Design Discovery

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Autumn 2019

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

Hall of Fame or Shame?
http://www.dol.wa.gov

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Hall of Fame!
http://www.dol.wa.gov/

- UI is (mostly) clean & uncluttered
- 3 key user tasks right up front
- Less important info (tweets, videos) below fold
- Multiple language options are clearly indicated
- Similarity & connectedness gives strong aesthetic & indicates navigation
- “How can we help you today?” wastes real estate
- A bit busy overall, but easy to fix

Mini-Administrivia

Studies show laptops in class disrupt both the students using laptops & the students around them.

CS147 Laptop Policy:
Laptops closed except in 3 back rows of the classroom (unless approved in advance with teaching team due to a legitimate need for the technology & forward seating).
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Outline

• Design Discovery
• Needfinding

Design Process: 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

“You Can Observe a Lot Just by Watching”
– Yogi Berra

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 / interview
• Important to carry out in naturalistic settings
  - outside the lab → “ecologically valid”
**Design Thinking Process**

- Empathize
- Define
- Ideate
- Prototype
- Test

**Empathy: Feel what they feel**

- Principles
  1) Immerse
  2) Observe
  3) Engage

**Bronislaw Malinowski Learning From Trobriand Islanders (1914)**

**Technique: Active Observation**

- Observe & interview without knowing what you are looking for
- Key is to discover what is interesting!

**Needfinding**

- Discovering opportunities by recognizing those gaps

- Needs: gaps within a system
Pay attention to all the artifacts

Look for workarounds & hacks

“Errors” are a goldmine

A needfinding interview is….

One in which the interviewee speaks 90% of the time. Be ready to hear something new and be changed by it.

Getting to Why

Needfinding starts with basic questions of everyday experiences

But moves from

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

Engage people in their environment

Defer your agenda & unlock their world

Step into the interviewee’s shoes

Be curious

Have a “beginners mindset”
Good interviews require a broad set of questions—but be prepared to veer.

Interviews typically share the same basic structure as a story:

- **Introduction**
- **Rising Action**
- **Climax**
- **Denouement**

Explore emotions

Closed-ended questions / What
Open-ended questions / Why

Adapted from Michael Barry

What Did She Do Wrong?

I'm here to learn about...

A Better Introduction…

Interview Questions – Background

- **Background** — "Tell me about what you do here."
- **Sequence** — "Walk me through your day yesterday…then what do you do next?"
- **Physical tour** — "Take me on a tour of how you build the panels…"
- **Virtual tour** — "Walk me through your sales process from the beginning…"
- **Participation** — "Can you show me exactly how you prepare a customer bid?"
- **Exhaustive List** — "What are all the different municipalities where you sell?"
Interview Questions – Build Rapport

- Naïve Outsider Perspective – “I’m not from LA, how does the housing market work here?”
- Changes Over Time – “How are things different than they were last year?”
- Reflecting Back – “So, what I hear you saying is..... is that right?”
- Quantity – “How many of your competitors fall into that category?”
- 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’?”

Interview Questions – Stories & Emotions

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

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
I heard you say that you were reluctant to talk to John... tell me more about that.

You mentioned you were focused on a calm year, but I hear you say you have no time to plan a vacation...

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?”

Keep recording...the last five minutes of an interview are often the best.
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 (themes), but be ready to veer to pull threads

Administrivia

1) Studio assignments coming out late Wed PM/early Thursday AM - attend assigned studio unless pre-cleared by staff
   - inform your TA if you will not be there this Friday (e.g., have some excused absence)
2) Studio absence policy
   - 1st absence for free for a legit reason (must inform TA in advance)
   - 2nd absence for a legit reason requires make-up assignment (must inform TA in advance)
   - after that you start to lose participation grade points
3) Teams will be arranged by Friday night/Saturday afternoon at latest
4) Join the Piazza forum to keep up with questions & announcements at https://piazza.com/stanford/fall2019/cs147/home
5) CURIS Poster Session, Friday, 3-5 pm on Packard Lawn (free food!)
6) Make sure to regularly check course web site: cs147.stanford.edu

Types of Questions to Avoid

- What they would do / like / want in hypothetical scenarios
- How often they do things
- How much they like things on an absolute scale
- Avoid binary questions
- “Tell me a story about yourself”
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
- Avoid suggesting answers
- Trust the question – ask it & stop talking

Let there be silence

Good Questions

(a little bit of)
Silence is Golden

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
- Get their 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]?

Interviewing Demo

Julie Stanford
– Sliced Bread Design & Stanford HCI

Interview a Stranger
2 minutes and then switch

Find a good story from their summer

“Hearing is through the ears, but listening is through the mind.” – Someone

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)

Choosing Participants

- Representative of target users (current or future users)
  - usually not Stanford students
- Interview people on both sides of an interaction (e.g., Lyft)
- Experts good for background but aren’t substitute for users
  - e.g., airport design: flies every week vs. never flown
- Consider interviewing extreme users
  - e.g., airport design: flies every week vs. never flown
- Typically interview 6-12 people individually for 30-90 min
  - Note: interviewing children may require permission

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 they think would be good…
- What’s worked for you????

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 racial and classist…[it] locates problems in individuals, families, and communities, rather than in institutional structures that create and maintain inequality.”

“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

- Design/observe forever without prototyping
  - rapid prototyping, evaluation & iteration is key

Further Reading

- Books
  - *User and Task Analysis for Interface Design* by Joann T. Hackos, Janice C. Redish
  - *The Inmates are Running the Asylum* by Alan Cooper
  - *The Design of Everyday Things* by Don Norman
  - *Observing the User Experience*, Goodman, Kuniavsky, & Moed

- Institute of Design at Stanford
  - lots of online materials at [http://dschool.stanford.edu](http://dschool.stanford.edu)

Further Reading on Ethical Issues With Community-based Research

- “Imperialist Tendencies” blog post by Jan Chipchase, [http://janchipchase.com/content/essays/imperialist-tendencies/](http://janchipchase.com/content/essays/imperialist-tendencies/)
- “To Hell with Good Intentions” by Ivan Illich, speech to the Conference on Inter-American Student Projects (CISP), April 21, 1968, [http://www.swaraj.org/illich_hell.htm](http://www.swaraj.org/illich_hell.htm)

Summary

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

Next Time

- Lecture
  - 1) Define: Unpacking needfinding results to define problem/domain of interest
  - 2) Ideate: Brainstorming on how might we solve the problem?

- Readings
  - d.school’s Empathy Fieldguide
  - Tips for Working Successfully in a Group by Randy Pausch

- Watch
  - ABC News Nightline IDEO Digs Deep, July 1999 (22 minutes)
  - Bonus video: ABC News, IDEO Design Thinking, January 2013 (13 minutes)