ABSTRACT

This paper discusses the various challenges encountered during iterative testing of an insurance company’s home page prototypes. The study focuses on the methodology details, including the selection of prototypes and usability evaluation methods and the considerations for practical trade-offs. During Phase 1, six individual think-aloud interviews were conducted to compare three prototypes. Participants were asked to complete tasks on the prototypes. Based on the findings from Phase 1, three prototypes were developed. In Phase 2, an online survey was administered with existing customers to compare these three prototypes. Survey responses indicated that content, layout, and visual appearance were most influential on users’ preferences of the designs. At the end of our paper, we compare the implementation and the results of usability evaluation and the prototypes in the two phases and discuss the limitations of the study.

Keywords: Insurance Website, Iterative Design, Online Survey, Prototype, Usability Evaluation

INTRODUCTION

According to a report by Cisco Internet Business Solutions Group, global e-commerce is expected to attain nearly $1.4 trillion in 2015 (Bethlahmy, Popat, & Schottmiller, 2011). Forrester Research further estimated that in 2016 US online shoppers will spend $327 billion, and e-retail will account for 9 percent of total retail sales (Mulpuru, 2012). An increasing number of companies have seized this opportunity by adopting the electronic way of business. One important factor critical to their success in e-business is their websites’ usability (Bilkova & Kopackova, 2014; Nantel & Senecal, 2009; Wang & Senecal, 2007). For instance, website usability and ease of use influence customers’ intention to use the site to make a transaction through exerting impact on their satisfaction, and customers’ intent to use the website predicts their decision to buy (Green & Pearson, 2011; Konradt, Held, Christophersen, & Nerdinger, 2011).
Additionally, website usability impacts customers’ intention to repurchase through affecting their perceived relationship quality with the company (Zhang et al., 2011).

In order to construct a user-friendly website, it is necessary to conduct a usability evaluation by taking into consideration users’ inputs from the early stages of website development (Barnum, 2002; Nielsen, 1993). Additionally, the time taken for the usability evaluation should not last so long as to slow down the entire development process. Prototype testing constitutes a powerful solution to address the above-mentioned challenges. A prototype is a “representation of a design idea” (Houde & Hill, 1997, p.369). Employing prototype testing during an iterative design carries the following unique advantages (Chou, 2002):

- Making the overarching purpose of designs clearer;
- Aiding communication and mutual understanding among team members; and
- Locating main usability concerns and promoting early and fast incorporation of the desired design changes.

Currently, however, there has been a lack of effort in evaluating different methods that could be adopted for usability evaluation of e-commerce website prototypes (Hasan, Morris, & Probeta, 2012; Hartson, Andre, & Williges, 2001; Koutsabasis, Spyrou, & Darzentas, 2007). Despite the popularity of prototype testing during the creation of e-business applications, there is no consensus on how to best conduct prototype testing and which type of prototype should be used under the specific circumstance (Engelberg & Seffah, 2002; Rudd, Stern, & Isensee, 1996; Sauer, Franke, & Ruetttinger, 2008; Sauer & Sonderegger, 2009). There are also no guidelines for using more than one method during prototype testing. As a result, practitioners are unsure of what might constitute the best approach for their individual situations (Wixon, 2003).

In this study, a usability evaluation laboratory at a mid-western U.S. university was contracted by an insurance company to conduct a usability evaluation of their home page redesigns. Guided by the philosophy of user-centeredness, we implemented a two-phase prototype testing adopting two usability evaluation methods:

- First, think-aloud user testing was conducted to compare three prototypes, focusing on the layout and key functionalities of the home page.
- Next, an online survey was administered to compare three possible aesthetic designs of the home page.

Details of each phase, including the practical trade-offs under time and resource constraints, were elaborated in the Methods Section. Findings from each phase were shared, which could inform developers of other e-business applications. We also compared the processes and the results of evaluations and the prototypes in Phases 1 and 2. It is hoped that our comparison will enrich the current methodology discussion and help practitioners design their prototype testing of online commercial systems. Additionally, although our two phases served different purposes, the findings in each phase complemented each other. The prototypes of Phase 2 were constructed based on findings from Phase 1, and findings from the two phases contributed to two dependent aspects of the homepage design. Therefore, we also hope that our insights from this study will provide directions to practitioners who are under time constraints to conduct a full-fledged extensive usability study while at the same time increasing the reliability of their study by employing more than one usability evaluation method.

As noted above, we administered an online survey in Phase 2. Although a survey was among the low-cost and effective usability evaluation methods (Gutwin & Greenberg, 2000), most studies adopted a survey as an addition to other methods, such as by administering a...
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