Notes on Paper Prototyping

Paper prototyping is a type of Low Fidelity Prototyping and is considered a quick and inexpensive method of testing ideas before developing a functional prototype. This method has the advantage of allowing easily modify the prototype even during user tests; it is faster to produce than any computer implementation and allows involving other people in the user interface development as users tend to be more critical when looking at a paper prototype than regarding a more formal application. It is estimated that it is possible to detect up to 80% of usability problems using low-fidelity prototypes.

Paper prototyping is particularly suitable for collecting data on:

• Concepts and terminology

• Navigation

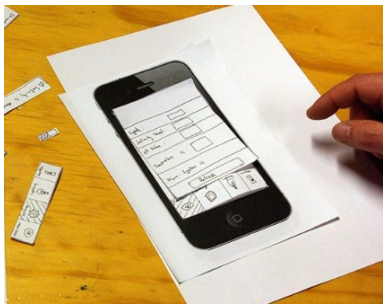
• Contents

• Structure

• Functionalities.

How to prepare the paper prototype

The purpose of a paper prototype is to answer questions and find usability issues, so it does not need to be very detailed and many simplifications are possible:



• replace some text with lines

• the size of the boxes, menus, ... may not be definitive

• replace images or icons with words (example: UA logo, etc ...)

• the prototype may not have the final colors and use only black and white; etc.

To prepare a paper prototype:

• Place the different screens (associated with the various tabs or menus) in different sheets to allow the user to navigate as they interact with the interface.

• Lists (drop down lists, menus, etc ...) must also be written on separate sheets and shown when the user selects the associated option.

• Buttons (radio buttons, check lists) can be simulated with pieces of paper that can be easily moved.

• User data can be written directly on a sheet transparent acetate (which can be cleaned between tests) or on post-it notes or the like to easily move and remove the information.

How to perform a usability test based on a paper prototype

A usability test based on a paper prototype involves the following steps:

1. Define the tasks that the user has to perform.

2. Prepare using paper the drawings, screens, menus, dialog box, pages, messages,… needed to perform those tasks.

3. Perform the test with users. A team member should play the role of the computer and manipulate the various screens, simulating the behavior of the user interface as the user interacts with it "clicking" on buttons and selecting options. Another team member observes the experiment and takes notes. When the test is performed by a single experimenter s/he must take notes immediately after the test.

5. The person posing as computer must not give any explanations about the application and its user interface but just simulate its behavior.

6. It is possible and advisable to change paper prototypes during the tests to test new solutions.

References

Ben Schneiderman, Catherine Plaisant, *Designing the User Interface*, 5th edition, Addison Wesley, 2009

Carolyn Snyder, *Paper Prototyping: The Fast and Easy Way to Design and Refine User Interfaces*, Interactive Technologies, 2003

Useful links

Jacob Nielsen, Paper Prototyping: Getting User Data Before You Code,
https://www.nngroup.com/articles/paper-prototyping/

Prototyping 101: The Difference between Low-Fidelity and High-Fidelity Prototypes and When to Use Each
https://theblog.adobe.com/prototyping-difference-low-fidelity-high-fidelity-prototypes-use/

Rikke Friis Dam and Yu Siang Teo, What Kind of Prototype Should You Create?
https://www.interaction-design.org/literature/article/what-kind-of-prototype-should-you-create