Early Stage Prototyping

Hall of Fame or Shame?

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
Hall of Shame!

iOS 6 Maps

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

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!

Outline

- Storyboarding
- Types of prototypes
- Low-fi prototyping
- Conducting a low-fi test
Design Process: Exploration

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

Sketches & Storyboards in UX Design
**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) vs. on-line (software)
- Precision: level of detail (e.g., informal or polished)
- Interactivity: watch-only vs. fully interactive
  - Fixed prototype: videos of static images
  - Fixed-path prototype: each step triggered by specified actions
  - Open prototype: one path or possibly more open (e.g., Denim)
  - Open prototype: work, but limitations (branding 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?

Grading on First Two Assignments

Needfinding Assignment #1
A1 Group Presentation: ✓: 7% ✓: 49% ✓: 37% +: 7%
A1 Individual Presentation: ✓: 0% ✓: 15% ✓: 44% +: 42%

POV, HMW, EP Assignment #2
A2 Group Report: ✓: 20% ✓: 38% ✓: 25% +: 18%
A2 Group Presentation: ✓: 3% ✓: 23% ✓: 60% +: 15%
A2 Individual Presentation: ✓: 0% ✓: 13% ✓: 56% +: 31%

TEAM MEETINGS
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)

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
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

Prototyping

• Books

• Articles
  - “Prototyping for Tiny Fingers” by Marc Rettig, in Communications of the ACM, 1994
  - “The Perils of Prototyping” by Alan Cooper,
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!