Chapter XI

Walk-Throughs in Web Usability: Cognitive, Activity, and Heuristic Walkthrough

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ABSTRACT

The evaluators of a Web site have a need for robust and easy-to-use usability inspection methods to help them to systematically identify the possible usability problems of the Web site being analysed. Three usability inspection methods — heuristic walk-through (HW), cognitive walk-through (CW), and activity walk-through (AW) — are reviewed in this chapter. This chapter discusses the relative advantages and weaknesses of all of the techniques, and suggestions for Web evaluation are offered, with a short Web site example. Based on these analyses, we suggest some changes to Web site evaluation to improve accuracy and reliability of the current walk-through methods; however, this chapter is not a comparison between the walk-through techniques in order to determine which technique is best at detecting usability problems of a Web site.
INTRODUCTION

Studies of human computer interaction (HCI) have established numerous usability inspection methods that can be applied by Web designers without the effort and expense of setting up evaluations with real users. This has ensured that measurement and concern of usability issues can be readily brought into an early Web design process.

The existing usability inspection methods are mostly based on and directed to the evaluation of the user interfaces of software or products that have been the catalyst of the HCI studies thus far. Recently, the relatively new medium — Web-based information systems — has been a driving force to extend the findings and theories from previous studies of HCI, in terms of its different use and use contexts compared with the traditional user interfaces. For instance, the design principles and guidelines of interface design have been rephrased for the Web context (e.g., Nielsen, 2000), likewise some advances of previous psychological theories have also been made for the Web context (e.g., Blackmon, Polson, Kitajima, & Lewis, 2002).

Following these advances, this chapter reviews usability inspection methods based on the walk-through methodology, with the aim of assessing how they collectively provide a reasonable suite of usability inspection tools for Web-based information systems. The first section looks at the theoretical foundations of Web evaluation. In the following sections, we take a brief look at different Web usability inspection techniques and describe the principles and concepts that each method is grounded on. Finally, we discuss the strengths and weaknesses of the methods as they currently exist and suggest improvements for assessing Web sites.

THEORETICAL FOUNDATIONS OF WEB EVALUATION

Let us first consider the typical situations in which people use a Web site. Quite often, there are two simple ways to access a Web site that the users want to use. Firstly, when they are aware of the Web site that matches their current objectives they will, either type the URL of the Web site, or simply use a previously established bookmark of the Web site. Otherwise they will employ a particular search engine for finding a best-fit Web site for their current objectives. Either way, all of their subsequent actions would be organised by only interacting with the current Web page appearing in a piecemeal and iterative way as follows.

Firstly, it is generally believed that users will analyse the Web page, separating it into several subregions and concentrate on the subregion(s) of the page that is semantically most similar to their current objectives. An action selection process that selects and acts on the relevant widgets from the chosen subregion follows (Kitajima, Blackmon, & Polson, 2000).

In such common Web navigation situations, there seems to be two interaction styles: recognition-based and recall-based interaction. In general, it is believed that most Web users are completely dependent on the labels, or the information presented on a Web page. Such individuals, especially new or infrequent visitors to a Web page, will have only abstract representations of their tasks and its goal structure with little or no knowledge of the consequences of their actions, so they have a strong tendency to select graphical widgets on the Web page based on how well they semantically match one or more components of their current goal sets. On the contrary, a recall-based interaction style is used by very frequent