Introduction

In 2007, the University of California at Berkeley Web Subject Pages Task Force (WSPTF) convened to explore options for improving the creation, findability, and navigability of Doe/Moffitt Library subject pages, a collection of "over 50 unique subject home pages that function as departmental and discipline-specific gateways to the Library's multi-leveled and elaborate web site" (http://sunsite3.berkeley.edu.wikis/subjectpagestf/index.php). Roughly twenty-five area and subject specialists maintain these pages, which are linked from the main Doe/Moffitt website (http://www.lib.berkeley.edu/doemoff) and in the full list of subject and affiliate libraries across the campus (http://www.lib.berkeley.edu/AboutLibrary/libraries_collections.html). Existing pages are built on a consistent template structure that provides a predictable series of links to library-provided and other subject-specific information, while also featuring unique content and information sources determined by individual authors. Each guide follows a series of conventions regarding nomenclature, organization, and navigation (Figure 1).

Figure 1 - Example Doe/Moffitt Subject Page
In their report, the WSPTF identified a number of features that would enhance existing subject guides from both the creator and end user perspective. Long recognized as an area of potential service enhancement among library staff, the template-based structure of existing guides was widely perceived as impeding the integration of dynamic features and other forms of content and layout customization. In addition, the static HTML foundation of the guides requires authors to become conversant with web editing software and coding to an extent that prevented a desired level of interaction on the part of some individuals. General recommendations from the WSPTF encouraged greater guide flexibility and increased availability of "2.0" features, while specific recommendations included the inclusion of a "what's new" section, librarian profile and contact information, seamless integration and updating from the Electronic Resources Finder (ERF), ease of linking to new acquisition lists such as those possible with the new ILS, ability to embed objects such as graphics and IM widgets, "clean" URLs, and ease of updating for staff unfamiliar with HTML. Their charge and complete report is available at http://sunsite3.berkeley.edu/wikis/subjectpagestf/index.php.

In Fall of 2008, the Subject Page Software Task Force (SPSTF) was subsequently formed and charged (http://sunsite3.berkeley.edu/wikis/spsoftwaretf/index.php?n=Main.HomePage) with evaluating subject guide software systems for local implementation in the Doe/Moffitt Libraries:

Task Force Charge - Summary

1. Review and prioritize the features desired for Doe/Moffitt subject pages.
2. Examine software options, including Library a la Carte, in light of the prioritized features.
3. Perform rigorous testing of the one or two most feasible software tools to ensure it meets the needs of subject guide authors as well as integrates fully with existing Library systems. Consideration must be given to the range of technology skills of subject guide authors.
4. Document the findings of the testing of the top one or two software solutions identified, including benefits and drawbacks of each and a final recommendation.

Subject Guide Platforms

The WSPTF recommended that the library pursue a pilot implementation of LibGuides, subscription-based software that allows guide creators to customize feature-enhanced library subject pages via a web-based interface. In light of the Library's fiscal constraints, the SPSTF considered cost-neutral alternatives to LibGuides, investigating local and open source subject software products that might facilitate flexible, dynamic, and customizable subject pages on a non subscription-based model. In late Fall of 2008 and Spring of 2009, the Task Force drew upon the recommendations of the previous group to structure our evaluation of alternative systems. The SPSTF considered a number of software options and formally tested two platforms - an open source product currently in beta developed by Oregon State University Libraries, Library a la Carte, and the Subject Page Assistant, a guide creation "wizard" developed locally by UC Berkeley Library Systems in partnership with the Library Web Advisory Group (WAG).

LibGuides is widely recognized as the industry standard platform for subscription-based subject pages, and is common among academic libraries that have pursued feature-enhanced guides. The advantages of more dynamic and customizable subject page models are generally recognized, and a number of recent studies have investigated the specific...
effectiveness of LibGuides in an academic library setting (Adams and Horne, 2009, Harriss, Liss, and Frigo, 2009). Findings tend to confirm the potential of LibGuides to reach a wider audience and provide added interactivity with a range of information resources, but stress that guide architecture and creator outreach are equally important to subject page effectiveness.

Figure 2 demonstrates a typical LibGuide in use at Temple University. LibGuides are organized in a tabular structure with flexible content-specific columns that allow guide creators to closely control information organization and presentation. Within the University of California System, Irvine (http://libguides.lib.uci.edu/) and UCLA (http://guides.library.ucla.edu/) currently use LibGuides.

**Figure 2 - Example LibGuides Subject Page at Temple University**

![LibGuide example](image)

**Initial Evaluation**

While a range of fee-based and open source subject page options exist, few incorporate the range of authoring and organizational features identified as desirable by the previous Task Force. Prior to convening the SPSTF, chair Char Booth reviewed a number of subject guide software platforms for their general ability to meet the basic specifications outlined by the 2007 WSPTF, such as MyLibrary, LibData, ResearchGuide, Library a la Carte, and Drupal. While each package had positive attributes that matched aspects of the previous group’s recommendations, many essentially duplicated or fell short of equalling the functionality of the existing Doe/Moffitt software guide template and/or the Systems Subject Page Assistant. Of the available software platforms, Library a la Carte and guides based in Drupal emerged as options that provided the requisite range of 2.0 features and author control. In addition, the Systems Subject Page Assistant was already available as a locally-developed potential option for the creation of dynamically updated guides. For more information on the features and limitations of the full range of subject guide platforms considered, Nichols introduces Library a la Carte (2009), Ian Chan (2009) recently compared Drupal, Library a
la Carte, and Moodle guides, while Corrado and Frederick provide an overview of other open source subject page tools (2008).

**Methodology**

The WSPTF concluded that Doe/Moffitt selectors desired a subject guide program that would allow the easy authoring of dynamic pages that reflected the unique information architecture of each content area and incorporated emerging web tools in order to better engage and inform end users. The SPSTF sought to establish whether the Systems Subject Page Assistant, Library a la Carte and/or a configuration of Drupal modules could offer the same functionality in free or open source format. Although we entered the evaluation with the knowledge that the Systems Subject Page Assistant was not developed with the intention of providing the amount of flexibility desired by Doe/Moffitt selectors, the Task Force determined that it was nonetheless valuable to evaluate this locally available product in our subject guide software test.

In late Fall 2008, the SPSTF reviewed the specific recommendations of the previous Task Force to identify testable areas related to software functionality and usability from the guide creator and end user perspective. We revised and expanded their initial list into the following series of investigable categories, which prioritize features desirable in a revised approach to subject guide creation and maintenance at the Doe/Moffitt Libraries:

**Guide Authors**

- Web 2.0 tools and feeds
- content interoperability with the ERF/OPAC
- ease/intuitiveness of guide creation
- interface customizability
- personal profile and contact options
- communication/feedback features
- search options
- production of clean/readable URLs
- software sustainability
- supported multimedia formats
- design consistency
- template and structure

**End Users**

- intuitive interface/navigation
- consistency (look and feel)
- simplicity
- findability

In a series of two formal software tests in Spring 2009, Task Force members evaluated Library a la Carte and the Systems Subject Page Assistant for their performance in the above categories. The SPSTF also considered practical aspects of the adoption feasibility of each tool within the Doe/Moffitt Libraries, based on the ability of Task Force members to become comfortable with the systems during testing. The Systems Subject Page Assistant was already in a process of formal vetting, and therefore required no installation or additional configuration for evaluation purposes. Library a la Carte required installation on the Library's test server, a process spearheaded by Lynne Grigsby and Library Systems.
Char Booth further configured Library a la Carte in order to make it suitable for realistic testing by the group.

At the beginning of each evaluation phase, the tool under consideration was demonstrated in detail by Char (who also considered the preparation necessary for each demonstration as an indication of the potential staff training required for the successful implementation of each option). Task Force members then developed individual test subject guides using the Subject Page Assistant and Library a la Carte, provided detailed feedback on their experience via two web-based survey instruments, and discussed their impressions of each tool in light of the feasibility of each software package being adopted by Doe/Moffitt selectors. A brief description of the findings of each evaluation phase follows.

**Evaluation and Findings**

A) *Subject Page Assistant*

Task Force members found that the Subject Page Assistant performed well in some of the specified criteria areas, but that it provided too little overall flexibility and potential for customization for guide creators (see Appendix A - Summary of Tester Comments). The easy-to-use guide authoring interface was praised by testers, although many felt that it provided less room for customization than Doe/Moffitt selectors had identified as requisite (Figure 4).

*Figure 4 - Systems Subject Page Assistant Author Interface*
The SPSTF finds that while the Subject Page Assistant (or "Wizard") provides an easy-to-use subject guide creation tool, it was not specifically built nor will it be modified to include many of the features identified as desirable by the WSGTF. Guides based in the Subject Page Assistant are straightforward to author, feature content dynamically pulled from the Electronic Resources Finder, present a consistent organizational template, and create "clean" URLs. They do not, however, allow creators to customize any content beyond resource selection and basic contact information. Library 2.0 elements such as subject tags, chat widgets, feedback, multimedia object embedding, and so forth were not originally intended to be features of the Wizard, and will not be pursued as future software enhancements (Figure 5).

Figure 5 - Example Systems Subject Page Assistant Guide

B) Library a la Carte

Although the Task Force gave the current version (1.2) of Library a la Carte lower usability ratings from the guide creator standpoint, it received high ratings for end-user usability and fared well according to the flexibility-oriented recommendations of the WSPTF. Overall, guides produced using Library a la Carte are intuitive for end users and quite customizable by creators. Among the features identified by the previous task force as desirable in a next-generation subject guide software package, Library a la Carte provides the ability to create "what's new" content, customize librarian profile and contact information, embed objects such as graphics and IM widgets, produce clean URLs, and create an easier editing interface.
for staff unfamiliar with HTML. While the full list of recommended open-source enhancements to the platform is enumerated in Appendix B - Essential and Recommended Library a la Carte Enhancements, principal among those areas that will require further development are seamless integration of the Electronic Resources Finder, not currently possible within the Library a la Carte framework.

While the Task Force finds Library a la Carte to be a promising product, it also presents a significant learning curve from the guide author perspective. In its present form, Library a la Carte would likely be initially challenging to use for many Doe/Moffitt selectors, but could be modified and trained to an extent that would enable its successful, if not seamless, local implementation. The beta version of Library a la Carte is undergoing a series of enhancements by its development team at Oregon State University that will be implemented in two forthcoming releases 1.3 (May-June 2009, estimated), and 1.4 (September 2009, estimated). Together, these releases are characterized by lead Software Developer Kim Griggs as comprising an overall 2.0 release that will guide the tool out of beta, or testing, status. Specifics of these updates are outlined on the Library a la Carte RubyForge site, which lists past and upcoming releases and fixes (http://rubyforge.org/projects/alacarte/). Planned updates and fixes forthcoming in release 1.3 and 1.4 will address a number of our original critiques of the a la Carte system, many of which could also be addressed by temporary "workarounds" on the local level (see Appendix B).

The initial frustration many felt with a la Carte stemmed from its relatively unintuitive authoring interface - SPSTF members were largely unable to begin creating test guides until the tool was demonstrated in detail, an indication of low initial author usability. This was determined to be largely an issue of tool and function nomenclature within the authoring interface, in addition to incomplete help and how-to documentation (http://alacarte.library.oregonstate.edu/support). Once the initial learning curve of guide creation was surpassed, the editing interface proved to be relatively usable in its current form (Figure 6).

*Figure 6 - Library a la Carte Guide Editing Interface*

The SPSTF found that a number of operations within Library a la Carte were somewhat convoluted and/or counterintuitive, and that several of its core functions would require significant modification to function successfully within the Doe/Moffitt Libraries (see Appendix A - Summary of Tester Comments). That said, the completed guides produced by
Library a la Carte were widely viewed within the group as usable, streamlined, and a vast aesthetic improvement over our current offerings, making the end user experience one of its core strengths as a subject guide creation platform (Figure 7).

**Figure 7 - Example Library a la Carte Subject Guide**

Library a la Carte Development Trajectory

Despite its initial usability difficulties, Library a la Carte presents the Berkeley Libraries with an opportunity to take a functional software option and customize it closely to our local specifications while simultaneously contributing to the open source codebase of an innovative library product. For those issues identified as requiring improvement in order for Library a la Carte to be successfully implemented at UC Berkeley, several sources of potential modification exist. By virtue of its status as an open source tool, Library a la Carte can be developed and enhanced by Oregon State University, locally by Library Systems, and/or by other members of the user community via the plug-in and release system common to platforms such as Drupal and WordPress.

Because this tool is founded on an open source model, there are a number of development trajectories that may be pursued in order to address a series of specific usability and functionality issues identified by the Task Force. If Library a la Carte is adopted locally, a number of features, workflows, and "bugs" will need to be managed in order for it to satisfy the criteria specified by the current and previous Task Forces. This can occur exclusively at the campus level via Library Systems, or can be pursued to the mutual benefit of Berkeley and Oregon State University by feeding our enhancements back into the Library a la Carte code base as plug-ins. After the upcoming scheduled releases (1.3/1.4), although additional functional enhancements to Library a la Carte should be pursued, the SPSTF is confident that it would be suitable to use "out of the box" on a pilot basis with subsequent and
ongoing customization by Library Systems in collaboration with Char Booth.

Appendix B describes and annotates the twenty specific usability/functionality requirements identified by the Task Force as either essential or recommended for the successful adoption of Library a la Carte by Doe/Moffitt subject guide creators. Through extensive communication with Lead Software Developer Kim Griggs and other members of the Library a la Carte team, Char Booth and Lynne Grigsby have evaluated this range of enhancements to the current version of the software and established whether they are forthcoming as updates from Oregon State University, would need to be taken on as local Berkeley open source developments, or are potential features being considered for future release by OSU. In addition to the modifications listed in Appendix B, Kim Griggs identified the following enhancements that may also be included in forthcoming releases (email communication, 2/24/09):

1. **Database of databases**: A interface in the tool to manage the list of databases and an A-Z patron interface.

2. **Tutorials**: Library instruction tutorial module with branches and quizzes.

3. **Profiles**: Librarian profiles and subject specialist portal that list librarians and links to the profiles

4. **New modules**: Google tools module, video and image search module, more robust RSS feed module, Delicious and Flickr modules.

5. **Tabs or Table of Contents alerts for course pages**

C) **Drupal-Based Guides**

Despite Drupal's initial promise as a subject guide system, after communicating with a number of university libraries using Drupal as a subject guide platform (Stanford University: https://www.stanford.edu/group/ic/cgi-bin/drupal2/research-guides, McMaster University: http://library.mcmaster.ca/guides/, Amherst College: https://www.amherst.edu/library/resources/subject_guides) and discovering no extant module package readily available for local testing, the SPSTF weighed potential Drupal subject page deliverables against the setup and extent of programming required of a formal test. The SPSTF concluded that the process of undertaking a Drupal guide test at this early stage in the Library's relationship to it as a content management system would prove unscalable, and elected to forgo this platform for formal consideration.

**Recommendations**

In light of the above findings, the Subject Page Software Task Force makes the following three recommendations:

1) While it interfaces admirably with the Electronic Resources Finder and makes the process of guide creation quite intuitive, the Systems Subject Page Assistant was not intended by its creators to provide design flexibility or 2.0 tool integration, both areas identified as requisite by the previous Task Force. Because the Systems Subject Guide Assistant does not meet a number of criteria specified by the previous and current Subject Guide Task Forces and will not be substantially adapted in the future, an alternative software package should be selected for Doe/Moffitt Libraries guides.
2) Library a la Carte is provisionally recommended for adoption, pending further investigation and prioritization of the development trajectories identified as "Essential" and "Recommended" in Appendix B, and should be provisionally adopted after the 1.3 and 1.4 releases in Summer and Fall of 2009, with a pilot implementation goal of Fall 2009 or Spring 2010 pending the OSU update and development schedule. Char Booth and Lynne Grigsby will continue to investigate development goals in communication with Oregon State University's Library a la Carte Team, and will begin to establish concrete specifications for features that would require local development with Systems programming staff.

Note: An additional (but untested by the SPSTF) component of Library a la Carte is its ability to function as a course guide platform in addition to a subject guide platform, which adds an element of considerable added value should it be adopted on a local basis. The Educational Initiatives Council (EIC) has identified course guides as an area of future development interest, and in the eventuality of a UC System license purchase of LibGuides (see #3 below), the Task Force recommends that Library a la Carte be locally evaluated and/or piloted as a course guide creation tool.

3) Recent discussions among HOPS members (Heads of Public Services) at the UC Libraries have indicated that a UC system-wide license of LibGuides is currently under consideration. The recommended pilot adoption of Library a la Carte is made with the provision that, should a System decision to purchase a consortial license of LibGuides come to fruition, pilot testing priority should be given to LibGuides in Fall of 2009 or Spring of 2010.

References


Appendix A - Summary of Tester Comments

Subject Page Wizard

* Needs more flexibility to add social networking tools and additional web 2.0 features. Template is fixed, which doesn't allow content owners to add content which does not fit into the structured form. There was no place to describe special collections, list important etexts or ejournals, or to create guides for specific subtopics or classes.

* I did not see a way to input images or other more complex web content. I did not like the limit of 10 resources under each category nor the way they displayed in alphabetical order without any way to guide patrons to the most useful ones. Since I do not have an active blog, I could not test that feature. There was no way to categorize print resources or web resources nor a place to put links to other campus websites that users may want to readily access. Though "usability" seemed easy, "usefulness" was very low.

* The ease of use of this assistant would be appreciated by our the broad range of web skills amongst our content providers. I created a guide fairly quickly and I really like how content was pulled from the ERF though I can't tell if it would be dynamically updated. I appreciate how font size/colors are not modifiable - meets criterion of consistent look across all D/M guides.

* It's a big step forward. In editing, t'would be nice to be able to back up a step... but at least can get around that problem at preview stage.

*While I appreciate the ease and expediency of the wizard, there were a few points at which I was left needing assistance, or generally wishing I was able to do more with the interface. The process of walking through guide creation step-by-step was quite useful, but I feel would be improved by greater potential to add and customize within each section. Manually entering print and web resources seemed cumbersome, and I felt limited by only being able to showcase ten electronic resources. Overall, I found the wizard easy to use, but lacking in many of the functions identified by guide creators in D/M as desirable.

Library a la Carte

* This tool in its present form is very clunky and confusing to use from a web author's perspective. It's very hard to grasp the difference between modules and tabs at first. The nomenclature for modules to choose from is equally deceptive. I'm pretty web savvy, and I think I could teach myself to use this software but it really is not very intuitive and would probably not lead to more publishing on the part of the majority.

*Very frustrating. It took me a long time just to add very little information, profile, tabs. I think it's me...given time and practice, I'm sure I would learn the buttons and features.

*Needs customization for local look/feel and there's a bit of a learning curve.

*Language means everything. There must be better terms to describe the various parts of a la carte, I'm just not sure what they are. Again, this could be my initial frustration talking, so keep that in mind.

*Diacritics seem to display properly which is a plus for me! One BIG DRAWBACK of Library a la Carte is that it does not seem to be able to dynamically pull content from other sources like library catalogs or the ERF. Other DRAWBACK as Char has identified is that is does not allow to make global changes either. I'm sure I would learn the buttons and features.
### Appendix B - Essential and Recommended Library a la Carte Enhancements

**a)** *Forthcoming in 1.3/1.4 Releases (also described as 2.0 Release)* - these enhancements are already slated for release in early summer or early fall of 2009.

**b)** *Berkeley Development Option* - this identifies a need for local development due to Berkeley-specific requirements or enhancements outside the intended scope of OSU.

**c)** *Under Investigation at OSU* - these issues may be addressed by future OSU releases, but are not definite.

<table>
<thead>
<tr>
<th>Essential</th>
<th>Forthcoming in 2.0 Release</th>
<th>Berkeley Development Option</th>
<th>Under Investigation at OSU</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ability to create and share basic template guides to provide a working example and flexible structure for guide creators</td>
<td>b</td>
<td>c</td>
<td>This functionality is being investigated by OSU, but could also be a local Berkeley fix.</td>
<td></td>
</tr>
<tr>
<td>2. Global modules that allow sitewide changes rather than on a case-by-case basis, and that prevent inadvertent edits by all who share them</td>
<td>b</td>
<td>c</td>
<td>A new module type could be created that limited permissions and allowed global changes. The basic functionality is already possible using the &quot;share&quot; function.</td>
<td></td>
</tr>
<tr>
<td>3. Expanded online help/how-to documentation</td>
<td>b</td>
<td>c</td>
<td>Online documentation is editable in Drupal; non-OSU users can make changes to the How-Tos and so forth.</td>
<td></td>
</tr>
<tr>
<td>4. Dynamic content module that allows automatic updates ('pulls' content) from the ERF and OPAC</td>
<td>b</td>
<td>A local module could be developed that would achieve this end using a similar approach to that developed for the Systems Subject Page Assistant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Revise module type content labels with more intuitive language</td>
<td>b</td>
<td>Easily achieved locally, but some redundant module types will be consolidated by OSU in future releases.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. More intuitive contact module setup process</td>
<td>a</td>
<td>c</td>
<td>This has been identified as a need by the OSU team and is under investigation by Kim Griggs, et al.</td>
<td></td>
</tr>
<tr>
<td>7. Incorporate links to existing guides of different platforms in the subject page portal</td>
<td>b</td>
<td>This could be achieved on a local level, and is not currently being considered as an OSU enhancement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Fix drag/drop module bug</td>
<td></td>
<td>c</td>
<td>OSU was not aware of this bug, and they will investigate.</td>
<td></td>
</tr>
<tr>
<td>9. Drag/drop tabs in guide creation interface</td>
<td>a</td>
<td></td>
<td>Already complete; available in current 1.2 release.</td>
<td></td>
</tr>
<tr>
<td><strong>Recommended</strong></td>
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<tr>
<td>10. More intuitive language in admin interface</td>
<td>b</td>
<td>Not an OSU priority; could be achieved locally.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Customizable permissions structure</td>
<td>b</td>
<td>A superuser role could easily be created locally that designated different permissions levels.</td>
<td></td>
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</tr>
<tr>
<td>12. Master subject list customizable from admin interface</td>
<td>b</td>
<td>OSU may make the process of assigning a master list of subjects possible from the admin interface, but defining the list is a locally achievable fix.</td>
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<tr>
<td>13. Ability to copy/create duplicate subject guides</td>
<td></td>
<td>c</td>
<td>This option is available in the course pages section of a La Carte; OSU has identified this as a need and is investigating.</td>
<td></td>
</tr>
<tr>
<td>14. More flexibility for organizing modules - instead of paginated list, a folder or other structure</td>
<td>b</td>
<td>Outside of the scope of OSU's vision could be investigated at Berkeley.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Guide editing interface that reflects finished guide (rather than a partial one, as is the case currently)</td>
<td>a</td>
<td>This is currently in development for future release.</td>
<td></td>
<td></td>
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<tr>
<td>16. Ability to specify related course and subject guides in lower left-hand content boxes.</td>
<td></td>
<td>c</td>
<td>Identified as an area of need by OSU, under investigation.</td>
<td></td>
</tr>
<tr>
<td>17. A rich text module editor that features source code view/edit options</td>
<td>a</td>
<td>Already available in recent release.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Keyword search for all global modules when adding them to tab</td>
<td>b</td>
<td>Outside scope of OSU vision, would need to be investigated locally.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. General multimedia module type needed that makes it more obvious where/how to embed source code</td>
<td>b</td>
<td>c</td>
<td>Could be developed locally, but also under consideration by OSU.</td>
<td></td>
</tr>
<tr>
<td>20. Clearer labeling of global v. local modules.</td>
<td>b</td>
<td>Locally manageable change.</td>
<td></td>
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</tr>
</tbody>
</table>

*Submitted to the Doe/Moffitt Advisory Group on 6 May 2009.*