Participatory Design: Overview

Some potential problems…

– our intuitions could be wrong
– interviews etc. might not be precise
– designers cannot know the user sufficiently well to answer all issues that come up during the design

Potential Solution

Designers should have access to pool of representative users.
These are the “end-users” themselves, not their managers or union reps, etc.
Participatory Design: Details

Users become first class members in the design process. They are active collaborators, not passive participants, in the process.

Users are considered subject matter experts who know all about the work context.

It’s an iterative process, and at all design stages things are subject to revision.

Participatory Design: Pros and Cons

Potential Up Side

- Users are excellent at reacting to suggested system designs
  - Designs must be concrete and visible
- Users bring in important “folk” knowledge of work context
  - Knowledge may be otherwise inaccessible to design team
- Greater buy-in for the system often results

Potential Down Side

- Can be hard to get a good pool of end users
  - Expensive, reluctance...
- Users are not expert designers
  - Don’t expect them to come up with design ideas from scratch
- The user is not always going to be right
  - Don’t expect them to know what they want
Emmy-Winning Interactions

The “Do Not Touch” button that was developed with Kidsteam as part of the participatory design process.

Nickelodeon won the 2013 Emmy for Outstanding Creative Achievement In Interactive Media – User Experience And Visual Design for their Nick App, which features it.

The button was specifically recognized in the app for its, “array of disruptive comedy and surprises.”

Technique: Sticky Note Brainstorming

A question is presented and the team (usually each member but sometimes in pairs) writes one word or phrase on each sticky note.

Session leaders collect the individual notes and organize them on a wall or board, looking to cluster similar ideas together to discover common themes and give a brief name to each.

This approach works well across many different contexts.
**Technique: Likes, Dislikes, Design Ideas**

This approach also uses sticky notes, but in a guided form and experiential context.

- A design target is selected and the team spends some time trying out this software or hardware (or even paper) prototype.
- As they use it, every time they see something they like or dislike or they have an idea for a new feature, they write it down (very briefly) on a sticky note.
- Similar to sticky note brainstorming, the notes are collected, but this time the are organized not only by themes, but in columns for Likes, Design Ideas, and Dislikes.

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**Low Fidelity Prototyping**

One way to support the involvement of different types of users is to use non-electronic/software solutions.

- This allows for faster and cheaper iterations of ideas and removes issues of technical failures and debugging.
- It can lower the technical expectations/needs of the team’s users, allowing a wider range of participants.
- Without needing to build things, in theory you aren’t limited to existing technologies and core ideas can more easily surface.
- It can support storytelling, which helps provide context along with specific ideas.
Low Fidelity Prototypes

Paper-based prototypes
- a paper mock-up of the interface look, feel, functionality
- “quick and cheap” to prepare and modify

Purpose
- brainstorm competing representations
- elicit user reactions
- elicit user modifications / suggestions

Research
- researchers work on new ways to make and use these prototypes

Arts & Crafts Prototyping

Using simple supplies like cardboard boxes, colored paper, markers, sticky notes, scissors, and tape you can construct low fidelity mock-ups representing design ideas.

This can remove many of the technical and financial hurdles that can slow down design idea generation and iteration.

Let’s redesign an HVAC Control System today!
Big Paper Brainstorming

There are times when you want to support even faster brainstorming and sketching out ideas or writing down thoughts that come to mind is enough of a starting point.

Markers and a big sheet of paper in the middle of a group might be enough to help the team members to express ideas and for others to build upon them.

Let’s redesign the Diamondback layout today!

PICTIVE prototypes

“Plastic Interface for Collaborative Technology Initiatives through Video Exploration” - Muller, CHI 91

Design is multiple layers of sticky notes and plastic overlays
- different sized stickies represent icons, menus, windows etc.

Interaction demonstrated by manipulating notes
- contents changed quickly by user/designer with pen and note repositioning

Session can be videotaped for later analysis
- usually end up with mess of paper and plastic!
PICTIVE prototypes (cont)

You could also create pre-made interface components on paper (though this can lock users into a certain initial mindset).
e.g., these empty widgets were created in visual basic and can be printed out:

I would argue it is still better to hand-draw them…

Technique: Mixing Ideas

After doing a “big paper” initial session, one possible elaboration is to then mix ideas from different teams by creating a collage of ideas from across all big sheets of paper.

– This is a physically destructive process, so it’s a good idea to photograph the sheets before cutting them up and it’s a good idea to let the teams know there will be some mixing in this way after the first round of presentations.

– In the Diamondback exercise, I could have cut the drawing of President Loh and one of the search ideas and taped them onto one of the full layout sketches to mix elements of the three teams.
Technique: Layered Elaboration

Supports creative / novel ideas since if you can draw it, it’s in your design.

Allows multiple non-destructive iterations of the design (inspired in part due to reactions to the mixing ideas approach).

Often start with a printout of a current design idea and then iterate / revise from there.

Typically we have three different “starting points” for different (but related) designs and rotate not only designs but also contexts.

Technique: Bags of Stuff

There are many ways to get creativity flowing, and with children and adults both fun and carefully designed limitations can be a part of that.

The “Bags of Stuff” technique supports all of the things we’ve discussed already but can also add a stronger element of fun.

It can also present a challenge through limiting the types of supplies to ones that mostly remove drawing from the equation and can make literal representations difficult. The story the team tells about the props they build is often the most valuable outcome.
Is crowd sourcing a form of PD?
It has been suggested by some that crowd sourcing is actually a form of participatory design.
– What do you think?

Prototyping and Development

<table>
<thead>
<tr>
<th>Early design</th>
<th>Late design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brainstorm different representations</td>
<td>Low fidelity paper prototypes</td>
</tr>
<tr>
<td>Choose a representation</td>
<td>Medium fidelity prototypes</td>
</tr>
<tr>
<td>Rough out interface style</td>
<td>High fidelity prototypes / restricted systems</td>
</tr>
<tr>
<td>Task centered walkthrough and redesign</td>
<td>Working systems</td>
</tr>
<tr>
<td>Fine tune interface, screen design</td>
<td>Alpha/Beta tests</td>
</tr>
</tbody>
</table>
| Heuristic evaluation and redesign | }

Limited field testing