JENNY GUBERNICK

DigIn Capstone: PCPL Intranet Projects

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Executive Summary

For my capstone project for my Master's Certificate in Digital Information Management (DigIn), I spent 7-12 hours per week helping the Communications and Systems Office at Pima County Library (PCPL) evaluate options for a new staff intranet, and improved incident report tracking software.

The existing PCPL intranet and incident tracking system is buggy and outdated. It is based on technology that the library is unable to support without internal IT staff expertise, and Pima County's IT staff are not able to support it. Therefore, the options are either to move to a framework that Pima County IT is able to support, or to move to a hosted solution.

By researching specifications, other institutions' platform and hosting choices and functionality, and asking for input and testing changes on existing systems, I helped provide the information that the library's administration used to move forward with selecting new products that will best meet the needs of its staff. By choosing one framework that Pima County IT can support, as well as one hosted solution, this will also give the library the opportunity to compare support for these products and perhaps choose to migrate to the platform that proves superior.

In this report, I will give a project overview, discuss the work completed in greater detail, and also analyze how the reality of the project compared with its initial plan and my role as part of the larger team. Next, I will conduct a self-evaluation and examine the possibilities in the future for other DigIn students. Then, I will share a self-reflection on what I have personally learned and gained from this project. Finally, I will attach appendices containing the initial proposal, my interim report, and my supervisor's evaluation.

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│  Research and   │ ──▶  │  User feedback  │ ──▶  │  BiblioCommons  │
│   Competitive   │      │      and        │      │  and SharePoint │
│    Analysis     │      │  improvements   │      │    Platforms    │
│                 │      │  to existing    │      │    Selected     │
│                 │      │    systems      │      │                 │
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Figure 1, Process and Outcomes

Project Overview

Research: Completed a competitive analysis of other libraries' web platforms and functionality, prepared a report on necessary and desired functionality, collected hosting prices and options, and compared the functionality of various platforms and CMSes.

User feedback: using emails, wiki pages, informal conversations, and experimenting with changes to the existing system, we determined what functionality would be ideal, and what would be the minimum necessary.

Study: read documentation, watched a UACBT SharePoint training module, and read books on SharePoint administration.

Communication: used in-person meetings, email, and wikis to share thoughts and opinions.

Programming; made changes to existing systems in PHP, HTML, JavaScript, and CSS, and ran SQL queries and made some minor updates to database structure.

Tied in existing projects: will use forthcoming user experience vendor OrangeBoy's personas and information to inform usability testing decisions.

Documentation: submitted initial project proposal, interim report, and final report, and discussed my projects and my colleagues' projects on the online class forum.

Next steps: designing SharePoint incident report tracker and BiblioCommons intranet, migrating data, and implementing the move. Usability testing and user feedback will be an ongoing part of this process.

Project Details

In my DigIn capstone project, over summer 2013, I began a project to redesign the Pima County Public Library's (PCPL) staff intranet and internal incident report tracker. The goal was to determine an appropriate platform for conveying sensitive information that would serve the needs of the organization both more effectively in the short term, and with better extensibility and support in the long-term.
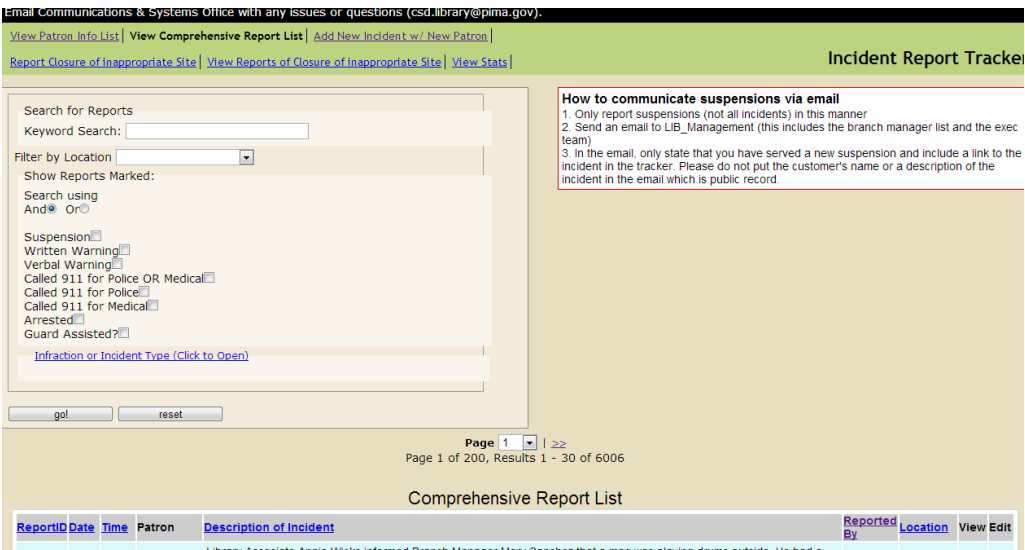
The current PCPL intranet (Figure 1) is mainly used for sharing information with staff at other locations, sharing documents, such as contact lists, and providing a staff directory through user profiles.

Also on the intranet is PCPL's Incident Report Tracker (Figure 2), which is a database containing confidential staff and patron information about any incidents regarding

Figure 2, Current PCPL Intranet

violations of PCPL's Code of Conduct (for example, graffiti, violence, theft), any incidents that may need to be reported to Pima County's Risk Management (for example, fires or accidents), or any time that the authorities are called, whether police, medical, or non-emergency lines.

Figure 3, Current PCPL Incident Report Tracker

The main methods that I used in assessing needs and conducting planning were 1) doing research into what other libraries and organizations were using to meet similar needs, 2) communicating with my supervisor and other staff in the Communications and Systems Office verbally, over email, and using a wiki, and 3) repairing and reconfiguring the existing intranet and incident report tracker web pages and database tables.

Some of the greatest frustrations in using the current intranet and incident report tracker come from the fact that the system was developed nearly a decade ago. While PCPL has grown and changed considerably over this time period, these tools have not, and PCPL has lacked the appropriate staff to redesign or overhaul them over time. One good example of this is in user profiles: due to budget constraints, a number of managers have been assigned to manage more than one location, but the current system assumes that each user profile will only have one location. Another example is the infraction fields in the incident report tracker correlate to an outdated version of the Code of Conduct, making it difficult for users to choose the appropriate options when submitting reports.

My research produced a number of documents that were useful in the initial stages of choosing a platform, and will continue to be helpful as the Communications and Systems Office moves into the design, migration, and implementation stages.

As a result, my supervisor and I presented the summary of this research and proposed options to the library director and deputy director, who ultimately made the decision to pursue the BiblioCommons hosted solution for the library website and intranet in the near future, and to utilize SharePoint for the incident report tracker functionality, following a model created by the University of Arizona Libraries for tracking similar patron information.

The SharePoint incident report tracker will be a better-designed database, using its built-in issue tracker system matched with the current infraction list (rather the outdated list built into the old system). Because of SharePoint's views features, the specialized use cases of branch managers and statistics gatherers will be more easily absorbed into the core functionality of the program, rather than being hosted on a separate site or requiring custom reports. Additionally, because Pima County IT uses Windows login credentials for all library staff, this will allow its contents to be more confidential. Currently, it is accessible to any library employee, including pages and youth workers, who has access to the intranet. SharePoint logins can restrict the access and ability to edit to the appropriate levels.

The BiblioCommons intranet, because it will be built on a WordPress platform, should be able to continue supporting the current features (staff profiles, blogs, and news items), while adding additional social and shared meeting functionality.

I tracked the time that I spent working on the DigIn project on a spreadsheet. Those hours were spent on a variety of tasks, including research, meetings with stakeholders, reading documentation, watching tutorials, and doing programming (creating, fixing, or searching web pages and databases).

As a result of my research and utilizing some previous programming expertise, I was also able to improve some existing functionality for the current system, such as providing a "view" link to incident reports that does not default to "edit" mode, and adding additional locations to the database. I have also been working on rewriting the intranet's user profiles to allow users to select more than one location -- in the years since the intranet was created, staff are now working under a different model that is not supported adequately by the current tools.

These improvements will be of great short-term utility until the new hosted services are configured (especially since I discovered that some of the public website's systems are built on the same framework), and have also given us insight into the kind of functionality that should be built into the initial configuration, rather than needing to be added after the fact.

Self-Evaluation

When I compare the work that I ended up completing with the work detailed on the timeline, I can see that it was overly ambitious in terms of the time frame required to move from researching and making an initial proposal, to implementing and completing a redesign project. Instead, those initial stages ended up taking up most of the project. I would say that the greatest challenge was on getting responses from Pima County IT -- as a separate department, it was politically difficult to navigate this, and to predict what would happen next.

I am disappointed to finish this project without having a finished product; however, since I am staying on with the system as a Librarian Substitute and they have available hours in that office for the vacant web designer/developer position, I hope to be able to see it through over the next several months. Although sometimes I have been frustrated by my own lack of knowledge and slowness in figuring out problems, when I look back overall, I realize that I have actually made a great deal of progress and contributed as much as I have learned. I have also realized that slow and steady isn't necessarily a bad thing, and that being thorough and taking the time to look into different possibilities can be an asset, especially during a slow-moving project – in some ways, the time frame can really be considered a luxury. Being able to spend the necessary time on design and functionality, rather than rushing to produce a finished product in a short time, will help the library avoid the problems that I have seen with the current systems.

I am proud of the work that I did, because it has set into motion not only having a new, improved incident tracking system and intranet, but also a new public website, which should have a great positive impact on the library's staff and users.

Depending on the timeline of implementing BiblioCommons, SharePoint could also be used as a replacement intranet system. Since Pima County's IT department supports SharePoint, and most of its functionality is controlled by a GUI, this may be a more realistic option than maintaining the current Windows/IIS/PHP/MSSQL stack that the IT department is not able to support or improve.

I can certainly see this being a project that future DigIn students could assist with, especially since the PCPL web designer position has been frozen and they do not currently have a web designer or programmer on staff. Furthermore, its lessons should help inform the next website redesign process for the public site, when BiblioCommons is purchased.

Reflection

I got a lot of insight into the decision-making process between PCPL and Pima County IT, and into the real-world life of a web developer. I learned that there would be a very wide variety of tasks to be accomplished and skills that would be needed to accomplish them.

For example, during one day, I had to prepare a complex query to provide a report of all incidents involving theft to another Pima County department, use the results of that query to create a simplified Excel spreadsheet, add new locations to the existing system, and make sure that those new locations didn't show up anywhere else that was pulling from the same database. Since it was hard to predict which skills would be needed for any given task, I found that having a flexible, let's figure it out attitude was far more important than being an expert at any particular thing. I also feel like I have personally overcome a lot of anxiety and perfectionism when it comes to my skills at web development, since I have learned that "good enough" is all any programmer can hope for, and that one can only really learn to program by programming.

I also discovered that although a lot of staff care about the tools they have to use on the website (intranet and incident report tracker) every day, they are not necessarily good at conveying what annoys them about the tools or what could be added to improve them. Being able to translate from tech-speak to library-speak is something that I'm not claiming to be an expert on, either, but it certainly seemed like the most valuable skill to learn. Really, most of this project came down to communication, patience, and willingness to compromise and figure out how to make the best of the realistic possibilities.

I think that being able to share this final report, code samples, screenshots, and research materials from this project (perhaps on a personal portfolio website, or on GitHub) will be very helpful in showing my capabilities and experience to future employers, whether in library or technical fields. I got to demonstrate both the "hard skills" of programming and the "soft skills" of communication and project management.

Appendix A: Project Proposal

Jenny Gubernick DigIn Capstone Project Proposal
Summer 2013
Pima County Public Library

In my project this summer, I will be assisting Jen Maney, the Communications & Systems Office Manager at Pima County Public Library (PCPL), with several interrelated projects related to the PCPL staff intranet. Jen has supervised numerous programmers, web developers, and web designers, and will be able to effectively monitor, guide, and evaluate my work. I also have some professional contacts that I have developed at the UA Library and from SIRLS classes to use as sounding boards for usability testing and programming issues that may arise, as well as being able to rely on the support of the 676 D2L forum and instructor for guidance related to project timeline and progress.

During this project, I will develop and demonstrate both "soft skills" of project management, delegation, communication, gathering feedback, etc., and also technical skills in computer programming, usability and user experience testing, and data management. Ultimately, I will be able to apply the soft skills to nearly any library or information professional job, and the technical experience will allow me to apply for a higher tier of jobs that offer better pay and more prestige. This would also allow me to broaden the scope of my future career paths to include IT professional positions that library school and experience alone would not have prepared me for, as well as making me a more competitive candidate for academic programs with a digital humanities focus. Additionally, this experience will make me more confident in my scripting ability, which has the potential to improve my efficiency and value in any position.

The specifics of my plan follow. During this project, I will:

- Research and evaluate both hosted and in-house options for the PCPL intranet, with the outcome of presenting an executive summary of plus/deltas, and, depending on the timeline that this evaluation and decision process takes, assisting with implementation of the chosen option. I anticipate this segment of the project lasting at least one month and taking 1-2 hours per week; implementation of hosted options would probably be beyond the scope of the capstone's timeline due to the procurement process, resulting in shifting my goals and priorities as needed. However, in-house development and migration may be possible during the remaining 12 weeks of the semester.

- Create a new incident report tracker that better meets the needs of its users, while complying with state and federal privacy laws. I anticipate this project taking 7-9 hours per week. The initial phase of this project will be tied to the staff intranet research in exploring hosted options, which would involve changing the scope and plan for the rest of the project (if that occurs, I will submit a revised project proposal). Here is an outline assuming in-house development and implementation:
    - o The first phase, which I anticipate taking 1-2 months, will involve meeting with stakeholders, creating mockups and wireframes using web development and scripting technology, and conducting focus groups and usability testing. The outcome of this phase will be a usable, searchable website that allows staff to easily enter and view information.
    - o The second phase will involve database design, including creating ERDs, evaluating different relational database platforms and creating an executive summary of plus/deltas, creating and presenting a data migration and normalization plan, and meeting with stakeholders. This phase will also take 1-2 months, and I anticipate that the majority of this work can be completed concurrently to the first phase.
    - o Then, for the third and final phase, based on the decision of the CSO Manager in evaluating my proposals, I will develop a new relational database using structured query language that contains and categorizes the information that library staff input and consult. Depending on the decisions of stakeholders, the previous information may either be migrated or archived at this point. The outcome will be a fully functional incident report tracker that improves on the functionality of the current one and is developed using best practices that can be extensible for the future and interoperable with new technologies. I anticipate this last phase taking the remainder of the timeline to complete.
- The overall competencies that I will learn and demonstrate in this project will include soft skills such as written and verbal communication with stakeholders, project management, research, and analysis, as well as programming skills in web and database design. The exact contents and scope of the programming will be determined by the project requirements, but I anticipate using scripting languages (most likely PHP and Python), web and metadata coding (HTML, XML, CSS, LESS, SASS), and MySQL, PostgreSQL, or MSSQL for the incident report tracker database, and anticipate working in either an in-house

Windows Server 2003 environment or a hosted Unix environment.

- I will also spend about 15-20 hours over the course of the semester in creating the required reports and documentation. This will be built in as a 1-2 hour per week time that can be adjusted flexibly based on project deadlines.
- Overall, I will spend 10-11 hours per week getting hands-on experience working on this project, and 1-2 hours per week on reports and documentation.

Note: I am currently working for the University of Arizona Libraries. However, I stayed on as a Librarian Substitute when I left PCPL so that I could get paid for this project. Although I specify 8-11 hours per week of project work, it is possible that I could work additional hours for PCPL doing other duties – I had previously helped them with fixing CSS on their website, etc., or I could do substitute hours at the information desk, serve on library committees, etc. However, the scope of this project would be strictly limited to researching hosted intranet and incident report tracker options, and then implementing them – anything else would be on my own time with them, not part of the capstone project.

Appendix B: Interim Reports

My project's been interesting so far! I'm working on Pima County Public Library's staff intranet and incident report tracker. Like Regina, I had hoped that by this time, I'd be further along in the process, but doing this project has definitely opened my eyes to what a realistic timeline actually looks like.

I gathered information about what a "perfect world" staff intranet would be, and also, what are the must-have features that we couldn't compromise on. Then I did a LOT of research on what back-end systems could be realistic options. For example, if we went with hosted Drupal, which modules we'd need to install and customize, and what kind of access we'd need. After the higher-ups chose hosted WordPress, I did competitive analyses of what other libraries were doing with it (a trick I'd learned from volunteering at the UA Libraries!) and which hosting companies could be good options. And then... we got word that BiblioCommons is happening sooner, rather than later, so the hosted options are kiboshed, but since it's a county administration decision, "sooner" is a kind of relative term here.

The other half of my project, the incident report tracker, is going about the same way. After doing research and presenting options, the higher-ups chose SharePoint (which wasn't my favorite option, but hey, putting "SharePoint administration" on my resume wouldn't hurt!), but we're waiting on County IT to approve it.

So in the meantime, I'm keeping busy improving the existing intranet and incident report tracker, since who knows how long they're going to end up staying around, and hoping that there will be more progress to report before the end of my project.

It's interesting to look back at what I learned about technology planning in the classes, and see how that's played out in this real-world scenario. Frankly, I think the problem here is that in this scenario, County IT does the technology planning, so no matter what the website team or library administration wants to plan on, we need to get their blessing, and politics are so complicated that it's been hard to anticipate how things will play out, or know which battles are worth picking. I had assumed, for example, that they would be *delighted* that we asked for a test SharePoint site, since they've been pushing for SharePoint for years, but maybe the issue is that *we* wanted to design and administer it?

This has definitely made me think that in the future, working for a library that has its own IT staff would be a huge advantage, and also, that going to them initially, instead of creating something to present after we made a final decision, would probably have been more realistic. Maybe even getting someone from their staff to come to those meetings.

Appendix C: Supervisor's Report

Jenny has done great work for us this summer. Her research into platforms for our intranet and incident report tracker has helped tremendously in our efforts to find better solutions for these staff resources. Jenny brought with her a real set of programming skills, which we sorely needed, but we also benefited from her patience and ability to be flexible and understanding of our ever-changing priorities. Since Jenny has worked for PCPL, she has a real grasp of the issues we face. She has great people skills, and her relationships with our team and other staff outside our office have been very effective. She has a way of explaining things in non-techie ways so that people understand them. It's been a pleasure to work with Jenny on this project.