Chapter VI
A Qualitative Study in User's Information–Seeking Behaviors on Web Sites:
A User–Centered Approach to Web Site Development

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ABSTRACT

This chapter introduces a qualitative study of user's information-seeking tasks on Web-based media, by investigating user's cognitive behaviors when they are searching for particular information on various kinds of Web sites. The experiment, which is a major part of the recently completed doctoral research at the Institute of Design-IIT, particularly studies cognitive factors including user goals and modes of searching in order to investigate if these factors significantly affect users' information-seeking behaviors. The main objective is to identify the corresponding impact of these factors on their needs and behaviors in relation to Web site design. By taking a user-based qualitative approach, the author hopes that this study will open the door to a careful consideration of actual user needs and behaviors in relation to information-seeking tasks on Web-based media. The results may compliment the uses of existing quantitative studies by supplying a deeper user understanding and a new qualitative approach to analyze and improve the design of information on Web sites.

INTRODUCTION

When visiting a Web site, each user has a specific goal that relates to a pattern of needs, expectations, and search behaviors. They also approach with different modes of searching based on varied knowledge, experience, and search sophistication.

This leads to differences in information-seeking strategies and searching behaviors. Since information on Web sites is traditionally structured and presented based on Web sites' goals and contents, it may or may not match with user goals or search behaviors.

Because of these problems, information structuring is the essence of Web design since these problems cannot be solved by the development of technically sophisticated systems alone. User search behaviors need to be studied and deeply understood in order to design systems that allow them to perform their information-seeking tasks easily, without struggle and frustration. The contents need to be authored, organized, structured, and presented to fit their needs, expectations, and search behaviors, while being able to carry out the goal of the Web site simultaneously. Both the provider and user must benefit at the same time to ensure the Web site success. As a result, user-centered design process is important in Web development to help people succeed within an information context that seeks to achieve business goals (Brinck, Gergle, & Wood, 2002).

In attempts to move toward user-centered design, many studies have been developed to establish design principles that better serve Web-based media. Among these attempts, Web usability, grounded in human-computer interaction (HCI), has currently assumed a significant role underpinning the design of many Web sites in order to maximize efficient use. Web usability studies and practices are primarily concerned with people performing a task accurately, completely, and easily. These may involve making information accessible, retrievable, legible, and readable, ensuring that all Web pages are reachable and practically navigated, or dealing with technical aspects of media interface and Web system by ensuring that all system functionality can be operated correctly and easily.

User Research in Web Development

User research in relation to Web site development is mostly conducted by using quantitative methods or automated programs, such as data mining and Logs File Analysis (analyze usage data), GOMS analysis (predict execution and learning time), and Information Scent modeling (mimic Web site navigation) serve different purposes. These automated methods are particularly essential to usability testing (evaluation), especially in cases where numerous users are involved since they can reveal a substantial amount of information with regard to usage patterns by representing the actual usage characteristics. Some also provide in-depth statistical analysis of usage. For example, *logs file analysis* can show overall hits, conversion rates, entrance pages, search terms, peak times, demographics, and system down-time (see Figure 1 and 2). These develop an understanding of how the Web site is being used by the actual users, which helps identify potential problems of the Web site, and may assist in suggesting a change or directing the future design (Brinck et al., 2002).

However, the limitations of these automated methods are that they cannot be employed without an existing Web site; the Web site needs to be prototyped or implemented at some level before these methods can be applied since they are intended as an analytical means rather than a generative one. More importantly, these automated methods cannot capture important qualitative and subjective information such as user preferences and misconceptions (Ivory & Hearst, 2001). They tend to yield a higher level of user data — what they do or what they do not do — but they usually fail to capture and analyze user cognitive behaviors such as their satisfaction, decision-making pattern, or reasons that underpin their needs and behaviors.

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