Automated Web Site Evaluation Tools: Implications for Writers

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The Web plays an important role in our society — enabling broad access to information and services. Nonetheless, the usability and accessibility of web page contents are still pressing problems. Content writing guidelines exist, but writers need tools to help them to conform to guidelines that are often vague, voluminous, contradictory, or difficult to apply. Automated web site evaluation tools are one potential solution to this problem. There are over 50 commercial and research tools for assessing many web page aspects, including issues that are relevant to writers. This chapter discusses the space of automated evaluation tools, in particular their advantages, limitations, and implications for writers. It summarizes web professionals’ use of the tools in practice and empirical studies on the tools’ efficacy. In general, the tools were not developed with content writers in mind. This chapter describes research needed to improve the tools so that they can benefit writers.

1 Introduction

Content plays an important role in web sites, as well as in the World Wide Web. From its inception, Berners-Lee intended the Web to be a vehicle for sharing ASCII text, which included links to other text (i.e., hypertext) (Berners-Lee & Fischetti, 1999). The current Web has evolved radically from its first instantiation: Web sites can have complex navigation mechanisms, functionality, and graphical designs. Despite the complex and graphical nature of sites, ASCII text or content is still their most important asset. For instance, an analysis of ratings assigned to a large sample of sites revealed that judges’ and users’ assessments of content, rather than graphics, were more correlated with overall site ratings (Sinha, Hearst, & Ivory, 2001).

Ever since the Web became available to a broad user population, users have experienced numerous usability and accessibility problems. Consequently, a plethora of design
guidance (e.g., guidelines, articles, texts, and other resources) exists to support web professionals in producing effective sites. Despite the importance of content, early design guidance focused mostly on graphic design and the mechanics of HTML coding, accessibility in particular (e.g., Levine, 1996; Lynch & Horton, 1999; W3C, 1999). In more recent design guidance, there is a shift in focus to content. For instance, Nielsen’s empirical studies on web writing provide guidance for writers (Nielsen, 1997), and texts focus exclusively on writing content for the Web (e.g., McGovern, Norton, & O’Dowd, 2002; Price & Price, 2002).

Despite the abundance of design guidance, conforming to it is a historical problem (Lowgren & Nordqvist, 1992; Souza & Bevan, 1990) that plagues content writers as well. Prescriptive guidelines are often voluminous, vague, conflicting, or divorced from the context in which sites are being developed, thus making such guidance difficult to apply. To mitigate this problem, researchers and vendors developed tools to assess whether or not a design conforms to specific guidelines. These tools are a potentially useful addition to the web site development process.

In this chapter, we discuss automated web site evaluation tools and their implications for content writers. Section 2 summarizes the characteristics of automated evaluation tools. Section 3 discusses web professionals’ use of the tools and presents findings from empirical studies. Current tools provide limited support for content evaluation and are somewhat inadequate overall; Section 4 describes research and functionality needed to better support writers.

2 Automated Evaluation of Web Sites

There are over 50 commercial and research tools for automated evaluation of web sites (see Ivory, 2003). The tools automate evaluation in two important ways:

- **Analysis.** Software automatically identifies potential problems.
- **Critique.** Software performs analysis and suggests improvements.

All the tools that we describe in this chapter support analysis and a subset support critique. We discuss the anatomy of an automated evaluation tool and then summarize five pre-dominant types of tools. Throughout our discussion, we focus on the application of these tools to web content.

Figure 1 depicts the anatomy of automated evaluation tools. The top part of the figure shows that a web site design is influenced by the intended users, their tasks, and the assumptions made about the technology that they will use to access the site. Tools also make assumptions about web site users (e.g., computer or Internet experience, reading level, and other abilities), their tasks (e.g., browsing or searching for information), and the technology that they use (e.g., web browsers, Internet connections, and assistive technology). For example, the tool may assume that users are sighted, browsing for information, and accessing the site via a computer with a 56.6 K modem and a 15-inch monitor. As another example, the tool may assume that users are blind, browsing for information, and accessing the site via a computer with a 56.6 K modem and screen reader. It is important to note that these assumptions may not match the factors that influenced the design of the