

User Experiences of the E-Commerce Site with Standard User Interface

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INTRODUCTION

The future of economic competitiveness for most enterprises relies on entrance and active participation in the e-commerce market (Vestal, 1999). E-commerce offers speed, convenience and often cost-effectiveness for today's busy shopper, but most e-commerce sites are still too hard to use. Zona Research (1999) found that 62% of online shoppers had given up at least once while looking for products, and 42% had turned to traditional channels to make their purchases. These statistics are astounding. In addition, according to Nielsen and Norman (2000), users fail when they try to purchase products on an e-commerce site about a third of the time. In reality, what happens is not just that the user fails, but that the site fails and does not sell a thing. Is "lost-in-hyperspace" primarily a psychological or an engineering problem? In other words, is "lost-in-hyperspace" a problem for users, or is it a symptom of poor design, which itself may be a psychological problem for authors of e-commerce sites?

Traditional services design user interfaces to treat users as suppliants who will simply have to learn to ask the right questions to get the right answers (Gonzalez, 1999). This approach will not work for the world of e-commerce. Much like driving a car or talking on the telephone, e-commerce follows the same rules in that the users are not concerned with the inner workings, but with the end result. E-commerce will make significant advances as long as the interface is kept simple and can be used in the same context as telephones are used today, according to Gonzalez (1999).

The problem with e-commerce sites is that the controls and organization are different for each site. This study investigates how an individual's perceptions of key beliefs surrounding the use of the e-commerce site with the standard user interface would influence the individual's decision to accept these e-commerce sites for online shopping purposes. This study applies the technology acceptance model (TAM) identifying components of usefulness and ease of use that predict user attitude toward the usage of the standard user interface. The research

uses a Web-based survey and employs TAM with path analysis to identify features of the standard user interface that might contribute to its usefulness and ease of use.

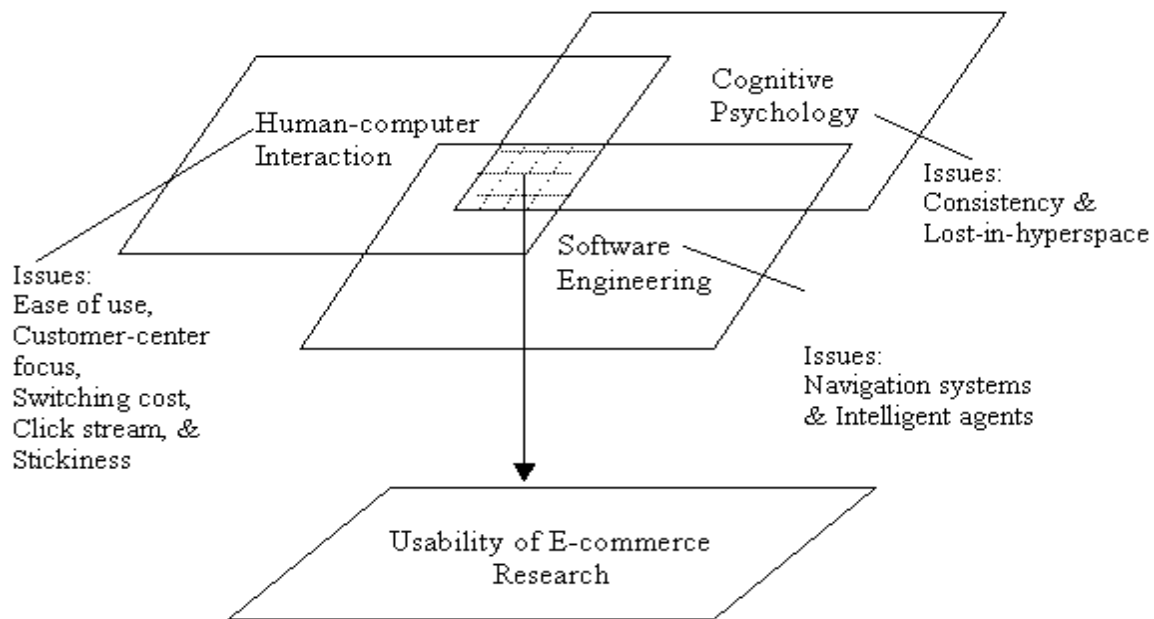
BACKGROUND

This study provides a review of the pertinent literature via an interdisciplinary approach integrating different disciplines into the usability of e-commerce research. In addition, to study user acceptance of e-commerce sites from an interdisciplinary perspective, TAM used by Davis (Davis, 1993; Davis, Bagozzi & Warshaw, 1989) is adopted to explain the usage of information technology.

Interdisciplinary Approach to E-Commerce Usability

An interdisciplinary approach integrates three disciplines of human-computer interaction, cognitive psychology and software engineering into the usability of e-commerce research. Theng and Thimbleby (1998) state that the human-computer interaction is typically grounded in empirical data from usability studies such as ease of use, customer-center focus, switching cost, click-stream, and stickiness. Cognitive psychology is typically grounded in models of human behavior and performance such as consistency and lost-in-hyperspace. Software engineering is typically grounded in sound engineering practice such as navigation systems and intelligent agents. Academic research may wish to promote a discipline-specific well without seeing the wider picture; for example, few software engineers are seriously concerned with usability (Theng & Thimbleby, 1998). This study is concerned with how the concepts, values, methods, and procedures from these disciplines can be integrated into the usability of e-commerce research; therefore, this study explores closely related literature in the areas of increasing the usability of e-commerce.

Figure 1. Interdisciplinary approach to the usability of e-commerce: integrating the disciplines of human-computer interaction, software engineering, and cognitive psychology into the usability of e-commerce research



Technology Acceptance Model (TAM)

Several researchers have validated TAM using different applications including e-mail, voice mail, word processing, micro-computers, automated teller, spreadsheet, calculator, Web pages development software, among others (Adams, Nelson & Todd, 1992; Bagozzi, Davis & Warshaw, 1992; Chau, 1996; Davis, Bagozzi & Warshaw, 1989; Fulk, Schmitz & Ryu, 1995; Hendrickson & Collins, 1996; Igbaria, Guimaraes & Davis, 1995; Szajna, 1996; Thompson, 1998). Other researchers have recommended TAM for the investigation of Web user behavior (Shaw, Gardner & Thomas, 1997). TAM provides a foundation for research on why users accept or reject information technology and how to increase user acceptance by judicious choice of system design features (Davis, 1993). Davis's proposed TAM is shown in Figure 2.

A prospective user's overall attitude toward a given system is hypothesized to be a major determinant of whether the user actually uses it or not. The perception of the stimuli creates cognitive beliefs, which initiate an affective response. The affective response has an influence on consumer behavior. Attitude is determined by cognitive beliefs. Attitude toward use, in turn, is a func-

tion of two beliefs: perceived usefulness and perceived ease of use. Perceived ease of use has a causal effect on perceived usefulness. System design features directly influence perceived usefulness and perceived ease of use. System design features have an indirect effect on attitude toward use and actual usage behavior through their direct effect on perceived usefulness and perceived ease of use. Perceived usefulness refers to the degree to which a person believes that a particular information system would enhance his or her job performance by reducing the time to accomplish a task or providing timely information (Davis, Bagozzi & Warshaw, 1989; Lederer, Maupin, Sena & Zhuang, 1999). Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort (Davis, Bagozzi & Warshaw, 1989).

METHODOLOGY

A Web-based survey study with two specific research objectives was conducted. The first objective was to explore the current usability problems of e-commerce sites and employ an artificial intelligence user interface

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