Website Navigation Redesign Project Summary

Prepared by Matthew Barry, October 2023

Project Team

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Project Goal

This project was initiated to try to address functional issues with the main navigational bar on the Western Libraries website. Anecdotally, we were aware that users were struggling to find items within the navigational menus, and that the menus had become an "untended garden", with a lot of links cross-posted across different navigational headers, or in places that weren't appropriate for the resource. Additionally, nearly ever page in the site was listed from the "services" page, making the page both redundant and very difficult to use. Finally, there were frequent inconsistencies between the content of the dropdown menus in the navigation and the content of the landing pages that clicking on the menu item would take you to (which was a necessary accessibility feature). This led us to want to pursue a navigational structure that didn't rely on dropdown menus in order to improve the consistency of the experience for all users. Finally, we also wanted to create a new navigation that was backed by an intentional strategy document to help ensure that the site would be kept up-to-date in a more sustainable fashion moving forward.

Image: The library website, pre-redesign

Project Objectives

Using *Information Architecture* by Moreville et al as a foundation, or research goal was to learn more about the **context, content, and users** of the library website, and then to use this information to construct a new navigational system that's better at *meeting our organization's goals*, *expressing the content that we have*, and *meeting user needs.*
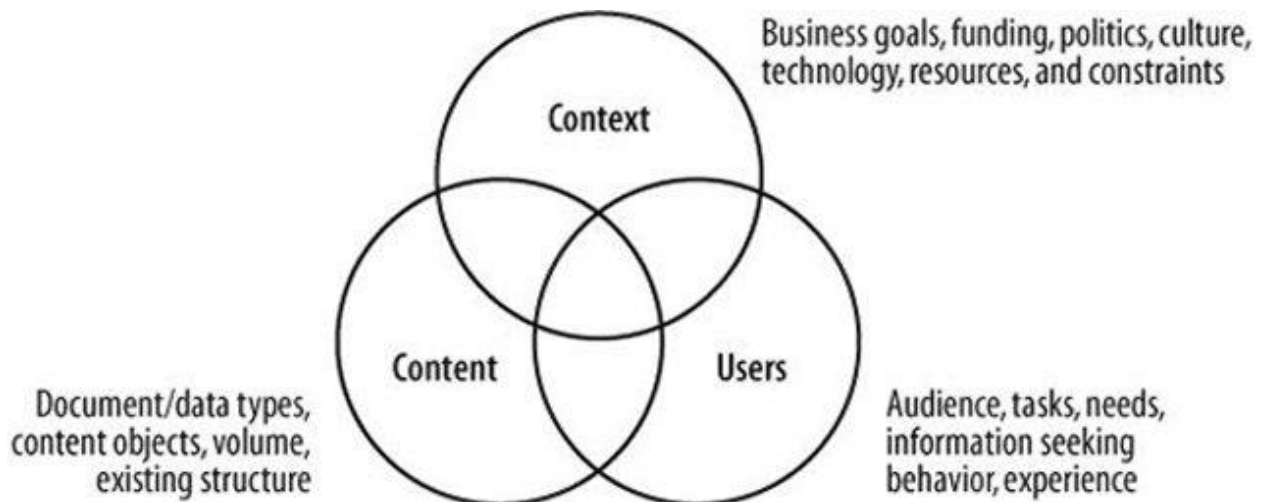
Picture: The "Infamous" Information Architecture Venn Diagram, from Information Architecture by Moreville et al.

Project Plan and timeline

The process of constructing the information architecture of the Western Libraries website followed the basic project plan of:

Research > Strategy > Design > Implementation > Administration

Research will involve reviewing existing infrastructure and content, collecting existing metrics, conducting an environmental scan of similar websites, and performing analysis and mapping of data gathered.

Strategy will involve working with stakeholders (Administration, Functional Units, and Users) to identify the strategic goals of the website

Design will use the research and strategy to create wireframes of high-level site structure and navigation, followed by additional discussions to determine which wireframes will be most successful

Implementation means applying the wireframes and strategic guidelines developed to the actual website

Administration is the means by which changes to the library website will be assessed, maintained, and adjusted based on changes in context and feedback.

The timeline of the project involved the following research activities:

1. **Library Website User Personas (previously completed project)**
2. **Stakeholder meeting: Library management –** March 2021
3. **Content analysis and benchmarking –** April 2021
4. **General user survey** – April 2021
5. **Stakeholder meeting: Western Libraries functional units, website strategy working group, web writers and auditors** – May 2021
6. **Faculty-specific surveys (informed by functional unit meetings)** – June 2021
7. **Website usage analysis** – June 2021
8. **Open card sort (round 1)** – August 2021
9. **Open card sort (round 2)** – September 2021
10. **Navigation ideation session** – November 2021
11. **Wireframe testing** – February 2022
12. **Site mapping –** April 2022
13. **Final stakeholder feedback surveys** – May 2022
14. **Implementation** – Finished June 2022

Research Methods

Stakeholder meetings

Management committee (context): The goal of this meeting was to identify project goals to ensure that the project goal aligned with university goals. To achieve this, we performed a brainstorming session to try to answer the following questions:

- What does success look like for our web presence?
- What are the goals for this system?
- Is the website a virtual branch, or is it a surrogate for our physical branches? When should it be one or the other?
- For each user group our website serves (based on user Personas): Why will this user use our website?
- Are there tasks that users shouldn't be able to perform on our website?

Functional units (content): The goal of these meetings were to learn more about the content that exists on the website, and whether there's anything we need to know that could affect the project. It was also a great opportunity to ensure that members of the library were aware that this work was happening. For these, we performed focus group sessions focused on the following questions:

- What is the purpose of your content? What are the goals and vision behind this content area?
- Who is your audience? Are there user groups missing that we want to serve? How would they differ in what they need from our website?
- How will the audience access your content?
- What controlled vocabularies do you use when producing content? How do you categorize your content internally?
- How is your content being entered into the system, and by whom?
- What content does each content owner handle?
- What is the format of your content? Is it dynamic or static?
- Who maintains your content?
- What future content or services are planned?
- Where does your content originate? How is it weeded? What are your formal and informal policies regarding content inclusion?

Website strategy working group (context):
The goal of this meeting was to understand the technical limitations of the platform or the project, and to ensure we had support for this work. In this meeting, we sought to learn:
- What is Cascade (our website CMS) capable of doing to improve the user experience?
  - Automatic search indexing
  - Advanced search features
  - Automatic site index
  - Search logs / user analytics
- What are the biggest potential problems we could encounter when designing new navigation, and what can we do to avoid them?
- Based on the limitations of the software we're using, what are some ways we can ensure that the system we create is within our ability to maintain?
- What technology platforms or channels does our web presence include? How does each platform differ in terms of content, users, or administration?

- How will content be created and managed, and by whom? Which content should be managed centrally and which should be managed by functional units? How should conflicting content requirements be handled?

Content Analysis & Mapping

For this research method, we used the "Noah's Ark" approach, adopted from *Information Architecture* (p.326). Our project team searched through the entire website to find any piece of content that had at least two examples. We distinguished content types on the following dimensions: *format, ducment type, source, subject,* and *existing architecture*.

Based on the content types we discovered, we created a content map that highlighted the relationship between *content sources, content models, content types,* and *content templates*. Based on this research, we produced the following lists, which served as a foundation for the design of our card sort studies.

Content Types
- **Landing / Index pages.** These pages contain images with headers underneath, and the headers link to other services. Examples of this type of page include location pages and service pages.
- **Service Request Forms.** These pages contain a form for requesting the library perform a specific service. Examples of this include the request for instruction form and the recommend a purchase form.
- **Contact form (active).** These pages contain a form for submitting a request for help, with the expectation of receiving a tailored response. Examples include Ask a Librarian and Consultation forms.
- **Contact directory (passive).** These pages are directories containing organized contact information, along with information about the individuals who can be contacted. Examples include the department directory.
- **Guide.** These pages contain general instructional information around a topic, resource, or subject, paired with links to external resources. Examples of these include research guides and the open access resources.
- **Tutorial.** These pages contain specific instructional information around completing a task. Examples of these can be found in the How-Tos section, Printing help, and other places.
- **Policy / Informational page.** These pages provide relevant facts about library operations or rules. Examples include library hours pages, loan policy pages, print policy pages, etc.
- **FAQs.** These pages provide information similar to what is found in tutorial or policy pages, but format them around answering user questions, and with no common narrative. Examples include FAQ – Interlibrary loans and Weldon Collections FAQs.
- **Calendar Events.** These pages provide detail about scheduled workshops, seminars, or other calendar events. Example: Research skills workshops. Note that this category currently includes both the landing page for calendar events and the individual event description pages.
- **External resources.** The Western Libraries website contains links to many external resources--- some of which are managed in-house, and others which are handled by outside entities. Examples of these include Omni, Scholarship@Western, and RACER.
- **Exhibit / Description pages.** These pages describe the contents of a curated library or archive collection.
- **Finding aids / collection guides.** These pages describe the extent of a collection in the library or archive, potentially with links to resources.

Content Areas

- Printing
- Open Access / OER
- Building Access / Hours / Locations
- Space Booking / Equipment booking
- Reference / Research Help
    - active (chat, email, consultations)
    - Passive (guides. Tutorials, faqs)
    - Programming (research skills workshops)
- Information Literacy / Instruction
- Loans / Resource Access / Fines
    - Course readings
    - Interlibrary Loan
    - Fulfilment network
- The Research Process / Citations
- Archives / Special Collections
    - Rare materials
    - Culturally relevant materials
- GIS service
- RDM service
- Research metrics
- Copyright
- Accessibility
- Institutional Repository (hosting / access)
- Library development
    - Renovation
    - User Experience Lab
- Scholarly communication

Audiences

- Students
- Faculty
- Graduates / Alumni
- Visiting Scholars / Non-affiliates
- Staff

User Survey

The user survey we sent out asked users to rank the website overall, to rank how important a number of different types of tasks were to them, and to provide general feedback on the experience of using the website.

The survey reached a total of 110 users. The majority of the responses were comprised by Staff of Faculty (49.57% of the respondents; n=57) and Graduate students (36.52%; n=42). Undergraduate students made up a smaller portion of the responses than one might have anticipated (13.04%; n=15). Only 1 respondent identified as a Post-graduate student.

The most highly ranked activities were common across user groups (Undergraduates, Graduate Students, and Staff/Faculty):

- Searching for electronic articles,
- Checking out books and other resources, and
- Using research guides.

Beyond the above top-ranking items, the following activities were of great importance to **undergrads** (in descending order):

- Finding information about spaces or locations,
- Learning about the research process (citations, finding sources, formatting, etc.), and
- Booking a study room or other space.

Graduate students' priorities diverged somewhat from those of the undergraduate students (in descending order):

- Learning about the research process (citations, finding sources, formatting, etc.),
- Asking a librarian for help or booking a consultation, and
- Viewing material in Scholarship @ Western or OJS

Faculty/staff placed great importance to these activities (in descending order):

- Publishing work in Scholarship @ Western or OJS
- Viewing material in Scholarship @ Western or OJS
- Finding information about spaces or locations

The feedback we received form users was sorted into the following broad themes:

- Users often mentioned not being able to find resources that had prominent links on the homepage, indicating that users often don't notice links on the homepage.
- People mention our navigation menus as being long and confusing (hard to find visitor page, for example). We need simple, user-focused language
- Users mentioned that pages are often buried or hidden, particularly under the Services menu. There is a need to better label and link pages and have clearer and more navigable menus.
- The inconsistent use of audience-based navigation ("Faculty Support") causes confusion and challenges for users seeking information about various resources.

Card Sort

We performed two separate rounds of card sorts, with the second round having a few modifications based on issues uncovered in the first round. The card sorts were administered over the internet using the tool *kardsort.com*, given that this project took place at the height of the COVID-19 pandemic. In the study, participants were given a set of 40 cards representing the different content areas on the Western Libraries website, and were asked to group the content into categories. This was an open card sort, meaning that users could label the categories they created in whatever fashion made sense to them. We also gave participants a short, post-sort survey.

The first round of the card sort had a total of 16 participants, while the second round had 63.

Ultimately, we uncovered the following card groupings:

In **both rounds** of the card sort, participants demonstrated **strong agreement** on the following item-to-category relationships (the percentages [%] are from the 2ⁿᵈ round of card sort):

- **Grouping 1:** "About the library / About us / general information"
    - Library strategic plan (54%)
    - Weldon renovation information (47%)
    - Library news (43%)
    - Library organizational structure (54%)
    - Accessibility (43%)
- **Grouping 2:** "Research / Research Help / Guides"
    - Research Data management (44%)
    - Research metrics (42%)
    - Systematic and scoping review (41%)
    - Library research partnerships and funding opportunities (40%)
    - Self-guided information to help with research or assignments (32%)
    - Getting help with research ("Getting research help from a librarian") (33%)
    - Open access (29%)
    - Copyright (19%)
    - Citation guides (27%)

In **both rounds** of the card sort, participants demonstrated **moderate agreement** on the following item-to-category relationship (the percentages are from the second card sort):

- **Grouping 3:** "Borrowing"
    - Borrowing technology or other equipment (16%)
    - Software borrowing and use (17%)
    - Borrowing books from other libraries (18%)

The following cards spawned many distinct categorizations, all falling below minimum 15% agreement (This is an arbitrary cut-off, just to get a general sense of low agreement cards).

- Booking a study space
- Rare and Special Collections
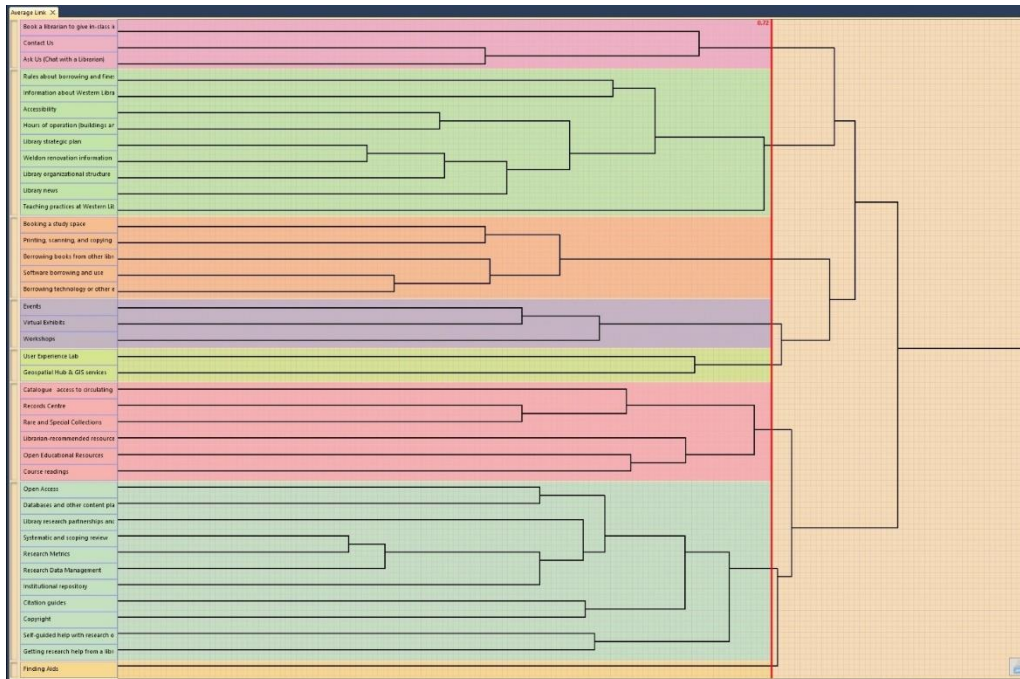- Catalogue / access to circulating materials

Image: Dendrogram chart from the second card sort showing the most agreed-upon user groupings

Based on detailed analysis of proximity matrices, correlation charts, and dendrograms generated by the card sort study (which were far too long to include in this report), we were able to identify a set of top-level and second-level categories ("content clusters") to bring to the Navigation Ideation Session.

Navigation Ideation Session

In the navigation ideation sessions, we formed three groups of library staff members from across all the functional units, and presented those groups with the findings from our card sort study. We then tasked those groups with sorting the content clusters we generated from the card sort into 3 distinct navigational designs that we could test and improve upon in our wireframe testing phase.

Wireframe Testing

For wireframe testing, we produced three prototypes of the website based on the navigation ideation session, and then held Zoom sessions with users where we did a mix of task analysis and qualitative comparative analysis---we had users attempt to complete 5 tasks on a random prototype, and then revealed the other two prototypes to them and had them complete the same tasks again, and then provide feedback on which prototype they liked best and why.
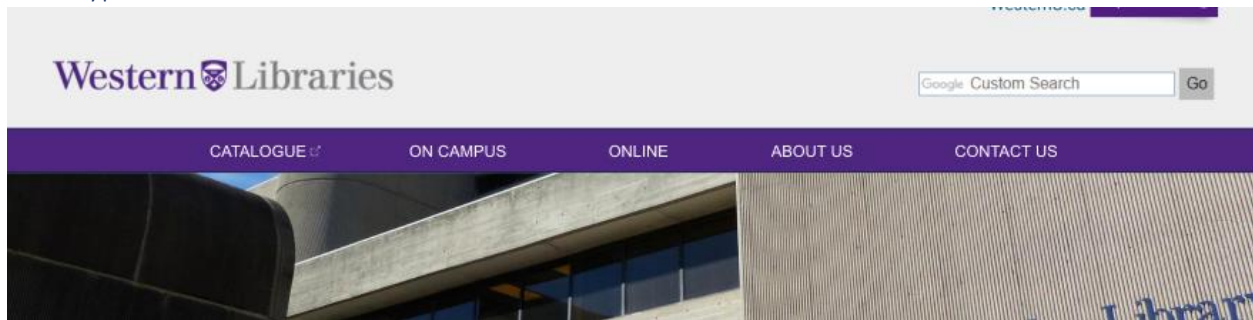
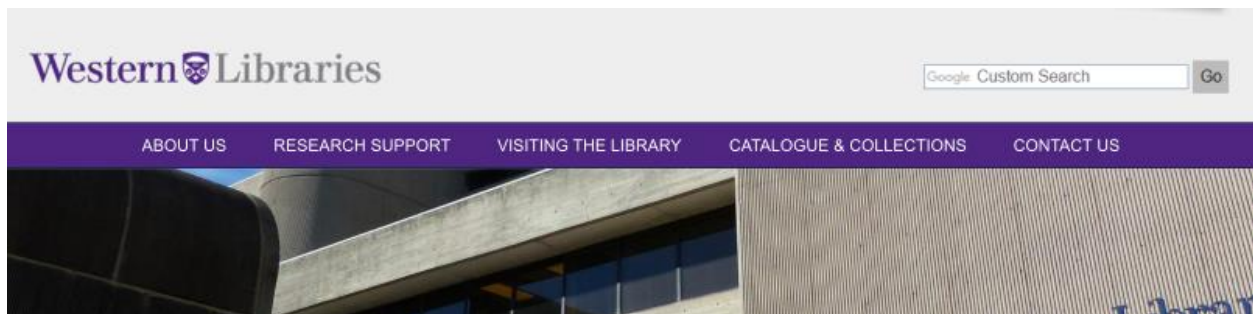Prototypes

Image: Navigation bar from prototype 1
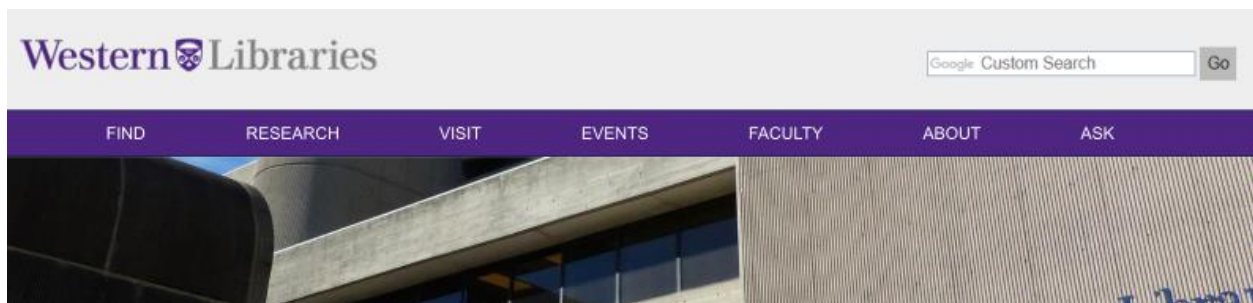

Image: Navigation bar from prototype 2

Image: Navigation bar from prototype 3

Wireframe findings

We tested our prototypes with a total of 10 participants. A majority of our participants showed a preference for wireframe 2, but multiple participants indicated a dual preference for 2 and 3, with several comments that the "Events" section from 3 in particular was worth including in our selected prototype. Based on this and other feedback received, we selected prototype 2, and improved it in a number of ways before implementing it as our new navigational structure.

Site Mapping, stakeholder consultations, & Implementation

After performing all of our research methods, we were confident in a direction forward for the new navigational structure. To implement the structure, we returned to the site mapping we had done at the beginning of the project, and worked to ensure that every page found a home in the new navigational structure---this involved going through the entire site map again, and mapping each page to each new

top navigational element, while creating appropriate second-level navigation in the process (based partly on the clusters developed during the card sort process). Once our new implementation-ready site map was completed, we performed one last round of stakeholder consultations. In these consultations, we focused on areas of the site where we had questions or concerns about how we had arranged the content, and brought them to the team, functional unit, or location that had the best claim of "ownership" over the content in question. Through targeted discussion we were able to fine-tune the second-level navigation, eliminate some redundant or outdated content, and ensure that there was consensus around the finalized design. Once one last round of changes was done, the new site was implemented in July 2022.

Outcome and Next Steps

After implementation, we performed a round of usability tests on the Catalogue & Collections, Research Support, and Visit Us pages. Based on those tests, we made the following adjustments:

- The Catalogue & Collections and Research Support pages had descriptive text added under each link to help users better understand what resources are available.
- The Visit Us page had the link to the Map of Library Locations page adjusted to look less like a banner ad, so more users would notice it.

A review of changes in page usage a year after implementation found:

- The new Catalogue & Collections and Research Support pages are now the #2 and #8 most viewed pages on the library website, respectively. Both pages have an average visit time long enough to suggest that users are not clicking into the page and immediately leaving,
- Nearly all of the Location pages have seen an increase in usage, ranging from 10% (Business) to 47% (Weldon).
- Despite having been exciting to users during our prototype testing, the Events page has not proven to be a popular destination for users, with usage ranked 32nd on our site, and with lower average view time than our other main navigation pages.

Based on both our usability tests and usage analysis, we flagged the Research Support page for a follow-up project to focus on redesigning the second-level navigation to better fit user needs. The work of making a strategy document was ultimately also flagged as a future project.