

ActiveStory Enhanced: Low-Fidelity Prototyping and Wizard of Oz Usability Testing Tool

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Abstract. This paper presents “ActiveStory Enhanced” as a tool that enables prototyping user interfaces and conducting usability tests in a way that is aligned with agile principles. The tool allows designers to sketch user interface prototypes as well as add basic interactions to provide navigation. Sketching can be done using a mouse or stylus on tablet PCs. Designers can then export the prototype to a web-based Wizard of Oz testing tool, allowing test participants to remotely walk through a UI while recording metrics such as mouse movements and time spent on pages. ASE improves on the original by providing some usability improvements, improved browser support, undo support, more control over the design and an improved pen and paper metaphor.

Keywords: user-centered design, agile user experience design, tablet PC

1 Introduction

With agile software development picking up increasing momentum and adoption over the past few years, some are concerned that a lack of attention to usability concerns has accompanied it¹. Agile methods call for a reduction in the amount of time spent upfront on design details. User-centered design (UCD) on the other hand tends to involve a significant amount of upfront design work including prototype design and usability testing. Agile and UCD practitioners have now turned their attention to unifying usability engineering with agile practices [1, 2, 3, 4].

Low-fidelity prototyping involves drawing sketches of a prototype, usually on a piece of paper. This method has been shown to require less upfront work as well as focusing the participants’ feedback on widget choice, widget placement and UI behavior in the early stages, rather than color choice, alignment and other less important superficial details [2]. Wizard of Oz testing consists of a person acting as the “wizard” while the test participant is shown the pieces of paper with the prototype designs, one page at a time. Whenever the user interacts with the interface, the wizard shows the next page which corresponds with that interaction. The drawback to this technique is that it traditionally requires the tester and participant to be collocated.

¹ Substantial traffic in the agile-usability newsgroup at Yahoo supports this statement.

2 ActiveStory Enhanced

ActiveStory Enhanced is a low-fidelity prototyping tool developed for the purpose of designing and performing distributed usability testing on an application. The tool allows designers to sketch user interfaces, add interactions and finally export the design to the web-based Wizard of Oz tool. Designers can use either a drawing tablet or tablet PC to further optimize the design experience and bring it closer to an actual pen and paper design feel.

2.1 Low-Fidelity Prototype Designer

The ActiveStory design tool allows designers to quickly draw user interfaces and link them together. The pen and paper metaphor is maintained with pen and eraser modes that allow the designer to draw on an ink surface. Interactions can be added to the design. In ActiveStory, an interaction is simply a region (hotspot) on a page that, once clicked upon, causes the system to load a new page. Designers can draw and erase with mouse or stylus; use custom pen colors, pen sizes and canvas sizes; select elements of the drawing and move, resize and delete them; add interactions and set the target page as well as resize and move the hotspot; and import existing images (e.g. screenshots or visual elements).

2.2 Wizard of Oz Testing Tool

The testing tool is Microsoft Silverlight based web application that presents the sketched prototypes to the test participant and handles navigations when a hotspot is clicked. It can be viewed by participants anywhere on the web, using any mainstream web browser and operating system. The Silverlight Wizard of Oz tool also collects some metrics that might be of interest to the usability designers and testers including: mouse behaviour (clicks and trails are presented to the tester by page, per user; or all the movements for all users on a given page are shown); time spent on each page (per user per instance of the page); clicks made on hotspots; and comments made by users on each page (per instance of the page).

References

1. Constantine, L. L.: Process Agility and Software Usability: Toward Lightweight Usage-Centered Design. Information Age, August 2002.
2. Barnum, C.: Usability Testing and Research. Pearson Education, New York (2002).
3. Patton, J.: Hitting the Target: Adding Interaction Design to Agile Software Development. , In. OOPSLA 2002, pp. 1-ff, ACM Press, 2002
4. Sy, D.: Adapting Usability Investigations for Agile User-centered Design, Journal of Usability Studies, vol. 2, issue 3, pp. 112-132, ACM Press, 2002.