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From an Autonomous to a Collaborative Website Redesign Process: The University of Denver Libraries Experience

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Abstract

Librarians traditionally have insisted on designing and developing the library's website in-house. An in-house developed website allows librarians full control of its design, content, and delivery. The library website is also distinguished by its research orientation compared to the university's marketing-driven purposes. However, in the age of gaining competitive advantage by promoting campus branding, shared services, and collaborative initiatives by various administrative units, libraries could be a stronger partner with other campus departments. This article describes the University of Denver Libraries' transformation from an autonomous information silo to an integrated Web portal within the University's Marketing & Communication division. In the course of this change, unlike turning a switch on or off, the librarians experienced stages of uncertainty, denial, negotiation, and acceptance. The project was successfully completed and became an exemplar for many other campus-wide initiatives. By sharing this experience, the authors hope to encourage other libraries to consider the tangible and intangible benefits that university-wide collaborations can elicit.

Keywords: Web sites--Design; Collaboration; Organizational change--Management

Introduction

Traditionally, librarians have exercised tight control over how information is gathered and disseminated.[1] Reliability and accuracy are basic values that undergird library operations typified in a librarian's implementation of authority control in online catalogs. Librarians also tend to feel uncomfortable when a database does not perform in a principled manner. Similar standards are upheld in other initiatives librarians are involved with, as evident in the website projects at the University of Denver Libraries. This study describes the Libraries' experience in transforming a website redesign process from the traditional autonomous mindset with static HTML design to a collaborative effort with internal and external constituents under a university-driven content management system (CMS). The benefits have been unexpected and far-reaching.

Literature Review

Context for this discussion is found in a review of literature pertaining to content management systems, library service standards, and change management.

Content Management Systems

Definitions of a CMS vary, but Fulton's definition is best suited for the type of Web CMS this paper addresses: "A CMS can be described as an application that enables the shared creation, editing, publishing, and management of digital content under strict administrative parameters."[2] Specifically, the features of a CMS include Web-based publishing, marketing tools, format management, revision control, indexing, search, and retrieval. While expressions of these features continually evolve, the beginnings of CMSs can be traced back to 1998.[3]

As part of a CMS, academic library websites have been in existence alongside their university main websites since the beginning, but the primary focus of library sites tend to be different. A university's website targets external audiences such as prospective students and donors, and tends to reflect marketing practices of commercial institutions.[4] Although libraries are interested in marketing and promoting themselves through websites,[5] their focus remains on serving academic audiences, mainly students and faculty, and promoting their academic success. Having a significantly different purpose, it is not surprising that an academic library website is seldom fully understood by university marketing professionals.

Service Standards

Although a precise definition of "service standards" may be elusive, researchers and theorists in the field of psychology seem to reach consensus on the core features of what constitutes high personal standards of performances (though it may be inaccurate to regard all or even most librarians as "perfectionists").[6, 7] Striving for high standards is certainly reasonable and may reflect positive aspirations, but caution regarding high standards may be in order, namely, to "feel free to be less precise as the situation permits."[8] A commitment to distinctly high standards can be negatively rendered as follows: holding to the belief that undesirable events will happen; maintaining the "should" principle for high objectives; tending toward a sense of inferiority and failure despite success.[9] Given the high standards for service upheld by librarians, it is important to be aware of possible negative aspects of such standards, and to guard against them, especially in working with others on campus in collaborative projects. In some cases, strict adherence to high standards could jeopardize partnerships. Knowing when to compromise and keeping a project's goal in view are key.

Change Management

 A redesigned website not only changes users' behavior while accessing the site, it also requires librarians to change their mode of instruction, including updating library guides and previously created video content. As changes are inevitable, it is essential to identify barriers beforehand and manage change in an appropriate manner throughout the process. Ciric and Rakovic noted the importance of giving due consideration to the culture of the organization where an information system implementation (such as a website redesign) is introduced.[10] They suggest that an organization with a team-based structure is most likely to succeed in information system implementation because many team-based responsibilities are already incorporated in the organizational culture.

Chick observes that human beings who are "control freaks," or, in our case, perhaps librarians committed to high standards, go through a five-stage process before accepting change; those stages include uncertainty, denial, negotiation, reflection, and action.[11] When receiving a mandate for change, typically a thousand unanswered questions arise in the face of the unknown. Once the news has been absorbed, we tend to go into denial. For these reasons, communication from the leaders about change needs to be as clear and direct as possible. Leaders should also acknowledge negative feelings and concerns and try to foster a positive outlook that suits the objectives of the organization. Once people accept that change happens, they move to a negotiation phase. Leaders need to be aware of what elements are negotiable and what are not, but then be firm and clear on the non-negotiable items. When negotiations have been exhausted, leaders need to allow and facilitate reflection time for the employees to get ready to engage the change process. This then can lead to action. As the adage goes, "there is no change without action." During this stage of action, leaders should define the nature of change expected and bring persons to commit to the change. Change cannot be successful without "buy-in" from at least the key players.

The University of Denver Libraries' website redesign experience reflects, at least tacitly, the unfolding of the change management process identified in the literature that resulted in a successful project—despite the fact that most librarians initially has significant concerns.

University of Denver Libraries Website Platform: Historical Perspectives

Basic HTML Design, mid-1990s – 2002

The University of Denver (DU), founded in 1864, is a private university with an enrollment of approximately 5,000 undergraduate and 6,000 graduate students. The library's website was first established in the mid-1990s with basic HTML webpages and hosted on the library's physical server. These basic static pages featured the Colorado Alliance of Research Libraries catalog and less than ten electronic resources including FirstSearch, Encyclopedia Britannica, SilverPlatter databases, and DIALOG. Though constructed with only static HTML, the website served the library well in the early days of rudimentary Internet connectivity (see Figures 1 and 2).

ColdFusion, 2003 - 2010

By the turn of the century, librarians also desired to have a website that contained features of table-based layouts to organize content and page hit counters to track statistics. This wish could not be fulfilled within the library due to the fact that the library lacked programming expertise and the budget to recruit programmers. In the meantime, the Center for Teaching and Learning Division (CTL) at the University supported faculty with programmers and applications. The library thus contracted with CTL for its services in designing a new website with a table layout, a content management subsystem keeping track of individual databases, a separate subsystem for keeping track of library research guides, and a tool to parse and display new books. Powered by ColdFusion Markup Language (CMFL), this website was in place for many years with librarians given full governance of the content organization (see figure 3). It is worth noting that the librarians embraced such freedom and would not have thought of approaches of any other kind.

But without a "web development team" with CFML skill sets within the library units, librarians found the website difficult to manage and grew concerned with delayed delivery of services. The database tracking system was working extremely well, but keeping it up-to-date required an additional layer of maintenance, since the resources the database was tracking needed to also be tracked in the local online catalog, in the electronic resources management system (ERMS) of the integrated library system and, by 2009, needed to be tracked in the Serials Solutions CMS as well. Because of these multiple layers of management the ColdFusion database tracking system, managed by the reference librarians, was rarely in perfect concord with the other systems managed by the cataloging staff. At the same time, CMSs such as Drupal, Joolma!, and WordPress were evolving rapidly to address the ease-of-use issue by providing webpage creation templates for non-technical staff. By 2010, pressure had mounted high to have the library's website migrate to a CMS.

Drupal, 2011-2013

Drupal was selected as the platform to replace ColdFusion. Though the choice of Drupal was in concert with a study by Connell concluding that Drupal was the most popular content management system amongst surveyed libraries,[12] the decision by the DU library was not properly vetted at the time. Did the library have system administration expertise to set-up, maintain, and upgrade the open source Drupal? Did the library have developers who are familiar with "cascading style sheets" (CSS) for advanced page design? Did the library have leaders who are skilled in information architecture, content strategy, and user experience design? The answers were "no," yet the desire to have full control over the website trumped rationale. Actually, the library's site was migrated to Drupal version 6 in 2010 with much struggle. Throughout the library's Drupal site presence between 2011 and 2013, the library experienced problems regarding usability, system administration support, and coding conventions resulting in the library's inability to meet enhancement requests in a timely manner (see Figure 4).

Collaborative Redesign, 2013-2014

Motivation

When it came time to consider the upgrade from Drupal version 6 to 7 and with the arrival of a

new Digital Infrastructure and Technology Co-ordinator in 2012, the library's Web presence redesign was again debated. While the librarians had enjoyed autonomy with a Drupal island on campus (no other unit used Drupal for their websites), the campus had gone on to implement an enterprise CMS OmniUpdate (OU). The OU system, managed by the Division of Marketing & Communications (MarComm), consults with clients on architecture, content, and design and boasts a digital marketing team applying a user-first approach to all of the Web projects. By early 2012, the majority of departments on campus had established a Web presence on OU with the help of MarComm. We wondered why the library could not be included in the OU campus initiative even though the library had traditionally rejected this type of opportunity. Especially in the spirit of a university-wide branding campaign, it was ever more important the library be part of the identity that helps provides a DU competitive advantage.

Outreach

In an effort to explore collaboration opportunity, in November, 2012, the library's Digital Infrastructure and Technology Coordinator reached out to the Digital Project Coordinator at MarComm and presented the library's need for a website redesign. Initially, MarComm quoted a $50,000 development cost for the project's template development in consultation with OU vendor support. This was considered to be an unreasonable estimate for the library, but further analysis by the Digital Infrastructure and Technology Coordinator revealed that MarComm's development team did not understand the nuts and bolts of typical academic libraries website content. Although it appears complicated to laypeople, an academic library's website is largely composed of third-party links and webpages. After "library instruction 101" from the Digital Infrastructure and Technology Coordinator, MarComm restated that there would be no additional charge other than time costs for this project.

An evaluation was conducted to compare OU and Drupal version 7 with respect to the implementation criteria that included branding and

redesign responsibilities, project management and development efforts, system administration functions, staff engagement flexibility, user education and training opportunities, estimated time to completion, and cost. Particularly noteworthy was the lack of a Drupal developer within the library to undertake a new development in-house. In addition, intangible benefits were considered: choosing OU offered the advantage of collaboration with MarComm as well as the opportunity to demystify library services to the Division that bears the most significant role in telling the DU stories. On a broader scale, using OU would help fold library marketing into greater the DU community and eliminate yet another computing service silo at DU. Members of the library's policy council discussed the proposal raising many doubts, questions, and concerns. Questions included: how many users are allowed to have access for content updating, what will be a turnaround timeframe if a different template is requested, and does the library have control over the sitemap generation? The Digital Infrastructure and Technology Coordinator carefully addressed each one question and the members voted unanimously for OU as the library's new CMS and website platform.

In early February 2013, an official kickoff meeting was held attended by decision makers who have a large stake in the project and a clear idea of the website goals. Stakeholders included the library's Digital Infrastructure and Technology Coordinator and its Web Designer/Developer, MarComm's Digital Marketing Coordinator, its Senior User Experience Designer and the Senior Digital Designer and Architect. This group agreed to an implementation strategy consisting of six processes related to information architecture, design and review, project development, author training, content migration, promotion, and going live. Project management was a collaboration of the Digital Infrastructure and Technology Coordinator representing the library and the Digital Marking Coordinator representing MarComm.

Information architecture

The function of information architecture is to determine the structure and scope of the li-

brary's website. By consulting analytics to rank the most accessed links in the existing website on Drupal, and with feedback from a card sort exercise of faculty representatives during the library's liaison advisory meetings, MarComm proposed a sitemap (see Figure 5). The sitemap was shared and debated among policy council members until consensus was reached.

Design and review

Although there are sets of branded design templates available to choose from, they are overly simple and do not meet the library's research-oriented requirements. The Senior Designer at MarComm remarked that the biggest challenge for the design was the library search appliance that requires intricate functionalities presented in the clearest way possible for a novice user. This involved the design of the tabbed search box, a common feature of the majority of academic libraries websites since at least 2008. For the DU Libraries, the designer proposed a one-to-one relationship between a search box and its function so that users understand the difference between various options. Besides the home page, the designer presented a typical interior page with mock content depicting how library content could be represented in the design (see Figures 6 and 7). The Digital Infrastructure and Technology Coordinator, the Libraries' chief negotiator, reviewed and "signed-off" for the design.

The review phase involved repeated discussion in the library's Content Management Group (CMG) meetings. CMG is a cross-departmental, task-based team consisting of librarians and staff from every functional unit within the library—access, acquisitions, cataloging, digital initiatives, electronic resources, and public services. Their feedback was provided to the designer for revision who then responded favorably or offered counter-suggestions. This iterative process was managed by the Digital Infrastructure and Technology Coordinator until the design was approved by CMG as well as the Dean and Director of the Library.

Development

MarComm's developer immediately set to work based on the design. Within weeks, the library had a portal to test. Throughout the design and development cycles, staff at MarComm built a trustworthy, supportive, and collaborative network with the Digital Infrastructure and Technology Coordinator. With this collaborative spirit, more than the usual coding permissions were given to the library so that library staff could further develop and test wedges and layouts that are unique to the library.

Author training and content migration

Training and migration were accomplished via parallel processes. While the university's software training specialist provided multiple training sessions to designated content authors, the library's CMG took stock of the content inventory and migration process. The inventory in the form of spreadsheet list pages were based on the following criteria and included title, URL, content author, and note fields:

(1) Existing page to be migrated without update.
(2) Existing page to be migrated with updates needed.
(3) New content page to be created.
(4) Existing page to be removed for the purpose of inventory.

This process was tedious and time consuming requiring diligent negotiation among content authors. However, it helped the librarians identify gaps in the content and made the building of the new site so much easier and faster. The content authors were helped along by MarComm throughout the migration process.

Promotion

Given the project management skills in task analysis, stakeholder communication, and leadership by MarComm and the library, the new website test environment was completed a month ahead of schedule (see Figure 8). Thus, the library had the luxury in terms of timeframe to open the test site for community testing before going live. Notices for this were sent out to

faculty and staff through the University's various listservs, including alert messages to preview the library's existing Drupal site. The redesigned website went live before the start of the Fall quarter, 2013, as planned—on time, and within budget (http://library.du.edu). Overall, the resistance and emotional stress from the staff was extremely low, due at least in part, if not primarily, to the collaborative nature of the process. Librarians corroborated the success of the project in these terms: that the new website produced a more familiar and functional environment for users, that collaboration occurred throughout the library and with its partners, that a new level of transparency was achieved through collaboration, and that the library now welcomes greater future collaboration.[13]

Conclusion

The University of Denver Libraries' latest website redesign efforts demonstrated the possibility and benefits of a change of culture by librarians from insisting on autonomy to promoting collaboration. This experience also validates the theory of Ciric and Rakovic that team-based organizational culture is best suited for a system implementation. Exhibiting to some extent the five-stage process before a change is accepted, librarians moved from uncertainty and doubt that the library would receive proper attention from MarComm's digital marketing team to reflection and ultimate acceptance. Throughout, the librarians related previous unpleasant experiences with external stakeholders and were very skeptical about any possible benefit of new collaboration. The concerns were well understood by the Digital Infrastructure and Technology Coordinator and were individually addressed or mitigated through a negotiation process during many policy meetings until everyone was satisfied with the proposal. For this, the librarians' willingness to take risks should be applauded.

Another key element in the DU experience was the careful consideration given to current resources and future maintenance of the website in terms of cost and personnel. With flat or dwindling budgets for academic libraries, lever-

aging our University resources is a must. We have accomplished much more in collaboration with MarComm that what we could have done separately.

Lastly, a leader with adequate project management experience and knowledge who ensures stakeholder communication and participatory decision making contributes to project success. Sure, librarians are committed to high standards, but rather than such standards being roadblocks to development, we are now committed to collaboration in a new way that will actually better ensure high standards.

On balance, however, it is important to note that some limitations, particularly delays, do exist as a result of this collaboration. For example, the library now relies on MarComm to manage the feeds indexed for the search feature, to add specific goals needed for assessment in Google Analytics, and to create unified responsive design for mobile applications. These are relatively minor compared to the benefits.

Overall, the experience of the University of Denver Libraries' collaborative approach to its website redesign has been very positive. Moreover, this integration of the libraries' website into the University's web sphere has led to many further collaborations regarding digital initiatives involving MarComm and the Libraries as well as the University Technology Services and the libraries. Given the nature of collaboration, stakeholders now leverage better each other's knowledge and resources to reach a common goal in serving the University's mission. Those intangible benefits are lasting and beyond expectation.
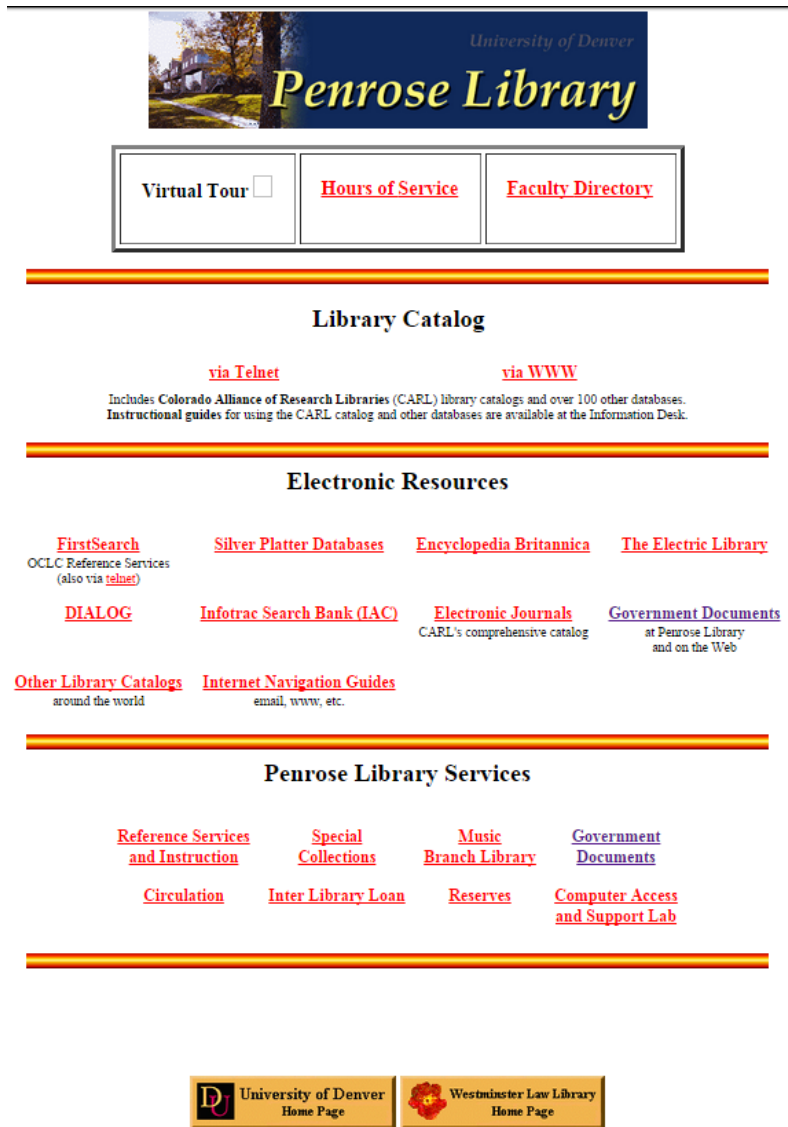
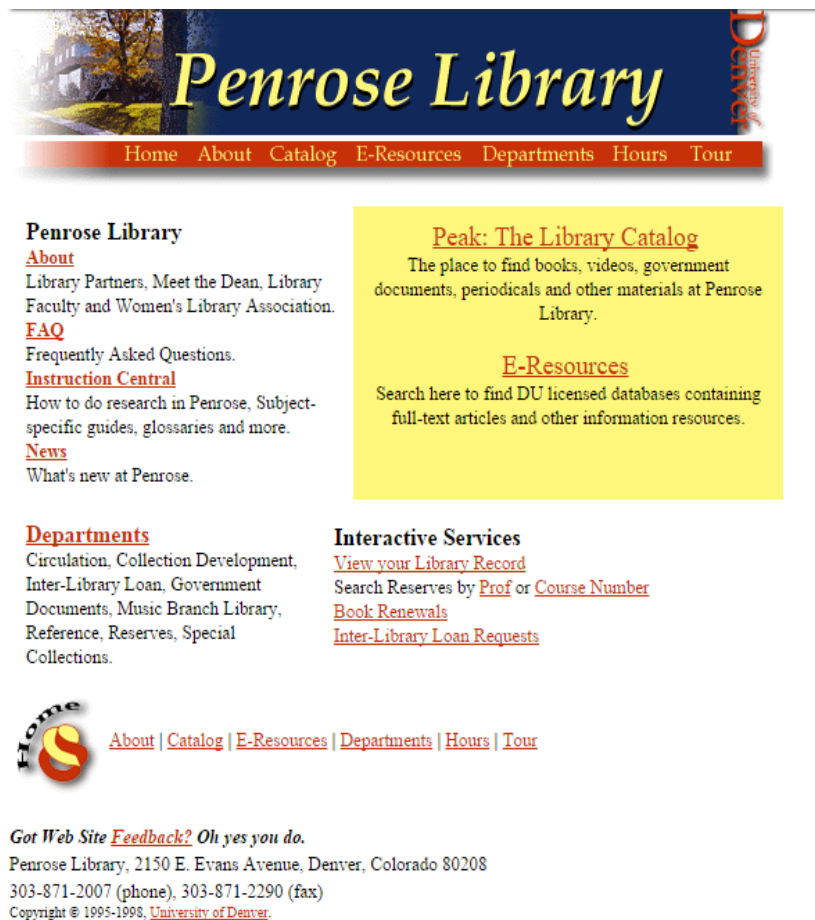Figure 1. Penrose Library Website in Simple HTML, June 5, 1997.

Figure 2. Library Website in Simple HTML, May 20, 2000.

Figure 3. ColdFusion Website, January 18, 2003.

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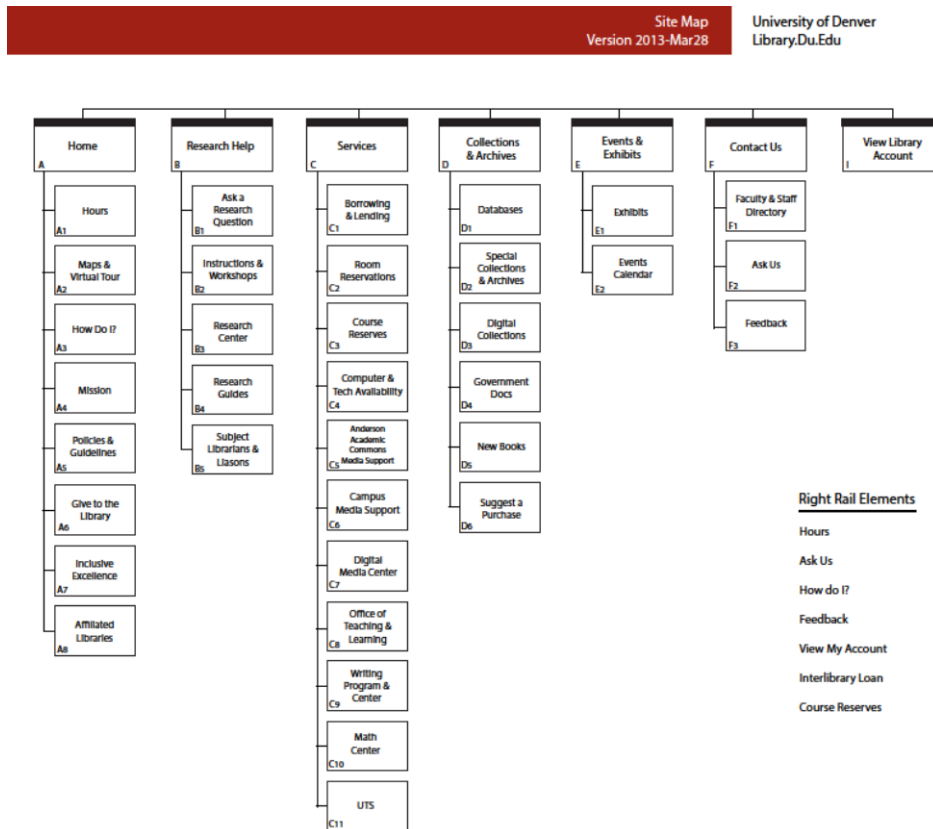

Figure 4. Drupal Website, June 1, 2012.

Figure 5. Proposed Sitemap March 2013

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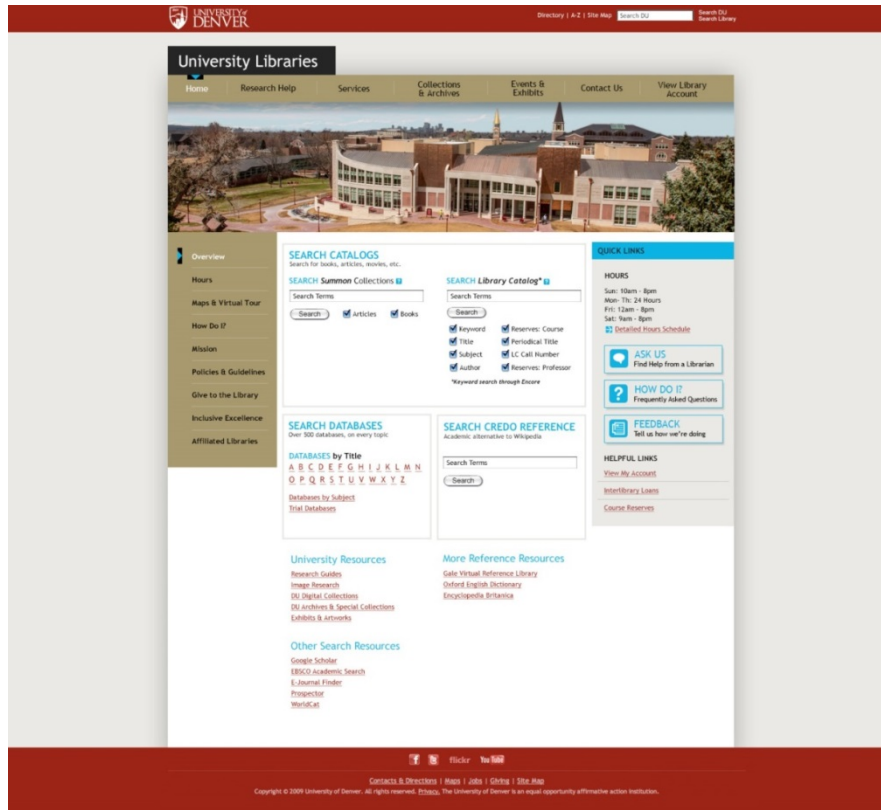

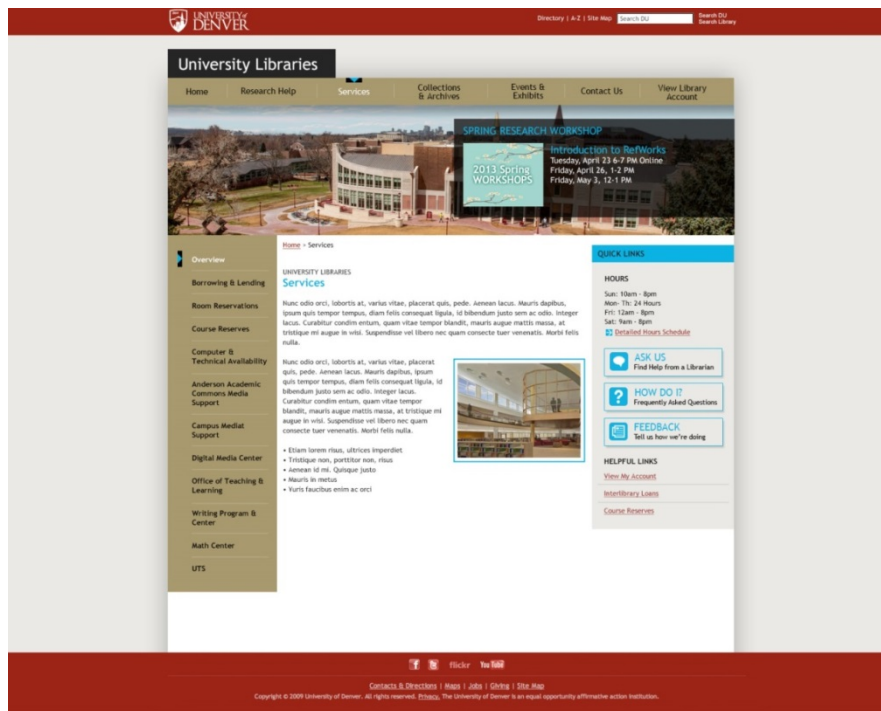Figure 6. Proposed Home Page of One-to-One Searchbox Relationship

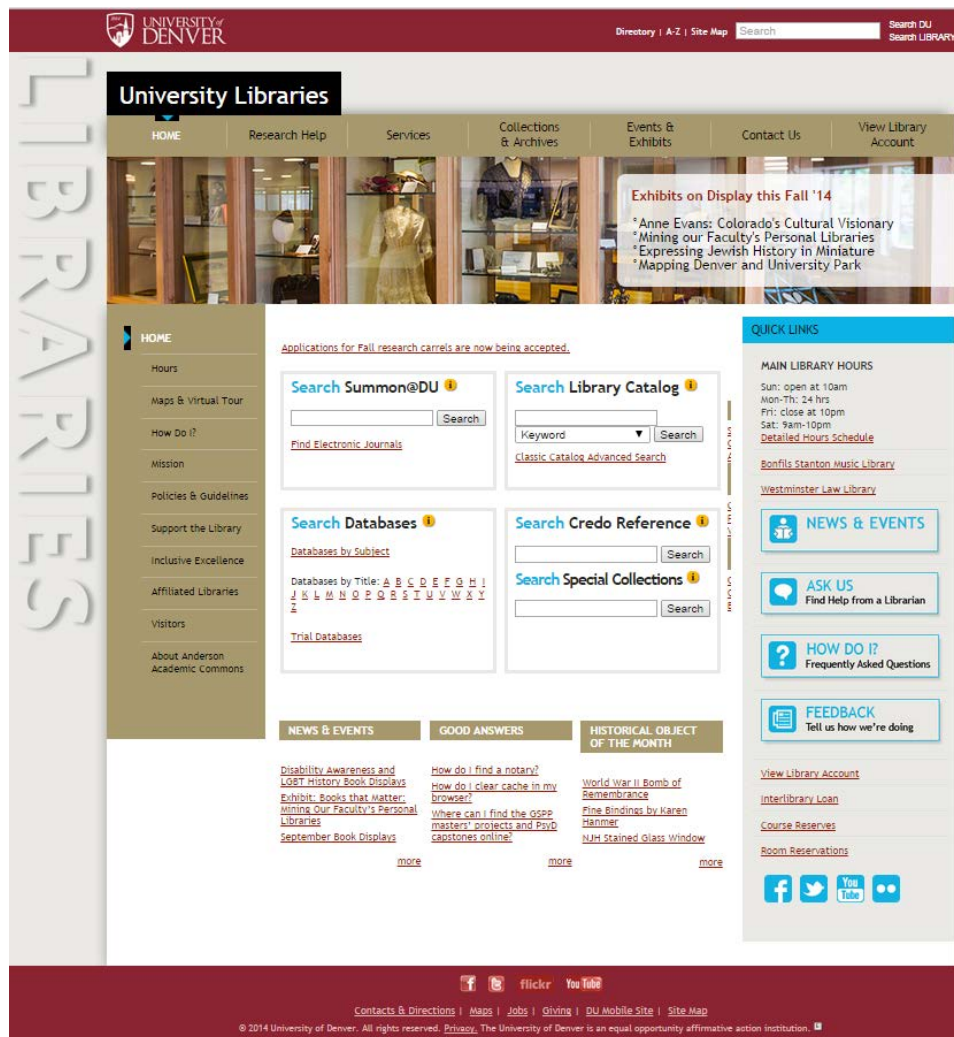Figure 7. Mockup of an Interior Page

Figure 8. Collaboratively Designed Library Website, Oct. 18, 2014.

Endnotes

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[12] Ruth Sara Connell, "Content Management Systems: Trends in Academic Libraries," *Information Technology and Libraries* 32, no. 2 (2013): 42-55.

[13] Statements from DU librarians reflecting this assessment are: "This is the first time we collaborated outside of the library in an attempt to make our website more like others so that we have the same DU look and feel with similar navigation. By doing so, we give users a more familiar environment when conducting research on the library's website."

"The role for the Chair of CMG was to collaborate within the library while the role of the Digital Infrastructure and Technology Coordinator was to communicate with MarComm. Information was flowing both ways and collaboration was happening all around the library."

"The transparency of the process allowed us to understand why the decision was made and why a particular request could not be accommodated. We had all the freedom to go back and revisit our decisions."

"This process taught us that we are flexible to changes. We would like to collaborate more with the campus constituents."

"Previously the reference libraries unanimously opposed relinquishing control of the library website to others, especially to the University people who understand nothing about libraries. But having gone through this process, we now have a better, more functional site than we have ever had before."