Early Stage Prototyping

Prof. James A. Landay
Computer Science Department
Stanford University
Autumn 2016
October 20, 2016

Hall of Fame or Shame?

Paper iPad App
By 53

Good
- Pens feel natural & the app is extremely good for its only real purpose: idea generation / notation.
- Once 3 basic gestures are learned, they become a natural part of rapid ideation.
- Look & feel is important here as the tools are "pleasurable" & work as expected.

Bad
- Gestures are not easily discoverable and require a short initial tutorial.

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Paper iPad App
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iOS 6 Maps
By Apple Inc.
Hall of Shame!

**Good**
- Beautiful alternative to the competition & generally easier to read
- Turn by turn directions are efficient, clear & functions well – in general

**Bad**
- Despite any aesthetics, the data is wrong & sparse, meaning, it does not perform the one task it should do well – getting from A to B

**iOS 6 Maps**
By Apple Inc.

Hall of Shame!

**Potentially Hall of Fame**
- Apple crowd sourced data
- The UI for problem reporting is well designed
- With so many users have potential to fix data rapidly → it has gotten much better!

**Google Maps Data vs iOS6 Maps Data**

Outline

- Storyboarding
- Types of prototypes
- Low-fi prototyping
- Conducting a low-fi test

Design Process: Exploration

- Discovery
- Design Exploration
- Design Refinement
- Production
- Expand Design Space
  - Brainstorming
  - Sketching
  - Storyboarding
  - Prototyping
Sketches & Storyboards

- Where do storyboards come from?
  - film & animation
- Give you a “script” of important events
  - leave out the details
  - concentrate on the important interactions

Sketches & Storyboards in UX Design

Starts to tell a story, but still describes the design
Sketches & Storyboards in UX Design

Task Flow #1

What is a Prototype?

“A prototype is an early sample or model built to test a concept or process or to act as a thing to be replicated or learned from.” – Wikipedia

a working representation of a final artifact

Types of Prototypes

Prototypes are concrete representations of a design

Prototype dimensions
- representation: form of the prototype
  - off-line (paper) or on-line (software)
- precision: level of detail (e.g., informal or polished)

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- precision: level of detail (e.g., informal or polished)
- interactivity: watch-only vs. fully interactive
  - fixed prototype (video clips)
  - fixed-path prototype (each step triggered by specified actions)
    - at extreme could be 1 path or possibly more open (e.g., Denim)
  - open prototype (real, but limited error handling or performance)
- evolution: expected life cycle of prototype
  - e.g., throw away or iterative

Fidelity in Prototyping

- Fidelity refers to the level of detail
- High fidelity?
  - prototypes look like the final product
- Low fidelity?
  - artists renditions with many details missing

Hi-fi Prototypes Warp

- Perceptions of the tester/reviewer
  - representation communicates “finished”
    - comments focus on color, fonts, & alignment
- Time
  - encourage precision
    - specifying details takes more time
- Creativity
  - lose track of the big picture
Why Use Low-fi Prototypes?
- Traditional methods take too long
  - sketches → prototype → evaluate → iterate
- Can instead simulate the prototype
  - sketches → evaluate → iterate
  - sketches act as prototypes
    - designer "plays computer"; others observe & record
- Kindergarten building skills
  - allows non-programmers to participate

The Basic Materials
- Large, heavy, white paper (A3 or 11x17)
- 5x8 in./A5/A6 index cards
- Tape, stick glue, correction tape
- Pens & markers (many colors & sizes)
- Post-its
- Overhead transparencies
- Scissors
- X-acto knives, etc.
Who is Zuki?

Administrivia

- Web Team Survey
  - https://goo.gl/forms/qnqe9lZ03sQiFdju2
- SFMOMA Field Trip, Sunday, Nov. 13
  - http://tinyurl.com/sfmoma147
- Assignment #5 – Low-fi Prototype & Pilot Usability Test
  - 15-20 rough sketches of different design realizations (everyone on team contributes)
    - think different modalities (e.g., visual, speech, watch) or different visual UIs (gestures, taps, etc.)
    - will do most of this in studio
    - pick best 2 realizations & storyboard more
    - pick best realization & add details to storyboard
    - build low-fi prototype of the best & test it w/ 3 target participants

POV, HMW, EP Assignment #2

Written Report: avg=90, std. dev.=5
Team Presentation: avg=90, std. dev.=5
Individual Presenter: avg=93, std. dev.=4
**Constructing the Model**

- Set a deadline
  - don’t think too long - build it!
- Draw a window frame on large paper
- Put different screen regions on cards
  - anything that moves, changes, appears/disappears
- Ready response for any user action
  - e.g., have those pull-down menus already made
- Use photocopier/printer to make many versions
Preparing for a Test

- Select your “customers”
  - understand background of intended users
  - use a questionnaire to get the people you need
  - don’t use friends or family
  - I think existing “customers” are OK (Rettig disagrees)

- Prepare scenarios that are
  - typical of the product during actual use
  - make prototype support these (small, yet broad)

- Practice to avoid “bugs”

Conducting a Test

- Four roles
  - greeter – puts users at ease & gets data
  - facilitator – only team member who speaks
  - computer – knows application logic & controls it
    - always simulates the response, w/o explanation
  - observers – take notes & recommendations

- Typical session is 1 hour
  - preparation, the test, debriefing

Evaluating Results

- Sort & prioritize observations
  - what was important?
  - lots of problems in the same area?

- Create a written report on findings
  - gives agenda for meeting on design changes

- Make changes & iterate
Advantages of Low-fi Prototyping

- Takes only a few hours
  - no expensive equipment needed
- Can test multiple alternatives
  - fast iterations
  - number of iterations is tied to final quality
- Almost all interaction can be faked (Wizard of Oz method)

Problems with Low-fi Prototypes

- “Computer” inherently buggy
- Slow compared to real app
  - timings not accurate
- Hard to implement some functionality
  - pulldowns, feedback, drag, viz …
- Won’t look like final product
  - sometimes hard to recognize widgets
- End-users can’t use by themselves
  - not in context of user’s work environment

Commercial Tools

- Balsamiq Mockups
  - see tutorial here
  - http://support.balsamiq.com/customer/portal/articles/107999
- POP
- Reflector 2.0

Summary

- Prototypes are a concrete representation of a design or final product
- Low-fi testing allows us to quickly iterate
  - get feedback from users & change right away

Further Reading

- Books
  - Paper Prototyping: The Fast and Easy Way to Design and Refine User Interfaces, by Carolyn Snyder, Morgan Kaufmann, 2003
- Articles

Next Time

- Lecture
  - Watch, Critique & Vote on Concept Videos
  - Mid-term course evaluation
- No Reading
- Project
  - 15-20 sketches of 3-5 design realizations in studio…
  - Pick the top two & storyboard those
  - Pick the top 1 & build/test low-fi prototypes using 3 key tasks for next week’s studio presentation
  - Recruit representative participants now!