So you want a new website

This text outlines the process the University Libraries of Notre Dame used to redesign its website. It includes a presentation of the various assessment activities utilized (surveys, focus group interviews, usability studies). It also includes a description of how the libraries articulated a vision for the website and a strategic plan. Finally, the text describes some of the retrospective conversion processes we had to implement in order to make things usable and consistent.

Introduction

When it comes to a website, any website, there are no definitive answers. Put another way, the technology of the Internet is still too new for there to be sets of concrete best practices. We are all still trying to figure out the best way to take advantage of this new medium.

That being said, the University Libraries of Notre Dame recently went through a website redesign process, and while there is always room for improvement, we believe the new implementation solves more problems than it creates. This text outlines that redesign process as well as describes our next steps.

Some history

The Libraries previous website had been in existence for a number of years. More than four or five. It had been grown and maintained rather organically. After pursuing the site it became apparent its overall implementation was very much like the library's organizational chart. There were distinct areas for reference, collection development, special collections, electronic resources, plus a few others. Each section sported a different look & feel, and within each section there were wide ranges of scope regarding breath and depth. Some things were buried so deeply in the website they were too difficult to find, let alone be used and accessed. Some things were labeled "Indexes and abstracts" while similar items were labeled "bibliographic databases". Furthermore, the tools and methods for maintaining the site were as varied as its content. Some people wrote HTML by hand. Other used graphic editors. Some of the content came from the integrated library system and was converted into sets of HTML files. All of these factors resulting in a large degree of inconsistency and in-usability, probably stemming from the site's organic nature.

First steps - initial investigations

The redesign process took a very long time to complete, and it began with a set of focus group interviews. In these interviews we tried to ascertain how the Libraries could improve access to digital library services and collections. Through the interviews the Libraries was able to get direct feedback from library users and learn about their thoughts and feelings summarized as: 1) information is hard to find in/from the Libraries, 2) access to identified pieces of information is difficult to obtain, and 3) communication between the Libraries and patrons could be improved. Based on this feedback the following things become action items: 1) strengthen the Libraries' understanding of user-centered design and put that understanding into practice, 2) reconstitute the Library Web Team, 3) implement and maintain a database driven website with an optional customizable front-end, and 4) implement and maintain a current awareness service.

Second steps - further investigations

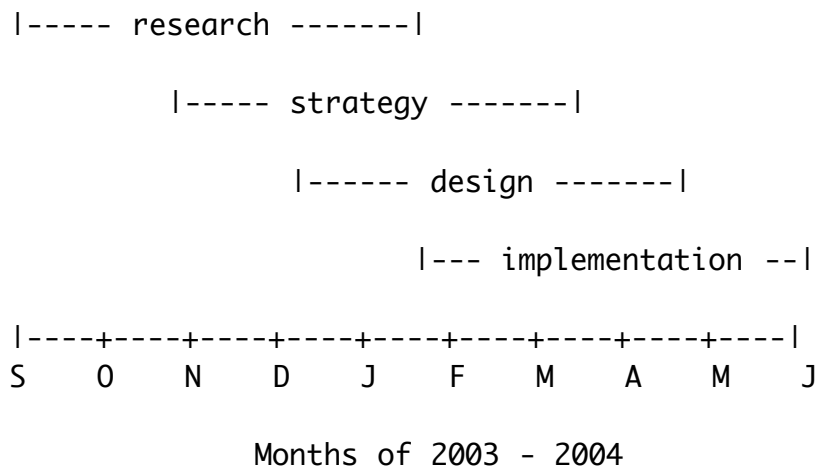
Time passed, and the Libraries re-created the Library Web Team. This team was (and still is) constituted of about twelve people plus almost another seventy five who are kept up to date via a mailing list. Of these twelve people, less than half work in the Libraries; most of the people on the Team are faculty and students. The purpose of the Team is guide the Libraries and be constantly answering the question, “Is the library’s website going in the right direction?” The Web Team “examines the website from 30,000 feet” and does not address the relative minutia of graphic design. Through a series of regular meetings the Web Team confirmed our initial investigations.

Not being satisfied, we then conducted an online survey asking respondents for demographic information, the frequency of use of various services, as well as open-ended questions regarding what they liked and disliked about the website. Nine hundred and fifty surveys were returned which included about fifty pages of narrative text and, in general, respondents thought the Libraries’ Website can be improved through:

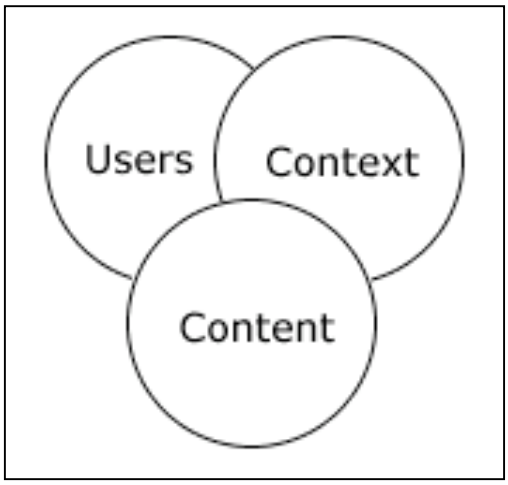
- better organization of materials
- implementing a flatter hierarchy
- providing more recommendations
- providing more self-service services
- improving the Website’s search interface
- making as much content available in full-text

A plan

By this time it was apparent to everybody in the Libraries that the website needed to change, and the following outline was created -- a plan -- to implement this change. The plan consisted of four overlapping stages: research, strategy, design, and implementation as illustrated in the following diagram:



Yet more research



In the research phase we asked ourselves very difficult questions about the fundamental information architecture of our site, specifically we asked ourselves questions about users, content, and context. "What is the purpose of the website, and how does it fit within the totality of the Libraries services and collections?", "Who are the website's primary audiences and what do they need, want, and desire?", and "What does the website contain?"

Strategy

In the strategy phase we answered the questions of the research phase as definitively as possible. We answered them in this way:

1. The purpose of website mirrors the purpose of the University Libraries: to help facilitate learning & teaching, to assist in scholarship, to supplement access to collections and service, and to facilitate communication. The role the website plays regarding collections and services is very much like the role a table of contents plays in a book; the website provides an overview and access to the information in and about the University Libraries.

2. The primary audiences of the website are the students, faculty, and staff of the University of Notre Dame. These people expect the website to help them facilitate their learning, teaching, and scholarship.

3. The content of the website is not very much different from the content of traditional, physical libraries, and therefore it contains tools to access bibliographic information, access to digital library services and collections, instructions for pedagogy, and last but not least, access to people who can help with all these processes -- librarians. The website is not designed to be comprehensive list of resources. Instead, it is designed to highlight the most significant resources and provide starting points for learning and research. The content of the website is very much like the content of traditional library pathfinders.

Design

The design phase of the project surrounded the graphic design of the new site as well as the design of a relational database used to manage lists of information resources.

To create the graphic design, and thus the templates for vast majority of the website, the Libraries hired a professional graphic designer from the University. This was extremely helpful because the graphic designer brought expertise traditionally not available in the library community. When it comes to graphic design, everybody's a critic. The graphic designer was

able to direct the library in a single direction when it came to the visual implementation of the website.

The vast majority of the Libraries website is/was composed of lists. Lists of catalogs. Lists of bibliographic databases. Lists of Internet resources. Lists of electronic and print journals. Etc. In an electronic environment lists are best created and managed through relational databases. Thus, we designed a relational database intended to maintain these lists. In a nutshell, the database contains a table for information resources, and it is essentially made up of Dublin Core elements. Just as importantly, the database also contains tables used to systematically describe the resources. These tables implement a facet/term approach to classification where any number of facet/term combinations can be created. We have facets in our system called Subjects, Formats, and Research Tools. We have terms such as Chemistry, Life Sciences, Literature, Books, Journals, Data Sets, Catalogs, Indexes, and Dictionaries. This system provides the ability to create a very broad and very shallow controlled vocabulary exemplified below:

- Subjects/Chemistry
- Subjects/Life Sciences
- Subjects/Literature
- Formats/Books
- Formats/Journals
- Formats/Data Sets
- Research Tools/Catalogs
- Research Tools/Indexes
- Research Tools/Dictionaries

The system was also designed in such a way that any resource can be associated with any number of facet/term combinations. Consequently, an Internet resource such as Project Gutenberg could be classified in the database like this:

- Title - Project Gutenberg
- Location - http://www.gutenberg.org/
- Note - A collection of public domain electronic texts
- Facet/Term - Subjects/Literature
- Facet/Term - Formats/Books
- Facet/Term - Research Tools/Catalogs

Because of this facet/term approach to classification, a large part of the design process was spent creating our vocabulary. This was and still is a challenging process because any vocabulary is organic in nature. Language is ambiguous. It is dynamic. Paradoxically, the definition of any word is not definitive. Yet some sort of consistent vocabulary was necessarily created in order to make the website easy to teach, learn, and most importantly use.

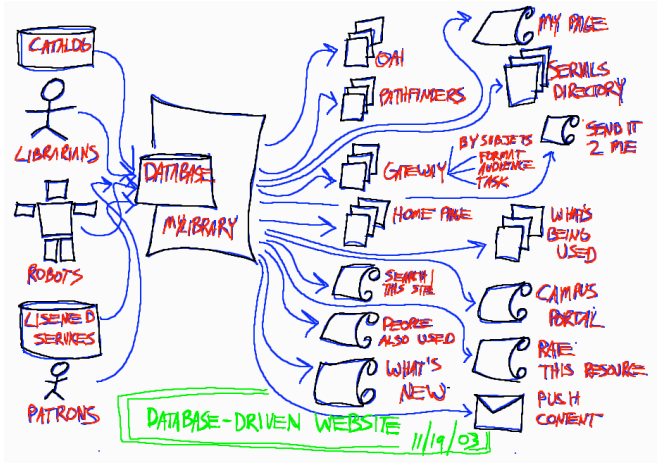
Implementation

The rubber hit the road during the implementation phase. It basically consisted of five parts: 1) retrospectively converting sets of narrative text pages to the new look & feel, 2) writing sets of Perl modules and corresponding CGI scripts facilitating input/output against the underlying database, 3) retrospectively enhancing MARC records in the integrated library system's catalog to include facet/term combinations, 4) regularly importing data from the catalog as well as doing

manual data entry into the database, and 5) writing reports against the database thus creating the website. Whew!

Retrospectively converting narrative texts, such as descriptions of departments, maps, and hours pages was relatively easy. We took the HTML templates given to us by the graphic designer and combined them with the existing text through the use of an HTML editor called Macromedia Contribute.

Writing the object oriented Perl modules and scripts used to facilitate input/output against the database represented a learning curve for a few library staff, but the time was very well spent. These Perl modules and a few example scripts are being distributed and supported as open source software under the moniker of MyLibrary 3.0.



Database-driven website

Retrospectively enhancing the MARC records of the catalog was not too challenging. We started using local field such as 695 to contain facet/term combinations. Subfield f contains the facet. Subfield t contains the term. MARC field 596, subfield d is used to denote whether or not the resource is destined for the website. If subfield d equal "Y", then this record is dumped on a daily basis to a file, and the file is imported into the website database.

Since the entirety of the website is not contained in the integrated library system's catalog, manual data entry into the database was required. Sets of Web forms were created for the process. Librarians fill in the forms according assigning titles, descriptions, locations, and facet/term combinations to information resources they desire to be available through the website.

Finally, sets of static as well as dynamic HTML pages are created from the database to manifest the website. The facet/term approach to classification allows us to create lists browsable by subject, format, research tool, and just about any combination thereof. We are also able to create a report easily interpreted by an indexer, and thus implement a searchable interface to the collection featuring Boolean logic, field searching, relevance ranking, sorting, and even a Did You Mean service a la Google.

Constant evaluation and next steps

The site had a "soft launch" the day after graduation, Spring 2004. This gave us all summer to iron out any of the wrinkles in the implementation.

From the beginning the design process was user-centered. We made special efforts to implement the features and functions described as advantageous by the students, faculty, and staff of the University. We tried to make the site usable, and consequently we did more usability tests. For example, we recently conducted a test asking participants to use the website and accomplish the following tasks:

1. What is the call number of the book entitled French Paintings by Lorenz Eitner?

2. What is the name, email address, and telephone number of a librarian who can help you with a chemistry question?

3. The book entitled British Masters: A Survey and Guide by Horrace Shipp is currently checked out of the library. Request that the library have this book returned so you may borrow it.

4. Download and/or email to yourself the full text of three scholarly articles about AIDS from at least two different journals.

5. What are the titles and call numbers of three books about the American Revolutionary War?

6. The Libraries does not own the book entitled Folding the Universe by Peter Engel (published by Vintage Books in 1989). Request the Libraries borrow this book from another library on your behalf.

7. Does the Libraries own volume 45, number 4 of the journal Challenge, and if so, then what is its call number?

8. Download and/or email to yourself the article entitled Painting Thoughts, Listening to Images by Angela Dalle Vacche found in volume 46, number 4 (Summer 1993) of Film Quarterly.

9. What is the title of at least one book put on reserve by Dr. Kimbra Smith?

10. What is the URL of Dissertation Abstracts Online, a specific index of theses and dissertations?

Of these tasks, numbers #4, #5, #7, and #8 proved to be the most difficult, but all is not lost. Most people were able to do most of the tasks. Site-wide navigation did not seem to be a problem. People appreciated the number of choices on the home page and were able to easily navigate back to the home page and begin new tasks -- people did not get lost in the site. Finding the call number of a book was easily accomplished. Identifying the contact information of a specific librarian was easy. Requesting an interlibrary loan or book recall was simple for the majority of the people.

We as a library must define for ourselves a level of success. It is unrealistic to expect 100% of the people to do 100% of the tasks. At the same time, it is irresponsible to measure success as nobody accomplishing any of the tasks. What does success look like? Do 80% of the people need to be able to accomplish 80% of the tasks? This question is still unresolved.

Based on these studies there were a number of recommendations:

1. Conduct a number of surveys, usability studies, and focus group interviews on the catalog portion of the website before the implementation of the next version of the OPAC. Such

actions will help the Libraries set priorities for the catalog's features and better insure the support of the students and faculty when the upgrade is complete.

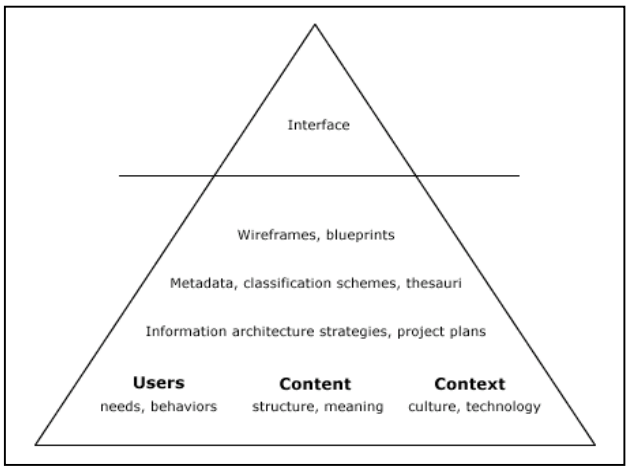
2. Integrate customization and personalization features into the website. Users don't necessarily know what databases to use, but they do know about themselves. By enabling users to log in and identify themselves we, the Libraries, will be able to recommend starting points for library research through a combination of users' University department, field of study, and rank.

3. Re-phrase, re-work, and re-examine how the organization of bibliographic databases and journals are presented on the site. Implementing a step-wise approach to database selection in the form of a mini-reference interview may be one solution. Rewording headings to be more active may be another.

4. Actively market the website. The website is not too difficult to use, rather, people do not know what it can do. By more actively marketing the site more attention will be drawn to it, and we, the Libraries, will receive more feedback regarding its functionality.

5. Continue focus group interviews and usability studies, but in the future, do the usability studies where there is a larger user population.

Summary



S.R. Ranganathan postulated in his Fifth Law that a library is a growing organism. This holds true for library websites as it does for libraries in general. At the same time, we wanted to make sure the thing we were re-creating "grew" in a way that was not only functional but usable as well. We wanted to make it easy to use, navigate through, and be seen as tool to facilitate learning, teaching, and research. By answering the questions of context, content, and users we were able to articulate a strategic plan for the website. By combining our professional judgment with technical expertise we were able accomplish our goals thoroughly and systematically. By continually repeating the process we will ensure the continued relevancy of the website. Managing websites, like reference services and collection development, are never-ending.

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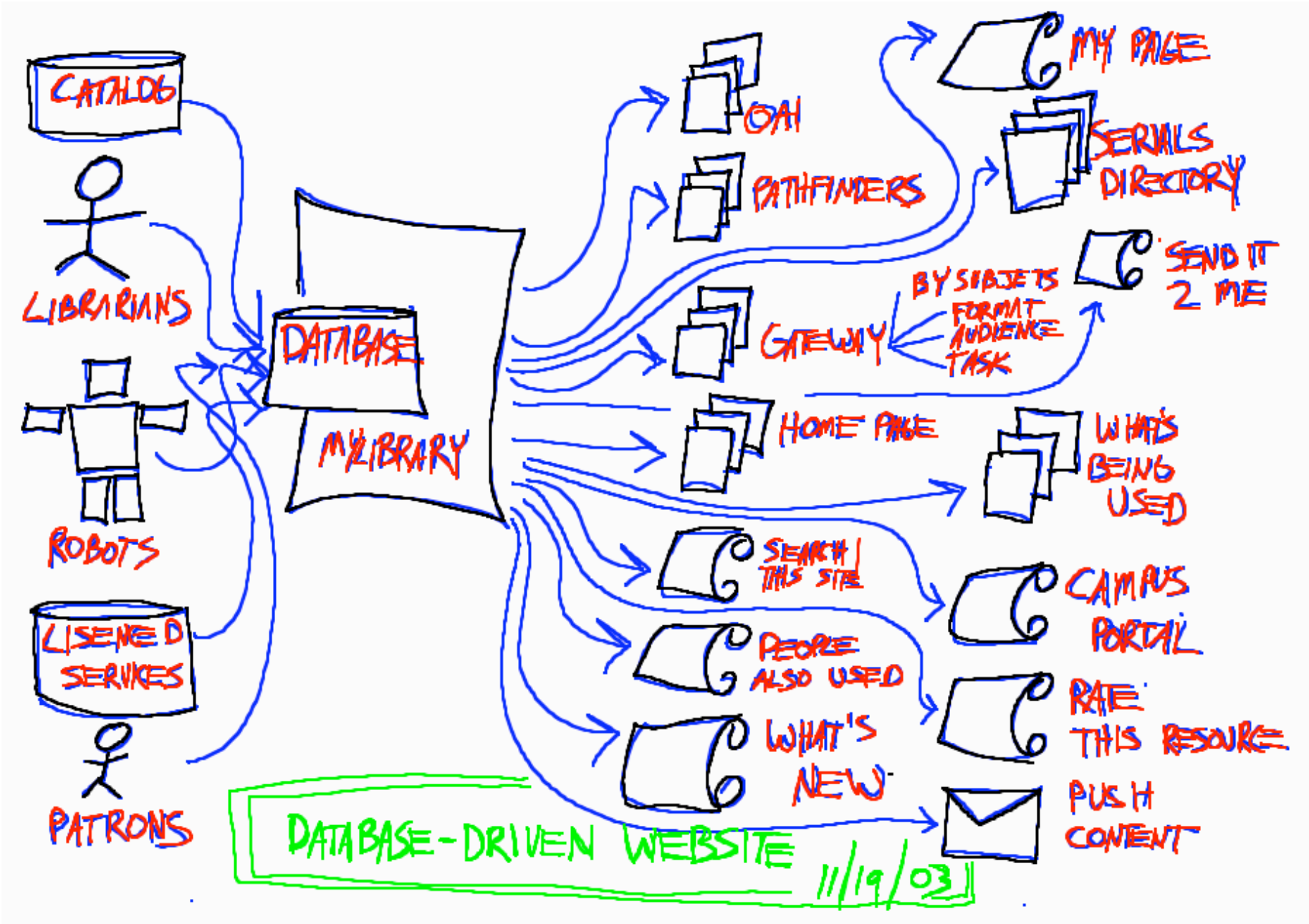
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OAI
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