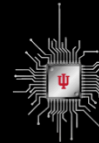


# Achieving System Usability in a Community Source Project

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# a bit of background

My name is Tara Bazler and I am the manager of the Enterprise Service Presentation & Delivery group in the Enterprise Software Division at Indiana University. I currently have 3 teams within my group,

# a bit of background



the OneStart team – which developed and maintains IU’s enterprise portal for students, faculty, and staff,

# a bit of background



IU OnThe Go

my group has also very recently started a new initiative to begin development of mobile applications

# a bit of background

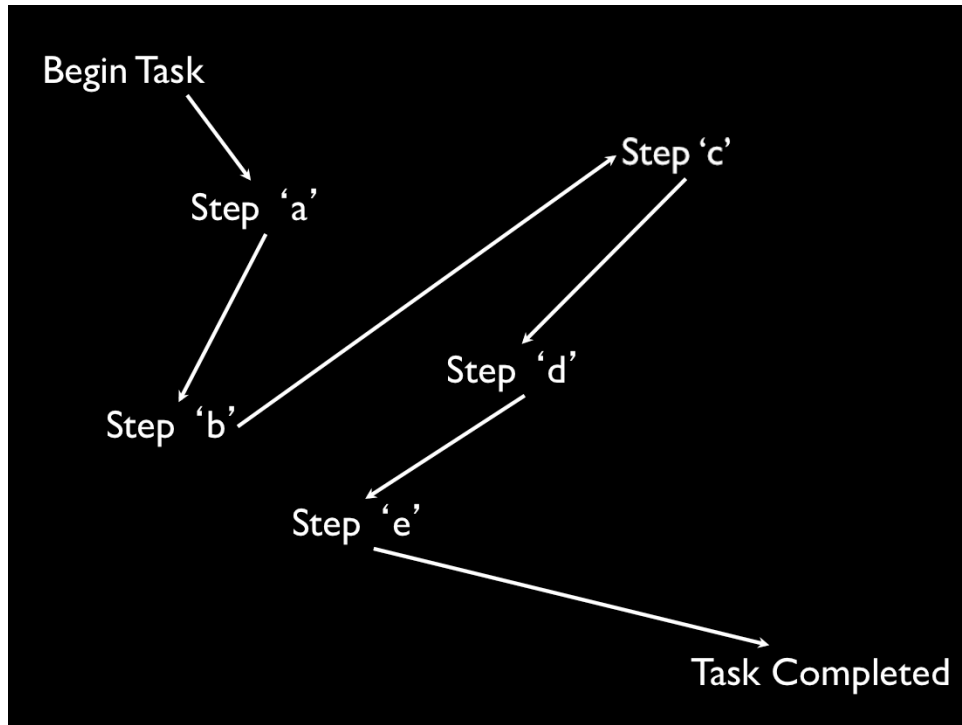


IU OnThe Go

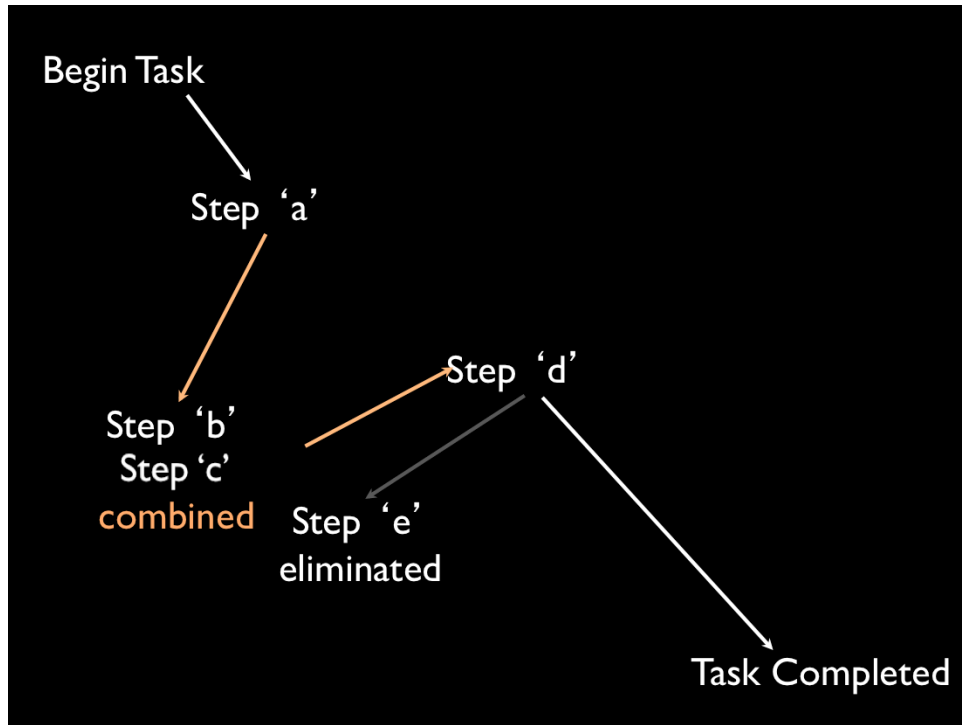
And finally, the User Experience Group. This group works with both internal and external clients as consultants for user experience, system usability, and design. Prior to my current role, I had worked with the User Experience Group for 6 years, starting out as a part-time usability consultant and working my way up to manage that team and it's projects.



The user experience group became involved with Kuali finance very early in the project and I will use my involvement with Kuali Finance, as well as with Kuali Coeus to highlight some of the issues we have encountered and how we have tried to deal with them. The finance module was to be developed based on the Financial Management System (FMS) developed and used at Indiana University. We met with many current FMS users to see how they used the system, what they liked most, what they disliked, and to learn the overall processes for the various tasks they had to accomplish.



During this time, we looked for opportunities to increase the efficiency of completing tasks and we looked for opportunities to remove data or features that had become obsolete.



In some cases, we found steps that could be combined.  
In some cases, the system could be 'smart' enough to complete steps for the user.  
And, we did find items that were no longer necessary, so we could remove them.  
Just like any project, (distributed or not) we had to learn the ins and outs of the system before we could begin work on designing the user experience and the interface.

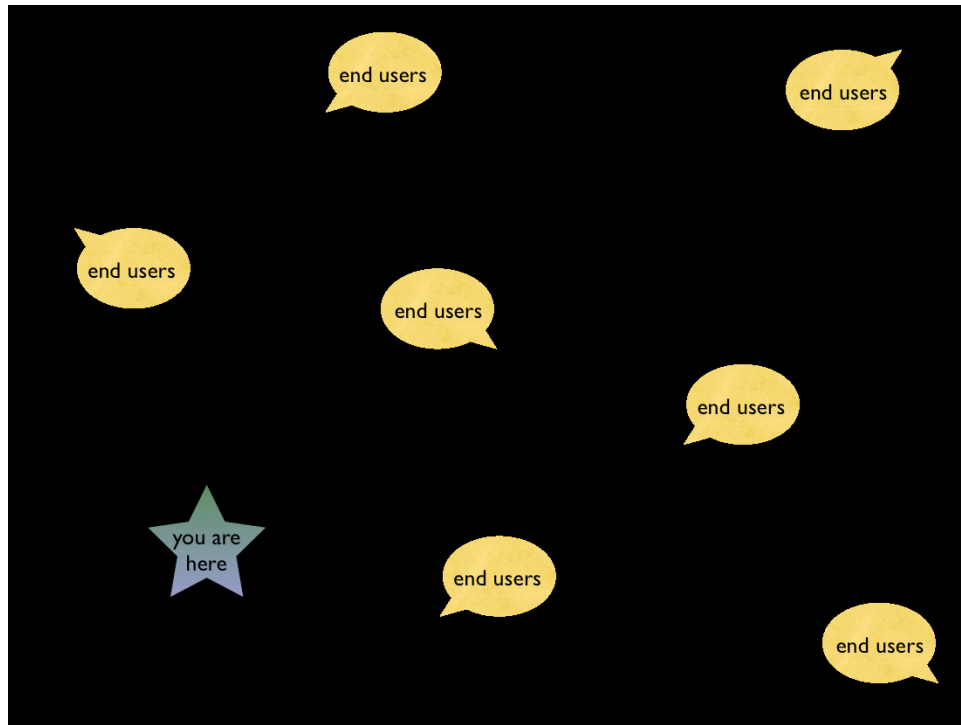




With a community source project, we encounter our first hurdle... we are here.... in this case – we were at Indiana University...



However, the majority of our users are way over there.



In fact, our users are scattered all over the country, rather than right outside our own doors.

We needed to meet the needs of users across many different institutions – with differing business rules & requirements. This ‘hurdle’ was also a great opportunity to collaborate with our peers and to get access to end users at each institution. Getting feedback from users at all these locations was necessary if we were to create a system that would handle the specific needs they had and be usable to a variety of end users in many different roles.

Our goals were clear: to provide a well-designed system that built on users’ knowledge and previous experience, allowing the majority of the users’ cognitive energy to be spent on the task at hand rather than on learning the subtleties of an unnecessarily complex interface.

# Design Principles

- Consistent style & use of elements
- Clear, logical navigational structure
- Intuitive grouping of items
- Accessibility
- Minimize the potential for error
- Flexibility

To meet our goals – we needed to follow some common design principles:

We also had to design an interface that would accommodate the large amounts of data inherent in financial systems.

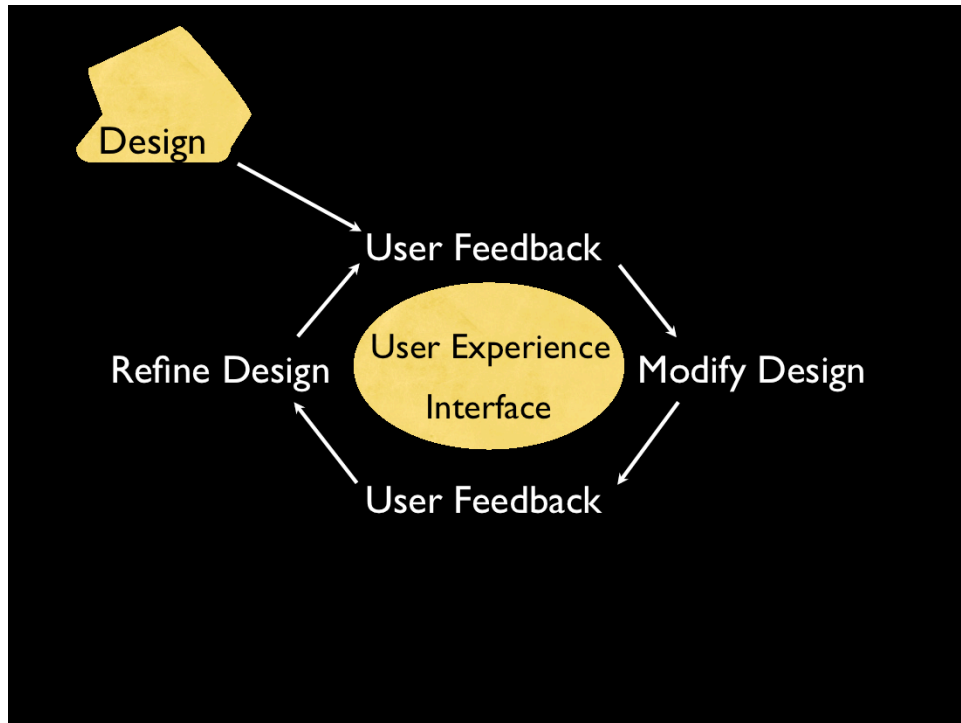
We had to allow for the flexibility to accommodate the differing requirements across institutions as well as for different types of modules Quali would eventually include.



Initial  
Design

After learning about the fms system and talking to subject matter experts at the various institutions, we developed some initial screen mocks in HTML. Then, we conducted a series of design critiques (explain design critiques), These critiques involved users at all of the (early) Kuali Partner institutions. We made use of adobe connect and conference calls to conduct these sessions. Participant were shown the screens via breeze and all participants dialed into the conference call. In this manner, participants at all locations could see the screens being shown in (close to) real time and comments/suggestions/issues could be heard by all. this provided us with a balanced view of the requirements.

For example, one group might not use something at all (or infrequently) whereas other groups may use that same functionality on a regular bases and it might represent a very important requirement for their work. Balancing these opposing needs is necessary. Providing flexibility for different institutions so they can add custom fields or remove sections they won't make use of is all part of the puzzle..

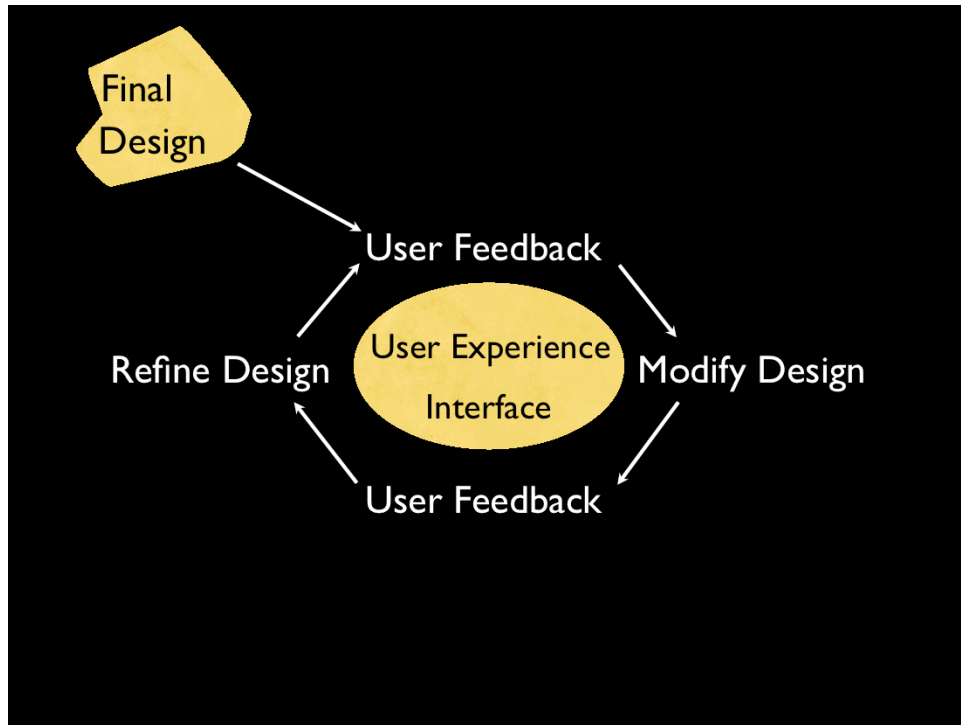


Gathering user feedback was an iterative process.

We would

- conduct design critiques,
- modify the design based on the feedback
- conduct additional critiques on the 'new & improved' screens to obtain more feedback.
- And then continue to refine the design and obtain user feedback.

This process would continue until the design was in good shape. We would then conduct user testing sessions at multiple institution.



we would eventually arrive at a point where we had an accepted, design that was deemed 'final'. At this point, HTML screens and the associated cascading style sheet (CSS) were passed on to the developers to use as templates for all the financial docs.

# Challenges

- Maintaining a consistent user interface

The next challenge was maintaining a consistent interface as development was completed at multiple institutions and across many teams.

Templates use frequently differs between groups, as well as individual developers. In addition, what happens when the templates don't meet the needs of a particular screen or new module being developed? In many cases, developers took their best shot to apply the templates to new data.. As more and more developers do this, the result is a lack of consistency that is difficult and costly to clean up...

Getting the various resources into the hands of developers that need them was a challenge. Guidelines and templates do not help at all if the developers cannot find them.



# Challenges

- Usability issues vs. personal preference

## Usability vs Personal preference

This is a huge issue that has become more problematic over time. As more institutions provide resources and are given a 'place at the table', the distinction between a usability issue and personal preference has been lost.

There are many things that people will not agree on – different people prefer different colors, different terminology, different configurations of how the data is displayed, etc.. and the discussion of these types of issues can end up wasting a great deal of time and energy!

We need to bring the decisions back to the usability of the system.

Can the user accomplish their goals in an accurate and timely manner?

Can the user complete the tasks they are here to do? Can they do it in an accurate and timely manner?

The term used may not be the term that 5% of the users prefer, but do they understand what it means so they can move on? Can they understand the graph and obtain the information they need?

If 1/2 the stakeholders prefers 1 term/layout and 1/2 prefers the another but everyone understands both – is it really worth the ongoing debate?

# Challenges

- Feature requests and development deadlines

## Feature creep/Project scope

When obtaining user feedback, requests for additional functionality always arise. Some of the requests may not be practical and will likely never be implemented. Other requests would be excellent additions to the system, but time and resources are not available.

It is always a good idea to manage expectations upfront. you want the end users to know that you value their input, but that there are constraints on what can be implemented – especially in the short term. Whether to include a suggestion on the ‘to do’ list, or on the future enhancements list – or to discard the idea must take into account a number of factors.



Is it a 'show-stopper'?

if you don't implement a suggestion, will 1 or more institutions be prevented from using the system?

In some cases, this means the new requirement will be included – perhaps many of the other institutions would also benefit, or folks are aware of other institutions not yet partnering with Quali that might join if this feature were included.

In other cases, the 1 institution it affects will have to add code upon implementation to handle their exceptions.

- How many users will benefit from the requested feature?
- How easy would it be to implement?

If it is not a show-stopper, a number of factors must be looked at...

for example. how difficult would it be to implement? How many users would it benefit?

If it is extremely difficult and/or time-consuming to implement and only benefits a small number of users, it is likely not something the team should prioritize.

If it is quick and easy to implement and many users will benefit, this could be added to the 'to do' list...

Some items may need to be left to individual institutions to implement... perhaps they are the only ones that need a functionality and it is beyond the scope of the project..

# Needed For Success

Considering the challenges, we have identified a number of key elements that are needed to successfully incorporate user centered design into a project

# Needed For Success

## Ongoing Communication!

open & frequent

First and foremost – Communication!

you can have the best guidelines, the greatest templates, and all the user feedback – but, if you don't have open lines of communication between the user experience designers and the various functional groups development teams – it just doesn't work!

# Needed For Success

A very involved UX team

Second, you need a very involved UX team – Ideally, the ux team should be full-time on the project and consist of several graphics designers and user experience designers. Our team has assisted with Kualu on a part-time basis for years and it is very difficult to keep up with the work load (both for Kualu – as well as within our own department)



# Needed For Success

## An Empowered UX team

This next point gets back to the challenge of determining when something is a user preference and when it is truly a usability issue and to making final design decisions.

The UX team needs to be given the authority to make decisions based on design standards and usability. Enabling them to make a call when issues of personal preference come up can save a great deal of time.

The UX consultants have been appointed to assist the team based on their unique expertise. However, this expertise will be wasted if the UX consultants are not given the authority to make design decisions based on good design principles and their experience in the field.

# Needed For Success

## Easy Access to Resources

To achieve a consistent interface, Agreed upon standards, guidelines, templates, goals must be documented and available to the whole team. These documents should all reside in a central location that everyone knows about and has access to. Again, you can have the greatest standards, the best templates, etc, but if they are not made available to everyone, they are useless.

The standards and guidelines should be referenced often and pushed as the first resource to check when questions on interface issues arise... (talk about the question concerning displaying errors and the error icon)

# Needed For Success

Representatives from all institutions

To assist with requirements, identifying participants at their locations, reviewing screen mocks to make sure requirements are met, etc.

# Needed For Success

Include UX members in the face-to-face meetings

when UX members are not included in the face-to-face meetings, a number of things occur

1. UX consultants are not kept in the loop as to why certain system design decisions are made or what limitations/restrictions have been imposed on the development team.
2. UX consultants are not able to offer feedback on design decisions when they are discussed
3. The User Experience and the work of the UX consultants is not seen as an important priority when the consultants are not at the table to represent this aspect of the system development.

# Needed For Success

## Close collaboration

Finally, close, ongoing collaboration between the UX members and developers, functional representatives, and end users – throughout the development life cycle.

There are always exceptions that come up, new requirements that must be dealt with, new types of data in new modules to display... these situations should be handled through a collaborative effort between the UX consultants, subject matter experts, and the development team.

Use experience is not a distinct task that can be checked off a project 'to do' list – it is an ongoing iterative processes

Questions/Comments?

