

Chapter 61

Reengineering the Portal to Texas HistorySM: A Case Study

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ABSTRACT

This case study reports the activities, findings, and lessons learned during a project that replaced the legacy Digital Asset Management (DAM) system of The Portal to Texas HistorySM at the University of North Texas Libraries with an open source system. This unique system decouples the application development framework from the backend infrastructure, effectively relieving the development and growth constraints inherent in the legacy system. In a novel approach for an academic library, genealogists participated in the user-centered, iterative approach used to prototype, develop, and test the user interface. The resulting system promoted productivity gains by enabling programming staff to work in parallel from specialized areas of expertise. A post-project review process identified a number of lessons learned, including the importance of representing the requirements and priorities of internal and external stakeholders. The review process also informed an application development model that may be useful to other digital libraries.

INTRODUCTION

The Portal to Texas HistorySM is a gateway to a significant set of humanities collections within the digital library of the University of North Texas (UNT) Libraries (<http://texashistory.unt.edu/>). In

collaboration with over 200 content partners, the Portal provides access to collections from Texas libraries, museums, archives, historical societies, and private collectors. The Portal archives and provides access to more than 165,000 digital objects, comprising over 2.3 million image files. The range of primary source materials includes maps, books, manuscripts, newspapers, diaries,

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photographs, and letters. While materials primarily concern the 254 Texas counties, there are items related to most of the states in the USA and to over 40 other countries.

Materials include a fascinating array of rare and invaluable items that document Texas's history, such as handwritten correspondence between Santa Anna and Lorenzo de Zavala from the early 19th century and photograph collections covering seminal events, including the Dallas Police Department's investigation of the 1963 John F. Kennedy assassination and the Texas City Disaster of 1947. Historic newspapers represent a large segment of the materials, with over half a million searchable pages dating from 1829 to the present. This significant collection is not only used in traditional research by scholars and lifelong learners, but also forms the basis for a collaboration between UNT and Stanford University in text mapping research that is exploring new methods for programmatically finding and analyzing meaningful patterns.

Development of the Portal began in 2003 when the UNT Libraries selected a system vendor for its digital library, and, as is typical of many digital libraries, based design decisions largely on the requirements of librarians and what they imagined end users would need. When the reengineering project began in 2008, the number of unique visitors per month had grown from 1,000 in 2004 to over 20,000. This success was accompanied by operational and management challenges, which affected the Portal's content partners, users, and other stakeholders.

Scale issues created by the continuous addition of content and the increased usage required constant attention and distracted the systems team from other areas of development. The underlying data model for both the digital objects and descriptive metadata were limiting the kind of items that could be ingested into the system. Development constraints associated with the underlying technical infrastructure also emerged. In particular, the

design and implementation of new features and functions was limited by outdated software and changing vendor priorities. It was often not feasible to make interface design changes without programmatic changes in the supporting infrastructure.

In 2007, a decision was made to replace the legacy asset management system with a digital library infrastructure and framework based largely on modern open source components widely used throughout the world. This approach distinguishes the UNT Libraries within the broader library community, in which libraries generally employ single-vendor, integrated systems for their digital libraries. Replacing the legacy system also presented an opportunity to include users directly in the design process.

The UNT Libraries received a National Leadership Grant from the Institute of Museum and Library Services (LG-06-07-0040-07) for a two-year study (2007-2009) to redesign the Portal's interface. At the outset of the project, an application development model was drafted to guide the project's work. The model employed user-centered design methods within a rapid development framework. The framework required reengineering the underlying technical infrastructure, which was undertaken in conjunction with this project. The model involved three teams within the Digital Libraries Division: (1) system designers and programmers, (2) user interface designers, and (3) user study researchers. The user group involved in the project was genealogical researchers, a significant and growing user group of both libraries and archives. Genealogists participated in needs assessment activities at the start of the project and in usability testing at three points over the course of the project. The goals of the project were:

- Implementation of a rapid development framework within the UNT Libraries, Digital Libraries Division.

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