

Portal Features of Major Digital Libraries

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INTRODUCTION

Digital libraries offer access to significant collections of selected and organized digital resources, of the type traditionally found in libraries or archives. They can offer photographs, books, journal articles, and so forth. (Schwartz, 2000). Their major advantage, compared to the Internet as a whole, is access to quality collections from well-known institutions, such as major libraries or archives, also cultural and historical associations (Love & Feather, 1998). They can be said to occupy the “high end” of the Internet.

Digital library studies have already become firmly established. There are textbooks (Arms, 2000; Chowdhury & Chowdhury, 2003; Lesk, 2005) and regular conferences, such as the ACM/IEEE Joint Conference on Digital Libraries (<http://www.jcdl.org/>). A major U.S. electronic journal, D-Lib Magazine, celebrated its tenth anniversary (<http://www.dlib.org/>). Its United Kingdom counterpart, Ariadne (<http://www.ariadne.ac.uk/>), is only slightly younger; there are Delphi studies (Kochtanek & Hein, 1999) and encyclopedia articles (McCarthy, 2004).

Traditionally, libraries and cultural institutions have used their buildings as advertisements for their contents. Buildings such as those of the Library of Congress and the Bibliothèque nationale de France, François-Mitterrand complex, have entered the cultural consciousness of the world. The stone lions that flank the entrance to the New York Public Library have become widely recognized symbols. The “Carnegie Libraries,” constructed throughout the United States by the philanthropist Andrew Carnegie, are famous for their solid and imposing structures. Free access was a basic condition of these institutions; many public libraries expanded their title to “Free Public Library.” On entering a physical library, users were soon confronted by the classic information retrieval device, the catalog (now normally automated). This is always supported by an information or reference desk, where general inquiries can be made.

When documents and other cultural materials are digitized and made available via the Internet, they transcend the limitations of physical buildings, but retain many of the features of traditional libraries. The gateway features of digital libraries occupy the role of the building, welcoming users and giving them their first impressions of the content. Access, whether to specific items or to broad subjects, is as essential in the digital environment, as it was in a traditional

library. Interface organization and presentation, therefore, become vital elements in digital library architecture and presentation.

BACKGROUND

Numerous definitions of portals are available; Tatnall (2005) offers the following definition in the first article of his book on Web portals:

... a special Internet (or intranet) site designed to act as a gateway to give access to other sites. A portal aggregates information from multiple sources and makes that information available to various users. In other words a portal is an all-in-one Web site used to find and to gain access to other sites, but also one that provides the services of a guide that can help to protect the user from the chaos of the Internet and direct them towards an eventual goal. More generally, however, a portal should be seen as providing a gateway not just to sites on the Web, but to all network-accessible resources, whether involving intranets, extranets, or the Internet. In other words a portal offers centralized access to all relevant content and applications. (Tatnall, 2005, pp. 3-4)

It is interesting to compare this definition of portals with the definition of a digital library, according to major textbooks in the digital library field:

... a digital library is a managed collection of information, with associated services, where the information is stored in digital formats and accessible over a network. A crucial part of this definition is that the information is managed ... Digital libraries contain diverse collections of information for use by many different users. Digital libraries range in size from tiny to huge. They can use any type of computing equipment and any suitable software. The unifying theme is that information is organized on computers and available over a network, with procedures to select the materials in the collections, to organize it, to make it available to users, and to archive it. (Arms, 2000, p. 2)

These two definitions have much in common. Tatnall speaks of a Web site aggregating information, offering guid-

ance to the Internet, and making that information available to various users. Arms discusses organizing and managing information over a network for use by many different users. The crucial difference is that a digital library is a “managed collection of information” (Arms, 2000, p 2), whereas a portal “aggregates information from multiple sources” (Tatnall, 2005, p. 3). The difference becomes even clearer from another textbook on digital libraries:

First, the digital library must have content. It can either be new material prepared digitally or old material converted to digital form. It can be bought, donated, or converted locally from previously purchased items. Content then needs to be stored and retrieved. Information is widely found in the form of text stored as characters, and images stored as scans. These images are frequently scans of printed pages, as well as illustrations or photographs. More recently, audio, video, and interactive material is accumulating rapidly in digital form, both newly generated and converted from older material. Once stored, the content must be made accessible. Retrieval systems are needed to let users find things; this is relatively straightforward for text and still a subject of research for pictures, sounds, and video. Content must then be delivered to the user; a digital library must contain interface software that lets people see and hear its contents. A digital library must also have a “preservation department” of sorts; there must be some process to ensure that what is available today will still be available tomorrow. (Lesk, 2005, p. 2)

Digital libraries manage internally archived content, and are responsible for the preservation of this content. Portals are gateways to more dynamic content, held both internally and externally, and therefore, have less preservation concerns. Organized access to information constitutes the basic activity of both systems; the differences reside in the type of resource processed, but one can expect similarities between their user interfaces.

A discussion of knowledge portals by Detlor (2004) states that:

Common elements contained within enterprise portal designs include an enterprise taxonomy or classification of information categories that help organize information for easy retrieval; a search engine to facilitate more specific and exact information requests; and hypertext links to both internal and external Web sites and information sources. (Detlor, 2004, p. 10)

The similarity to digital libraries, whose principal activity consists in offering browse and search access to collections of information, is striking. It is clear that digital libraries and portals share common features. The purpose of this article is to determine the extent of these similarities. This

can be tested by selecting representative digital libraries and analyzing them systematically.

METHODOLOGY

Initial selection of resources was made using the chapter, “A world tour of digital libraries” from a major textbook for the digital library area (Lesk, 2005, chap. 12, pp. 321-360). This chapter covers a wide area, but selection was limited to large-scale, English or French language digital libraries that are freely available to the public and offer significant cultural content. This produced a list of 15 resources, from the United States, England, and France. This was rounded out by five additional digital libraries that were selected by the author of this chapter for their similarity to the original resources, but that also widened geographic coverage, coming from Australia, Canada, Ireland, New Zealand, and Scotland (Table 1).

Previous digital library research has also been based upon analysis of 20 resources; Chowdhury and Chowdhury (2001) discuss the information retrieval features of 20 digital libraries. The resources analyzed in this article can be termed “deep” digital library resources, rather than “shallow” resources, according to the British Joint Information Systems Committee Portals FAQ (Joint Information, 2002). In other words, these are classic digital library systems, based on structured content management systems, offering solid informational content, rather than simple “pointer” sites.

For an analysis of portal features, Butter’s 2003 paper, “What features in a portal?” was consulted. This organizes portal features according to no less than 12 categories: utilities; user profiling; resource discovery; news; community communication; subject-specific specialization; advertising; education; leisure; miscellaneous services; assistance with site use; and additional features. He detailed these topics in a 148-row Excel spreadsheet. These categories are not fully relevant to digital libraries; three, for advertising, leisure, and additional features, were omitted as irrelevant. The remaining nine categories can be grouped into three major categories (Table 2).

These three basic categories clearly demonstrate the dynamics of operation within digital libraries, or indeed in any other type of library. They were adopted as the basis for the Excel spreadsheet which analyzed the selected digital libraries. Minor alterations were introduced to make the categories more relevant to specific features of digital libraries. A list of 13 features was developed (Table 3).

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