

James Landay CS Summer Camp: Designing & Prototyping Smart Applications

Design Discovery

Prof. James A. Landay
Computer Science Department
Stanford University

Summer 2018
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* some slides based on those of Julie Stanford, Sliced Bread Design

Outline

- Design Discovery
- Needfinding



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Design Process: Discovery

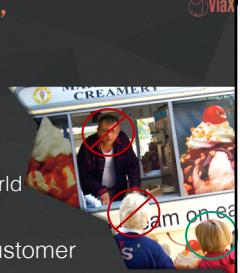
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graph TD; A[Discovery] --> B[Design Exploration]; B --> C[Design Refinement]; C --> D[Production]
```

Discovery

- characteristics of customers & tasks (AKA Needfinding)
 - understand client's expectations
 - determine scope of project
 - evaluate existing practices & products

"You Are Not the Customer"

- Seems obvious, but...
 - different experiences
 - different terminology
 - different ways of looking at the world
- Easy to think of self as typical customer



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Understanding the Customer

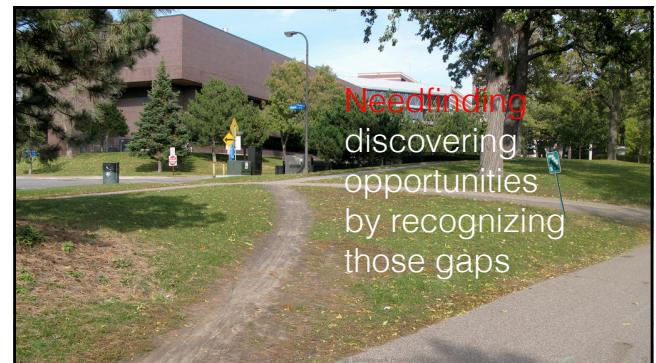
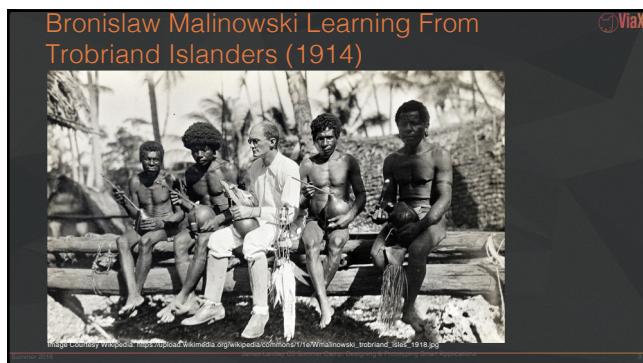
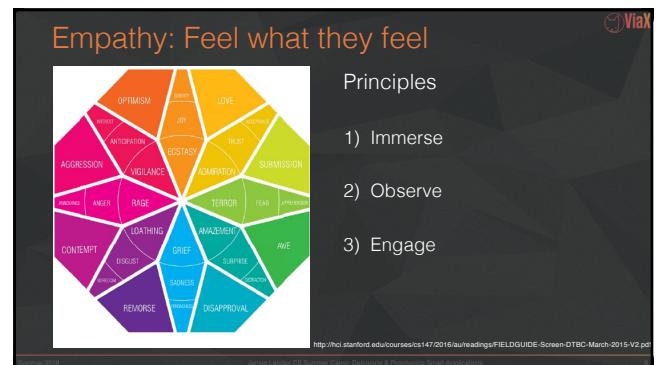
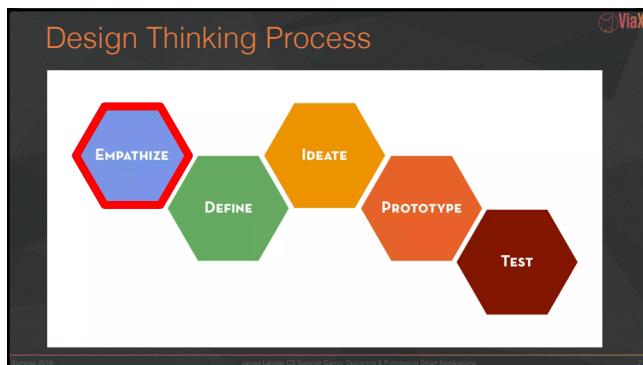
- How do you learn how your customers work & live as well as interact with technology?
 - interviews
 - self report
 - logging/analytics
 - observation
- How do you learn how your customers think?
 - understand human cognition
 - observe users performing tasks
- Important to carry out in naturalistic settings
 - outside the lab → "ecologically valid"



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"You Can Observe a Lot Just by Watching"

—Yogi Berra





Pay attention to *all* the artifacts

Look for workarounds & hacks

“Errors” are a goldmine

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Getting to Why

ViaX

Needfinding starts with basic questions of everyday experiences

But moves from

- closed ended questions to open ended questions
- “whats” to “whys”
- actions to feelings

Engage people in their environment

Remember that people make sense

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A needfinding interview is....

One in which the interviewee speaks 90% of the time.

More than data gathering. Be ready to hear something new and be changed by it.

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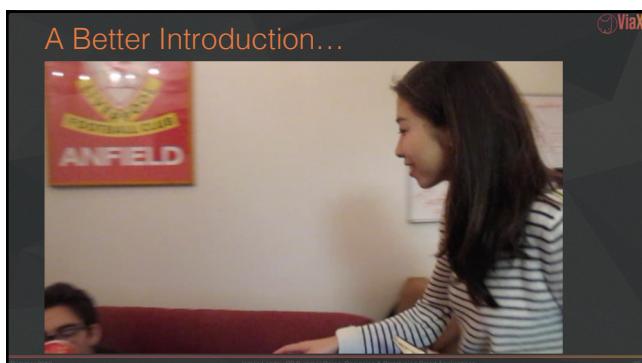
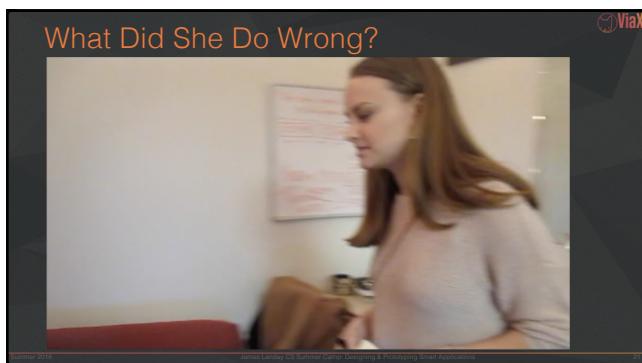
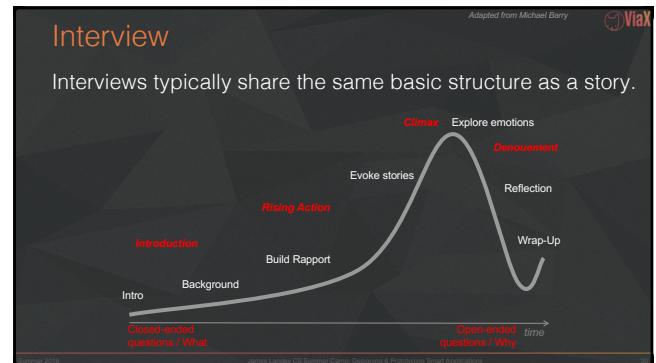
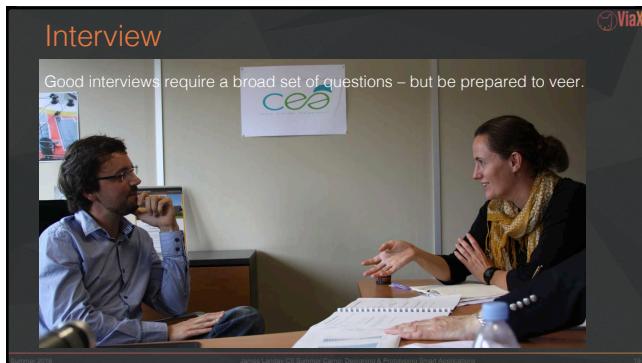
Defer your agenda & unlock their world

Step into the interviewee’s shoes

Be curious

Have a “beginners mindset”

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Interview Questions – Build Rapport

- **Naïve Outsider Perspective** — “I’m not from LA, how does the housing market work here?”
- **Quantity** — “How many of your competitors fall into that category?”
- **Changes Over Time** — “How are things different than they were last year?”
- **Tasks and organizational structures** — “Can you draw me a diagram of your org. chart?”
- **Native Language** — “Why do you call your office ‘the command post’?”
- **Reflecting Back** — “So, what I hear you saying is..... is that right?”

Adapted from Michael Barry



Interview Questions – Stories & Emotions

- **Peer Comparison** — “Do your colleagues share your sales techniques?”
- **Other Viewpoint Comparison** — “What would other solar owners think about that?”
- **Clarification** — “...and when you say ‘I’m a closer,’ what do you mean exactly?”
- **Characterization and Comparison** — “Could you characterize your sales style and compare it to Mike’s?”
- **Success and Failure** — “Describe your most successful sales call. Now tell me about a sales call that was an absolute disaster.”

Adapted from Michael Barry

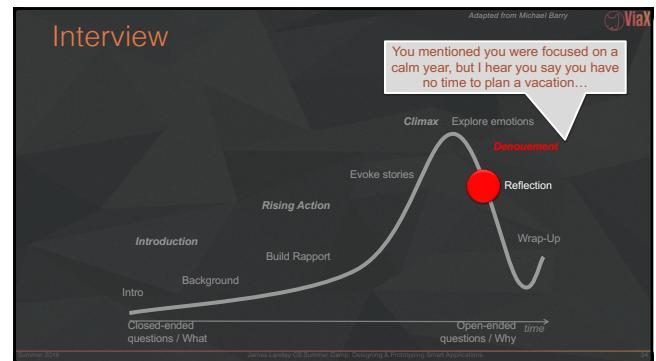


Follow up and pull that thread

- Adjust your questions to their previous answers
- Ask questions in language they use / understand
- Pick up on/ask for examples
- Be flexible

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Interview Questions – Reflection

- Point to Their Reaction – “Why do you roll your eyes when you say that?”
- Suggestive Opinion – “Some people have very negative feelings about emotional sales pitches. What are your feelings about it?”
- Contradictions – “You tell me you can sell ice cubes to Eskimos but you also tell me you have a deep concern for your customers, how do these two work together?”

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A few last tips

- Remember that people make sense (to themselves)
- Your job is to be able to **explain how they make sense**
 - get to the bottom of things & understand the what & why
- Create a discussion guide with lots of questions, but be ready to veer to pull threads

Choosing Participants

- Representative of target users
- May be current users of a similar system
- Might be the non-users – but could be in future
- Interview people on both sides of an interaction
- Experts good for background but aren't a substitute for users
- Consider interviewing *extreme* users
- Typically interview 6-12 people individually for 30-90 min
- **Note:** interviewing children may require signed permission with the school
 - find similar users in that age group (i.e., RF kids?)

Where to Recruit

- Depends on target audience...
- Nextdoor.com
- Facebook / wechat groups
- Craig's List
- Local email lists (e.g., parents, etc.)
- Snowball sampling – when you recruit someone ask them to pass it on to others that they think would be good...
- What's worked for you????



Common Pitfalls – Suggesting Answers



"How was that decision reached? Was there a big meeting? Did your boss decide without you?..."

- Let the informant paint his or her own categories of meaning
- Technique: Avoid suggested answers
- Trust the question – ask it and stop talking;

Let there be silence

Common Pitfalls – Hypothetical Situations



"What if I designed something that wasn't as round and soft and annoying as your current thing and instead bounced up and down. Would that work for you?"

"What about your friends? What would they do?"

- Ask about events & things that actually happened/exist
- Focus on getting the user's point of view, not what they think someone else might do

There is More Than One Way to Ask “Why?”



- Tell me more about that
- Tell me what you mean when you say XXX
- [last phrase the person said]?

Good Questions



(*a little bit of*)
Silence is Golden

Interview a Stranger
2 minutes and then switch

Find a good story from their summer

What are the gems?

- You've uncovered a surprise/found what is missing
- You can explain why people do unusual things
- You want to tell others about what you learned

Share with your team

- Stories
- Photos
- Sketches
- Quotes

Users: Unique or One of Many?

"Take the attitude that nothing any person does is done for no reason; if you think it's for no reason, you don't yet understand the point of view from which it makes sense."

"Take the attitude that nothing any person does is unique to them, it always represents an important class of customers whose needs will not be met if you don't figure out what's going on."

(p. 63, *Contextual Design*)

Ethical Considerations in Needfinding

Testing/fieldwork can be coercive if there is a power imbalance (e.g., in under resourced communities)



People may feel no option but to speak to you or give you their time even though they may not get anything of value in return.

Ethical Considerations in Needfinding

Testing/fieldwork can be coercive if there is a power imbalance (e.g., in under resourced communities)



"the 'at-risk' label is highly problematic and often implicitly racist and classist... [it] locates problems in individuals, families, and communities, rather than in institutional structures that create and maintain inequality."

Ethical Considerations in Needfinding

Testing/fieldwork can be coercive if there is a power imbalance (e.g., in under resourced communities)



"When the interviewer is a foreign researcher requiring a translator, the bias towards the interviewer's artifact increases to 5x."

Caveats of User-Centered Design

- Politics
 - "agents of change" can cause controversy
 - important to get buy-in from all those involved
- Customers are not always right
 - cannot anticipate new technology accurately
 - job is to build system customers will want
 - not system customers say they want

The slide has a dark background with a subtle geometric pattern. In the top right corner, there is a small red logo consisting of a circle with a dot and the word "ViaX". The title "Summary" is centered at the top in a light orange font. Below the title is a bulleted list of design principles:

- Know thy user & involve them in design
- Needfinding
 - build empathy with customers
 - listen to them to discover interesting insights