

Rich Internet Resources:

Designing Complex Web-Based Information Archives

In 2008, Yu Centrik engaged in the redesign of web-based digital archives for two major organizations which each target the specific information needs of large-scale, specialized user populations. Clear parallels between both projects resulted in novel methodological ideas and practical design patterns applicable to the research and design of specialized internet resources for subject matter experts.



CONTEXT

Mandate : The first project was a web archive redesign for the UNESCO Institute for Statistics (UIS): the statistical branch of the United Nations' educational, scientific and cultural agency. The UIS provides almost 200 countries with statistical information on international progress in education, science and culture. The second project was a similar redesign for the Canadian Institute for Health Information (CIHI): an independent, not-for-profit organization that provides essential data and analysis on Canada's health system and the health of Canadians. Both projects involved analysis, iterative design and usability evaluation using semi-functional interactive prototypes.

Solution : Comparing both projects led to a few effective methodological approaches and user-validated design concepts which should be considered by anyone designing information-heavy interfaces for specialized user populations.

Uniting Web and Database Design

User expectations, motivations and context-of-use vary greatly between traditional websites and digital archives. Although many have innovated in the subject matter, software architecture, hardware and implementation of digital archives, design principles for their interfaces remain largely unexplored. This state of practice is inadequate for the optimization of online web-based archives.

When mandated with the challenge of building web-based digital archives, our specialists devised an effective methodology which combined database design principles obtained from contextual analysis with modern web usability. Based on results from the usability evaluation phases of both projects, the procedure created contextually appropriate interfaces for each system in question. The following page outlines a few methodological and design principles which aligned to both projects simultaneously, and thus may serve as inspiration for future designers and researchers.

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METHODOLOGICAL PERSPECTIVES

Gather Information in Advance: In the context of CIHI's systemic redesign, several exploratory interviews had been scheduled with high-profile users (government representatives and healthcare workers) about their usage of this critical online resource. In order to optimize the data relevance of these interviews, generic surveys were given to internal subject matter experts in advance, allowing our ethnographers to dive directly into specifics with an established understanding of the usage context of health information seekers.

Create a Subject Liaison: A subject liaison is a designer who is charged with developing a 'quick and dirty' understanding of the specialized field in question, enabling a holistic view of both modern design and their relation to users' core discipline. These disciplinary middlemen ensured the accurate procurement of requirements and user data while also incorporating an intimate knowledge of relevant subject matter in the design process.

Reconsider Web Design Instincts: Test prototypes of both systems' web archive homepages were initially contentious, as they were unusually dense for a website. Usability testing showed that users actually appreciated these screens as a comprehensive and complete window into the wide array of content contained within the system. This aligns with the fact that many users referred to specialized archives as more of an application than a website: an essential element of their daily work. It's clear that standard web usability principles should be second guessed when designing online archives. It's simply a matter of taking a holistic design approach from first principles as opposed to a reflexive 'web design' approach.

Organize Transcendent Navigation: Users pursuing information on the World Wide Web have shown parallels to a 'hunter' assessing the cost and value associated with different approaches to finding their target. In attempting to apply this concept to content-heavy information resources, we found efficiency and value in conceptualizing this process

as the optimization of hierarchical 'transcendence'. Usability testing demonstrated that helping users quickly 'transcend' the first-level of information architecture effectively removes a lot of superfluous content and distraction from an otherwise comprehensive interface. This pragmatic envisioning of "information foraging theory" helped us apply it more directly.

DESIGN PERSPECTIVES

Home Page as a Visual Model: On the UIS homepage, a "Direct Access" panel served to depict the two main content types of the database: data and documents. As users continued to navigate through the resource, they often referred to how each section connected to these two primary types of content. It seems a clear definition of the purpose and organization of the system can help create lucid interaction. An indicative homepage layout or information graphic can prime a cohesive and accurate mental model which will continue to grow as users accumulate more experience with the interface.

Advanced Search Results: Instead of an 'advanced search' function, users were provided with an 'advanced results' page which allowed them to further filter and classify a simple initial keyword search. Test participants simply typed in a string and clicked search; they did not seem to be bothered by the lack of other search options. Upon seeing their search results, they would decide whether to browse through the paginated results or use advanced narrowing functionality. This type of design simplifies the basic search process, providing complex functionality when it is actually needed: after the user has deemed the initial keyword search inadequate.



THIS WORK WAS PRESENTED AT ECA 2010 IN GENEVA, SWITZERLAND!

The work presented here was submitted and accepted to the European Commission on Digital Archives in Geneva, Switzerland in April 2010. The presentation represented a unique opportunity to bring industrial design experience directly to the door of specialists in digital archiving and library science. This work served as an inspiration for the design of future archives, and also potentially a foundation for new directions in academic research.

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