

Jaci Paige Wilkinson. Low-Hanging Fruit and Pain Points: An Analysis of Change Implementation Resulting from Flash Usability Testing at Duke University Libraries. A Master's paper for the M.S in L.S. degree. July, 2015. 89 pages. Advisor: Ronald E. Bergquist

This paper describes a mixed method study of change implementation resulting from flash usability testing at Duke University Libraries. Flash usability testing, also known as guerilla or on-the-fly, is a method that allows researchers to collect large amounts of data in a short amount of time with quick, unplanned think-aloud tests in a high-traffic library space.

Data from usability reports was triangulated with data from interviews with members of Duke University Libraries' WebX team. WebX is a cross-departmental team that acts as "functional owner" of the libraries' web presence. It commissions flash usability tests and uses the data to implement changes or spur further research. Interviews incorporated a card sort of the recommendations from every flash usability test. The paper unearths myriad attitudes toward the libraries' web presence and perceptions of the role of usability testing in the academic library. Additionally, the paper details the subsequent effectiveness of change implementation.

Headings:

User interfaces (Computer systems)

Web development

Websites -- Management

Usability testing

LOW-HANGING FRUIT AND PAIN POINTS: AN ANALYSIS OF CHANGE
IMPLEMENTATION RESULTING FROM FLASH USABILITY TESTING AT DUKE
UNIVERSITY LIBRARIES

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Introduction

Guerilla, flash, sprint, pop-up, on-the-fly. These words are frequently used to describe a certain kind of usability testing that involves short, unplanned think-aloud tests of web interfaces set in the participant's native environment. This design is valued in the commercial world because it is cheap, requires little planning, and yields quick results. "The bottom line? Guerrilla usability testing presented itself as an easy-to-perform technique for refining the user experience. It helped us validate (and invalidate) critical assumptions at cheap cost and with rapid speed." (Simon www.uxbooth.com) Flash testing originates in an environment where the developer's time cannot be wasted; with flash testing, simple prototypes and wireframes can receive feedback before too much effort and money is put into fleshing them out.

Duke University Libraries' Assessment and User Experience department (AUX) was established as a department August 2013. From early in its creation, department head Jessica Smith¹ prioritized the use of flash testing to spearhead improvement in the library's web services and resources. Jessica and one other member of the AUX typically do the data collection: Jessica acts as test administrator and another staff member or graduate student worker takes notes. Testing is held in high-traffic areas at Duke

¹ The interviewees' first and last names used in this paper are anonymized. The names are consistent, but they are made up names, so that they are a more neutral identifier to permit the reader to focus on the content of what the participants had to say, rather than on the personalities of the participants.

University Libraries like the Perkins Library lobby and the Lilly Library lobby (the main and undergraduate libraries, respectively).

Data collected from flash usability testing is compiled into a report structured into lists of key findings and key recommendations. Jessica presents the report to a team that includes public service librarians, members of AUX, and members of the libraries' IT departments. Called WebX, this team is the deciding body for change implementation that results from flash usability testing. Involvement in flash usability testing is only one component of WebX's work. Its charge states, "In close collaboration with the Libraries' Information Technology Services and Collection & User Services leadership, the Web Experience Team (WebX) oversees and manages the Libraries' existing web interfaces and develops appropriate strategies for incorporating and evaluating changes in the most effective manner." (WebX Charter 1) WebX also uses flash usability testing reports to generate ideas for new usability testing or make decisions to do follow-up testing on unclear or important findings.

The importance of the WebX team in the advancement and improvement of Duke University Libraries' web presence cannot be understated. When they discuss the flash usability reports, for instance, large and small decisions are made that affect the day-to-day experience of the Duke University Libraries for every user. These decisions arise primarily from the recommendation sections of reports. Graduate students working in AUX analyze the raw data, compile findings and recommendations, and write the final report under Jessica Smith's supervision. Recommendations are the phenomenon of interest in this study because they are the units used to impel change within WebX meetings.

Duke University's own long-term strategic planning reflects the importance of assessment and user experience. Strategic direction number one of *Duke University Libraries' Strategic Plan 2010-2012* is "Improve the User Experience". Part 1.1 details that Duke will "Frame a systematic process for collecting and sharing information about the ways library users work." (1) Part 1.3 states that Duke will "Institutionalize innovation by employing results from user assessments to improve procedures and services quickly." (4) WebX embodies the idea of "institutionalized innovation" through its interdisciplinary stakeholders. Flash usability testing proves that "quick" and efficient improvements are valued.

The institutional support and internal infrastructure are in place to propel a culture of usability-powered innovation. But how does Duke University Libraries meaningfully and effectively analyze data and implement change? This paper analyzes internal artifact data in the form of reports and notes and triangulates it with interviews and a card sort. Seven members of the WebX team were interviewed by the researcher. Each interview included a card sorting activity of the ninety-three recommendations found in all fourteen flash usability tests. Each recommendation was color-coded into one of five categories: TEXT, USE, INTERFACE, FEATURES, and SYSTEM FUNCTION². The card sort activity, fully explained in the methodology section, was meant to be as interactive as the interviewee wished and was meant to mainly serve as a conversation shaper and memory booster. See Appendix A for the complete list of categorized recommendations.

The data collection described above served two purposes: first, to glean individual members' perceptions regarding the effectiveness of WebX and flash usability testing.

² Throughout the paper category titles will be capitalized

This is an important task because each interviewee represents a perspective that is indicative of his/her job title, home department, and resulting viewpoint. Second, the interviews allowed the researcher to track lifecycle of a recommendation as remembered and perceived by each interviewee. Understanding patterns of how recommendations are chosen for implementation and how they are cast aside is complex and difficult to track on paper or with individual memory. Using the card sorting activity, interviewees reflected on past decisions and discussions as well as identified trends in those decisions and discussions.

In analysis of change implementation resulting from flash usability testing, the following research questions are considered:

1.1 Research Questions

1. What changes have come about in the last year as a result of findings from flash usability testing?
2. How does participating staff perceive the effectiveness of flash usability testing?
3. What trends are there in content of implemented recommendations or discarded recommendations?
4. Could WebX improve how it analyzes, interprets, and makes decisions regarding data collected from flash usability testing?

By answering these questions the study hopes to describe how flash usability testing has affected Duke University Libraries' online service and resource access.

Ideally, the results of this study will generate recommendations that are of use not only to Duke University Libraries but also to other assessment and user experience departments

in academic libraries interested in successfully implementing change from data collected in flash usability testing.

Literature Review

The nature of flash usability testing as a usability methodology is little studied in academic library literature. However, interest and scholarship in the realm of library usability testing and assessment has exploded in the past fifteen years. Galina Letnikova identifies myriad reasons for the increased interest in library usability and assessment in her article “Usability Testing of Academic Websites”: “The need for a usable and intuitive academic library Web site arose from the fact that the majority of the academic libraries’ Web sites were initially designed from librarians’ perspectives without a focus on customer centered activities.” (53) In academia, web use by students has skyrocketed due to near-universal laptop ownership, campus-wide wireless access, and the popularity of the internet.

As students increase their use and preference for web-delivered services, the academic library community saw that it must modify and promote its services as well as promote them by harnessing the internet’s popularity. But students aren’t the sole users within the academic library user ecosystem: “the diverse communities of patrons in academic libraries, from first-year students and visitors to faculty scholars and doctoral students, push library website designers to take a complex set of resources often designed for experts and organize this set to be accessible to everyone. Academic library websites need to be useful, usable, and accessible to an increasingly diverse patron base while still being the go-to portal for in-depth research in scholarly fields.” (Gallant & Wright

49). Libraries have a desire to understand the online activities and needs of the wide variety of academic library users.

The Internet's popularity is in large part due to successful commercial research into user needs and habits. "...The rapidly expanding online retail market has forced large commercial organizations to conduct usability testing of their Web sites in an effort to lure more business by enabling customers to find their products and services intuitively... Commercial search engines compete with libraries by offering the student an easy way to find information." (Gallant & Wright 54) The advancements and ingenuity seen in commercial online services has raised the expectation of library patrons exponentially. "Considering the extraordinary pace with which knowledge is moving to the Web, it is equally difficult to imagine what an academic library will be and do in another decade." (Campbell 29) Academic libraries must innovate their web services lest their largest clientele (higher education students) default to commercial search applications and non-peer reviewed sources.

Compared to most academic libraries, commercial resources have large budgets for consumer research, marketing, and usability testing of web services. In addition to competition with better-funded commercial sites, libraries are faced with rising costs of providing up-to-date online resources. Faced with this bevy of costs and competition, libraries must carefully weigh how best to innovate their services to prevent obsolescence.

Commercial web services exert pressure externally on libraries but pressures within also influence the development of assessment and user experience services within the library. In his 2007 article "Evidence Based Librarianship: The Leadership

Challenge”, Amos Lakos states that “libraries, in general, recognize the value of collecting and using data for planning and decision-making, but they do not do this systematically or effectively.” (431) Lakos suggests that libraries adopt a “culture of assessment” in which “decisions are based on facts, research, and analysis” instead of “instincts, unverified assumptions, unfocused discussions.” (432) Motivation springs from the desire to “understand changing customer expectations and values” (433). Lakos’ article emphasizes the importance of management recognizing and investing the energy and resources into creating a “culture of assessment”.

A large portion of usability testing articles in academic library literature are motivated by a complete, one-time overhaul of a library’s website as opposed to a long-term plan for iterative testing. Gallant and Wright observe, “Many articles focus on one redesign, the effectiveness of a new piece of usability-measuring equipment, or recommendations for overall site design based on a test or a set of tests.” (53) Long-term goals and organization for consistent usability testing demonstrate a commitment to the previously mentioned “culture of assessment”.

“Planning Your Way to a More Usable Web Site”, a 2003 article in the magazine *Online*, demonstrates the archetypal language of usability testing planning. Authors Pamela Gore and Sandra G. Hirsch create the following list for a basic usability assessment plan: “(1) goals and objectives, (2) target population, (3) type of assessment, (4) frequency, (5) test environment/equipment requirements, and (6) results and recommendations.” (as quoted in Wright & Gallant 54) Point six doesn’t seem to take the plan to a natural conclusion. There is no step seven that explains the function of results and recommendations. Wright and Gallant use this plan for a case study on Odum

Library within Valdosta State University and the Valdosta State University Information Technology office. Under each point the authors list the action taken to follow that point and the action under point six is “Test administrators will report results to the User Experience Testing Group, who will share the results with library faculty and staff. The User Experience Testing Group may share results with other departments included in website redesigns when necessary, including Web Services and Information Technology.” (56) This action doesn’t mention what comes after sharing results and recommendations. Although the structure of Gore and Hirsch’s basic usability assessment plan is meant to be flexible and basic, the exclusion of implementation leaves a hole in the narrative of systemic change.

Non-academic texts from usability professionals are a popular alternative source for information and advice on conducting usability testing in academic libraries. Within the Assessment and User Experience department at Duke University Libraries multiple staff members have Krug books in their workspace that are cited with regularity. Steve Krug’s book, *Don’t Make Me Think* is a step-by-step guide for organizations who don’t have usability professionals. A theme prominent throughout Krug’s work is that usability testing can be so cheap, easy, and effective that there is no excuse not to do it. In *Don’t Make Me Think*, Krug includes a comprehensive how-to for data analysis and change implementation. One of his “maxims” is “focus ruthlessly on fixing the most serious problems first.” (chapter nine) The problems are first identified after each test when the tester lists the three biggest usability problems they perceived in the test. Krug provides a template for that document in the book. As soon as testing is complete, Krug

recommends compiling the group of observers and testers to compile and rate the ten worst problems.

Organizations naturally incline to fix small problems with easy solution and little impact instead of focusing on difficult problems. Krug's maxim is to fight that habit and to instead focus on serious problems that have a larger impact. To focus less on what he calls "low-hanging fruit", Krug recommends, "Keep a separate list of low-hanging fruit. You can also keep a list of things that aren't serious problems but are very easy to fix. And by very easy, I mean things that one person can fix in less than an hour, without getting permission from anyone who isn't at the debriefing." (chapter nine) The idea to keep serious, uncomfortable, and difficult problems as center point is demonstrates that although Krug claims usability testing is quick, easy, and cheap the conclusions they draw might not be.

The first bullet point in Krug's list of steps to post-test debriefing is "Go around the room giving everyone a chance to say what they thought were the three most serious problems they observed (of the nine they wrote down; three for each session). Write them down on a whiteboard or sheets of easel pad paper... And they have to be observed problems; things that actually happened during one of the test sessions." (chapter nine) Krug assumes that every person at the debriefing, where decisions are made to implement change from testing, was physically or virtually present for at least part of the testing process. The power of personal observation is important to Krug to the extent that he specifies "And they have to be observed problems; things that actually happened during one of the test sessions." (chapter nine) This anchors the debriefing process to data instead of personal opinions or recommendations a member might have.

Steve Krug says to stop a meeting once, “you feel like you’ve allocated all of the time and resources you have available in the next month for fixing usability problems... The group has now decided what needs to be fixed and made a commitment to fixing it.” Like other usability test how-tos, Krug doesn’t detail how best to keep track of changes once they are made or to insure that they have been completed.

Discussion and analysis of task management in change implementation is more commonly found in performance measurement literature. The field of performance measurement arose out of the commercial sector and has been adapted to fit the information driven, instead of profit driven, culture of academic libraries. Performance measurement, as defined by Andy Neely et al. in the article “Performance Measurement System Design”, writes, “it is the process of quantifying action, where measurement is the process of quantification and action leads to performance.” (Neely et al.

80) Efficiency and effectiveness are quantified to determine success in action. When applied to usability testing, performance measurement literature looks to quantify the actions of participants in usability tests. Measures of efficiency, effectiveness, and satisfaction in the performance of users on tasks relay the best, more important data to researchers. However, performance measurement literature has not been used to discuss what happens after the usability test is over. The performance of those individuals who are implementing change from usability testing is not scrutinized and there is no measurement of action taken from usability testing. Without any measurement it is impossible to quantify the true impact and cost of usability testing. The true cost is also obscured when factors such as staff time taken to implement changes is not measured. Actionables set aside for further discussion or future consideration aren’t a possibility.

Content analysis of annual reports and strategic plans in literature demonstrates correlation between a library's credibility and the specificity of the plans included in those documents. In the paper "Towards the Assessment of Strategic Credibility in Academic Libraries", Gail Staines writes, "For those libraries that developed strategic plans that were included in this study it was uncovered that each has a plan of action and that plan of action is delineated in terms of goals, objectives, and strategic directions." (Staines 169) As previously noted, priority one of Duke University Libraries' Strategic Plan is "Improving the user experience". Given the priority of user experience in Duke University Libraries, connecting large strategic goals with demonstrative data builds the library's credibility

A 2015 survey of ACRL institutions' strategic plans identified top trends impacting academic libraries. Laurie Saunders writes, "Attention to technology was surprisingly low in these plans. While physical space was among the top three areas, virtual space was only mentioned in just over half of the plans, and fewer than one third discussed usability testing or otherwise assessing and enhancing the user experience online" (Saunders 290). Saunders survey of strategic plans only includes 63 of the 170 member institutions but this observation attests that there is little connection between strategic direction in the realm of user experience and therefore less scrutiny on data deliverables in user experience. Duke University Libraries' strategic plan is unique and progressive given the emphasis on user experience, therefore, its implementation of that strategic plan is all the more important and visible.

A literature review demonstrates that there is ample space in the scholarly realm of academic library usability testing to not only study the particular nature of flash

usability testing but also to pay special attention to how institutions use collected data from usability testing to formalize change and innovation.

Methods & Data Collection

To detail the mixed methods used and the data collection structured by those methods, the following section is split into three parts that correspond chronologically to when data was obtained. First, existing artifacts in the form of flash usability testing reports were utilized to collect data on the actionables that resulted from this form of testing and how it was presented to the WebX team. These actionables are the recommendations sections of each report. Second, the researcher created a card sort and categorized recommendations from all reports. The card sort bridged existing artifacts with the third section, the interviews, because it served as an interactive discussion piece for a portion of the interview process. Interviews with WebX team members filled in gaps found in the reports as well as provided an opportunity for individual perspectives to arise.

Another key reason mixed methods and triangulation of data are employed is to reduce insider bias. Although the researcher's status as insider is a benefit for interpreting data, insider bias is of concern. The phenomenon of studying one's own field is sometimes known as "practitioner's inquiry" and it is common in education (Greene 1). Greene, in her article "On the Inside Looking In: Methodological Insights and Challenges in Conducting Qualitative Insider Research", cites triangulation as a method to reduce bias. Triangulation refers to "the researcher's use of multiple sources, methods, investigators, and theories" (Denzin, 1978, as cited in Lincoln & Guba, 1985, 305). Wildemuth supports the use triangulation and mixed methods as well, particularly when

existing artifacts are a source of data collection. She writes, “in essentially every study, data obtained from documents and artifacts will need to be analyzed in combination with data obtained using other methods... data from multiple sources are integrated to draw more valid conclusions.” (160) This paper employs triangulation and mixed methods to reduce bias and create a more comprehensive picture of the phenomenon of interest.

1.2 Existing Artifacts: Usability Reports

As explained in the introduction, the analysis of raw data from flash usability testing at Duke University Libraries is recorded in the form of reports. Reports and the raw data used to write them are stored in Sharepoint, a Windows-based document sharing application. Refer to Appendix A and B for examples of full reports; they are particularly interesting to compare because each has a different author and there are differences in structure and content. Each report has an introduction that explains the impetus of the test, the setting, and participant demographics. The body of each report is made up of the key findings and key recommendations. An appendix usually includes the script used by testers.

In *Applications Of Social Research Methods To Questions In Information And Library Science*, Wildemuth identifies two primary steps when considering the use of what she calls “dead data”: clearly conceptualize the phenomenon of interest and “define the link between the phenomenon of interest and the documents or physical traces you will use to study it.” (159) The phenomenon of interest is the decision making process

and resulting changes made resulting from flash usability testing. Because the reports compile raw data from testing and communicate it to the decision makers and change makers they are the physical traces of that phenomenon of interest.

Although insider bias is of concern, there are certainly benefits to insider status in interpretation of data. H. Russell Bernard writes, “as people interact with information, they often leave physical traces of their behavior behind” (as quote in Wildemuth,160). In order to properly interpret those traces, Wildemuth writes “to interpret the meaning of a document correctly, the researcher must know quite a bit about the social context in which it was created.” (160) The researcher’s experience as a report writer, change implementer, tester, and member of the AUX department greatly facilitates the identification of flash usability reports as important artifacts. Besides identification, there is an established relationship with the artifact’s content creators it is easy to contact them with questions and clarifications. Cultural knowledge bolsters confidence to construct meaningful interpretation.

Wildemuth points out that collecting data from artifacts doesn’t “influence content in the same way that more intrusive methods” (159). The unobtrusive nature of analyzing flash usability testing usability reports allowed for substantial analysis before other data was sought after; this analysis strengthened the interview process. Without the unobtrusive data, it would be difficult to create interview material that connects interviewees to the evidence of the researcher’s phenomenon of interest.

To begin analysis of flash usability reports every report was read and analyzed paying special attention to recommendation sections. Each document looked “untouched” by edits or comments and there was no evidence that the reports were working documents analyzed or marked up in WebX meetings. This made the document seem as if every finding and recommendation was without dispute or alteration. This conclusion seemed unlikely as many of the recommendations used vague language such as “Use less library jargon”. Analysis of the recommendation wording across reports points to a loose and widely interpreted idea amongst authors as to what recommendations were meant to accomplish. Very specific recommendations, like “hide the ‘try this option instead’ banner” are directives to the WebX team that require no interpretation (other than whether or not to carry it out) but most, such as “add search box to the ‘Subject Experts’ page that is more prominent” and “move button closer to the resource’s citation information” necessitate discussion and decision making either in the WebX meeting or by an individual making the change. That interpretation is not reflected in the artifact of the report.

The lack of “decision making trail” in flash usability reports was disadvantageous. Although the interviews with WebX members were meant to elucidate the process of change implementation, supporting documentation was expected. However, in searching WebX’s Sharepoint site there is a folder of notes from every WebX meeting. Appendix A’s test was completed 7 February 2014 (regarding the *Get It @ Duke* feature) and there was a WebX meeting 11 February and 25 February. Each meeting notes mentions

actionables regarding the *Get It @ Duke* feature but none attribute flash usability testing recommendations as the source. It is impossible to make a trail from flash usability testing reports to the list of actionables in meeting notes. This makes both documents seem temporarily useful instead of living, working documents that WebX members are using to track progress of changes made.

After analyzing each report, ninety-three recommendations were placed into a new document still organized by report. Some recommendations listed in reports were excluded for multiple reasons. First, some recommendations had the note that only one participant made that specific recommendation or comment and those were left out because of their lack of popularity. Secondly, some reports had a “potential” recommendation section and because of there were no criteria as to what “potential” meant for each author it was less complicated to leave those out. Finally, repeat recommendations were not counted because, as will be demonstrated with the card sort, the purpose of compiling recommendations was to demonstrate range of content and solicit feedback, not measure the importance of a recommendation or determine its value if it is put forth multiple times.

Once recommendations from the fourteen reports were compiled into a new document the plan was initially to determine exactly which were implemented and which were not. This task proved near impossible because, as observed earlier, there is no “decision-making trail” that provided a clear line between the report recommendation and the problem it referred to. Because of how vague some recommendations were it was

difficult to trace to an observable change on the library's website. Initially the interviews were meant to bolster artifact data with details of "why" and "how" but after analyzing recommendations a shift occurred and the interview guide became more concerned with filling in the gaps left by artifacts.

1.3 Card sort

To bridge the mixed methods approach of data collection, a card sort was chosen to create new structure for the artifact data that represents the phenomenon of interest: the flash usability testing recommendations. A new structure for this data was not meant to stay static; the card sort was incorporated into the interview process to facilitate discussion and create new ways for old and familiar topics to be presented to WebX members. See Appendix C for a list of the text found on each card and sorted into the categories chosen by the researcher.

Card-sorting has a well-established history in the realm of usability testing. It has even been called one of "the most powerful information architecture research tools in the world" (Morville & Rosenfeld). Typically, card-sorting involves the following: "During a card-sorting usability test, people are given a stack of index cards. Written on each card is a heading from the Web site. For libraries, headings can be the names of services (interlibrary loans, ordering forms) or individual content items (books, journals, or whole collections). People sort the cards into piles that make sense to them and then label each pile. Each label represents a possible category or heading, giving you a better

understanding of how people think about the Web site's content. The designer can then start to define the site's architecture based on people's expectations and feedback and then further refine it later on with additional user research." (Whang, 2007) Data analysis is often qualitative in nature and researchers "eyeball" and discuss card groups with participants and then analyze those groups amongst themselves.

The card sort utilized in this instance is very different in purpose and nature. Its purpose is not to gather user input regarding a system structure, instead the categories are meant to impose structure so to remind interviewees about a familiar set of information and to elucidate new ways to think about and consider that information. Card sorts "discover users' mental models". (Faiks & Hyland 150) Understanding the mental models WebX team members use to consider recommendations is useful particularly in comparison to the mental models favored by their colleagues in WebX. Those differing perspectives are then reconciled by asking each interviewee to comment upon and discuss the categories imposed by the researcher.

There are practical reasons for pre-interview categorization. The card sort was made up of ninety-three cards and took up a large-sized dining room table. This amount of information had the potential to be overwhelming especially since each interviewee only has the span of the interview to read and consider the card sort.

In deciding how to organize the recommendations into a card sort, it was first determined that the content of each recommendation was of primary interest. Later in the interview section it will be demonstrated that interviewees often categorized the

recommendations by external factors such as controversiality or the time it would take to implement. Five categories emerged through content analysis; explained in table one below.

1.3.1.1 Table one: card sort categories

FEATURE	Adding or removing a feature/function from a web page that a user would interact with (not just read) e.g. a search box or login field. Includes links.
SYSTEM FUNCTION	A recommendation that requires changing or modifying how a system processes or outputs information after a user generated an input.
TEXT	Any recommendation that mentions text use (except for size: that's interface) with regards to adding explanations, changing titles, or mouseover text recommendations. Does NOT include links.
INTERFACE	Pertains to color use, text size, size of features, and arrangement of information on page.
USE	Large-scale recommendations that pertain to policy or process rather than a particular web page.

These categories were influenced by the researcher's experience working within Duke University Libraries' web pages. These are not user-focused categories, instead they were categories tailored to someone, such as a WebX member, who knows how recommendations are considered as actionables. That is, how a person carries out a recommendation: what program they have to be in and what programming language they use, etc. In the next section, the interviews will demonstrate how the interviewed WebX members responded to the categories, agreed and disagreed with them, and, most importantly, were inspired by the categorization to make observations that they otherwise might not of.

1.4 Interviews

All interviewees have at one point been regular attendees of WebX meetings. Five participants are currently members and four of them have been since WebX was created two years ago. One participant, Christopher Williams, is not a member but attends every meeting and completes tasks for WebX. Sarah Jones served on WebX for one year until Summer 2014. Figure two, below, lists the name and title of each interviewee.

1.4.1.1 Table two: interviewee names and titles³

Jessica Smith	Head, Assessment and User Experience and Librarian for Education
Michael Johnson	Assessment & User Experience Project Manager
Christopher Williams	Digital Projects Developer
Ashley Brown	Research Services Librarian, Rubenstein Special Collections Library
Sarah Jones	Librarian for Western European Studies and Adjunct Assistant Professor in the Department of German Studies
Matthew Miller	Digital Projects Developer
Joshua Davis	Director of Communications, Duke University Libraries

³ Although the names are anonymized, the titles match the interviewees’.

A semi-structured interview approach was used, “for the purpose of obtaining research-relevant information and focused... on content specified by research objectives.” (Cannell & Kahn 530) An interview guide structured essential questions, those that every interviewee was asked, from questions tailored specifically to individual perspectives and responses. Wildemuth describes this method for conducting semi-structured interviews to create an environment of “sense-making” in the interview (233).

The card sort is included as a component of the interview for two reasons. The first reason is described in the methods portion of the card sort section. But there is a much more practical reason to incorporate a card sort of flash usability report recommendations: to jog interviewee’s memories about past projects. In every interviewee, the same questions were asked before and then during the card sort: “What recommendations do you remember discussing/completing/discarding?” It was much more difficult to cultivate data from those questions until the recommendations were laid out before each interviewee.

Given the large amount of data that seven interviews produces, the following data analysis mirrors the interview’s format until the card sort. This structure highlights similarities and differences articulated by each interviewee.

1. Description of role within WebX,
2. WebX’s position within the libraries,
3. Description of flash usability testing’s role and their participation,

4. Description of role in discussion and implementation of recommendations resulting from flash usability testing

Interviewees' responses to the card sort and post-card sort questions will be detailed in the results section.

1.4.2 Description of role within WebX

A variety of library stakeholders are members of the WebX team and each has a unique reason for participating. Director of Communications for Duke University Libraries, Joshua Davis, says he comes to all meetings because of his interest in library's web presence. This web presence is so important because it is, "the primary way people find our stuff these days...(it's) how people familiarize themselves with the library system as whole". Because he works in an administrative capacity and is not a librarian, Joshua believes that he brings an "outsider's non-technical perspective" to discussions.

If Joshua identifies as an "outsider", Jessica would stand as the ultimate insider of the WebX team. She is the chair, she wrote its charge, she is the department head of AUX, and she is liaison librarian for education. When initially conceiving WebX, Jessica interviewed staff across the libraries to discover what they wanted in a team dedicated to improving the library's web presence. Jessica describes that, "I help keep things going" in the way of writing and soliciting agenda items, running meetings, and helping to distribute work. Three other interviewees mentioned the work and dedication that Jessica has demonstrated with her work in WebX. Those compliments are often in reference to

her ambition and ability to implement change. Jessica also noted that it is her place to publicize what WebX does to the wider library community. Jessica and another interviewee, Michael Johnson are part of consistent user testing outside of flash usability testing so the two of them are able to bring a wider perspective of what other usability and assessment occurs in the library.

As co-chair, Michael Johnson helps develop agendas, he assigns tasks after meetings, helps discussion between meetings, makes changes, and he researches analytic data. As a project manager for AUX, Michael is particularly accustomed to articulating an IT and systems perspective and bridges communication between members of the team without IT skills and those with IT skills. How Michael serves as a communicator “bridge” is demonstrated by his task of digging up applicable analytics to affirm or deny recommendations. This triangulation of data will be discussed in more detail later, but the fact that Michael is the sole implementer of that task demonstrates how key his presence is.

The remaining interviewees can be divided into two camps: librarians and IT staff. Sarah Jones and Ashley Brown belong to the former and Christopher Williams and Matthew Miller the latter. These distinctions are not of the researcher’s choosing; interviewees often distinguished their behavior or other WebX members’ behavior by these categories. The characteristics interviewees attribute to each group will become clear throughout the paper.

Ashley Brown, as a research librarian for the Rubenstein Special Collections Library, serves users with different needs than those using general collections materials. She also mentions that users of Rubenstein need different tools and that a lot of “non-regular researchers” visit. These include genealogists, professors and students from other institutions, and community members. Ashley considers herself, “more research and instruction oriented than tech oriented” and often finds that WebX meetings are focused mainly on services within the library website outside special collections. Ashley has been a member of WebX for only one year because she rotated on when another Special Collections representative left the team.

Sarah Jones straddles two worlds: that of the library and that of the academic department she teaches in. Her unique position is easily perceived because of how she talks about faculty and student-researcher needs. Like Ashley, Sarah served as a rotating liaison of her library department, International Studies. Sarah hasn't served on WebX since Summer of 2014 when another department liaison stepped in. Since leaving WebX, Sarah hasn't kept up with their activity but mentioned that if she saw something she didn't like or wanted to improve she would feel very comfortable using the WebX project recommendation form to make a suggestion. WebX promotes the project recommendation form to all library staff but it isn't used as often as e-mail or in-person contact. That Sarah, as an ex-member, sees it as an effective way to communicate with WebX demonstrates that she believes in WebX's efficiency.

Matthew Miller and Christopher Williams are both digital project developers within the Information Technology Services and Digital Projects Services departments. Christopher isn't a member of the WebX team but he sits in on meetings and provides technical support and advice: "When WebX has some project they want to implement I'm the one who usually does the work." (Williams) Matthew made a similar comment to describe his role in WebX. He said, "I'm one of the few people who can actually end up taking recommendations made by the team and implementing changes on the web and discovery systems." They both have background as systems analysts and Miller professed a background in usability.

1.4.3 WebX's position in the libraries

All interviewees perceive WebX to be an efficient, useful component of the Duke University Libraries system. Four interviewees compared WebX to an earlier team called WIGIT but all who mentioned it acknowledged that WIGIT was a much less effective team. Joshua touched on why that was: "we sat around talked about these esoteric things" instead of discussions that led to change. He also credited Jessica's leadership for the improved efficiency of WebX: "she really whipped us into shape".

In the most general sense, all interviewees see the WebX team as the body that is making decisions "about the library's web presence." (Davis) Michael Johnson said WebX provides "vision and guidance for our website". Michael, who has already been labeled as a "bridge", made another very "bridging" statement when he observed that

WebX is a “point of connection” between users, content creators, and support staff. This brings up the fact that IT staff such as himself, Matthew Miller, and Christopher Williams, have no direct and very little indirect interaction with the user group they serve. WebX gives them that “point of connection”. Christopher supports that point when he answered what he thought WebX was for by saying it is a place for discussing “how people experience the library”.

Michael also used the words “functional owners of our website” and collaborative ownership of the library’s web presence as another theme that ran through responses about the purpose of WebX. Matthew Miller called WebX a, “collaborative effort needed to make complex, important decisions for a large system.” Ashley Brown and Sarah Jones had very different responses. Ashley said WebX is, “responsible for looking at every part of library website and even things researchers get to from outside the library website.” (Brown). Ashley doesn’t conceptualize the library’s resources as a system because she considers a researcher’s complete experience searching for information. That experience often extends outside the libraries’ web presence. Sarah called WebX a, “...rather informal approach to making changes quickly and efficiently”... anytime the access point is virtual.” (Jones) She sees it as an “informal” and quick “approach” which contrasts with Matthew’s comments that WebX makes large and complex decisions and Michael’s comment that WebX facilitates “functional ownership”. A comparison of Sarah’s description of WebX versus Michael’s and Matthew’s demonstrates that perhaps the two see WebX as having a larger and more pivotal role in the library than Sarah.

WebX, Joshua Davis says, is a way for the libraries to maintain habits of change and innovation, “so we’re constantly upping our game.” As someone who serves as an administrator and image-creator for the Duke University Libraries, Joshua’s statement can be seen as a sign that WebX is a demonstration of the libraries’ priorities. Matthew Miller reiterated the larger role of WebX when he mentioned, in his response regarding the purpose of WebX, that Duke University Libraries’ number one strategic plan point is about improving the user experience. Matthew says that WebX is carrying out that strategy.

1.4.4 Description of flash usability testing and their participation

Of the seven interviewees, only two, Jessica Smith and Michael Johnson, have been present at a flash usability test. Because of Jessica’s role as head of AUX and Michael’s as project manager, they are often deciding what issues are crafted into a flash usability test and which are assessed using other means. As head of AUX, Jessica is responsible for, “consistent user testing” (Smith) but she says in WebX while there might be “brainstorming for types of on-the-fly testing” but that those tests don’t always end up being facilitated by WebX. Matthew Miller described part of the process for selecting what is selected for flash usability testing: “(we) focus our efforts on the tools or the sites the projects the parts of the website that we feel like have pressing design decisions to be made and the least, simultaneously the least, reliable information from which to make those decisions.” Two interviewees besides Jessica mentioned that WebX helps to

identify areas that need testing. Three interviewees said that WebX is part of the script writing process.

WebX members, when asked to consider their contributions to flash usability testing, spent most of the time talking about reading and discussing reports. Michael Johnson put it most plainly when he said that after testing, the team “decides what we can do, what makes the most sense”. Four interviewees brought up that reports are circulated before the WebX meeting; multiple mentions were made of reading reports beforehand. Jessica expressed concern with the efficiency of report discussion: “It’s difficult sometimes to bring together the group and make sure everyone has actually read the report thoroughly and carefully because we don’t have time in an hour meeting when we’re talking to go through the whole report... it’s difficult to have the time that we really need to hit every aspect of a usability report.” The time commitment of reading through a whole report surfaced with other interviewees. Joshua Davis, when listing the steps of the WebX team after testing, said, “we all, well we make an attempt, to read through all of everything and digest what the major recommendations and findings are.” His aside of “well we make an attempt” suggests that the group and individual members may struggle to read whole reports.

1.4.5 Description of role in discussion and implementation of recommendations

In every WebX meeting where a flash usability testing report is of topic, a large amount of time is spent discussing findings and recommendations. Interviews demonstrate that there are two, intertwining steps that happen to decide whether or not to implement a recommendation. One of these steps is finding the context, user-end ideal and the other is measuring that ideal change against technical feasibility. Different members weigh in on each step. Sarah Jones bluntly asserted where she felt comfortable in these discussions: “I would never criticize color or font because that is not what I do”; Sarah did not see herself commenting on design-oriented topics because she sees other members of the team as the experts. On the other hand, Christopher Williams articulated what he sees as his “blind spot” in discussions: ... “a lot of times my hunch or assumptions about something maybe are not reflected by the way people really use things, especially the public service librarians I think come with a really valuable perspective that I would never have.” (Williams) Once again, the dual personalities of WebX are articulated: that of the librarians and that of the IT staff.

As part of these dueling perspectives, one point regarding task management kept cropping up in interviewees’ responses. Michael Johnson, Matthew Miller, Joshua Davis, and Christopher Williams all spoke at one point of organizing potential recommendations by the time and effort that would be necessary for implementation. Matthew Miller commented that, “every recommendation that that group considers to do

always has some sort of resulting commitment of IT staff time.” (Miller) Michael mentioned measuring the “feasibility of task implementation: “is it a quick fix or a long term thing”. Given Joshua Davis’s position in administration, not systems, it was surprising that he joined this chorus of monitoring IT staff time commitment. He said, “there’s always more we want to do than we have time or people to do it” given the limited amount of, “people in the library who can execute a lot of the changes is small... We’re always discussing whether we have the bandwidth to do what we want to do given that the people who end up taking on the a lot of the projects in WebX, tend to be the same people over and over.” Joshua calls this “a human resource issue”. Consider this issue in contrast to a statement made one librarian: “I’m definitely not a tech person so then these things (changes) just happen which is great”. When “things just happen” there is a potential misunderstanding as to what each stakeholder’s time commitment is to the WebX team.

A small network of individuals with the knowledge and access to create changes might be a human resources issue but it has its advantages as well. Christopher Williams, who has less library experience and is more accustomed to working in a systems-oriented workplace, made some interesting comments comparing the workflows of systems analysis staff at Duke University Libraries with his previous work settings. He said, “we don’t really formalize, like, our developing process in that way or even, like, I think our content generation process and I think maybe part of that is the structure of it... it’s so open ended anyone can create stuff”. On the one hand, Christopher said that is a strength

because it is a lot quicker to make changes and “I appreciate the openness of our approach in that way”. However, “our system brings with it a host of editorial problems” because of that openness. Christopher is particularly referring to Drupal, the web platform used by Duke University Libraries to host its website. Most staff can gain access to make changes to these pages, which is particularly easy because there is a WYSIWYG (what you see is what you get) editor view. No coding or programming experience is necessary. Because there is no formalized development process, a staff member with access can add and edit content without consulting any other staff.

Results

The card sort labels categorize the following section. This organization not only allows for comparison of interviewee's responses in each category but also helps to highlight which interviewees responded to which category. To facilitate a more seamless and useful discussion not all recommendations are mentioned or analyzed. A note that categories will be capitalized whenever they are referred to.

1.5 USE

The initial name for this category wasn't well understood by the first interviewee, Jessica Smith, and in every other interview it was also referred to by the label she suggested: policy and process. Jessica justified her choice of label by articulating that the recommendations in this category often require a change in workflow or activity for multiple people and to communicate that change a policy change or some amount of re-training is required. Jessica also mentioned the intrinsic similarities to TEXT and USE because text changes are often, at their root, policy decisions about verbiage. One recommendation that demonstrates the policy making inherent to TEXT is "consider whether we need to explain the word "media" better in Books & Media". When Jessica saw that recommendation she explained that extensive testing was done before the title Books & More was settled on (it was later changed again to Books & Media). "Heaven forbid we move away from calling it the Catalog," said Jessica. For clarification, the title Books and Media heads the Catalog search results, hence why the traditional title would

be Catalog. Her comment implied that there was a memorable amount of disagreement in moving away from the verbiage of Catalog.

Sarah Jones brought up that same recommendation and provided a counterargument as to why she thought the title Catalog, not Books and Media, should be used. “Students do need to learn the category of Catalog...other librarians feel we need to make it easy and really I think that is digital naïveté.” (Jones) She believes using the word Catalog is important because “it’s the language of research and you have to practice it”. Amongst these comments, Sarah constructed a context for why she finds importance in this verbiage.

What I see here is this conflict of trying to make it easy and also to enable us to teach: ‘what is a database?’ There are libraries that have replaced that with the all search and that totally bias in favor of sciences who usually do known item searching.... (as opposed to) anytime you’re trying to do latest and oldest or book form versus article in the humanities. I see a lot of frustrations in students because no one is teaching them the basics.

The root of Sarah’s concern is disconnect between the verbiage of her instruction and verbiage of the library’s website. Duke University Libraries’ homepage directs students to the all search function; in Sarah’s experience the all search biases known item searching and the disciplines are that commonly do that type of searching. Students don’t learn how to distinguish between an all search and more refined search functions such as the Catalog and database searches. According to Sarah, ignorance of “the language of research” continues when the library doesn’t label the Catalog for what it is and therefore fails to reinforce her instruction.

Another recommendation that falls into the USE category was initially categorized in FEATURES. The recommendation, “ensure that *Latest at Lilly* carousel is current” was first assumed to be a feature because content, including text and an image, needed to be updated in a carousel feature. In looking back through the raw data that led to that recommendation, two flash usability test participants mentioned that the *Latest at Lilly* content seemed irrelevant and old. Although this might seem like a web development issue, Matthew Miller pointed out during the card sort activity that the *Latest @ Lilly* carousel would be current if “staff there actually blogged”; a comment like that makes the recommendation fit into USE. Jessica Smith also moved the recommendation into USE. Drupal automatically feeds new posts from the Lilly Library blog into the carousel but that requires staff within Lilly Library to create new content. Misunderstanding a USE recommendation for FEATURES highlights a gray area of web content that isn’t solely controlled by IT staff. In this instance, recommendation implementation would mean changing or creating a policy for Lilly staff to write blog posts on a more regular basis or even eliminating the *Latest at Lilly* feature if that policy is not feasible.

One recommendation in the USE category was a prime topic of conversation for all interviewees: “find way to bring together displays of three different accounts (library, ILL, Rubenstein)”. Multiple interviewees wanted to move it into the categories of SYSTEM FUNCTION or FEATURES because synchronizing all accounts into one display would take considerable systems work if possible. Users are required to login into three separate accounts for different activities (the Rubenstein account for requesting special collections materials, the library account is for renewing and viewing checked out

general collections material, and the ILL account is for requesting interlibrary loans and document delivery amongst Duke's various library branches) because each is a different vendor-controlled system that Duke University Libraries subscribes to. Jessica observed that WebX looks to integrate systems whenever possible because so much feedback indicates that multiple interfaces, logins, and systems are "jarring" to users. Jessica notes that users are accustomed to a "single interface experience" within a website. Michael adds, "my impression is one of the most recurring things is confusion over different silos of resources we have people see the whole thing as The Website when in truth it is multiple websites that operate differently... It is disorienting and people sometimes have difficulty figuring out where they are within one of these silos and how to make connect." Unfortunately, this particular recommendation is not, currently, possible to implement because systems limitations make it impossible to integrate all systems into one login point.

Michael Johnson noticed in the USE category that things must be promoted and publicized, "It's not enough that we've designed something... It's almost disappointing that that feels like it's needed." In the commercial world, it would seem absurd to create or modify a feature and then fail to promote or market it to an audience. Perhaps Michael's statement stems from a belief that changes are made because users need them and therefore will notice those changes independently. This belief demonstrates that perhaps IT staff is more focused on deliverables than end use.

1.6 TEXT

Joshua Davis calls the removal of library jargon his cause. Throughout his interview, Joshua called his perspective that of a "layman" compared to information

specialists like librarians and IT staff. Jessica Smith agreed: “We spend a lot of time thinking about the right text in our meetings” and that Joshua, “cuts through” with input in “total layman’s speak”. On the other hand, Jessica says that Joshua is, “the first to tell us to move on”. Joshua also referred to his place in expediting semantic discussions because “sometimes those get kind of in the weeds” meaning that discussions tend to get pushed a little too deep. The push for layman’s speak in the library’s web presence is not universally accepted as is evidenced by Sarah’s statements in the previous section about teaching users “the language of research”.

Flash usability testing is particularly well suited for small, quick changes says Michael Johnson: “We found it (flash usability testing) most beneficial in supporting an interim approach to our website...” The examples he gives of changes are updating hyperlinks, interface modifications, and language improvement. Although many text modifications are simple changes in WYSIWYG editor, Jessica mentions that the discussions takes much more time than the implementation, particularly with recommendations like, “determine branding language to use when referring to the default search functionality”.

Many of the TEXT recommendations are to add mouse-over text: “link text more descriptive or add mouse-over text”, “include mouse-over text for buttons and links”, and “provide explanation of Classic Catalog, TRLN, and WorldCat using mouse-over text”. I asked some other the interviewees why this was such a popularly recommended feature. Matthew Miller sees them as indicative of something within the text or interface that isn’t self-explanatory. His explanation for that confusion is a combination of library jargon, complicated data, and distinct systems working together. Jessica was more opinionated

about the mouse-over feature: “it’s definitely a band aid”. Instead, Jessica suggests that improving interfaces is a more effective way to prevent confusion. She also noted that mouse-over text isn’t mobile friendly. Referencing mobile responsive web design demonstrates that there is awareness of the growing popularity of accessing library interfaces through mobile devices and tablets.

1.7 INTERFACE

Organizing content and unifying its visuals are at the heart of many WebX discussions. Michael Johnson observed, “Often it is the research and instructional services staff that are comfortable making some of these (search options) more prominent and then it is the web designers who are saying ‘well no we just want one or two of these things to be prominent... It is the visual designer versus the folks who are really invested in making sure their patrons know how to get there.’” Jessica Smith reiterated that commitment to hierarchy when she brought up the policy of only using a green button (top level) one on a webpage. The issue is that there are people trained to design interfaces and there are those who, as Michael said, “really invested in making sure their patrons know how to get there”. The primary scene of this battle is the library homepage. Matthew Miller indicated that there has been a shift in groupthink: “In the past year and a half we have a better presented website”. By “better presented”, Matthew distinguished that it is now more design focused in content presentation and less like “an essay”. “We have finally broken out of that mindset.” On the other hand, visual design discussions have their saturation point: “How much time have we spent discussing the color of fonts”, Joshua said with some amount of exasperation. “And how much does that actually matter? I sometimes question the usefulness of those discussions.” (Davis)

What drives the various interface-related opinions found amongst interviewees? Matthew Miller calls it, “making something that is complicated seem easy”. Ashley Brown calls it the, “sense of trying to unify things... (and) clarify options”. For Duke to compete with other web resources its interface must be “as seamless as possible”, said Jessica Smith. One recommendation that exemplifies the need for a seamless interface experience was “make clear to users how far along in the process they are”. The process in question is the request system for materials from the Rubenstein Special Collection library. Materials must be requested online and users are e-mailed when the request has been filled and materials are ready to be viewed at Rubenstein. Initially, this recommendation was placed in the USE category but Jessica moved it to INTERFACE because although the recommendation refers to a process it is the interface that facilitates the user’s experience of fulfilling the process. Modifications to the interface of each page that guides each user through the process of requesting materials have the potential to reduce fatigue and build satisfaction. Ashley Brown, who is particularly interested in this recommendation because it pertains to special collections, compared the potential improvement to “making it like an Amazon shopping cart”. Comparison to commercial systems indicates a desire to utilize online experiences with which users are already familiar.

Unifying interface components is very important in light of analytics data utilized to study user habits of the Duke University Libraries’ website. “There are so many entry points – not everyone is accessing from library.duke.edu (the homepage)”, Jessica explained. Analytic data specifically shows that users often come to a library web page not from the home page but through a Google search. This habit has been confirmed over

and over by flash usability testing: the research strategies test report (May 2014) specifically mentions that some participants did a Google search of the page they wanted to find instead of navigating within the libraries' website. Finding number one states, "Users tend to begin their research by searching Google or Google Scholar (three of six respondents indicated Google or Google Scholar as their starting point) or the DUL website (two of six respondents started their research at the DUL site." (Johnson 4)

When users rely on Google to filter search results, the library must ensure that Google is pulling the most relevant and up to date content and interface. For instance, if a user navigates to page that uses the old masthead; the site-wide search box within that masthead doesn't work. The systematic implementation of interface changes unifies the libraries' web presence no matter what a user's habits are.

1.8 SYSTEM FUNCTION

When asked to organize the card sort in a way that felt natural, Christopher Williams and Matthew Miller spoke of categorizing by affected system. Within the recommendations, seven different systems are represented:

1. Bento for the all search,
2. Endeca for the library Catalog (also known as Books & More),
3. Summon for article searching,
4. Classic Catalog for traditional Catalog searching,
5. Aeon for the special collections request system,
6. Drupal for the website, and
7. Link 2.0 for searching full text options of the same article cross-database from Summon.

Link 2.0 is more of a “tool” because it acts as an optimizer of Summon. Unfortunately, most of these systems are vendor subscriptions and there are limitations to a developer’s ability to change the system’s back end functionalities or to fix problems. “We have minimal ability to change anything in the system but we can inject, like, JavaScript.”

Michael Johnson, Matthew Miller, and Christopher Williams created a new functionality called Link 2.0 that allows students to search for article access across systems.

Christopher explains a portion of that tool: “it hijacks link action and basically grabs stuff about what people are trying to access.” With words like “inject” and “hijack”, an impression is left that workarounds are created instead of real solutions. System limitations prevent a lot of recommendations from making it past the discussion phase.

One recommendation in SYSTEM FUNCTION exemplified the collaborative effort needed between librarians and IT staff in order to effectively make decisions. The recommendation is “consider displaying all images rather than only those that have thumbnails.” Currently, an image search will only return results that have a thumbnail display because, as Michael puts it, they went “off the belief that people don’t click on something that doesn’t have a thumbnail”. Instead, there is a gray box where the thumbnail would be). Christopher Williams also brought up this recommendation and called it “a complicated issue” because a lot of valuable resources are completely hidden based on this use assumption that no one mentioned had been studied or researched. All the IT staff interviewees specifically mentioned that this particular recommendation was not implemented.

1.9 FEATURES

In three different flash usability tests, the recommendation, “Integrate the option to chat with a librarian” appears. In October 2013, the Duke University Libraries’ implemented a new website that included, in the masthead, a chat option labeled *Ask a Librarian*. Because of its placement in the masthead, this option is available from every single page within the libraries’ website. To Jessica, Joshua Davis, and IT staff, this seemed to be enough. “Whenever you add more, yes you might be meeting a particular need but you’re also distracting from the options that are already available.” (Smith) This philosophy echoes earlier interface discussions about simplifying content and its presentation. However, the public service librarians in WebX disagreed and now there is a proactive chat option that activates after a user idles on a search results screen for two minutes. Joshua Wellborn said “I hate that thing... it reminds me of commercial sites.” Considering WebX’s ranks, it would seem that a majority of members were against the pop-up chat option. In an earlier conversation Jessica mentioned that library staff are very “vocal” user group so it is likely other library staff reiterated this recommendation and overpowered WebX’s majority.

It would seem in the instance of this recommendation that the philosophy of WebX to simplify content was proven less useful for the needs of library patrons. However, it bears scrutinizing the recommendations themselves; where did they come from? Did they arise from observations where test participants specifically said they wanted a pop-up chat option or is the result of interpretation on the part of the report writer?

Conclusion

Results from the interviews and card sort provide a detailed look at trends and aberrations in opinions and viewpoints pertaining to WebX's flash usability testing, subsequent recommendations, and change implementation. This analysis provides material to make larger claims about flash usability testing at Duke University Libraries that are generalizable to this type of testing and change implementation in other academic library settings. The following conclusive claims are structured by the research questions introduced in the introduction.

1.10 Research Question #1

What changes have come about in the last year as a result of findings from flash usability testing?

Of all the research questions, this ranked as most important at the study's inception and eventually became least important. At the beginning of data collection, it seemed logical to track recommendations that had been implemented versus those that had not. Unfortunately, that potentially useful information was not obtainable for a multitude of reasons. At its most basic level, each recommendation can fall in a larger gray area between implemented and not implemented. Multiple people may work on one recommendation and lose track of progress, a recommendation may transform into a very different actionable, multiple recommendations may be combined, a recommendation could be pending further research, non-WebX workflows and staff may become involved, and a number of other complications. Because of this gray area, it was surprising

difficult to get interviewees to identify which recommendations they implemented. It is important to note that these complications are the specific result of recommendations stemming from flash usability tests. Because the data comes from such a quick, “lightweight tool” (Brown), its members are inclined to triangulate data from at least one other source, usually analytics, before implementing a recommendation. In the process of triangulation, the lifecycle of recommendations is muddled or lost in documentation and the memories of WebX members.

1.11 Research Question #2

How does participating staff perceive the effectiveness of flash usability testing?

“One thing that is really cool about the WebX is that there are lots of different perspectives that are represented... A lot of times my hunch or assumptions about something maybe are not reflected by the way people really use things... Coming from that non-library background in general there’s a lot of maybe, what’s a good word, habitual conventions that researchers of the library world tend to follow that don’t seem habitual to me.” (Williams)

Williams’ perceptiveness about his own viewpoint demonstrates one of the highest achievements of WebX. An interdisciplinary team such as this cultivates disagreement and vivid discussion. Data demonstrates that typically, but not always, the opinion line is drawn between the two previously identified groups of librarians versus IT staff. The widely varying viewpoints identified in the results section don’t indicate a permanent fission in WebX; instead they indicate success. Christopher Williams’s quote demonstrates that rigorous inquiry is produced by the team’s multifarious perspectives.

Despite the value of WebX's diverse composition, one fact is very clear: there is a divide in who can carry out a majority of recommendations and who cannot. Matthew Miller, Michael Johnson, and Christopher Williams all spoke off-handedly of the constant do-list they have of recommendation research and implementation but Joshua Wellborn articulated it best when he identified that task management for IT staff is a human resources issue. For WebX and similar usability task forces to make a consistent impact there needs to be a concentration of stakeholders who have the knowledge and experience to implement changes. WebX needs to be aware of how task distribution may unequally impact different team members.

Some interviewees commented that the card sort made them consider how much WebX had accomplished. For instance, Ashley Brown said, "This is kind of rewarding to see!" when considering all the recommendations that had come through WebX. Matthew Miller, on the other hand, said "It's quite humbling to see it this way and to just know that a lot of these things never got done... it's not just that they're not good recommendations or not good ideas but there are certainly ones that I know would make a good impact on the site that are still left undone." For Miller, the card sort's visualization of recommendations was "humbling" instead of "rewarding". The difference in opinion indicates that there may be disparate perceptions as to the effectiveness of change that comes about from flash usability testing.

1.12 Research Question #3

What trends are there in the content of implemented recommendations or discarded recommendations?

In the results section, each category contained recommendations that allude to simplifying and unifying the variety of systems that make up Duke University Libraries' web presence. This is by far the most prominent trend observed in recommendation content. Librarians and IT staff are very concerned with making Duke's purchased and curated resources as easy to use as commercial web sites. However, when it came to bigger picture system issues, often IT staff is unable to make the desired changes because a vendor operates the system. These recommendations, such as "change ordering of box numbers in listings to numerical order" or "integrate Aeon with ILL/DD (interlibrary loan/document delivery) account" must be completely dropped until the vendor is willing to make changes to their product. Is it worthwhile to continue testing and creating recommendations when the chance is so small for large-scale, meaningful change to the system?

Ease of access bleeds not just into how systems operate but how they are presented. It is clear that Duke University Libraries wants their website to operate as well as a commercially-funded and researched website. But should they attempt to make their web site mimic the popular bent of commercial sources or should it reflect the complex, academic culture from which it arises? Sarah Jones's "language of research" versus Joshua Davis's crusade for layman's speak exemplifies this tension. Analysis of recommendation implementation indicates that layman's speak is winning out. Does Duke University Libraries realize the philosophical side that they've taken and its larger implications for its web presence?

1.13 Research Question #4

Could WebX improve how it analyzes, interprets, and makes decisions regarding data collected from flash usability testing?

Optimization of WebX meeting time is of high importance. Besides whittling down which recommendations are discussed, other management tools would assist the WebX team's meeting quality. Three interviewees made some mention of themselves, or others, not reading reports before meetings. One interviewee spoke with frustration that it is difficult to discuss flash usability testing reports when so much time is spent just explaining what is already written in the report. However, another interviewee mentioned that it is difficult to find the section he is most interested in, the recommendations, because "often times they're buried in reports, they may be on page three of a report they may be in paragraph form. To see them both expressed visually but also to see them analyzed and classified in some way... there's a lot of value in thinking how these things may be classified." (Miller) Perhaps if reports were presented in a way that is less narrative-based and more visually appealing and or interactive WebX members would be more inspired and incentivized to brainstorm and consider recommendations prior to WebX meetings.

TEXT was its own category with eighteen recommendations. The two interviewees that spoke most about verbiage, Joshua Davis and Jessica Smith, both mentioned that this line of conversation is often drawn out and results in "low-hanging fruit" (Smith) changes. In other words, the changes made are easy but minimally impact the user experience. Given Davis and Smith's comments it would behoove WebX to expedite conversations regarding text or completely take them off the WebX discussion table and hand off decision making to a smaller group of individuals. This recommendation is consistent with Steve Krug's missive in *Don't Make Me Think* to only go after changes that will make a concerted difference to the user and create a separate

workflow for “low-hanging fruit” (Smith took the term from Krug). Sarah Jones boldly asserted, within moments of considering the TEXT recommendation category, “To me that is not a WebX issue, that’s a community issue”. Although she spoke at length of the importance of language in her discussion of other recommendations, Jones saw the recommendations in the TEXT category as representative of culture in a way that WebX does not influence.

At the inception of this study, flash usability testing reports seemed the most important and useful source for artifact analysis of recommendations. Given the trouble with tracking down recommendation implementation these reports were cross-referenced with notes from WebX meetings with the hope of understanding how recommendations were documented in their various stages of completion. That was not successful. In interviews, the question was asked: “Has this exercise changed how you think about Duke’s flash usability testing?” three interviewees made comments about recommendations becoming lost after their report was discussed in one WebX meeting. “Now that I think back it’d be nice to have a good way to track in a way that they don’t get lost.” (Miller) Smith re-iterated that apprehension for lost recommendations: “sometimes we really never get back to it.” (Smith) Williams, coming from a web development, project-based background, observed that in WebX “there is not formal project management or oversight or something”...(we) don’t take time to go back over things or do a “post-mortem”...(we’re) too busy for that.” (Williams) Matthew Miller even went so far as to recommend new documentation for WebX to track recommendation implementation. “I would love for us to find a way to make it clearer, maybe the answer is Basecamp, maybe something for breaking out things that have been

recommended as the output of these reports we're tracking the status of them over time better than leaving them sitting in these documents." This seems like an excellent, practical solution to combat lost recommendations. Basecamp is a project management web platform that allows for document sharing, messaging within tasks, and other tools to assist collaboration. When reports are discussed there should be one resulting document, maybe a new Basecamp document where recommendations are listed and discussed, maybe the report, maybe the WebX meeting notes, that is a robust archive of the progress of change implementation.

In addition to crafting a workflow and accompanying documentation that more closely follows the lifecycle of a recommendation, periodic revisits to discuss old recommendations may act as a useful exercise to identifying trends in flash usability testing. It would also serve as a practical way to refresh the memory of WebX if recommendations were left inactive. Michael Johnson, after doing the card sort, said, "I think will look at it (the next report on flash testing) differently". Christopher Williams said it was good to revisit suggestions where there was little agreement to see if it can be hashed out or a compromise made and that some recommendations are so specific and others are very general that it is difficult for him to conceptualize, Smith said, "it'd be nice if we could come up with some way to have meetings perhaps devoted to talking about these recommendations." Given the pleasure and perspective interviewees took from a visually stimulating, interactive retrospect of recommendations, this should perhaps be a regular occurrence. Michael Johnson went so far as to articulate: "maybe it would be a good idea if, once a year, we looked at all the recommendations made over

the past one or two years sort of with a sense of ‘this is done’, ‘this is in progress’, ‘this wasn’t done and why wasn’t it’”.

Periodic reconsideration of cumulative recommendations would also be useful in instances where system updates or other factors allow change that was previously impossible. Duke University Libraries is currently in the development phase of a new integrated library system called Kuali OLE. Its website explains, “Kuali OLE is the first system designed by and for academic and research libraries for managing and delivering intellectual information.” (www.kuali.org/ole) Joshua Davis questioned how useful reflection upon recommendations is for current systems when a new system, Kuali OLE, is implemented. That is a practical concern because Kuali OLE will have its own specific usability issues. However, documentation that details old recommendations gives staff the chance to reflect upon usability issue trends and that level of reflection can assist in the implementation and improvement of the new system.

In conclusion, this study has demonstrated some complex issues of implementing change from flash usability testing in an academic library setting. It is the researcher’s hope that this study is of interest to academic libraries that wish to implement flash usability testing and also of use to the WebX team at Duke University Libraries. Implementation of consistent usability testing affords a valuable opportunity for library stakeholders, librarians, IT staff, administration, and others, to cultivate a user-centered, data-driven environment. Given the quickly changing digital realm that academic libraries operate within, commitment to the continuous improvement of web services is vital.

Appendices

1.14 Appendix A

The following is a usability test report written a former field experience student with the Duke University Assessment and User Experience department. It summarizes the test logistics and then lists findings and recommendations.

Usability Test Report: “get it@Duke” Interface

Summary

Jessica Smith, with the assistance of two graduate student workers, conducted usability testing on the functionality of the “get it@Duke” interface. The test was held outside of the Von der Heyden Pavilion on February 7, 2014 from 10:00 – 11:45am. A pilot was conducted with Steph Matthiesen prior to her viewing the test. The test consisted of a short set of background questions, three tasks, and four post-test questions that lasted approximately 10 minutes. See Appendix for test script.

Overall, users generally started their information-seeking path using the same link for each task within the “get it@Duke” interface. However, all users diverged at some point in their paths for all three tasks. Some questions to consider about this process:

- Should these variations be a concern for WebX if the user eventually gets to the result they need?
- Or should the paths be more consistent among users?

While one participant mentioned that they wouldn't change anything about the "get it@Duke" button and interface, the remaining participants gave feedback about the interface being confusing at times and often not knowing what to click next.

Participants

Eight individuals (excluding our pilot participant) completed this test. Participants included four undergraduates, two graduates, one post-doc, and one faculty member representing the following departments: classical studies, economics, electrical engineering, German, music, and sociology.

Seven out of the eight participants said that they have seen the "get it@Duke" button and of those seven, six participants have clicked this button. Two participants said they use "get it@Duke" every day, three use it every week, and one participant uses it every month.

Key Findings

1. Users mentioned that they really like the "get it@Duke" button when it works, especially when it takes them directly to the item online.
2. The majority of participants started to complete each task in the same manner, but all participants diverged in their path by their second or third step or click (see notes under each task to get a sense of the wide variation in respondents' paths).
3. Task three proved to be the most challenging. In general, users didn't understand why there were so many buttons to "View the full text" as well as numerous other

links on the page and wondered why they were not simply directed to the full-text of the article.

4. Several participants mentioned that the following buttons/links were helpful: “Try this option instead”, “Problem getting this item?”, and “Ask a Librarian.”
5. Participants often mentioned not knowing where to click next when items were unavailable. They expressed confusion when they clicked “get it at Duke,” either directly from the item record or after getting to subsequent vendor-mediated pages, and were not directed to the full-text. They noted concerns with the following aspects of the “get it at Duke” interface: abundance of links and options; purpose of each link; font size of links, especially those under “Other options”; and use of text links when they expected or preferred buttons.

Recommendations to Consider

Since some of the following recommendations involve some vendor interfaces that Duke Libraries may have little control over, these are merely suggestions for exploration.

1. Limit the number of options returned, particularly in the third task containing multiple buttons to “View the full text.” Whenever possible, researchers should be able to bypass this screen and be taken directly to the full-text. *Note that in this example, <http://bit.ly/1iRJhKy>, the link to LexisNexis produces the full text article – why are users not directed to this page?*
2. Move the “View the full text” button closer to the resource’s citation information.

3. Make other options for getting items more prominent by increasing font size of text links under “Other options...” and links located next to “View the full text” buttons.
4. Make “Problems getting this item? We can help!” link text more descriptive or add mouseover text so users understand they will be completing a form to get help locating that particular item.
5. Include option for chatting with a librarian, or make Ask a Librarian link in DUL masthead more prominent.
6. Add a link to search Google Scholar as an option under “Other options for finding this resource.” *Note that this was suggested by one respondent.*
7. Include mouseover text for buttons and links that describe the purpose of the button or link. For example, many users were not sure of the purpose of the links beside the “View the full text” buttons when completing task three.
8. Consider including in the resource citation a cover image, and make the title and author information prominent. Give less prominence to the publication date and other citation details. *Note that this was suggested by one respondent.*
9. Make “Try this option instead” link that appears just under the DUL masthead a button instead of a text link, and change the color of the link to make it more prominent.
10. Change color and link text of “Report a problem!” button that appears in “Try this option instead” banner so that researchers understand the purpose of the button – respondents either did not notice the button or thought it referred to the entire site rather than a specific resource.

11. For items we have available online, hide the “Try this option instead” banner to give more real estate to the resource itself. *Note that this was suggested by one participant frustrated by the amount of screen real estate this banner occupies when he views books or articles online.*

Results

Task One: eBook

Task one required participants to find a specific eBook (<http://bit.ly/1dc9wTV>) and then describe what they would do if they had trouble accessing the book online. After finding the catalog record, all participants clicked the “get it@Duke” button and successfully accessed the eBook.

Intended path: Click “Try this option instead” and explore the options on that page to access the book online.

No. Participants	Path Description if eBook was Inaccessible
1	Didn't see anything on the screen that would help find the book – User remembered accessing a book through TRLN before, but couldn't find how to do this
1	Didn't see anything on the screen that would help find the book – Mentioned that a button would be helpful – Mentioned the “Report a Problem” button is for the website, not for a catalog record

1	Would go back to “eDuke” website – Search for book title on eDuke – Might use the Browse book function (NOTE: all of these involve the publisher’s website)
1	“Try this option instead” – Would try the first two options under “Your book is available at these links:”
1	“Try this option instead” – Would try the first two options under “Your book is available at these links:” – If these didn’t work, would go back to homepage and click Ask a Librarian.
1	Call my librarian, Laura Williams – Or would click “Report a Problem” button and fill out form
1	“Try this option instead” – Clicked “Search for this in e-Duke Books Scholarly Collection 2009” – If this didn’t work, would try to find a pirated version online.
1	“Try this option instead” – Would try the first two options under “Your book is available at these links:” – If this didn’t work, would click “Problems getting this item?”

Task Two: Journal Article Unavailable Online

Task two required participants to describe what they would do when an article was unavailable online. Here is example of a “We don’t have this online” page that participants used for this task: <http://bit.ly/1f9mDqa>

Intended path: “Check for copy in the catalog” and then “Request a copy from another library” once users saw we don’t have the appropriate volume/issue of this journal in print.

No. Participants	Path from “We don’t have this online” Page
1	“Check for copy in the catalog” – Clicked back since it looked like related results – “Request a copy from another library”
1	Go to JSTOR – Search for title of journal – Search for article by date and issue
1	“Check for copy in the catalog” – Find journal and click “get it@Duke” – “View all issues of journal” – Search for article by date and issue
1	“Check for copy in the catalog” – Hathi Trust link – First result on Hathi Trust page
1	“Check for copy in the catalog” – Find journal and click “get it@Duke” – Would try going to the journal’s website by searching on Google – Has had success in the past with Ask a Librarian and “Request a copy from another library”
1	“Requests for Duke Medicine faculty, staff and students” – Looks like this is for a hard copy of the article – Looks like it is impossible to get an electronic copy, so would give up

1	“Check for copy in the catalog” – If this didn’t work, would go back to results page and go to next result. – Clicked “Problems getting this item?” button – But normally wouldn’t fill out a form
1	“Check for copy in the catalog” – If didn’t work, then would go to ILL from “My Account” link on DUL home page

Task Three: Finding Online Access to Newspaper Article

The third task required participants to find online access to a *New York Times* article. The page participants viewed included eight “View the full text” buttons:

<http://bit.ly/1iRjKy>

Intended paths: Click each “View the full text button” until user found full-text; Click “Problems getting this item?”; or Click links under “Other options...”

No. Participants	Path from Page Containing Eight “View the full text” Buttons
1	“View the full text” (first result) – Didn’t understand why there were so many options – “Look up citation form” – “get it@Duke” (same screen) – Would check with a librarian
1	“View the full text” (first result) – “get it@Duke” (same screen) – Not sure what other options are – Would search outside of library
1	“View the full text” (first result) – “View the full text” (second result) – Tried other “View the full text” results, no luck – Would try Google, Google Scholar, or other student account in France

1	<p>“View the full text” (first result) – “get it@Duke” (same screen) –</p> <p>“Try this option instead” (back to results) – “View the full text” (second result) – “Search for this in New York Times” (first link) – NC Live not available, closed tab – “Search for this in New York Times” (second link) – Searched for article title</p>
1	<p>“View the full text” (first result) – “View the full text” (second result) – “Problems getting this item?” – Thought this button would connect to a chat box – Would fill out form though</p>
1	<p>“View the full text” (first result) – “Proquest Technical Support” – Would fill out form</p>
1	<p>“View the full text” (first result) – “View the full text” (second result) – “get it@Duke” (same screen) – Would got to JSTOR or click on all “View the full text” buttons</p>
1	<p>“View the full text” (first result) – “View the full text” (second result) – “View the full text” (third result) – “View the full text” (fourth result) – Would click all of “View the full text” options – If no success, would click “Problems getting this item?”</p>

Post-Test Interview

Participants had the following responses in their post-test interview.

What participants found helpful or effective about the “get it@Duke” button or interface:

Very direct, easy-to-follow, gave multiple options

Promoting a link directly to a journal database

Helpful to know when item is not available online

“Problem getting this item?” button

Link to Ask a Librarian

When it works, it takes you directly to the item.

“Try this option instead” link

What participants dislike or find confusing about the “get it@Duke” button or interface:

Not sure what the button “View the full text” is referring to. Button should be next to the title of the article.

Most of the time, the button doesn’t work. I don’t get what I want.

“View the full text” button doesn’t take me to the full text.

There are so many text links to click on and I’m not sure what to click on. I like big flashy buttons.

“get it@Duke” seemed to work better last year.

Why are there so many “View the full text” buttons? Repetitious.

Font size of text links is very small and the text is clumped together.

The button and interface are not intuitive to me.

“View the full text” page looks like an illegal file sharing page.

The citation style of the title listed on these pages is not intuitive.

Didn’t notice the “Try this option” link at first. Easy to miss.

Recommendations for improvement:

Limit the number of options returned.

Bypass all the “View the full text” buttons and go directly to the full text or PDF.

Instead of opening so many tabs when I “View the full text”, just take me to the source.

I wouldn't change anything. The button and interface seem pretty intuitive.

Would like an option to search in Google Scholar.

For eBooks, do not show the library bar at the top of the page because you lose screen real estate for the eBook.

Have an image of the cover if available, title of item should be as large as possible, followed by author, and publication date.

Have a more information button to explain what the “View the full text” means and all of the other links near these buttons.

Appendix: “get it@Duke” Usability Test Script

Thank you for agreeing to take part in this study. In an effort to improve access to online articles and books, we are testing the functionality of our “get it@Duke” interface.

I will be asking you to complete a few tasks involving finding online articles, journals and books available through Duke Libraries. Keep in mind that there are no right or wrong answers and that we're testing a tool — not you. If you have any questions as we go along, feel free to ask them. I may not be able to answer them right away, since we're interested in how people do when they don't have someone sitting next to them to help. But if you still have any questions when we're done I'll try to answer them then.

Okay, first some general questions:

Are you an undergrad, grad student, faculty member, staff member?

If you are an undergrad, what year are you?

For undergrads: What is your major? For grads, faculty, staff: What department are you in?

Have you ever seen the “get it@Duke” button when looking for online articles, journals or books?

If yes, have you ever clicked on it?

If yes, would you say that you use this button every day, every week, every month, or less often?

Now I'd like for you to complete three short tasks to test the “get it@Duke” interface. It would be really helpful if you would share your thoughts and observations as you are completing the tasks, so try to think aloud as much as you can. Like I said, there are no right or wrong answers.

What do you typically use for your research? A laptop? Desktop? Smartphone?

If you have this device with you, would you like to do these tasks using your own device?

[If they don't have the device/don't want to use it, or if they typically use a laptop to do research, we'll use our laptop]

TASK ONE

You've just discovered the musician Arthur Russell and want to see if we have his biography, Hold On to Your Dreams: [Arthur Russell and the Downtown Music Scene, 1973-1992](#), available online.

a. Use the Duke Libraries homepage to find out if we have this book available online.

[Goal is for participants get to this page: <http://bit.ly/1dc9wTV>

http://getitduke.library.duke.edu/?sid=sersol&SS_jc=TC0000393010&title=Hold%20on%20to%20your%20dreams%20%3A%20Arthur%20Russell%20and%20the%20downtown%20music%20scene%2C%201973-1992.]

b. What if you were not able to access the book from this screen? Show me what you would do next.

TASK TWO

You are now interested in using the database Academic Search Complete to do research on charter schools. Using this interface, search for charter schools [have Academic Search Complete open].

a. Try to find one of the first three search results online. [After clicking “get it at Duke” beside either result one or two, participant should see “get it at Duke” interface and “We don’t have this online” message]

b. Show me what you would do to get this article. [Engage participants in exploring “Other options,” as appropriate]

TASK THREE

Let's go to this page [show participants <http://bit.ly/1iRjHky> -

[\[\\[\\\[\\\\[\\\\\[\\\\\\[\\\\\\\[a. You'd like to read this article online. Show me how you would do that.\\\\\\\]\\\\\\\(http://getitduke.library.duke.edu/?paramdict=en-US&genre=article&spage=C.1&SS_issnh=0362-4331&issn=03624331&SS_referer=http%3A%2F%2Fsearch.proquest.com.proxy.lib.duke.edu%2F%2Fdocview%2F1491405773&date=2014-01-25&aulast=Sheets&atitle=Architect+Goes+Home%2C+to+Recall+and+to+Work%3A+%5BThe+Arts%2FCultural+Desk%5D&title=New+York+Times&localeid=1033&aufrst=Hilarie¶mdict=en-US&jtitle=New+York+Times&SS_LibHash=PM6MT7VG3J&sid=info%3Asid%2FProQ%3A&SS_authors=Sheets%2C+Hilarie+M&SS_source=3&l=PM6MT7VG3J&SS_ReferentFormat=JournalFormat&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3Ajournl&au=Sheets%2C+Hilarie+M&PP=true&SS_RequestType=1&SS_PostParamDict=disableOneClick\\\\\\\] -</p>
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<div data-bbox=)

b. What else could you do from this screen? Describe some of the other options you see.

Okay, that concludes our tasks. I have a few questions I'd like to ask you about your experience – feel free to leave this page open.

POST-TEST INTERVIEW

What did you find helpful or effective about the “get it at Duke” button and interface?

What did you dislike or find confusing about the button or interface?

If you could change the “get it at Duke” screen in any way, what would you change?

Is there anything else you’d like to tell us about your experience using “get it at Duke”?

1.15 Appendix B

The following is a usability test report written by the study’s author, Jaci Wilkinson, a former field experience student with the Duke University Assessment and User Experience department. It summarizes the test logistics and then lists findings and recommendations

Usability Testing Report: Lilly Library’s Homepage

Summary

On April 20, 2015, Jessica Smith and Jaci Wilkinson conducted usability testing in the lobby of Lilly Library. Seven participants were interviewed between 2 p.m. and 3:30 p.m. A pilot was conducted the week prior with an ADS student worker. The test consisted of four pre-test questions, five tasks, and four post-test questions. Each test took approximately twelve minutes. See Appendix A for full usability test script.

Task One asked participants to use a Tier 2 public computer (logged in prior to the start of the test) in Lilly Library to conduct a search on a current topic of interest and to reflect on the DUL homepage as the default starting page in Lilly Library. Of interest were respondents’ interactions with a public computer and participants’ starting points for their research (e.g. Lilly Library homepage, DUL homepage, Google). Every participant launched Internet Explorer (the only browser readily available on Tier 2 computers) and then used the DUL homepage (‘home’ on all Tier 2 computers) to begin their research. [Note: Our pilot participant used a Tier One computer in Perkins and so

had easy access to both Firefox and Internet Explorer browsers; she opted to use Firefox and was directed to the Mozilla homepage rather than the DUL homepage. She searched for resources on her topic directly from the URL bar on the Mozilla page and noted that she would then go to the DUL homepage to conduct more “serious” research.]

Task Two required participants to start from the DUL homepage and go to the Lilly homepage to conduct a search. To complete this task, three participants (43%) navigated to the Lilly Library homepage from the DUL “Libraries” menu, while four (57%) searched for some form of “lilly duke library” in Google or directly in their browser’s URL bar.

For Task Three, we asked each participant to look at the Lilly homepage for just five seconds. We then switched to a blank browser tab and ask participants to write down what they remembered seeing. This task was followed with questions related to the purpose and functionality of Lilly’s homepage. See Appendix B for transcriptions of participants’ written responses.

Task Four required each participant to conduct a search from the Lilly homepage. We asked each participant to reflect on the portion of DUL collections they were searching from the Lilly homepage and to tell us if they were satisfied with the search results. Four of the seven participants (57%) identified that they could change their search options to include the full Duke libraries catalog instead of just Lilly materials.

Task Five asked participants to use the Lilly homepage to find a new DVD available for them to check out. This task evaluated whether or not participants noticed the New Additions feature on the Lilly homepage. Four of the seven participants (57%) found and used this feature.

As part of this evaluation, we also considered traffic to the Lilly homepage relative to the DUL homepage, total clicks to numerous links on the Lilly homepage, and the most common sources of Lilly homepage traffic. See Appendix C for web metrics.

Participants

Seven participants (excluding the pilot participant) completed the test. Three were first-year students, one was a senior, one was a former faculty member, and two were graduate students. The following departments were represented: religion; art, art history and visual studies; political science; and romance studies. The three first-year students had not yet declared their major.

Six out of seven participants (86%) had used a Lilly public computer before. The reasons varied widely. One participant cited the bigger screen as beneficial. Another participant, a MacBook owner, uses public computers to access Microsoft Office. Two participants (29%) use Lilly computers for scanning and printing. Two other participants (29%) said they use public computers for quick things such as e-mail checking or call number checking. Six out of seven participants (86%) had used the Lilly homepage before this test. All participants had used the DUL homepage before, and four participants (57%) use it three or more times a week.

Key Findings

1. Every participant used the DUL homepage to start their search, and five (71%) used the default search ('ALL') on the DUL homepage.

2. Five of the participants (71%) mentioned that they start at the DUL homepage, as opposed to the Lilly homepage, because it is “expected,” “better,” “easy,” and a “full search.”
3. One participant (14%) noted that if the browser homepage had defaulted to the Lilly homepage, he would have gone to Google to start his search because he only knows what to do from the DUL homepage.
4. Of the two participants who didn’t use the main search bar, one clicked ‘Advanced Search,’ and one went to the Search & Find tab, clicked ‘Articles,’ and did a keyword article search.
5. When asked to describe the primary purpose of the Lilly homepage, four participants (57%) named “search” or “searching Lilly materials” as the primary purpose.
6. Two participants (29%) identified searching/discovering new and current materials as the primary reason for using the Lilly homepage.
7. Five participants (71%) stated that the DUL homepage should remain the default for Lilly public computer browsers. One participant (14%) recommended that the browser default to two tabs, displaying both the Lilly homepage and the DUL homepage.
8. Four participants (57%) noted that the Lilly homepage reminded them of and/or worked similarly to the DUL homepage and other Duke Libraries web pages.
9. Two participants (29%) vocalized that they did not know what “DevilDVDs” were.
10. Two participants (29%) clicked on ‘Film & Video’ under ‘Lilly Collections’ on homepage to find new DVDs available for them to check out.

Key Recommendations

1. Endeavor to display all New Additions content on the Lilly Library homepage above the fold.
2. Design “Lilly Collections” and “Latest at Lilly” to occupy less space on the homepage.
3. Reduce white space on Lilly homepage so as to display more content above the fold.
4. Ensure that “Latest at Lilly” carousel is current and primarily displays news items related to Lilly.
5. Include a search field on the “Film & Video” collection page.
6. Add a section in the “Film & Video” page that directs users to the New Additions features for DVDs.
7. Set the DUL homepage as “Home” for the Firefox browser on the Tier One work stations, just as it is for Internet Explorer on the Tier Two machines. Consider adding a shortcut to Firefox to the desktop or taskbar, just as it is on the Tier One stations.

Appendix A: DUL usability test script, Lilly homepage

Thank you for agreeing to take part in this study.

We are interested in learning more about how researchers use the Lilly Library homepage, and we're hoping what we learn will help us improve current functionality.

I'll be asking you to complete a couple of short tasks that involve using library websites.

Keep in mind that there are no right or wrong answers and that we're testing our website — not you.

Okay, first some general questions:

1. Are you an undergrad, grad student, faculty member, staff member?

a. If you are an undergrad, what year are you?

- b. If you are an undergrad, what is your major?*
- c. If you are a grad student or faculty or staff member, what department are you in?*
- 2. Have you ever used a public computer in Lilly Library?*
- a. If yes, would you say you use the public computers here in Lilly every day, every week, every month, once a semester, or less often?*
- b. What is your primary reason for using a public computer?*
- 3. Have you ever used the Lilly Library website (point to Lilly homepage)?*
- a. If yes, would you say you use the Lilly homepage every day, every week, every month, once a semester, or less often?*
- b. What is your primary reason for using the Lilly homepage?*
- 4. Have you ever used the Duke University Libraries website (point to DUL homepage)?*
- a. If yes, would you say you use the Duke Libraries website every day, every week, every month, once a semester, or less often?*
- b. What is your primary reason for using the Duke University Libraries homepage?*

Now I'd like you to complete a couple of tasks. It would be really helpful if you would share your thoughts and observations as you are completing the tasks, so try to think aloud as much as you can. Like I said, there are no right or wrong answers.

TASK ONE: First, consider a topic you're currently thinking about or researching for a class, project or personal interest

Let's walk over to this computer [Lilly public computer] to search for books, articles or other resources that would help you research this topic. [Note: Participants will be stopped after they open a browser, go to a website and enter their search terms.]

Describe your experience using this public computer to begin your search.

[If appropriate...] You opened a browser and were directed to the Duke University Libraries homepage. What are your thoughts about that? Did you expect to see this homepage or a different one?

TASK TWO: Okay, now you'd like to use the Lilly Library homepage to search for sources on your topic. Show us how you'd get to that page from the Duke University Libraries homepage.

[Flip to another tab once participant finds Lilly homepage, and describe task three.]

TASK THREE: We're now going to show you the Lilly Library homepage for just 5 seconds. Try to remember everything you see in these 5 seconds, and then we'll ask you to write down what you see. [Move to another tab once 5 seconds are up, and give participants a moment to write down everything they remember about the page.]

What is the primary purpose of the Lilly Library homepage?

What can you search for using the Lilly Library homepage?

Would you use the Lilly Library homepage to search for sources on your topic?

[If participant answers yes, go to TASK THREE. If participant answers no, go to item d.]

Why not? What site would you use instead?

TASK FOUR: Let's now return to library.duke.edu/lilly, and conduct a search for resources on your topic

[After participant views results, return to Lilly homepage, and point to search box] What are you searching when entering terms into this box?

Is there a way to change what you're searching?

What worked well as you were searching?

What would you recommend changing about this search interface?

TASK FIVE: *You're interested in seeing the new DVDs available to check out at Lilly.*

Show me how you would find a new DVD that's available for you to check out.,

What worked well as you located a new DVD available for you to check out?

What would you recommend changing about this interface?

POST-TEST INTERVIEW

[Skip to d. if participant has already fully answered questions a and b]

What are your thoughts about the Lilly homepage?

What would you change or improve about the Lilly homepage

These computers default to the Duke University Libraries homepage rather than the Lilly Library homepage. What are your thoughts about?

Is there anything else you'd like to tell us about your experience today?

Appendix B: Transcribed participant notes after 5-second test

Pilot: Contained links for art, film, history – probably not as relevant to my research

Participant 1: the “news” underneath the search bar looks slightly outdated in aesthetics

Participant 2: looks easy to navigate looks like all duke

Participant 3: well organized with different tabs easy to choose between just lilly library and a full catalogue

Participant 4: The catalogue search is defaulted to Lilly library catalog the opening hours are clear the novelties are colorful and they catch the attention it might be easy not to realize in the very beginning it is Lilly library homepage

Participant 5: Current Collections Art, Philosophy

Participant 6: books/media art keywords search bar new literature

Participant 7: the search ftn is not very relevant to me (I can look for Lilly only books from main page) I like that the current literature books are listed. I enjoy Lilly's selection

Appendix C: Web analytics of Lilly Library Homepage

(Note: this appendix was added by Michael Johnson after the original report was presented to WebX)

August 25, 2014 through April 22, 2015

Page	Pageviews	Percent
DUL homepage	906,919	98
Lilly homepage	18,618	2
Total	925,537	100

Event	Clicks
Catalog Search Submit	3,296
Catalog Film Video	278
Catalog Advanced	211
New Addition / devilDVDs	157
Articles Search Submit	94
New Addition / Current Literature	35
All Search Submit	31
New Addition / Art Books	16
Summon Advanced	3
New Addition Header	1
Total Events	4,122

Source	Pageviews
google	6,914
search.library.duke.edu	2,838
(direct)	1,538
duke.edu	211
search.duke.edu	121
bing	116
blogs.library.duke.edu	111
guides.library.duke.edu	74
duke.summon.serialssolutio	63
ns.com	
db.library.duke.edu	53
qduke.com	53
catalog.library.duke.edu	47
exhibits.library.duke.edu	47
shib.oit.duke.edu	42
calendar.duke.edu	21
proxy.lib.duke.edu	21
reservations.library.duke.ed	21
u	
library.duke.edu	16
yahoo	16
borrowdirect.org	11
databases.library.duke.edu	11
flavorwire.com	11
joblist.ala.org	11
library.divinity.duke.edu	11
people.duke.edu	11
search.trln.org	11
semmla.musiclibraryassoc.org	11
baidu	5
en.wikipedia.org	5
lib.potsdam.edu	5
libraries.mit.edu	5
link.duke.edu	5
maps.duke.edu	5
sakai.duke.edu	5
salalm.org	5
sww.sas.com	5

1.16 Appendix C

Below is the card sort data organized by the categories originally chosen by the researcher. The number beside each recommendation corresponds to the test from which it came. The key of test titles and numbers is at the bottom of the appendix.

Feature

Adding or removing a feature/function from a web page that a user would interact with (not just read) e.g. a search box, login field. Includes links

1. include option for chatting with a librarian (2)
2. add a link to search Google Scholar (2)
3. Add a link to the books and more search tab (3)
4. add a link to research databases to the research support menu (3)
5. increase access to information about locating images and conducting image-related research on the homepage (5)
6. keep sidebar expanded, but give users the option of collapsing it if they wish (6)
7. integrate 'get it @ duke' into the sidebar button (6)
8. integrate an option to chat with librarians into sidebar (6)
9. consider eliminating 'staff' and 'research guides' sections until search is robust enough to consistently return relevant results (8)
10. integrate the option to chat with a librarian into the sidebar (9)
11. enable filtering on the ALL results page like on the endeca results page (11)
12. add a link to Research Databases to the Research Support menu (12)

13. consider reducing the number of fields required on the Researcher Registration page (13)
14. consider a hyperlink to the Terms and Conditions page on registration page” (instead of filling whole page with text) (13)
15. remove step of choosing affiliation on splash page: have different login options all on one page (13) >>> correct spot?
16. ensure that Latest at Lilly carousel is current (14)
17. include a search field on the Film & Video collection page (14)
18. Add a section in the Film & Video page that directs users to the New Additions features (14)

System Function

A recommendation that requires changing or modifying how a system processes or outputs information after a user generated an input

1. limit the number of options returned (2)
2. consider removing functionality that appends the word ‘research’ to search terms entered in the search field on this page (research guides page search) (3)
3. continue to investigate the possibility of using endenca to power the books and more section of the bento interface (4)
4. use Summon to power books and more but link the endeca results interface from ‘see more’ at the top of the books and more column
5. consider displaying more than 5 results in the books and more bento interface
6. consider displaying item description for results in the books and more section of the bento interface (4)

7. enhance search for the 'staff', 'research guides', and 'images' sections (8)
8. consider displaying all 'images' rather than only those that have thumbnails (8)
9. remove the 'powered by google' text in the lower right hand corner of the search boxes using google cse (8) >>> correct spot??
10. resolve issue that leads to the same cover image displaying for different titles in 'books & more' (8)
11. ensure that the same results that appear in the 'see all' summons results page appear in the bento interface (8)
12. change ordering of box numbers in listings to numerical order (9)
13. make it easier to request multiple boxes from a collection (9)
14. fix search results load time (11)
15. add a "most used" or personalizable resource section to the DUL homepage (11)
16. reorder options for each resource result so [results] are arranged in chronological order by date coverage (12)
17. add a Best Bets section to the All Search (12)
18. Remove references of "Aeon" from login and registration/sign-up pages (13) (also in interface)
19. integrate Aeon with ILL/DD account (13)
20. Create a databases or audio results box (11)
21. consider pros and cons of adding a Special Collections results box to results (11)

Text

Any recommendation that mentions text use (except for size: that's interface) with regards to adding explanations, changing titles, or mouseover text recommendations

1. provide explanation of Classic Catalog, TRLN, and WorldCat using mouseover text (1)
2. link text more descriptive or add mouseover text (2)
3. include mouseover text for buttons and links (2)
4. change the hint text in the Books & More search field (3)
5. determine branding language to use when referring to the default search functionality (3)
6. clarify the text for the drop-down menu in the side bar (6)
7. remove library jargon (6)
8. change the names of the tabs on the eBooks page (7)
9. incorporate Download popular eBooks to your Device into the heading of the box (7)
10. ensure the text clearly communicates the purpose of this section (9)
11. the 'place this request' link should place a request for that particular box rather than taking them to another list (9)
12. consider whether we need to explain the word "media" better in Books & Media (11)
13. consider how to clarify that the Our Website section of results is actually a site search (11)
14. consider ways to improve explanatory text under box headings on search results page (11)
15. add options in the Browse by Subject section on the Research Databases page (12)

16. clarify the functionality of the Research Databases search page (12)
17. add more drop-down options or rephrase the current options on the Online Journal Titles portal page and results page (12)
18. consider changing the wording used to describe requesting Rubenstein materials (13)

Interface

Pertains to color use, text size, size of features, and arrangement of information on page

1. Add search box to the Subject Experts page that is more prominent (1)
2. Make options in the black bar of the search box... more prominent (1)
3. button closer to the resource's citation information (2)
4. increasing font size of text links (2)
5. make the title and author information more prominent (2)
6. change the color of the link (2)
7. change color and link text (2)
8. hide the "try this option instead" banner (2)
9. make the search box on the 'subject specialists' page more prominent (5)
10. make options to search and request items through worldcat and search TRLN on the homepage more prominent (5)
11. use the 'get it @ duke' logo for the collapsed side bar (6)
12. make the sidebar button more visible (6)
13. change the order of the tabs to preference search option that produces more results (7)

14. incorporate a more prominent visual break between the search options on the eBooks page (7)
15. reduce the two tabs to one eBooks tab (7)
16. make titles of sections more distinguishable from the results (8)
17. distinguish the colors of the fonts used (8)
18. move Other Resources to the 3rd column on the page (8)
19. make more prominent the drop-down menu in the sidebar (9)
20. make the heading from the drop-down section of the sidebar more prominent (9)
21. use a font that is easier for researchers to read when oriented sideways (6)
22. move the sidebar to the left side of the screen (9)
23. on the 'get this title' page make the request option for items more prominent (9)
24. update pages that still have old masthead (10)
25. determine whether Special Collections are appearing in the best locations on the results screen... clarify to users where Special Collections appear on the results screen (11)
26. consider the ways in which the current results screen might be overwhelming to users (11)
27. make supplemental links in Search Resources box on Libraries homepage more prominent (12)
28. consider putting guides in multiple categories" (so easier to find in nesting process) (12)
29. recommend a redesign of getitduke.library.duke.edu to make the search results interface more usable (12)

30. highlight the website category of materials in the All Search results page (12)
31. Remove references of “Aeon” from login and registration/sign-up pages (13) (also in system functions)
32. endeavor to display all New Additions content on the Lilly Library homepage above the fold (14)
33. redesign Lilly Collections and Latest at Lilly to occupy less space on the homepage (14)

Use

Large-scale recommendations that pertain to policy or process rather than a particular web page

1. publicize this feature through DUL blog and other social media outlets (3)
2. create an instructional page for using this functionality (3)
3. encourage research librarians to incorporate the new feature into instruction sessions (3)
4. explore ways to make searching for images easier in endeca (5)
5. reduce the number of steps to request books (10)
6. make it clear to users how far along in the process they are (10)
7. find way to bring together displays of three different accounts (library, ILL, Rubenstein)” (10)
8. set the DUL homepage as Home for Firefox browser (14)

1. Homepage-search interface, 2/4/14
2. Get it @ Duke, 2/7/14
3. Default Search – Research Guides, 3/7/14
4. Books and More Tool Bento, 4/8/14
5. Research Strategies, 5/1/14
6. Get It At Duke Sidebar, 6/9/14
7. eBooks, 6/18/14
8. Bento Results, 7/18/14
9. Link 2.0, 7/31/14
10. Requesting Materials, 9/3/14
11. Bento Results, 9/11/14
12. Website etc., 10/29/14
13. Rubenstein & Aeon Login and Interface, 2/29/15
14. Lilly Website, 4/20/15

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