



## ***Adding SPICE to our library intranet site: a recipe to enhance usability***

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### **Objective**

In 2004 the Central Coast Health (CCH) Library Services staff determined their section of the organisation's intranet had outgrown its original structure and purpose, and a thorough revision of both architecture and content was required.

The goals of the project were to produce a highly usable site and to use the project as an opportunity to explore the practice of evidence-based librarianship (EBL). Accordingly, the problem – a user-unfriendly intranet site – was reframed using the SPICE anatomy (Booth, 2004a) into the following research question:

*“How can the usability of the Central Coast Health Library Services' intranet site be improved to enhance the site's effectiveness as a gateway to the library's services and resources, for the staff and students of the organisation?”*

### **Method**

Four main phases emerged in the project plan, beginning with a "quick fix" of the site to provide a suitable starting point from which further evidence-based improvements could be made. The second phase involved locating, retrieving and examining the evidence to identify the modifications required. The evidence was taken from the literature, scenario-based usability tests, usability checklist analyses, and feedback from library staff and clients. After analysing the evidence, the third phase entailed implementing the recommended changes, and publishing the redeveloped and highly usable intranet site. Finally, the new site will be evaluated and guidelines for the ongoing maintenance and development of the site will be defined.

The main themes which emerged from the literature review were: distinctions between usefulness, effectiveness and usability; usability testing in practice; and web design guidelines. This project acknowledges that usability is only one indicator of the overall effectiveness of a site. Other indicators, such as accessibility, are outside the scope of the current project. The literature search yielded a large number of resources describing practical approaches to usability testing (MIT Libraries, 1999; Pace, 2002). Numerous guidelines and recommendations were uncovered, with varying strengths of evidence, but the two selected for use by this project were *Research-Based Web Design and Usability Guidelines* (Koyani, Bailey, & Nall, 2003), and the *Raward Library Usability Analysis Tool* (Raward, 2002).

An online survey undertaken at the start of the project invited feedback and suggestions by Library intranet site users. Results of the survey were used to ensure that project goals and client needs were aligned, and to compile a list of the functions the Library intranet site was expected to perform. The survey was also used

to recruit volunteers for usability testing. Qualitative data representing clients' feelings about the usability of the site was also elicited via a series of open-ended questions posed during interviews conducted immediately after each usability test session.

The *Raward Library Usability Analysis Tool* was applied to a version of the Library's intranet site archived just prior to the "quick fix". It was then applied to the current site, and is intended to be applied at each major revision throughout the project. Applying the Raward Tool resulted in not only a usability score, but also a list of recommendations for improved usability.

Clients who volunteered through the online survey were recruited to participate in the scenario-based testing sessions. Renowned usability expert Jakob Nielsen (2000) recommends testing five users, but performing multiple small tests, to get the best results. The project proposes to undertake a round of usability testing at each stage of the redevelopment. In each round, two tests of seven scenarios each will be delivered.

Vaughn & Callicott (2003) challenged librarians conducting usability testing to think about the role of the site in relation to the library itself. Awkwardly, the Library Services' intranet site assumed the role of both a substitution for, and an extension of the physical Library. This was one issue not satisfactorily resolved throughout the testing process. However formation of the scenario-based tasks tended to omit clues, thereby testing ease of use, rather than usefulness. In all cases, the tasks set aimed to test the usability of the site, and not the level of information literacy possessed by the test participant.

Once usability issues had been identified the *Research-Based Web Design & Usability Guidelines* (Koyani et al., 2003) were referred to for evidence-based solutions. At the time of writing the list of relevant recommendations to improve the usability of the Library Services' intranet site had been extracted from these guidelines, but not yet applied to produce a revised, and highly usable, intranet site.

Usability testing is part of a continuous cycle of development, implementation and evaluation (Nielsen, 2000; Norlin, 2002). This was a timely reminder for the project team who strove to conduct the project according to the principles of evidence-based librarianship. Booth (2004b) notes, "*the evidence-base cycle will not be complete unless, once having implemented our changes [to a Web or intranet site], we put in place mechanisms for on-going evaluation*". Guidelines for the ongoing management of the redeveloped site will be created in the final stage of the project, and will include the need for an ongoing process of usability testing.

## **Results**

Raward's (2002) checklist was an effective way to identify where the site falls short of best practice in design for usability. This checklist identified several aspects which needed attention, and this method alone would have resulted in a revised site with significantly enhanced usability. Each time the checklist has been applied, (after changes have been made to the site), the usability index has risen considerably. It is

anticipated this index will rise again, after the findings of the current round of testing have been applied. The results of the scenario-based usability testing supported the findings of the usability checklist analysis, demonstrating a fairly usable site, though one with plenty of scope for improvement. Engaging clients in the process however, had the added benefit of providing the opportunity to observe how clients use the site to satisfy particular information needs.

Post-test interviews, in conjunction with comments made during the survey and throughout the testing sessions, were invaluable to better understand how and why clients use the Library's intranet site and the difficulties they actually face in the workplace. The benefit of this form of feedback not only provided information for better site design, but also for enhanced service delivery, generally.

### **Future Directions**

The methodology used to enhance the usability of this library intranet site, would be just as applicable to a usability study of other library internet/intranet sites. It is expected that a complete project report, detailing the literature review, methodology, documentation, results and recommendations will be prepared as the project draws to a close. Once the current project is completed, it is anticipated that the findings will be used to propose the launch of an Internet site for Library Services. The project findings may also guide the development of new/combined intranet sites published as a result of the creation of the merged area service, Northern Sydney Central Coast Health.

Future projects could undertake to examine how to enhance effectiveness by improving the other indicators, such as accessibility. If such investigation leads to further revision of the re-launched site, such modification would be subject to usability testing, as a matter of course.

This project has provided the librarians of Central Coast Health Library Services an ideal opportunity to investigate the application of the EBL process. Usability testing lies within the ambit of evidence-based librarianship in that it is practical, grounded testing carried out in order to obtain evidence with which to address relevant and answerable questions facing the practice of librarianship (Eldredge, 2001). The conference presentation based on this summary, will focus on how the principles of EBL were applied by (and challenged) the project team, throughout the study.

### **References**

- Booth, A. (2004a). Formulating answerable questions. In A. Booth & A. Brice (Eds.), *Evidence-based practice for information professionals: a handbook* (pp. 61-70). London: Facet.
- Booth, A. (2004b). Untangling the web. *Health Information and Libraries Journal*, 21(1), 70-73.
- Eldredge, J. D. (2001). The most relevant and answerable research questions facing the practice of health sciences librarianship. *Hypothesis*, 15(1), 9-14,17.
- Koyani, S. J., Bailey, R. W., & Nall, J. R. (2003). *Research-based web design & usability guidelines*. Washington, D.C.: United States Department of Health and Human Services.

MIT Libraries. (1999). *Web site usability test*. Retrieved 27 May, 2005, from <http://macfadden.mit.edu/webgroup/usability/results/index.html>

Nielsen, J. (2000). *Jakob Nielsen's alertbox: why you only need to test with 5 users*. Retrieved 8 March, 2004, from <http://www.useit.com/alertbox/20000319.html>

Norlin, E. (2002). *Usability testing for library websites : a hands-on guide / Elaina Norlin, CM! Winters*. Chicago: American Library Association.

Pace, A. K. (2002). Optimizing library Web services: a usability approach. *Library Technology Reports*, 38(2), 2-81.

Raward, R. A. (2002). *A study of best practice design guidelines and the development of a usability analysis tool for the evaluation of Australian academic library web sites*. Unpublished Thesis (M.A.), University of Canberra, Canberra.

Vaughn, D., & Callicott, B. (2003). Broccoli Librarianship and Google-Bred Patrons, or What's Wrong with Usability Testing? *College & Undergraduate Libraries*, 10(2), 1-18.