Web Site Design: Building a Cognitive Framework

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ABSTRACT

Usability is rapidly becoming recognized as a crucial element in Web design. Usability addresses the question: How easy is a system for visitors to learn, to use and to remember? Usability impacts the quality of the user’s experience. How, then, does an organization contemplating an online presence choose design elements and a composition that facilitate usability thus encouraging visitors to enter a Web site as well as become repeat visitors? Cognitive psychology offers one perspective that may provide some guidance for site design based upon how individuals process information. The research presented in this paper addresses the question: What factors, if used in site design, will encourage surfers to enter a Web site? Through the development of the Web Site Preference Framework, the authors provide evidence that by making a Web site conducive to information processing preferences, Web pages can be designed that will facilitate viewers entering the site.

Keywords: Web site design; information processing; cognitive maps; usability

INTRODUCTION

Web sites are becoming an extension of the marketing efforts that were once restricted to radio, television and print media. Jakob Nielsen, Web guru, has proclaimed that users first assess Web site usability (i.e., how easy a Web site is to use, to learn, to remember); purchase and payment are second (Nielsen and Norman, 2000). If a Web site does not give users a good experience, they will not come back. Because it is easier for a consumer to merely go to an alternative supplier on the Web, some organizations never get the opportunity to make a sale. They lose customers on the basis of the usability of their site before customers even
explore the product offerings. Consequently, a critical factor for any organization considering an online presence must be how to assess Web site design apart from the prices and quality of goods and services offered.

Studies have begun to emerge that attempt to address this issue. For example, Katerattanakul (2002) examined the concept of fitness for use and found that effective Web site design should support either consumer information search, consumer transactions or consumer enjoyment. Aladwani and Palvia (2002) found key characteristics of a quality Web site include specific content, content quality, appearance and technical adequacy. Similarly, Chakraborty, Lala and Warren (2002) found that informativeness and organization were among the factors that explain effective Web sites. None of these studies, however, examine how to actually build effective content, and present that content in an organized fashion.

As the Internet is first and foremost a source of information, it seems only logical to approach designing an effective Web site from the perspective of information processing theory. The task then becomes one of identifying the dimensions upon which to design a Web site as an effective purveyor of information.

Stephen and Rachel Kaplan (1982, 1998) provide insight into assessing a landscape from an information processing perspective. Through numerous studies they developed a preference framework that explains how to satisfy an individual’s desire to understand and explore a physical environment from an information processing perspective. Building on the research of Kaplan and Kaplan, the studies presented in this paper describe the development of the Web Site Preference Framework. To understand the context of this framework, information processing theory—specifically the concept of cognitive maps—is first summarized. From this theory, the notion of the Web as a landscape is explored and studies are presented that identify four dimensions that appear to be relevant to assessing Web site effectiveness.

**COGNITIVE LANDSCAPES**

Many questions remain unresolved when it comes to Web site design. Exactly how much information should a Web site contain? What is the best combination of text and visuals? How do you choose content and a layout that is inviting to users? Fortunately, the work of Kaplan and Kaplan provides insight into how to use cognitive psychology to create environments that both encourages viewing and motivates surfers to further explore a Web site.

Kaplan and Kaplan recognized that landscape designers (e.g., architects) were not necessarily the best individuals to design a user-friendly landscape as experts see things differently than do first-time visitors. The goal of Kaplan’s and Kaplan’s research was to develop preference patterns for environmental design that incorporate the end users’ use of environmental cues in information processing. By identifying the end users’ preference patterns, environments could be designed that make it easier for people to feel comfortable entering a landscape because they believe
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