Prototyping
Ryan Park • CS376 • April 29, 2008
What Do Prototypes Prototype?

Courtesy Flickr user zezodedo
What is a prototype?

A prototype is a representation of a design idea.


Courtesy Flickr user hamwithcam
What Do Prototypes Prototype?

- Role
- Implementation
- Look and feel
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**Purpose**

**Resolution**

**Fidelity**

Example 1. Role prototype for 3D space-planning application [E1 Houde 1990].

Courtesy Flickr user iLounge
Role Prototypes

Courtesy IDEO

Apple Knowledge Navigator
Example 5. Interactive story for an operating system interface [E5 Vertelney and Wong 1990].
Implementation Prototypes

Example 3. Implementation prototype for 3D space-planning application [E3 Chen 1990].

Courtesy Flickr user madeinoz
Resolution vs. Fidelity

• Which resolutions are appropriate in which situations?

• “If you present a high-resolution version of the artifact, the audience will be more likely to see it as a finished product, causing them to evaluate it as a whole rather than focus on one aspect.”
  — Antonio Ricciardi

• How do we avoid confusing the audience?
I think that given the tenets of [user-centered design], a role prototype should almost certainly come before a look and feel prototype. And most likely, implementation should come last. If it comes first, I think it's equivalent to a proof of concept, which I'm not sure is a prototype in the same way it is defined in this paper. This is because a [proof of concept], in my opinion, is more about internal validation (i.e. "this is possible") than sharing ideas with outsiders (whether they be the design team or end-users).

— Neil Patel
Developing Prototypes: Serial or Parallel?

- To what extent are certain axes directly influenced by the others? Which should come first?
- In what situations might parallel prototyping work? When is it necessary?
Among the examples I like the pizza-box the most. It well illustrates the idea that an efficient prototype should give answers to the question that the designer is interested in, in a way as simple as possible.

— Chen Wu

Simply by telling someone a pizza box is a computer, people treat that pizza box like they would a laptop and the designers analyze it as a computer.

— Michael Smith
Abstract representation

• Will we learn how people treat a laptop, or how they treat a pizza box?

Getting the Right Design and the Design Right

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“What a simple and inspiring paper.”

“Overall, I don’t believe anything particularly new resulted from this paper—I have a difficult time thinking that this paper was presented at a CHI conference.”
Getting the Right Design and the Design Right
Getting the Right Design and the Design Right

- Hypotheses:
  - Participants rate designs lower when all alternatives are seen.
  - Participants exposed to alternative designs will feel less pressure to be positive.
  - Participants who see alternative designs will provide more suggestions for improvement.
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Interaction Effect

Average Number of Comments

Condition

Single
Multiple

Negative
Positive
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• Results:
  • Participants rate designs lower when all alternatives are seen.
  • Participants exposed to alternative designs will feel less pressure to be positive.
  • Participants who see alternative designs will provide more suggestions for improvement.
Getting the Right Design and the Design Right

• but...
  • Superficial suggestions decreased when users were shown multiple prototypes.

• and...
  • New substantial suggestions also decreased in the Multiple experiment.
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• My hypothesis:
  • When presented with a prototype, users felt pressure to give feedback for the entire allotted time.
  • When presented with 3 prototypes, they gave fewer superficial suggestions because they had more substantial responses to give.
What’s the right number?

What would happen if instead of just three prototypes were used, ten, or even fifty were used? [...] My hypothesis would be that more than three would lead to better results but after ten the return would be marginal.

— Michael Fischer