

Using a permanent usability team to advance user-centered design in libraries

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Abstract

Usability, user studies, and evaluating user experiences have been a part of academic libraries for many years. In the last 20 years libraries have created ad hoc usability teams to do user studies. Oregon State University (OSU) Libraries started its ongoing team in 2006, resulting in an increased focus on user experience throughout the libraries. This article explores the team's history from formation to work it took on. The merits and challenges usability teams bring to an organization are also discussed. To date the literature describes usability methods and shares findings from libraries' usability studies but none discusses benefits a standing usability team brings to a library organization or the work it may do.

Introduction

Libraries recognize the enduring value usability studies and user-centered design bring to our websites and organizations. Yet, many libraries rely on ad hoc usability teams to carry out user studies despite calls to systematically cultivate a user-centered culture (Cervone, 2005). Often the group that redesigns a library website is also expected perform any usability studies (Connell, 2008). Given the centrality of websites to libraries' missions, we might anticipate a higher rate of usability studies than Connell's finding of 46%. Oregon State University (OSU) Libraries' experience with a dedicated usability team demonstrates one solution to doing regular user studies and developing a user-centered culture. OSU Libraries started its ongoing usability team in 2006, resulting in an increased focus on user experience throughout the libraries. This article explores the team's history from formation to the work it did. The merits and challenges usability teams bring to an organization are also discussed. To date, the literature describes

usability methods and shares findings from libraries' usability studies but none discusses the benefits a standing usability team brings to a library's organization.

Literature Review

The library literature is replete with findings from usability studies, descriptions of testing methods and exhortations that libraries adopt user-centered design as standard practice. However, very little is written about the individuals and teams that conduct this work or how they fit into a library organization. Further, no literature describes the formation and place of a usability team within a library's organization. A few articles do mention usability personnel or teams, but only in the context of larger issues.

Cervone (2005) called for the installation of an on-going usability training program for library staff and proposed a model for implementation. His proposal describes a systematic method to ensure all staff are versed in usability thinking. He also suggests the program content, which he categorizes as knowledge-based and skills-based training. With knowledge-based training, staff gain insight into the benefits of usability and user-centered design. Skills-based training focuses on tools and methodologies. The benefits of an on-going usability training program are the development of staff skills, making "the concept of usability pervasive throughout the culture of the organization" and ensuring the usability of library services and resources. He does not, however, address the development of a focused team to carry out this training.

While on-going, library-wide training is one approach to inculcating usability testing and user-centered design throughout a library, another is through hiring personnel dedicated to usability efforts. Ward and Hiller (2005) note that the University of Washington Libraries "sought to programmatically incorporate usability testing in the development life cycle of online services

and resources". As a result, UW Libraries hired a coordinator and a graduate student specifically to work on usability efforts.

The computer science literature reveals how other organizations have formed and handled usability teams. Several themes emerge when reviewing this literature: team members and structure; the team's relationship with other teams; and when the team gets involved in the process.

Team members' background and skills

Usability teams vary in the makeup of members, their backgrounds and in team structure. Many teams reflect the diversity of fields that contribute to understanding users and user-centered design. Vredenburg (1999) describes a multidisciplinary approach where a team's skill set included visual, industrial and HCI design; user assistance architecture; user research; marketing; and product development. Borgholm and Halskov Madsen's (1999) surveys of usability efforts at six multinational companies found a wide range of team members' skills and backgrounds: human factors and cognitive psychology, industrial engineering, visual design, technical communication, anthropology, computer science and programming. Reuters' virtual team, The Usability Group (TUG), possessed an array of skills such as interface design, prototype design, graphic design, and cognitive psychology (Garrison, Heath, & Jaynes, 1996).

Borgholm and Halskov Madsen (1999) note that teams' skills are not fixed. As usability specialists with different backgrounds interact with each other or learn about each others' practices, mutual adoption of practices (and skills) occurs. Skills may also change in response to institutional reorganization. Demers (1981) describes IBM's concern about anticipating and solving usability problems early enough in the development process. This was solved by adding a programmer to their usability committee. Although libraries are not likely to permanently

employ usability staff with all of the skills noted above, evaluating when and how to expand a library organization's current skill set may prove beneficial.

Team structure

Two common structures for usability teams are a centralized group in a single department or one whose members are distributed among development teams (Borgholm & Halskov Madsen, 1999). A centralized usability department will "loan out" one or more members to work on projects with other departments or teams in the organization. Alternately, team members may belong to a "permanent, specialized department" or, an "ad hoc group oriented toward usability" and will work on usability issues within a department. Distributed groups tend to have involvement at an early stage because of their pre-existing relationships with developers and others, whereas a centralized approach risks isolation. One solution will not work for all institutions and many organizations try different placements to maximize the advantages of each structure. Regardless of team structure, Demers (1981) concluded that "usability must be designed into the system from the very beginning, and it must be as integral a part of the development process as performance, reliability, and serviceability."

Instead of a dedicated usability team, an organization may form a core group of usability experts to advance user-centered design skills throughout the organization. Reuter's usability group created a "network of champions" to promote Customer Centered Design throughout their organization (Garrison et al., 1996). Leadley, Pao and Douglas (2005) describe challenges that newly Certified Usability Analysts encountered during their sanctioned efforts to create a user experience culture. The analysts experienced resistance to being accepted, to their services being used and were not readily seen as adding value to end products. However, their efforts prevailed and ultimately standards they created with user and developer input were adopted. At Microsoft, members from their central team of usability coordinators and technical staff led the

way for usability efforts in the organization (Muller & Czerwinski, 1999). These usability experts joined product teams to share findings from testing with developers and worked on “user experience, conceptual organization, task flow, (and) detailed design”.

Relationship with other groups

For greater success, usability teams need to establish positive working relationships with developers (Borgholm & Halskov Madsen, 1999). Ideally, usability experts would then be brought into the development process at an early enough stage to minimize usability problems. This in turn can reduce customer service costs (Muller & Czerwinski, 1999). For the relationship to be effective developers must embrace user-centered design. Leadley, Pao and Douglas (2005) found that “a single demonstration of usability testing is great for converting people to user experience concepts”.

Teams in libraries

There is a wealth of literature describing libraries’ experiences with teams and team management and offers much guidance about the formation and maintenance of teams. Of particular interest is *Use of Teams in ARL Libraries* (Soete, 1998); *Managing 21st Century Libraries* by Pugh (2005); and *Teams in Library Technical Services* by Bazirjian and Mugridge (2006).

The library literature also discusses how libraries are helping their employees gain management skills (Fosmire, 2008) and that libraries have used all librarians to help improve services and build a culture of continuous learning among librarians and staff (Bradigan & Powell, 2004). Church and Felker (2005) describe forming a web team and the important core skills of the team members. They also discuss the importance of good communication among

members and with others in the organization, authority of the team to make decisions, accountability for work, and the necessary resources to accomplish work and training.

OSU Libraries Experience

Background

In 2006, OSU Libraries put together an ad hoc committee to perform a usability study on OSU Libraries metasearch application. Around the same time, OSU Libraries planned to redesign its website so administration decided to make the ad hoc committee a permanent usability team. This team would focus on the website redesign, as well as on other projects that library staff wanted to test. The scope of the team's charge was to perform usability studies, analyze results and provide consultation to those interested in having usability studies done. The usability team was also given an educational directive to their work. This education piece was to inform library staff about what usability and user-centered design is and to share tests and methods for others to use. Cervone (2005) suggests that libraries create a usability training program to promote usability throughout the organization. OSU Libraries felt that having a dedicated team where staff from various departments could either be a team member or work with the team on usability studies would be a better way to "teach" usability. Staff participation in either option fosters active learning.

Libraries have always kept the user in mind when creating or improving services and having a dedicated usability team extends that value. As Borgholm and Halskov Madsen (1999) wrote, a usability team "need[s] to cooperate with users to obtain knowledge about their work practices, and they need to cooperate with developers to make them apply this knowledge about work practice". A usability team helps meet these groups in the middle and mitigates

some of the personal choices or decision-making by the development team by focusing on the objective data gathered from the user studies.

Distributed model

Due to staffing levels and the recognized importance of having skills and viewpoints from individuals throughout the organization, OSU Libraries created their usability team using the distributed model of team placement within an organization. All members of the usability team work on every project, instead of “assigning” team members to different projects. However, the level of participation on projects may vary depending on workload issues and project size. By having the whole team work on every project it allows expertise to be developed within the team. Schaffer (2004) argues that “usability should not reside within a single group or team; in order to succeed, usability must permeate the entire organization and become part of the system. In all cases, you need a small, centralized, internal group to support your usability initiatives”. This central group maintains and cultivates the usability skills within the organization.

Many libraries assemble a team to perform usability tests when the need arises. This can take time and delay a project because it may seem like yet another thing that librarians have to do on top of their already overloaded schedule. Without a team in place, usability may not be done or testing may be scaled back. Furthermore, there may be a lag in performing any usability tests while the team members reacquaint themselves with usability test methods. Having a permanent usability team allows library staff to make their participation part of their position and allows for usability testing to happen early in the development or redesign of a project. This early collaboration can identify problems that would have been identified later on and may be easier to correct. OSU Libraries’ web team asked for a first round of user testing at an early enough stage in their website redesign so they could include user input at each stage of development.

Part of the usability team's charge was to educate the entire library staff about usability. Schaffer (2004) discusses how others within the organization should be given some basic training in usability in order to help shape the organization's commitment to usability. Fortunately, OSU Libraries' administration requested that an ad hoc usability team become a standing team. The fact that libraries focus on users combined with OSU Libraries' installation of a permanent web team, helped sell the idea of usability for web projects to rest of the organization.

Team make up and members' roles

OSU Libraries' usability team membership consists of standing and ad hoc members. Standing members join for one or more years providing continuity and some institutional memory. Ad hoc members may join for a year or longer to gain skills in performing usability studies. These ad hoc members change depending on availability and interest. For example, one librarian was a member for one year and left to shift focus to other work responsibilities. Team members do not have to be experts in usability; they just need to have an interest in the subject and support from their supervisors to make it part of their position. Another type of ad hoc member is one who joins the team as the representative for their project and remains on the team throughout user testing of their project. It is important that ad hoc members are viewed as part of the team in order for communication to be seamless and to demonstrate how important it is for project teams to be intimately involved in usability, even if they are not doing all of the testing themselves. This ad hoc membership is also important as a way to educate library staff on usability. For example, when OSU Libraries redesigned and updated the interlibrary loan information pages and request form, the head of interlibrary loan became an ad hoc member of the team. After consulting with her on what she wanted tested, she decided her staff would benefit from participation in user testing as test observers.

Among the standing members of the team, two members are considered permanent due to their positions in the library: the web coordinator and a programmer. These individuals benefit from being on the team because they experience the whole process of usability studies from developing and conducting tests to analyzing findings. They see users interacting with the site and the problems users experience first-hand. The web coordinator and programmer are able to brainstorm possible solutions more quickly than if they were not a part of the usability team. This was especially important when working on the libraries' website redesign. The web coordinator is generally involved in every web project undertaken by OSU Libraries, but may not be the lead. The programmer is involved with special web projects and her experience is tremendously useful because she has a Master's Degree in Human Computer Interaction. Her participation and knowledge informs her projects and helps her justify changes to administrators.

The rest of the team, which averages about five members, comes from departments throughout the library. One of the team members is designated team leader. This position rotates every year or two in order to develop and strengthen skills. The leader is the main contact between the team and the administration and is the primary contact for project leaders to bring projects to the usability team. However, the team leader does not necessarily lead all of the usability projects. There were some projects that did not need the whole team. The programmer developed, conducted, led and analyzed tests relevant to her work. She moved more quickly than if the whole team was involved. Because of her considerable experience she easily executed all aspects of testing, however she maintained a connection with the team by asking for input and sharing her findings.

The team composition brings different perspectives and strengths to the group. Cervone (2005) writes that "[p]ublic services staff and collection managers cannot make intelligent decisions about how to design information resources or services if they do not have an understanding of how people interact with computing environments". In addition to the web

coordinator and the programmer, the team has included several librarians who have a large instruction component to their positions. A study by Graves and Ruppel (2006) found that instruction librarians changed their instruction or created new instructional materials because of what they saw during usability studies. Instruction librarians contribute to a usability team because they can help create questions and tasks that do not test users' knowledge, but rather focus on what is being tested. Other library staff can be part of the team because as Graves and Ruppel (2006) note, "...observations during usability testing, can, however, inform other areas of their work".

Having a coordinator in the group allows team members to concentrate on the usability test and not on recruiting and scheduling (Borgholm & Halskov Madsen, 1999). At OSU, the team had a student worker to recruit, schedule and assemble test packets. Office support personnel could also fill this role if student employees are not available. As long as the student employee is well-trained on prescreening volunteers, the usability team members do not have to be involved with recruiting.

Team accomplishments

The usability team has received a steady stream of requests for usability tests since it began in the spring of 2006. The team conducted two rounds of user testing for the OSU Libraries home page, and one round of interlibrary loan pages. In addition to these formal usability tests, the team has tried out different forms of usability analysis as the need arose. Guerrilla or hallway style testing was performed on a chat box, an institutional repository and a database interface. The team hosted three open houses where participants completed task and satisfaction questionnaires to test the interface for a natural resources digital library, OSU Libraries metasearch and OPAC. The team assisted with a card sorting exercise to address

web team concerns about terminology used in website navigation and provided a heuristic analysis for an open source custom content management system.

Most recently, the team analyzed website statistics to uncover any usability concerns. An upcoming project will be an ethnographic-style test of a stand-alone, point of service video. The team believes this level of requests is a result of having a standing usability team.

Benefits of a usability team

OSU Libraries website, personnel and organization greatly benefit from having a permanent usability team. Benefits that other libraries can experience include:

- Usability is done more quickly because a group does not have to be formed and take time to get up to speed about which method or test to use.
- Usability concepts permeate an organization's culture since members not only rotate, but also come from multiple departments (Cervone, 2005).
- Staff have the opportunity to develop new skills and learn about usability and user-centered design (Kupersmith, 2008).
- Decision making is based on evidence rather than personal opinions or interests since usability can be done in collaboration with the development group and there may be less need to 'sell' results.
- Team participation becomes part of a librarian's "regular" work, rather than an extra responsibility.
- Observing user studies can inform how librarians approach their other responsibilities, such as instruction or access services. (Kupersmith, 2008).
- Builds staff capacity-important to libraries unable to take on more staff.

Challenges of creating a usability team

Like any new endeavor this experience has not been without challenges. Libraries interested in establishing a usability team might consider these issues prior to setting up a team:

- Is the staff large enough to support a standing team? How many individuals have a strong interest in usability and are able to commit time and energy to team?
- What is the library organizational framework? Does it allow for a new team?
- Does administration support the formation of a usability team? Who will advocate for the team at the administrative level?
- Are web developers and other technical staff willing to collaborate or be ad hoc members?
- Will team leaders rotate? If yes, will this necessitate position description changes? And, how will the team ensure that communication with administration persists during a team leader change?
- Will team membership overlap? Team members' staggered membership helps prevent member turnover and decreases the amount of time needed to re-form the team (Baughman, 2008).

Conclusion

The usability team has been a success. It is a part of OSU Libraries structure and user-centered design is an accepted practice. Staff have the opportunity to specialize in usability and user-centered design. User testing is considered and usually undertaken when new services -- web or otherwise--are developed. More decisions are made based on evidence rather than because staff think an idea is good.

With the vast array of techniques available, a usability study does not need to take very long, but it does need concentrated effort to develop an effective test, schedule and conduct sessions and to collect, analyze and report the data. A permanent usability team allows an organization to build expertise and tackle more usability projects than ad hoc teams. Having a usability team already in place makes it more likely that usability studies will be done on projects that may otherwise have been overlooked because of the “burden” of asking staff to be a part of another project on top of their already busy schedule.

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