Mycalpoly Redesign Concept

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Abstract

For my senior project I developed a conceptual redesign for the Mycalpoly Portal interface. I approached the whole process with the objective of designing a better user experience. The Portal redesign concept began with research on interaction design and user interviews and culminated with screenshots of the final design. The final concept included redesigns for the Mycalpoly login screen, the homepage, custom homepage, an example of extended tab view, and a sample search results page.

The following report includes background information on interaction design, as well as the process I went through to create my redesign for the Mycalpoly Portal.
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Chapter I: Introduction

Statement of Problem:

Every student, faculty member, and employee of California Polytechnic State University uses the my.calpoly.edu Web Portal (Mycalpoly). This powerful website brings together every web resource used by the Cal Poly community into one convenient location, all under one login. Whether the user is a student registering for classes through CPReg, a teacher posting an assignment on Blackboard, or an employee submitting payroll hours, Mycalpoly is the starting point.

Cal Poly has had a history of being on the forefront with its Portal design. Back in 2003, the Mycalpoly Portal received the Best Practice Award from KM World magazine for its aggressive efforts to create a website incorporating the web applications students need most, all under one login. Unfortunately the current Mycalpoly Portal design has not been modified to reflect the standards for usability and web interface design now popular on other major websites. Too often students struggle to find information within the Portal—or even worse, they don’t know that certain features exist because they are buried deep within the interface.

Purpose of Study:

The purpose of this project was to further analyze the problems with the Mycalpoly Portal interface, research interactive design concepts, and create a
design alternative which applies the analysis and concepts. I wanted to create a new visual look which aimed at better fulfilling the needs of users while also increasing usability and aesthetics. To accomplish this I created a series of screen shots which conveyed my redesign concept. The series included designs for the homepage, login page, an expanded tab view example, as well as examples of a customized homepage and a Portal search.

On a personal level, this project gave me firsthand experience with the research and design methods commonly used in interaction design. Being able to solve complex user experience problems with qualitative and quantitative analysis is not something practiced by most graphic designers. These processes are becoming even more important as the need for on screen user experiences continues to grow.

Limitations of the study:

There were some limitations when it came to rethinking the form and function of the Mycalpoly Portal. Because the portal is home to many third party web applications, there are elements that are out of reach of the study’s redesign. An example of this is the Cal Poly email and calendar application, Zimbra. It would be pointless for me to suggest to the Mycalpoly developers that the interface of Zimbra should change because they have no control the design of this interface.
My lack of experience in web design programming is another limitation to the project. I lack the technical skills to be able to create working digital mockups of my concept for the Mycalpoly Portal. If I had proficient skills in programming, I could have created working mockups of my concepts, and used them during the user testing phase. Instead I had to find more low tech testing methods. As a result my study focused more on the visual interface features and not on the programming it would take to actually implement my design concept. If my findings or recommendations are strong enough, hopefully the Mycalpoly development team will be interested in doing the necessary programming to implement them.

Glossary of Terms:

Mycalpoly: Cal Poly’s web portal, which encompasses many things students, faculty members, and employees would need to access over the Internet including: class scheduling, grades, finances, job listing, email, calendars, and databases.

End-User: The person who uses the final developed product (i.e. the consumer)

An Interaction: Communication between two or more humans; or between humans and a responsive device, like a computer

Design Brief: A preliminary document that defines the problem and may also include initial solutions
**Quantitive Data**: Numerical information that can be analyzed to better understand the problem and develop better solutions

**Qualitative Data**: Information that defines the quality of something rather than its quantity

**User-Centered Design (UCD)**: An approach to interaction design based on the idea that the user knows best

**Activity-Centered Design**: A method of interaction design where the focus is put on the tasks it takes to reach an outcome

**Affordance**: A property of an object that gives the user hints as to the purpose of that object in an effort to increase usability

**Fitt's Law**: The time it takes to move to a target, such as a button, is determined by the size of that target and how far away that target is

**Hick’s Law**: The time it takes for a user to make a decision is based on the number of choices they have to choose from

**Web Application**: An internet based software program which runs within the web browser

**Hunt Statement**: A statement that aims at focusing the designer research efforts. The statement is usually done in this form: I am going to research X so I can do Y (where X is often an activity and Y is the project goal).

**Design Implications**: A set of specifications or goals that the end product should fulfill. They are the result of giving order and organizing raw data into meaningful ways.
Portal: A website that brings together information from other various websites and presents it in a unified and clear format.

User Experience: Relating to one's overall feeling towards the product they are interacting with.

Login: The process of entering personal information to gain access to a restricted website.

Impressions: The number of times a web page is viewed. A web page view occurs every time anyone loads a single page of information on the web.

Click Through Rate (CTR): A way of measuring the popularity of a link. The CTR found by dividing the number of clicks on that link by the total number of impressions for that page.

Single Click Access: Links within the Mycalpoly Portal that open up a new web browser window and take the user directly to the feature they are seeking.

Tabs: Buttons commonly used in web design to categorize information.

Minimized: A simplified graphic state that provides a hint to the user as to what the entire content contains.
Chapter II: Review of Research

Introduction to Interaction Design:

According to Dan Saffer in his book, Designing for Interaction, interaction design is an interdisciplinary field that draws from areas such as industrial design, human-computer interaction, communication design, information architecture, as well as behavioral sciences (6 Saffer). For the most successful user experience a broad range of knowledge is best, as design projects can be rather complex.

Interaction Design Methods:

There are four main approaches to solving user experience issues: user-centered design, activity-centered design, systems design, and genius design. Not every approach is used in every project; however, they are all important, and some projects may pull from multiple approaches. User-centered design follows the principle that the “user knows best.” According to Dan Saffer, “designers should try to fit products to people instead of the other way around” (31 Saffer). Activity-centered design focuses more specifically on the tasks the user must go through. The design process is then tailored to making those task run as efficiently as possible. Systems design deemphasizes the user’s importance and focuses more on the context of the problem. This process “outlines the components that systems should have: a goal, a sensor, a comparator, and an actuator” (35 Saffer). This approach is extremely analytical and logic based.
The last of the four main approaches to interaction design is genius design. In genius design there is very little research as most of the process relies on the wisdom and experience of the design team. Apple Computers is probably the most famous user of this approach. They rely almost solely on the knowledge and experience of their lead designers. In comparison, Microsoft is known for taking a more user-centered approach and does extensive user testing on their new products.

While there is no one correct method for creating a successful user experience, there are general phases that apply to the design interaction process. According to Dan Saffer, the first phase is to gain an understanding and define the problem. This is achieved through various methods, which could include interviewing the target audience, talking with experts, or studying how competitors solve the same issue. After working through the research phase, the next step is to create a set of design implications. The designer needs to be able to interpret all of the data and break it up into specifications before brainstorming any solutions. The next step is to develop some concepts and test them with the users of that product. With user feedback, the design process enters the refinement stage and more user testing until an appropriate solution is reached.
Mycalpoly Background Information:

The Mycalpoly Portal, launched in 2001, was originally only for students. Over the next two years developers worked to expand the services offered within the Portal to provide features for Cal Poly staff and faculty members. In 2003, the site averaged 6,000 visitors a day and reached peaks of more than 10,000 (KM World).

A few years ago the Portal switched over to an open source program framework called uPortal. This is a web template used by many colleges across the country including some big schools like the University of Wisconsin and Rutgers University. It’s the uPortal framework that gives Mycalpoly its basic user interface. This open source interface shares a lot of the same features as the iGoogle website, with information organized into channels that can be arranged to the users liking.

According to the Mycalpoly website, the Portal “features information and services in a format you can personalize.” For example, a Mycalpoly user can delete the weather channel from their homepage, or move it to the top if it is really important to them. The site is used by the entire Cal Poly community to access information like: campus announcements, employee self services, events, real-time news, college and department information, and Blackboard course material. The Portal also offers single click access to web applications such as: Mustang jobs, Zimbra email and calendar, PeopleSoft Financials, CPReg (for class registration), and student payroll and timekeeping.
Chapter III: Procedure and Results

Introduction to Process:

For the redesign of the Mycalpoly Portal, I used the user-centered design approach. This method made the most sense for the project because many students have experienced usability problems and could help be able to help me pinpoint the problems. Also the portal should be designed to fit the needs of its users, so the development should naturally start with user input. After learning as much as I could from talking with users, I compiled the data and formalized a list of specifications for the new design. With those design implications, I began the ideation phase and developed an initial mockup. The design was then shown to users for feedback and refined as needed. The final concept design has been favorably reviewed by users as an improvement to the usability and aesthetics of the Mycalpoly Portal.

Research:

Most of my research for the Portal redesign came in the form of user interviews. Before conducting any interviews, I created a hunt statement to help focus my research and observations. The statement went as follows: *I am going to research how the students of Cal Poly use the Mycalpoly Portal so that I can develop a portal interface that is easier for them to use.* I kept this statement close by during the entire research phase to help keep my investigation on track.
Next I developed a set of questions to help stimulate conversation and provide more structure during the interview process. Some of the questions I asked required the user to show me how they navigate the current Portal interface. Some of the questions included: “Show me how you would find a campus map on the Mycalpoly Portal,” and “How would you find the phone number of one of your teachers?” With other questions I was more interested in getting their opinion. Such as “What do you dislike about the current Mycalpoly Portal” and “What features would you like to see added?” This format ended up being too structured to use for the entire interview and I found a lot of the conversations taking their own path. Some of the interviews were one on one conversations with Cal Poly students, while others were with larger groups of people who were just throwing out ideas, criticism, and other comments about the design of the Portal which I recorded as insight. I knew that this data would play an important role in determining my design implications for the redesign.

The research portion also included several meetings with the Mycalpoly development team. These meetings were very important because they helped me better understand how the portal functions and also helped to get the development team involved with my project. I was able to get a sense of what the current capabilities were for the Portal, as well as learn about functions they are hoping to add soon. It was good to hear that they had already begun developing a more comprehensive search tool for the Portal.
I had hoped to get quantitative data relating to the user tendencies from the Portal development team; however, after multiple meetings it became apparent that this data wasn’t available. Unfortunately, because the Portal is such a conglomerate of web links, most of the click throughs made by users are untraceable. This sort of data would have played a major role in the redesign process and it was definitely a setback to not get any hard numbers.

I worked with the development team to post a question and a more lengthy survey up on the Mycalpoly Portal. This helped me tap into the greater user base and expand on the interview research method. We posted a multiple choice poll question on the Portal asking users “Which of the following areas do you find the most difficult to navigate in the portal?” The answer choices were: registration, finances, general campus information, advising information, and important dates. Then if people had more input we asked them to follow the link to take a longer survey. After a week, there were 1999 responses to the initial question and 40 people answered the more in-depth set of questions. Here are the results to the navigation poll question:

![Figure 1]

- Registration: 19%
- Finances: 14%
- General Campus Info: 19%
- Advising Info: 12%
- Important Dates: 36%
The extended survey was seven questions that attempted to pinpoint the types of users, what features they use most, as well as their likes and dislikes about the current Portal interface. Here is the complete list of questions (answers are in parentheses):

• What year are you?
  • Freshman, Sophomore, Junior, or Senior

• How would your describe your overall experience when trying to find information on the Mycalpoly Portal?
  • I find what I am looking for right away
  • I find what I need it just takes me some time to find it
  • I struggle to find what I need on the Portal

• What are the top 5 things you use the Mycalpoly Portal for?

• Did you know you could customize the look of your Mycalpoly Portal?
  • Yes my Portal is customized
  • Yes but I’m not interested
  • No but I am interested in this feature
  • No and I don’t care for a customized Portal

• What do you like about the Portal?

• What would you change about the Portal?
Summary of Data:

The next step in the redesign process was to compile and analyze all of the user input and create design implications for the new *Mycalpoly* concept. I began the analysis portion by trying to compile the data in ways that helped prove what I had heard from the majority of the users I interviewed. However, because too few people took the in-depth survey it was hard to make any definitive conclusions from the data. I ended up creating my design implications after reviewing both my interview notes and the responses to the survey. The list of design specifications included:

- Less is more
- Connect the user to information faster, with less clicks
- A greater emphasis placed on aesthetics
- An expanded search tool as a secondary form of navigation
- A fixed homepage design that is more structured than the current version
- Stricter design standards for Portal channel content
- Users want a more personal Portal option
- A clear design hierarchy that promotes navigation and usability.

Implementation:

With the design implications finalized, I began brainstorming layout designs that met the specifications better than the current Portal. After some initial sketching, I realized what I really needed to do was develop a clear and
concise design hierarchy. I stopped brainstorming how the redesigned Portal was going to look and began thinking about the order in which information and features should appear to the user. Based on the user feedback I created the following structure for Portal information.

**Figure 2 Design hierarchy for Portal information**

Within my design hierarchy model, single click web shortcuts were the most important feature because they provide quick access to content that would otherwise require many steps. I also made this the most important feature
because I think in the future it could become even more useful if users could add
to the standard set of shortcuts, or even create their own single click shortcuts.

The second most important design element was the tab navigation idea
from the original Portal design. After watching many users navigate Mycalpoly,
most students are accustomed to the tab feature and use it to access most of the
information found on the Portal. The tabs offer a very simple way to categorize
information. There just needs to be less of them.

The third element was a completely new idea that showcases commonly
used features in an expanded quick view format. This is a feature offered by
many big mail clients like Google and Yahoo. Based on the user survey data,
some of the most commonly used features are Blackboard and the Zimbra email
client. Mycalpoly could better promote these useful features by integrating them
directly into the homepage design. This idea will become more clear later with
the actual redesign, but essentially the idea is that certain features are used so
much that they should be readily available on the homepage, without any effort to
access.

The forth layer of information is basically all the channel content that a
user might want to access. It’s information they don’t need to see all the time on
the Portal, however, it still has to be easy to access. The tabs are shown in the
minimized state until the user clicks on one of them. With this action, the
activated tab expands to present its content. This process is essentially what the
current Portal does when you click on a tab; however, with my version the other
elements of the design stay the same. This part of the interface would also hold the search results.

The final element is where user added channels would be located on the homepage. The current Portal design offers every user freedom to change the order in which they view information. In my opinion, the current customization method offers typical user too much freedom and adds to the visual clutter of the Mycalpoly design. While most users say they have no interest in customizing their homepage, many savvy users do customize their Portal and it is important to keep some form of this feature.

Figure 3 Basic layout using the design hierarchy established in figure 2

With a better understanding of how information should be presented to the user, I went back to brainstorming the layout for my redesign concept. The design ideas seemed to flow naturally from the design hierarchy sketches. I gave the features higher up on the hierarchy list more visual importance, while also
trying to give the overall composition balance. This was the first design concept I presented to users and the Mycalpoly development team.

**Figure 4** Initial homepage redesign concept

The design in Figure 4 presents the top three most important features of the design hierarchy: single click icons represented by the PASS graphics, only 5 tabs in the minimized state, and the third section which features Blackboard and Zimbra previews. Each of the three featured areas has its own distinct design look and size. The single clicks are medium sized and square, while the tabs are long thin bars. These distinct differentiations help guide the user through the page and help them interpret the information faster than the current Portal design.
Testing and Refinement:

The first round of testing was rather short and included showing the design to my senior project class. This review session was more to gather quick feedback about some of the key concepts of the design. Because there was no content within the design, the amount of feedback I could get was limited; however, the initial response was encouraging. No one pointed out any major flaws in the design and people really liked the simplified tab format and the Zimbra/Blackboard preview concept. The next step in the design process was to further develop the concept and get a mockup that would be understandable to the average user.

Figure 5 Refined homepage redesign concept
For the second round of testing I further developed the main page design and created a simplified login page (see Figure 6). This login page is symbolic of the fundamental change I am presenting to the Cal Poly community. Many users hate the busy clutter of the current portal design, including the current login page. For this round of testing I included my senior project class again, as well as the Portal development team and some random users. I started off by showing them the new simplified login design. Many people responded positively to the dramatic deviation from the current login screen. The dominant image of Madonna Peak filling the background was “much more pleasant to the eye,” said one user. After showing them the login page, I then presented the main page design and described the various features in detail. The only thing that received major changes after the second round of review was the Blackboard access.
feature of the homepage. It was expanded on the final design version to include shortcuts to other features commonly used by students.

With a lot of positive feedback to the changes I was proposing in my redesign concept, I finalized the homepage and login page design, and created an expanded tab view example and a customized homepage and search layout example. The following are the final designs for my Mycalpoly Portal redesign concept.

Final Design:

**Figure 7 Standard login page**
Figure 8 Login page with example of an important notice. This would be more effective than the current method at letting users know about important Portal news.

Figure 9 Homepage design as it would appear after a user logged in
Figure 10  *Homepage design with custom channels at the bottom*

![Image of homepage design with custom channels at the bottom]

Figure 11  *Channel example with the menu activated to show customization features.*

![Image of channel example with the menu activated to show customization features]
Chapter IV: Summary and Recommendations

There were definitely some issues during this redesign project however overall, I think it was a success and I am pleased with the final product. The first major setback was when I found out that I wasn’t going to be able to get any hard
data relating to user click throughs. This information would have been very useful for determining the Portal hierarchy. Because I wasn’t able to get any numbers relating to the Portal usage, I had to make all of my design implications off of qualitative information, which is harder to analyze.

The interview process could have gone better, which would have been beneficial when compiling the qualitative data. For a few of the interviews I had another person helping me with the questions, which would have been ideal for the whole process. That would have allowed for someone to focus on the note taking, while the other person asked the questions. Furthermore, the interview process was a bit too organic. It would have been nice if it had carried a bit more structure. Next time I conduct interviews, I will stick to a list of questions and have everyone answer every question. That way I will have data on everyone for everything I am interested in, instead of a bunch of random responses from various people.

The testing phase of the project was shortened due lack of time. It would have been beneficial to the overall redesign concept if I was able to show the design to more common users and get their feedback.
Bibliography


