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Comprehensive Cancer Center
Background Research Report
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Summary of Client's Mission

The Cancer Center is one of the nation's leading comprehensive cancer centers, as designated by the National Cancer Institute. Taking a multidisciplinary approach to the prevention and treatment of cancer at all stages, the parent institution gathers experts from across campus to engage in collaborative and innovative research. In addition to front-end patient care and clinical trials, the Cancer Center continues these collaborations through a wide-array of research initiatives, in the medical field and beyond. The Cancer Center receives more than $160 million in grants for their research initiatives and has conducted over 350 clinical-trials to help their patients and help shape the future of cancer-related medicine.

Summary of Client's Problems

Despite being pioneers in cancer research and education, the Cancer Center is struggling with accurately representing the impact and in a user-friendly way on their website. Although they have existing *Research + Education* pages, research faculty have criticized these pages for making information difficult to find, poor organization, and inadequately describing the breadth of their research. The existing sections also do not properly address a substantial $150 million gift given by generous donors, finalized in March 2018, that has helped fund extensive new collaborations and research opportunities. The client is looking to find new ways to organize their content, feature more of the current research initiatives, and make the site accessible and inclusive to all users.

Questions

This background research report will address the following questions:

1. Which institutions are considered competitors to the Cancer Center?
2. Which of the client's design and user experience challenges can be addressed through competitive analysis and benchmarking?
3. How does the Cancer Center's website compare to those of other large research universities or comprehensive cancer centers? What are the strengths and weaknesses, norms, similarities, or differences between these sites and the client's site?

Introduction – Why Benchmark?

Benchmarking, or competitive analysis, is the process of "taking a measurement against a reference point" and is an important part of helping an organization reach its goals when implementing fundamental changes (Cheney 2). Comparing a client organization to other similar institutions provides an opportunity to analyze how potential problems are already being solved and find ways to leverage these existing solutions, helping organizations save time and money when trying to implement design modifications.

Per Amy Schade in "Competitive Usability Evaluations: Learning from Your Competition," a successful evaluation focuses on two to four competitors, depending on the timeline and budget for the project. Competitors can be identified through several means, including: Do they offer similar content with their product? Does their product offer similar functionality? Will your users potentially compare your product to theirs? Although these are important characteristics of comparing two organizations from the same sector, Schade also suggests considering "tangential competitors" if the project allows, as they may offer interesting insights from "different industries" that could be applied to your organization ("Competitive Usability Evaluations").

In terms of features to analyze, it is recommended to narrow the focus of elements to the "nettlesome practices" that most disrupt the user experience (Cheney 4). The focus should then be to compile metrics that help identify "strengths and weaknesses, trends, patterns, and differences" that may help pinpoint missing opportunities or components in the clients' product (Schade, "Competitive Usability Evaluations"). Overall, when completing a benchmarking exercise, it is important to remember that the result of competitive analysis is "not to declare a winner," but to find ways to improve the design under review (Schade, "Competitive Usability Evaluations").

What Solutions Might Be Identified Through Benchmarking?

In our initial client scoping, the Cancer Center described several aspects of their design problem that can help focus the benchmarking process detailed in this report. Their primary focus in re-designing the *Research + Education* pages of their website is to improve the user experience through information architecture, navigation, and "content strategy" updates (Matthews, "Proposal"). As these challenges are fundamental aspects of the UX design process and data organization norms, it is expected that potential solutions for these challenges may already be

implemented by other institutions. By analyzing the competitors' website structure and design, we may be able to build on existing solutions in our suggested re-design with the client.

Who Are The Competitors?

The Cancer Center provides many avenues for determining potential competitors. Looking at the Cancer Center as a component of the larger institutional community, we can investigate other large universities with similar medical systems. The Cancer Center is also a NCI-Designated Comprehensive Cancer Center, a designation given by the National Cancer Institute at the National Institutes of Health. This designation (with some variations) has been given to 71 different institutes across 36 states and the District of Columbia, any of which may be valid competitors for comparison ("NCI-Designated Cancer Centers").

Considering the larger University of Michigan community, there are also some campus partners that may be referenced as competitors. Many research divisions exist in different departments and units across U-M's campus, such as U-M's Precision Health, the Institute for Healthcare Policy & Innovation, and the Michigan Institute for Clinical & Health Research. As research units under the University of Michigan umbrella, their websites highlight similar information about ongoing research initiatives, cross-campus collaboration, grant funded work, and available educational opportunities.

When communicating via email following our initial meeting, our project contacts provided a number of potential benchmarking institutions, specifically noting the University of Chicago, Penn Medicine, and the University of North Carolina as external peer competitors and the U-M Office of Research and the U-M Biosciences Initiative as internal University of Michigan peers (Fawcett). When determining benchmarking opportunities for this project, taking our client's expertise into account is valuable in that it provides an opportunity to consider how the client considers their own work in comparison to their competitors and collaborators in the U-M system and the larger sector of cancer research.

For the sake of this report, we will be comparing the Cancer Center *Research + Education* website to two main competitors:

Penn Medicine Abramson Cancer Center

Like the Cancer Center, the Penn Medicine Abramson Cancer Center is also a NCI-Designated Comprehensive Cancer Center ("NCI-Designated Cancer Centers"). The Abramson Cancer Center's website highlights several similar features to the Cancer Center website, including specific pages for *Cancer Research* and *Education and Training*. Their site demonstrates a more user-friendly approach to information hierarchy and design.

University of Michigan Office of Research

The U-M Office of Research, referred to as UMOR, is an internal competitor within the larger University of Michigan research community. Like the Cancer Center, their website features information pertaining to many different campus research initiatives. Their site utilizes some interesting strategies that may work as potential solutions to our client's design problem, including featuring graphics with key *Facts & Figures* that detail use of grant dollars, and announcements that highlight newly developed initiatives and progress.

How Does The Cancer Center Compare?

In the project scoping document provided by the Cancer Center team, one of the top priorities for our final recommendations is determining how to improve the user experience and information architecture of the *Research + Education* site (Matthews 1). Looking more closely at the Penn Medicine Abramson Cancer Center and U-M Office of Research websites, we can glean some ideas of how to better serve the Cancer Center *Research + Education* users through information hierarchy and organization, navigation, and content strategy.

Information Hierarchy and Organization

Our client explicitly stated that many of their users, primarily research faculty, are "dissatisfied with the organization" of the current *Research + Education* site (Matthews 1)*.* Examining the existing site, we can see that they use five audience-based categories to delineate their main topics on the *Research + Education* landing page. Although these main categories are generally clear in defining their intended audiences (*Research*, *Education*, *Resources*, etc), the pages linked beneath each section are less clear and provide no supporting information. Essentially, the landing page is a list of hyperlinks. Additionally, there is no organization of these subtopics which can require effort in looking for specific topics. Looking at the current site in the context of

Morville et al.'s breadth-and-depth hierarchy models, where breadth and depth refer to the number of options at each level and the number of levels respectively, the current landing page is broad-and-shallow (119). Under these circumstances, Morville et al. suggest that users may be overwhelmed by the number of options available to them (Morville et al. 119).

In comparison, the Penn Medicine Abramson Cancer Center's *For Researchers* page is more comprehensive and inline with Morville et al.'s model of a narrow-and-deep hierarchy, where users have fewer options to choose from on the landing page, but can follow a longer and more meaningful thread through additional site pages (119). Here, rather than seeing all relevant links on the landing page, users are encouraged to click through the main topic to the subtopic page. Users need only click through one level of the hierarchy before reaching more specific and in-depth information about their chosen topic. Each following subpage then further extrapolates on the topic or directs the users to other parts of the site. This hierarchical layout is beneficial in providing a clean and concise informational structure as users begin their visit on the site.

The UMOR site is similar to the Abramson Cancer Center in how it handles its landing page, by presenting broad categories that lead to detailed subpages. The UMOR site employs a more graphic approach to presenting these initial categories, showing punchy images of students, researchers, and locations on U-M's campus with written headings. While this is a nice way to make the site more engaging, it is also visually overwhelming and makes it more challenging to navigate, especially as users have to hover over images in order to view supporting details for each topic. Despite looking more engaging, there is a trade-off with this design as it requires more time and effort on the part of the user to find their target information.

Between the two competitor sites, it may be worth considering improvements from both in our final recommendations to the Cancer Center. While the UMOR site is visually exciting, it is also overwhelming and requires more effort from the user. The Penn Medicine Abramson Cancer Center's *For Researchers* page is very easy to navigate, but is not particularly visually appealing and does not include images. A combination of these different concepts may provide a better, more engaging, and more organized user experience for *Research + Education* visitors.

Navigation

Once you start exploring the information on the *Research + Education* page, it is challenging to understand exactly where you are in the larger context of the site and these steps highlight some of the biggest weaknesses of the current design. To expand on this, there are a few different areas of concern. First, the category hyperlinks on the landing page direct to a number of different types of resources across disparate areas of the Cancer Center website, including additional HTML web pages, Google Docs, and Google intranet web pages. There is also poor mapping between the landing page and the linked subpages. For example, when you move from the *Research + Education* landing page to the *Research Members* subpage, options within the side menu don't reflect options that were available on the landing page. Where users may expect to see a breadcrumb menu that could help them navigate back or see the same category breakdown as the landing page, the side and top navigation have been replaced by a new-to-the-user menu. This menu features different subsection topics, such as *Research Programs* and *View our Researchers* becoming *Research*, *Research Programs*, and *Immunotherap*y.

Although these additional topics may be of interest to an individual user, it is difficult to contextualize them with the broader categories used elsewhere on the site. In addition, subtopics from other *Research + Education* categories are combined and recategorized when moving deeper into the site. Where *Shared Resources* and *Funding Opportunities* are listed under *Resources* on the landing page, they are then clumped with *Research* subtopics on the other pages. On the current site, the configuration and labeling of pages makes it difficult to know where to find the target information, how to navigate between pages, and how to return to the starting point of your search.

Both the UMOR and Penn Medicine Abramson Cancer Center websites demonstrate more functional navigational strategies, including use of breadcrumb and side menus, as well as expandable menus in the body of subpages. Both competitor sites use local navigation menus for subpages that help solidify the affiliations between categories and the subtopics available to explore in these sections. The information available on the landing page is equally accessible as you move through different areas of the site. The breadcrumb menus at the top of each sub-page also facilitate easier navigation through the site, making it easier to understand the pathways between pages and opportunities to quickly return to the previous page.

Regarding expandable menus, Penn Medicine Abramson Cancer Center's *Education and Training* page exemplifies this concept well. Rather than crowding the page with information for many audiences, there are expandable categories, allowing the user to self-select what material to access.

In contrast, the Cancer Center *Education and Training* page is structured the same way as the landing page, with lists of links and no additional supporting information. By employing expanding menus on individual pages with complex and detailed information intended for various audiences, copy can be organized more efficiently, users can more quickly navigate to information that is relevant to them, and sprawling pages can be consolidated. The Cancer Center site can benefit from applying similar universal and local menus as its competitors, making information equally accessible on all pages throughout the site.

Content Strategy

Our clients are also interested in how to make website content more representative of the innovative work currently being done thanks to the Cancer Center research grants started in 2018. The current site was designed prior to this grant funding taking effect and is mentioned only on the page detailing the donation. Overall, this component is not addressed adequately elsewhere in the existing site design.

Looking at the UMOR *Research Initiatives* page provides further insight into opportunities that highlight information on grant funding and innovation. The *Research Initiatives* page is straightforward, but effective, and includes a short description of how the University is involved in multiple research efforts, a *What's Happening* panel showing recent research updates, a by-the-numbers look at research expenditure, amount of lab space, rankings of graduate programs, and research institutes across campus. Similarly, the Penn Medicine Abramson Cancer Center lists descriptions under each category link on their landing page, providing additional context for each section and information how Penn Medicine is involved in these areas of research and education. It is a simple, but effective way of sharing the Abramson Cancer Center's mission and research accomplishments.

Ultimately, both of these competitors offer some ideas that could be adapted to the Cancer Center site. First, implementing a similar *What's Happening?*as used by UMOR can help promote new initiatives brought about by the family gift. Following the Penn Medicine Abramson Cancer Center's lead in providing short descriptions beneath each category link is another

simple way to help share the Cancer Center's unique collaboration initiatives, as well as helping users navigate through the site and find relevant information more easily.

Conclusion

The Cancer Center's *Research + Education* page is a robust and thorough resource of information for its community of researchers, trainees, and staff. However, there are many different approaches that the site can take to making this information more comprehensive, accessible, and engaging for the primarily-internal users accessing the site. Looking at similar features from the Penn Medicine Abramson Cancer Center and University of Michigan Office of Research websites helps identify potential solutions that could be implemented in the redesign of the Cancer Center webpages. These tactics include restructuring the *Research + Education* landing page, adding additional descriptive copy to each category heading, creating more detailed local navigation and breadcrumb menus for easier navigation, designing additional opportunities to highlight the exciting new initiatives and opportunities brought about by the family gift, and celebrating the Cancer Center's institutional excellence.

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