Modernizing the Mainframe: Using Agile to Improve the User Experience with User Centered Design

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CA Technologies

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What is this session about?

- At the heart of this talk is how can we leverage user experience, Agile, and a partnership with our users to ensure we're providing useful products that will help them do their job more efficiently.

- This is not meant to be a list of best practices when we ourselves continue to learn and grow. But we would like to share what CA has been doing with UX and agile to create a culture of user-centered design, and share some lessons we've learned along the way.

What is User Experience (UX)?

UX Challenges on Mainframe

Leveraging Agile for a Better UX

Working Together

Lessons Learned

So with that in mind, here's the agenda for this session.
- I'd like to start by talking about what UX actually is, and what that means in the context of the mainframe
- I'd like to share some of the challenges we've encountered while bringing UX to the mainframe
- I'd also like to talk about our experience leveraging Agile in the UX process
- I'll share in more detail how you can partner with us to be successful in this effort so you can see how critical the role of our users is
- And I'll wrap up by sharing some of the lessons we've learned so far
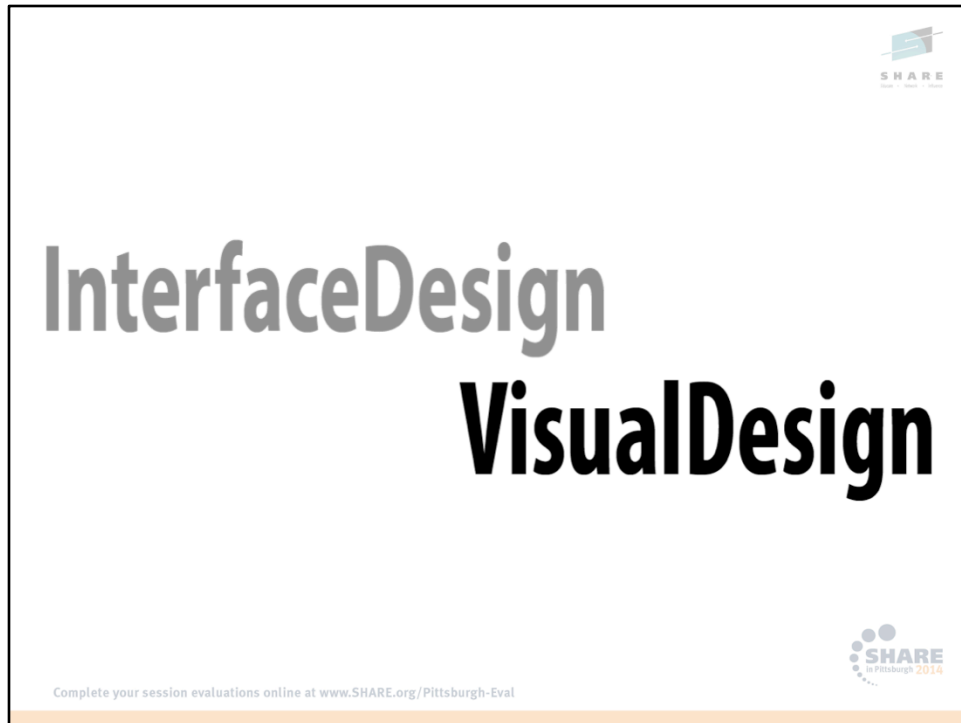
What is User Experience (UX)?

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First, when we talk about user experience, what is it that most people think of?
(Invite audience to participate)

This is what usually comes to mind for most folks. And while it's true that interface and visual design play a part in UX, that's not all there is to it.

What is User Experience (UX)?

What most people think UX is

What UX really is

In fact, Nielsen and Norman, two leading minds of the modern usability and the user-centered design movement, propose that UX encompasses all aspects of the end-user's interaction with the company, its services, and its products. So, even if we were to just focus on the "products" part of this definition, you can see how the previous slide starts to look more like this:

What is User Experience (UX)?

What most people think UX is

What UX really is

" User Experience (UX) encompasses all aspects of the end-user's interaction with the company, its services, and its products. "

~Jakob Nielsen and Don Norman, *The Definition of User Experience*

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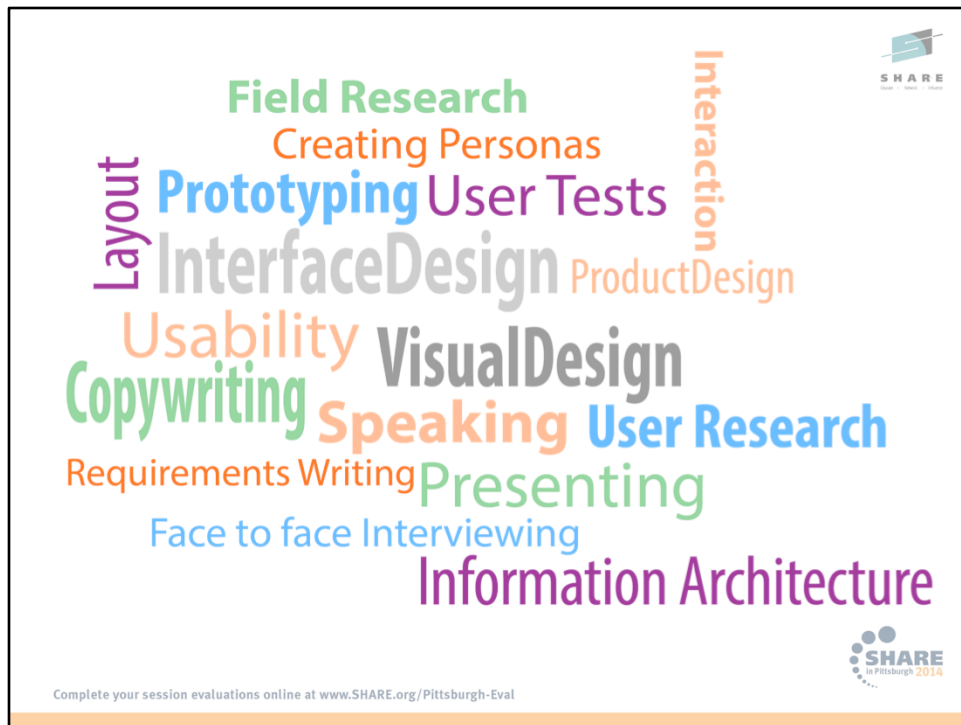
As you can see, UX professionals are involved in a wide variety of activities, including user research, interaction design, prototyping, information architecture, usability testing, and much more. UX success on the mainframe means delivering on all these aspects, which makes sense especially when you consider that many of our products don't have a graphical interface.

What is User Experience (UX)?

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What is User Experience (UX)?

What most people think UX is

What UX really is

Where's the volume control?

What is User Experience (UX)?

What most people think UX is

What UX really is

Which way do you open this door?

What is User Experience (UX)?

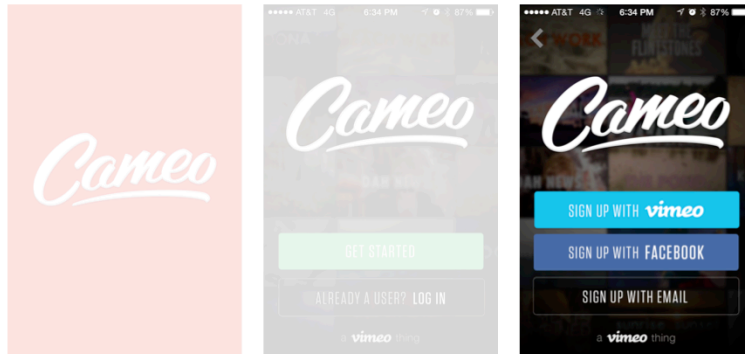What most people think UX is

What UX really is
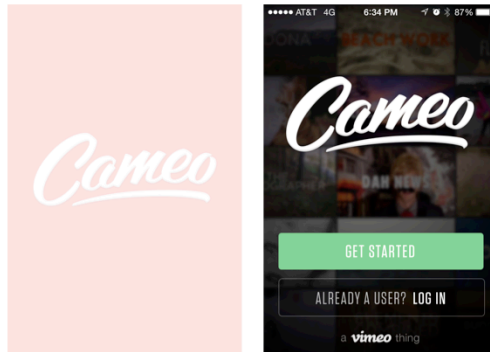
Video recording tool.

I opened the app to record for the first time when I see this! No problem, just hit "Get Started" and we'll be 'rolling.'

Not so fast! I still had to sign in/sign up with no option to shoot video first.

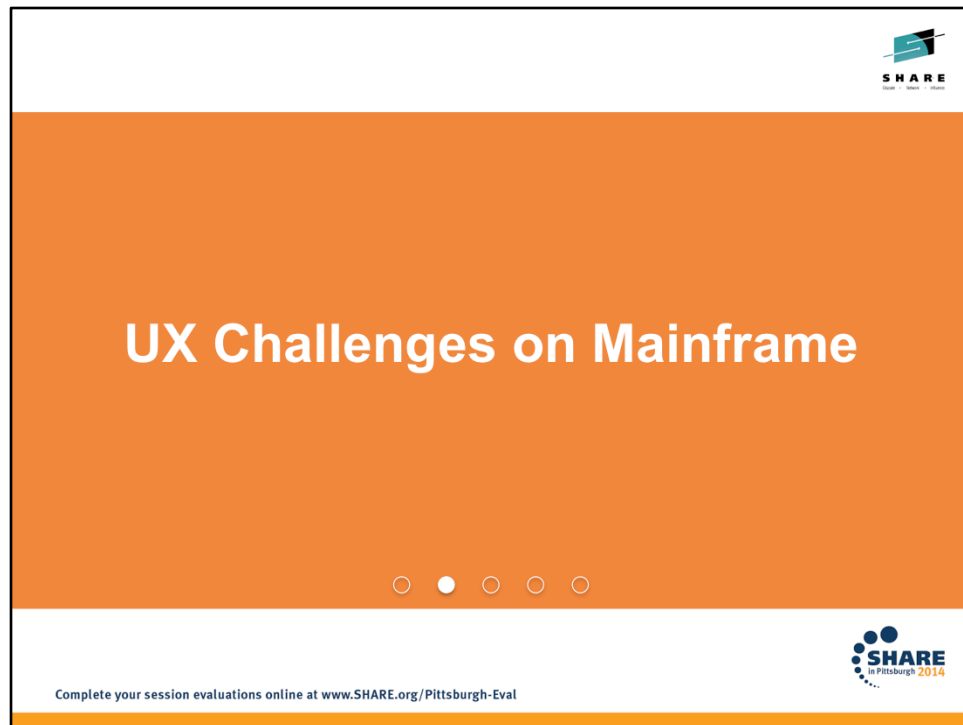## What is User Experience (UX)?

What most people think UX is

What UX really is

Examples of good user experiences?
- Every time you raise/lower the volume successfully on any device
- Every time you open a door successfully
- Any time you achieve something with any tool and the tool didn't get in your way
- I challenge you to think of those experiences you have in every day life!

Following are some of the most common UX challenges I've experienced while working specifically on mainframe. Some of these are shared with challenges in the business-to-business or enterprise model. And this certainly is not exhaustive list so there might be more than these.

UX Challenges on Mainframe

User is not usually the buyer

Custom environments

Users are difficult to reach

Complex work domain

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First, the user is not usually the buyer:
- Most feedback today comes to us via 3rd party or non core-user of product. We're often speaking with IT managers or other people in the organization who are capable of making a purchasing decision or recommendation, but that can't truly represent the end user's needs.
- And while it is valuable to hear from multiple perspectives, what happens is that we end up creating products that might meet the needs of the business, but not necessarily the needs and requirements of the users who are in front of the product day in and day out.

UX Challenges on Mainframe

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User research

Create & use *Personas*

Articulate user benefit

How to overcome
- Good user research
- Creating and using *Personas*, a "profile" of our users are (and are not). Based on user research; not made up.
- Be clear about what the benefit to the end user (or persona) is.

UX Challenges on Mainframe

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Customization is another challenge.
- Customers often have unique setup or conditions that are specific to their shop.
- This makes it difficult to get valuable feedback on new concepts we might be working on since our systems can vary greatly from theirs.
- It's not as easy as getting them on a webex or on site to test out new features since they won't know our systems.

UX Challenges on Mainframe

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Test early & on-site

How to overcome
- This is a really difficult one to tackle. Usually, by the time the system has been customized, it's already been shipped at least in Beta, which means it's past development phase.

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There is also a lack of access to end users for various reasons.
- Our end users are busy. They have a job to do and some teams have to find ways to do that job with fewer and fewer people.
- Also, since we have to go through management and other channels who already have some aggregated feedback from their teams, there's a misconception that this kind of feedback is enough.
- Our users have a specialized skill. it's not as easy as grabbing someone off the street to test our software. In fact there are many subspecialties in mainframe and asking an MVS expert to provide feedback for a CICS or MQ functionality may not be optimal.

UX Challenges on Mainframe

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Complex work domain

Good balance of time/effort

Recruit everywhere

Heuristic evaluation

How to overcome
- We need to successfully manage how much time and effort we're asking of our users. We need to create a good balance of partnership and benefit. And we need to be flexible and accommodating based on what works for them.
- But we can't stress enough the value we get from meeting with users first-hand. It's one thing to aggregate feedback from users in one company, but it's something else entirely to analyze the feedback of users across an entire industry based on the right "tool for the job."
- Heuristic evaluation: when all else fails, it's still important to have expert reviews (experts in usability *and* domain) of the products and features we're creating to ensure at least basic usability guidelines are followed.

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Complex work domain

Complexity of the work domain is an additional challenge:
- We're not designing simple, single-purpose applications.
- I don't mean to trivialize challenges of other domains, but we're not designing websites or weather apps.
- Our users need support in completing many different functions, often with competing goals and priorities.
- And just as the domain is complex, so is building software that supports it.

UX Challenges on Mainframe

User is not usually the buyer

Custom environments
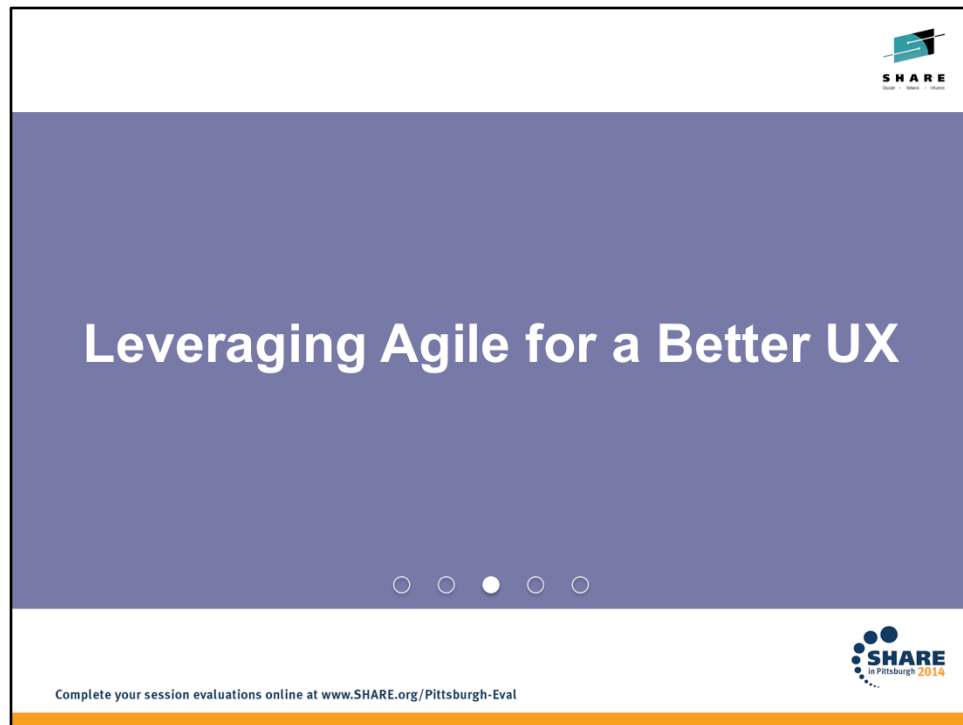
Users are difficult to reach

Complex work domain

Work domain analysis

How to overcome
- A work domain analysis goes beyond simply analyzing a task. It looks at the user's goals, needs, requirements, and how these all interact holistically.

Next, I'd like to share how we have been leveraging Agile to grow our culture of user-centered design.

Leveraging Agile for a Better UX

UX and Agile integration

Emphasis on engagement
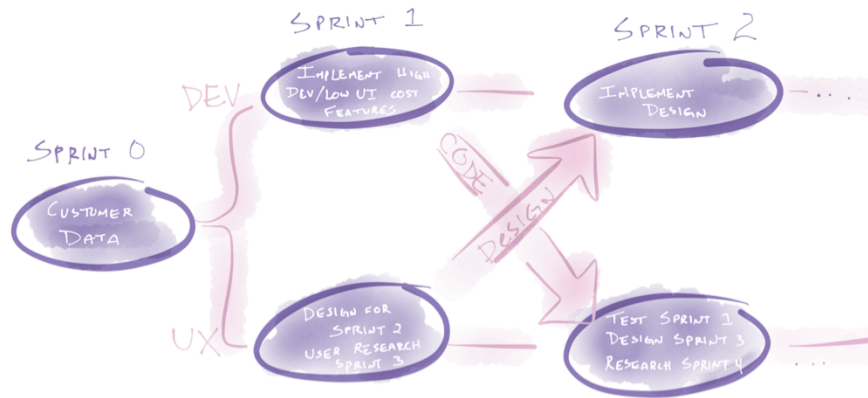
Iterative development

Small chunks, big change

- First, more and more teams at CA are successfully integrating UX into their Agile teams and involving UX throughout the release cycle.

- And we've based our approach on Jeff Gothelf and Josh Seiden's book, Lean UX, to embed UX activities into the Agile framework.

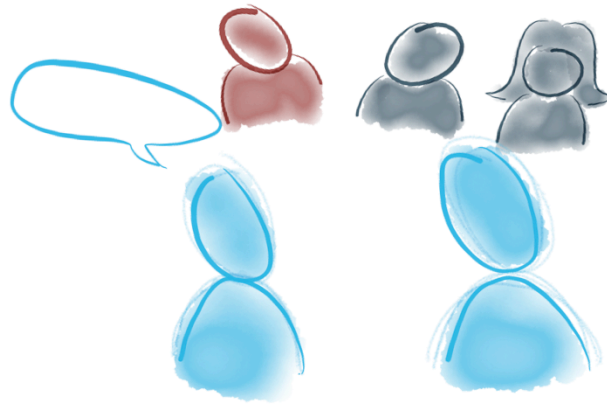- Examples from this approach include Staggered Sprints, where design activities take place one or two sprints ahead of development, while advocating strong collaboration between designers and developers during both the design and development sprint.

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We're also emphasizing the importance of engaging with our customers
- and especially driving home the value of investing in our relationship with end users
- so we can cultivate a culture of mutually beneficial, continuous engagement and feedback.
- We're here to help you. if you use other CA products, I want to put you in touch with the people who can help or have some UX involvement
- engender trust so that you will want to partner with us and participate early, maybe proactively open your doors to us

Leveraging Agile for a Better UX

UX and Agile integration

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We're also taking advantage of Agile's culture of iterative development
- not only to grow and deepen our understanding of our users' work domain (which is absolutely critical)
- but also to get comfortable in Agile's spirit of testing early and learning from it, so that if we realized our assumptions were wrong, we can easily pivot and try another way.
- I'm not advocating that we aim to fail, but that we get more comfortable in intelligent risk taking so that we can continue to be a leading innovator

Leveraging Agile for a Better UX

UX and Agile integration

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Iterative development

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- And finally, Agile methods like Story Mapping and release planning help us set a long-term course for product development which let us take big leaps in innovation and break them down into smaller chunks. So what might appear to be slow, evolutionary change up-close is actually part of bigger, revolutionary innovation when seen holistically.
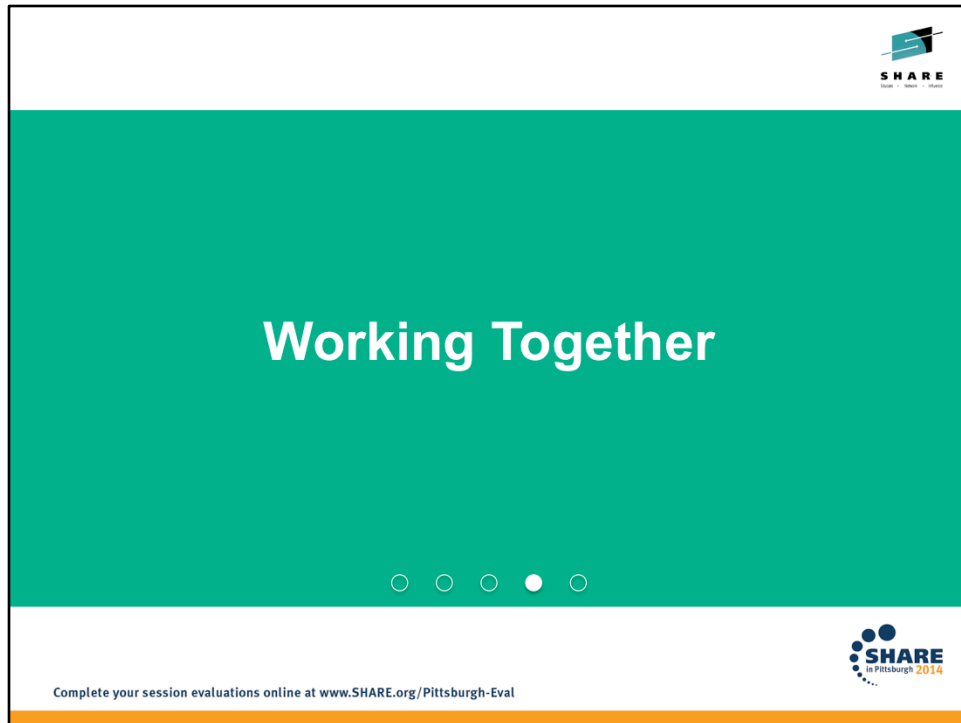
Now as you have probably noticed, there's a key ingredient in this whole process, and that's YOU. Our customers, our partners, and all users of our products. In this section I'd like to discuss how your involvement is critical.

Working Together

Plan

Design / Build / Test

Release

During the planning phases, the product team puts together a charter, developers determine the architecture needed to test assumptions about technology, and UX resources identify the methods needed to reduce assumptions about customers, and prioritize user research based on the product charter.

Working Together

Plan

Design / Build / Test

Release

Charter Review

Interviews & surveys

On-site observation

- Your input is critical in this phase to help us understand your current needs and what features will bring you the greatest value. We may invite you to participate in a Charter Review to give us your thoughts about our intended direction.
- Your participation is also integral at this time through interviews, surveys, and even hosting us on-site to observe you working in context.

Working Together

Plan

Design / Build / Test

Release

As we get into our development sprints and we're designing, building, and testing, there are various opportunities for you to partner with us:

- You can be part of our monthly Sprint review calls where we show you what development's been working on and ask for your feedback.
- You can participate in usability testing of concepts that should be in the pipeline to be developed next, or testing a feature we may have just built.
- And during this phase we'll continue to solicit customer input for work in the next development sprint.

Working Together

Plan

Design / Build / Test

Release

Finally, as our development sprints are completed, we encourage our customers to stay engaged.

Working Together

Plan

Design / Build / Test

Release

Beta trial

Testing & reporting

User group meeting

One way to do that is by becoming part of the Beta program. And just because the product goes GA doesn't mean our work is done. This is an iterative process so this is a great time to get feedback on the integration of the release as a whole, as well as begin putting ideas together for the next release. This becomes a great opportunity for additional testing and focus groups. We're also working on making reporting much easier, for example, by integrating STAR into CA Communities.

Lessons Learned

Lessons Learned

Continuous learning and growth

Constant cycle of improvement

Cross-functional coordination

Everyone is a researcher

Communicate intent

As I've mentioned a couple times, we at CA are continuously learning and figuring out the best ways to work and partner with you. We certainly don't expect overnight success as we apply the lessons we learned yesterday when planning for tomorrow.

"The biggest win of my team, and I mean me, graphics designer and developers, is that we never have [a] final design to implement. We are still working on every piece [sic] until release day even on the last day. This is only possible because we are one team, one will and in the spirit of agile we are together on same place." – Vojtech Outulny

Lessons Learned

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Cross-functional coordination

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Communicate intent

"UX/PO and PM work together in a coordinated way in terms of early research and concept validation. The PM is primarily focused on 'what problem do we need to solve' and the UX/PO resources are focused on 'how do we solve it so the users are delighted'. Establishing complimentary roles in this process makes for better knowledge sharing and prioritization. I learned the hard way, that too much overlap with the PM in terms of market/product strategy research and definition can cause tension. Better to work this out early."
– Mike Melillo

Lessons Learned

Continuous learning and growth

Constant cycle of improvement

Cross-functional coordination

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Communicate intent

- Involving development and support in research, either participating in customer sessions, or ensuring they are updated on findings and all product decisions are explained in context of research. Shared understanding makes for more effective delivery in sprints of user value, elevates developers to creative role and creates empathy for customers / increased motivation.
- Also, support is an excellent source of user research and worth engaging early.

Lessons Learned

Continuous learning and growth

Constant cycle of improvement

Cross-functional coordination

Everyone is a researcher

Communicate intent

Finally, we've learned that it's really important to communicate intent to our customers at every step of the way.
- For example, in the case of user engagements, I find that many of our customers are not used to site visits that don't involve us sitting in a conference room doing product demos and answering questions in a group setting. I learned that it's important to be clear about what we hope to achieve, how we plan on doing that, and carefully planning our visits from start to finish.
- Another thing I learned to communicate clearly was the nature of my role. When people hear me describe UX, it's easy to assume that I want to come along and make complex products so easy to use that just about anyone could do the job. That's a misconception that I usually have to address upfront. When it comes to our products, one of the end goals for us as a UX organization is to achieve a balance for novices AND experts alike.
    - if a novice has to become an expert before being productive, that's frustrating
    - the same can be said of an expert who's forced to interact with tools as if he were a novice

So just to recap
- I hope today you come away with a better understanding of what UX actually is
- I discussed some of the UX challenges that pertain to the mainframe
- We talked about some of my experiences leveraging Agile in the UX process
- We also discussed in more detail the different ways that customers and users can get involved
- And finally, I hope you were able to take something away from the lessons we've learned ourselves

Conclusion

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- So if you walk away with just one thing today, it's that mainframe users deserve a great user experience with the tools of their trade, that the best way to achieve this is by making our partnership with users a high priority, and that modernizing the mainframe doesn't mean simply slapping on a graphical interface.

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Questions, Comments & Discussion

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