Chapter 17
Applying the WDP Technique to Usability Inspections in Web Development Organizations

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ABSTRACT
This chapter presents the WDP (Web Design Perspectives-based Usability Evaluation), an inspection technique specifically designed to assess the usability of Web applications. This technique combines Web design perspectives and the heuristic evaluation method proposed by Nielsen (1994b). In addition to describing the components of the WDP technique this chapter also illustrates its use in practice by means of an industrial case study where the technique is applied to inspect a real Web application. In this case study, developers and requirement assessment staff applied the WDP technique to evaluate the usability of modules developed from scratch for a Web application. The results of this case study indicate the feasibility of performing usability inspections with the participation of a software project’s stakeholders, even when stakeholders are not usability experts.

DOI: 10.4018/978-1-60566-896-3.ch017
INTRODUCTION

Due to the relevance of usability in Web applications the software development industry is investing in projects and evaluations that help improve this quality item in their Web applications (Matera et al. 2006). The most commonly adopted methods to evaluate usability are: (1) usability tests, in which real users take part; and (2) usability inspections, in which inspectors (usually specialists) examine aspects related to the usability of the application to detect violations of a set of usability principles.

Although usability testing is considered the most efficient way to test systems and prototypes from a user’s standpoint, its costs are high as it involves user time and, many times, the use of specific usability labs. Apart from that, usability tests also have some inconveniences such as the difficulty in selecting a representative sample from a population and a possible difficulty in training the users in test execution that includes advanced application aspects (Matera et al. 2006). Usability inspection methods were proposed as an alternative with a good cost-benefit ratio in comparison to usability tests.

One of the methods for usability inspection is the Heuristics Evaluation (Nielsen 1994b) in which a small group of specialists study an application using a list of usability principles called heuristics. Studies have shown that this is a very efficient method, with a good cost-benefit ratio (Nielsen 1994a). However, a disadvantage to this method is the high dependency on the skills and experience of the evaluators (Matera et al. 2006).

Regarding the usability evaluation of Web applications, several techniques, methods and tools have been proposed. Insfran & Fernandez (2008) present a systematic review in which 51 articles were reviewed to investigate which methods for usability evaluation had been used by researchers to assess Web artefacts. Forty-five percent of the articles reviewed described the use of evaluation methods especially customized to evaluate Web applications, where usability testing is the most frequently used method.

However, despite the large number of techniques and tools proposed, many Web development organizations are not applying them (Insfran and Fernandez 2008). Possible causes to this are: lack of knowledge of these techniques and tools; or still budgetary limitations that prevent the hiring of usability specialists.

This chapter presents a usability inspection technique specific to Web applications named WDP (Web Design Perspectives-based Usability Evaluation), that can be used by the very stakeholders in software projects in the evaluation of their usability. WDP is based on the Heuristics Evaluation method with specific focus on Web applications, and was developed through an approach based on experimentation. Two feasibility studies have been carried out so far, one an observation study and two case studies where the WDP technique was evaluated (Conte et al. 2007a; Conte et al. 2007b; Conte et al. 2008; Vaz et al. 2008). This chapter clearly presents the application of the WDP technique in the Web development industry, along with an inspection process that is suggested to be used in usability evaluations. To this end, the chapter describes a case study in an industrial environment where a usability inspection was carried out where developers and requirement evaluators used this technique to assess recently-developed modules. An analysis is made of the efficiency indicators in the fault detection stage, effort in the detection stages and discrimination and learn ability degree as gathered throughout the case study. The purpose of this chapter is to provide information that may encourage other Web development organizations to carry out usability evaluations using techniques for the support of inspections.

The chapter is organized as follows: after the introduction on usability inspections for Web applications, the WDP technique is presented, describing the concept of perspectives, which form its basis, within the context of a Web project,
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