the digital form.

## **BACKGROUND: INFORMATION OF DIGITAL LIBRARIES**

Emerging digital culture has paved the way to the creation of digital libraries, which have made it easier for users to access information through digital systems and networks. With the global increase in the quantity of information and the

6 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:  
[www.igi-global.com/chapter/digital-library-service-system-digital/19865](http://www.igi-global.com/chapter/digital-library-service-system-digital/19865)

## Related Content

---

### Extracting the Essence: Automatic Text Summarization

Fu Lee Wang and Christopher C. Yang (2009). *Handbook of Research on Digital Libraries: Design, Development, and Impact* (pp. 113-121).

[www.irma-international.org/chapter/extracting-essence-automatic-text-summarization/19874](http://www.irma-international.org/chapter/extracting-essence-automatic-text-summarization/19874)

### X-System: An Extensible Digital Library System for Flexible and Multi-Purpose Contents Management

Jian-hua Yeh, Chao-chen Chen, Shun-hong Sie and Cjien-cheng Liu (2014). *International Journal of Digital Library Systems* (pp. 25-40).

[www.irma-international.org/article/x-system/105109](http://www.irma-international.org/article/x-system/105109)

### Digital Libraries and Society: New Perspectives on Information and Dissemination

Ian H. Witten (2005). *Design and Usability of Digital Libraries: Case Studies in the Asia Pacific* (pp. 191-215).

[www.irma-international.org/chapter/digital-libraries-society/8139](http://www.irma-international.org/chapter/digital-libraries-society/8139)

### Content Analysis of Library Associations' Privacy Policies in Some Countries

Ying Wang and Hao Zhou (2012). *International Journal of Digital Library Systems* (pp. 1-12).

[www.irma-international.org/article/content-analysis-library-associations-privacy/73644](http://www.irma-international.org/article/content-analysis-library-associations-privacy/73644)

### Does 3D Cellular Automata Using WordNet Can Improve Text Clustering?

Abdelmalek Amine, Reda Mohamed Hamou and Michel Simonet (2014). *International Journal of Digital Library Systems* (pp. 16-28).

[www.irma-international.org/article/does-3d-cellular-automata-using-wordnet-can-improve-text-clustering/141372](http://www.irma-international.org/article/does-3d-cellular-automata-using-wordnet-can-improve-text-clustering/141372)