Design Exploration

Prof. James A. Landay
Computer Science Department
Stanford University

Autumn 2023
October 11, 2023

* slides marked Buxton are courtesy of Bill Buxton, from his talk "Why I Love the iPod, iPhone, Wii and Google", remix uk, 18-19 Sept. 2008, Brighton
** values slides based on slides from Dr. Diana Acosta-Navas, Embedded EthiCS Fellow, McCoy Family Center for Ethics in Society - Human-Centered AI
Just getting too many emails? Sign up for Lamps Plus texts!

Sign Up for Texts >

As described by former student Kevin Fox @kfury (designer of the original Gmail)
Hall of Fame or Shame?

Just getting too many emails? Sign up for Lamps Plus texts!

Sign Up for Texts >

Lamps Plus
Unsubscribe to email confirmation

Good
- simple & direct text
- a confirmation....

Bad
- I don’t want your info & you suggest to bug me in an even more invasive way?

As described by former student Kevin Fox @kfury (designer of the original gmail)
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Outline

- Another good concept video
- Reviewing tasks
- Sketching to explore user experiences
- Values in design
High Fidelity Concept Videos

parqtheapp
Design Process: Discovery

Assess Needs
- understand client’s expectations
- determine scope of project
- characteristics of customers & tasks
- evaluate existing practices & products

Discovery

Design Exploration

Design Refinement

Production
Task. The structured set of *activities* or *high-level actions* required to achieve a high level user *goal*.

*what* a user wants to do
Another Look at Tasks

Instead of describing FEATURES in your solution, describe TASKS as (USER + GOALS).

Common Mistake: Confusing the lens. A lot of tasks get described as what the SYSTEM designed by you needs to achieve.

Sketch by Trijeet Mukhopadhyay
Example of Good Tasks: Lyft

• Simple: Signaling for a ride
  – this is what 90% of people are going to be using the app for, so it should be easy to accomplish and require as few steps as possible.

• Moderate: Contacting driver to pick up a forgotten item
  – this will happen less often, so it will require a few more steps to contact a previous driver and connect with them to coordinate the return of the item (because the UI is designed to make the simple tasks the most accessible).

• Complex: Become a driver for Lyft
  – although the goal is still to make this as streamlined as possible, there are multiple levels of screenings and regulations that you have to pass. You must scan and upload documents and register with multiple parties, etc. This is a task that most people will not be doing.
Design Process: Exploration

**Discovery**

**Design Exploration**
- brainstorming
- sketching
- storyboarding
- prototyping

**Design Refinement**

**Production**

**Expand Design Space**
Iteration

At every stage!

**Design**

**Prototype**
- Sketch
- Paper
- Video
- Tool
- Program

**Evaluate**
- Gut
- Crit
- Expert Eval
- Lo-fi Test
- User Study
Sketching: A Quintessential Activity of Design

* Courtesy Bill Buxton
The diagram illustrates the relationship between investment, time, and weight of design criteria in the context of ideation and usability. It shows a cycle of ideation and gradual increase in usability over time, with investment and weight of design criteria growing concurrently. The diagram is courtesy of Bill Buxton.
From Sketch to Prototype

**Sketch**  **Prototype**

- Evocative → Didactic
- Suggest → Describe
- Ambiguous → Reassuring
- Question → Answer
- Propose → Test
- Provoke → Resolve
- Tentative → Specific
- Noncommittal → Depiction

Difference in intent rather than in form

Courtesy Bill Buxton
The Anatomy of "Sketching"

- Quick / Timely
- Inexpensive / Disposable
- Plentiful
- Clear vocabulary. You know that it is a sketch (lines extend through endpoints, ...)
- No higher resolution than required to communicate the intended purpose/concept
- Resolution doesn’t suggest a degree of refinement of concept that exceeds actual state
- Ambiguous

Courtesy Bill Buxton
If you want to get the most out of a sketch, you need to leave big enough holes.

There has to be enough room for the imagination.

Courtesy Bill Buxton
Design as Choice: Generative & Reductive

Elaboration (“Flare”)  Reduction (“Focus”)

Laseau (1980)

Courtesy Bill Buxton
Exploration of Alternatives

… a designer that pitched three ideas would probably be fired. I’d say 5 is an entry point for an early formal review (distilled from 100’s). … if you are pushing one you will be found out, and also fired. … it is about open mindedness, humility, discovery, and learning. If you aren’t authentically dedicated to that approach you are just doing it wrong!

Alistair Hamilton
VP Design
Symbol Technologies

Courtesy Bill Buxton
People on a design team must be as happy to be wrong as right. If their ideas hold up under strong (but fair) criticism, then great, they can proceed with confidence. If their ideas are rejected with good rationale, then they have learned something.

...There are no dumb questions. There are no ideas too crazy to consider. Get it on the table, even if you are playing around. It may lead to something.

Bill Buxton
*Sketching User Experiences*
pg. 147-149
design rationale for decisions is key
diverse teams make this work better
Which Group Produced the Best Ceramic Pots

Group A
- graded by their highest quality pot

Group B
- graded by total number of pots

Photograph: Graeme Robertson/The Guardian
What does the customer want to buy?
“The experience of even simple artifacts does not exist in a vacuum but, rather, in dynamic relationship with other people, places, and objects”
– Buchenau & Suri 2000
Experience vs. Interface Design

user experience = UI + situation + environment

CitrusMate Plus  Mighty OJ Manual Juicer  OrangeX Manual Juicer
Experience Design for a Phone App?

- Draw my phone
- Draw my app’s interface
- Draw the experience of using my app

- Which is the true object of design?

http://www.listmeapp.com/

Courtesy Bill Buxton
Abstract It with Minimal Detail

Include only what is required to render the intended purpose or concept

http://www.smashingmagazine.com/2013/06/sketching-for-better-mobile-experiences/
People think focusing is about saying “yes.” But… “Focusing is about saying no.” – Steve Jobs

Scott McCloud’s *Understanding Comics*
Design Thinking is Iterative

- USER RESEARCH
- CURRENT
- CONCRETE
- PROTOTYPES
- FUTURE
- IDEAS
- ABSTRACT
- INSIGHTS
SKETCH FROM THE BASICS!

We’ll practice expressing everyday objects through basic shapes! **Grab a pen and a piece of paper** and draw a 3 x 3 grid on your paper.

Individually spend 4 minutes drawing as many objects from your kitchen from memory using only the 5 drawing elements to the right as the base. Fill every square in the grid within the 4 minutes!

Post a picture of your grid in the slack thread at the end!
Administrivia

- Grades for A1 coming out tonight at latest
- After studio this week think about/brainstorm team names (we need it for the web site – you will fill out a form due on Monday night)
Team Break

- Complete your team norms (5-10 min)
- This week’s assignment (~10-15 min)
  - work on your slides
  - CA will come around and give feedback
Values & Ethics in Design

- Introduction
- Value Sensitive Design (VSD)
- Stakeholder Analysis
- Value tensions
- Further reading
Values in Design

• The artifacts we design embed values of the creators – whether we mean to or not...

• Example: Springboard Video (2014)
Values in Design

• The artifacts we design embed values of the creators – whether we mean to or not…

• Example: Springboard Video (2014)

• Chimamanda Ngozi Adichie (author) says:

  “The single story creates stereotypes… not that they are untrue, but that they are incomplete. They make one story become the only story.”

  “The danger of a single story”, TEDGlobal 2009
What are values?

“what is important to people in their lives, with a focus on ethics and morality”
How does technology embed values?

- Humans shape the design of technology
- Technology in turn shapes human experience and society
How does technology embed values?

- Humans shape the design of technology
- Technology in turn shapes human experience and society
- This occurs at multiple scales

Figure 1.1
Projects that engage different levels of human experience. Slide reproduced from University Faculty Lecture, University of Washington (Friedman, 2013).
Stakeholder analysis

Whose values are being considered?

*Direct stakeholders*  
people interacting directly with a technology

*Indirect stakeholders*  
people who are affected by the technology, but don’t interact directly with it
Stakeholder analysis

Whose values are being considered?

*Direct stakeholders*  people interacting directly with a technology

*Indirect stakeholders*  people who are affected by the technology, but don’t interact directly with it

**Example:** electronic health record systems

*Direct stakeholders*  doctors, insurance agents, nurses

*Indirect stakeholders*  patients
Whose values are being considered?
How can we surface values in design?

- Value elicitation materials
  - value lists
  - value scenarios
  - card decks
  - ...
- Talk to people! Observe!
- Build prototypes and show it to people!
What values are encoded?

Bike-sharing
- Mobility
- Health
- Sustainability
- Inclusion
- Accessibility

Contact-tracing
- Health
- Safety
- Efficiency
- Public interest
- Privacy

Social Chatbot
- Wellness
- Solidarity
- Inclusion
- Human connection

Let’s Chat
What did we learn?

Values don’t exist in isolation

Values are interconnected and are often in tension with each other
A wearable fitness tracker for older adults that monitors their health, detects falls and injuries, and automatically sends updates to their doctors and loved ones.
Tarot Cards of Tech

“a set of provocations designed to help creators more fully consider the impact of technology”

→ help designers think of different “risk areas” that can uncover missing stakeholders and value tensions

tarotcardsoftech.artefactgroup.com
An example

A wearable fitness tracker for older adults that monitors their health, detects falls and injuries, and automatically sends updates to their doctors and loved ones.

THE FORGOTTEN

When you picture your user base, who is excluded? If they used your product, what would their experience be like?

Whose perspective is missing from product development?

Pretend the opposite of your assumptions about your core user are true—how does that change your product?
Further Reading

- Other frameworks
  - Inclusive design
  - Design justice
  - Participatory design
  - Feminist HCI
  - Critical race and HCI
  - Queer HCI

- Other resources
  - Building Utopia Deck
  - Envisioning Cards
  - Judgement Call
  - Timelines
  - Many, many more
Values & Ethics Design Ethics Research

Once designers have identified values & value tensions, who gets decide how to navigate them?

How might we enable stakeholders to directly participate in navigating value tensions?

https://dl.acm.org/doi/10.1145/3563657.359599
Summary

- Sketching allows *exploration* of many concepts in the very early stages of design

- As investment goes up, need to use more and more formal criteria for evaluation

- *Values are embedded* in designs → think critically about which values and whose values you are embedding
Next Time

• Lecture
  - Early-Stage Prototyping (low-fi & medium-fi)

• Read
  - “Involving Customers with Iterative Design” (Ch 4) of *The Design of Sites*
  - “Making a Paper Prototype” (Ch 4) from *Paper Prototyping* by Carolyn Snyder

• Watch
  - *The danger of a single story*, Chimamanda Ngozi Adichie, TEDGlobal 2009 (20 min.)
    https://www.ted.com/talks/chimamanda Ngozi Adichie the danger of a single story?language=en

• Exit Ticket