

# Chapter 4.14

## Web Site Quality and Usability in E-Commerce

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### ABSTRACT

Web sites are being widely deployed commercially; however, the factors that affect the customer's perception on the quality and acceptance of Web sites are unclear. Through a literature review on information systems success, ServQual, and trust, this chapter examines and integrates four sets of factors to capture the quality of e-commerce Web sites: system quality (functionality), information quality (content), service quality, and attractor. Based on the Technology Acceptance Model in comparison with the Theory of Reasoned Action and the theory of Human-Computer Interaction/Usability, a framework is developed relating the Web quality to customers' beliefs (perceived usefulness and ease of use of the site), attitudes (preferences for the site), and intentions (to revisit the site). A guideline for Web interface design is proposed for Web designers and managers.

### INTRODUCTION

Web sites are being widely deployed commercially (Liu & Arnett, 2000; Robbins & Stylianou, 2003). There is ample anecdotal evidence that suggests the Internet is a fruitful tool for commercial purposes (Huizingh, 2000). However, just starting doing business on the Internet does not necessarily guarantee competitive advantages. On the one hand, electronic commerce (e-commerce) companies are dependent upon people visiting their Web sites, purchasing their products, and more importantly, being a repeat customer (Smith & Merchant, 2001). On the other hand, customers have too many Web sites that they can use as alternatives. There are almost no barriers for them to switch to another site if the performance of a Web site is unacceptable (Bhatti et al., 2000). So, in order to communicate with the potential customers through the Internet effectively, a well-designed, quality Web site is needed.

However, the implicit assumptions about the quality and usability of a Web site and the factors that influence the customer's perception on the acceptance of a Web site are unclear (Lin & Lu, 2000; Dhyani et al., 2002). In their work, Pollard and Blyth (1999) are much aware that it is often difficult to define what gives a Web site something extra that keeps people coming back for more. As Hoffman and Novak (1995) note, little is known about how to develop commercial Web sites to maximize profit. Berthon et al. (1996) call for research to reveal the nature and effectiveness of e-commerce (Huizingh, 2000). So, it is necessary to assess the factors that an e-commerce Web site must have to attract potential customers (Smith & Merchant, 2001). The purpose of this chapter is to explore these factors in the context of B2C e-commerce.

Most studies have focused on either the basic content management of Web sites or a specific set of functions of Web sites. In analyzing the Web site content, researchers evaluate the quality (Bhatti et al., 2000; Huizingh, 2000) and the relevance (Perkowitz & Etzioni, 1999) of online information. In exploring Web site functions, there are studies on search engines (Thelwall, 2000), waiting time (Weinberg, 2000), response time (Lin & Lu, 2000), and interface (Slatin, 2001; Wen et al., 2001). Some studies look at the level of customer feedback (Pollard & Blyth, 1999; Light & Wakeman, 2001). Most existing empirical research on the success factors influencing Web site quality is exploratory in nature (Liu & Arnett, 2000; Simeon, 1999). While there should be many factors associated with e-commerce Web site success, little effort has been done to combine these factors (Liu & Arnett, 2000). To paint a full picture of e-commerce Web site quality, this chapter examines and integrates four sets of determining factors: system quality, information quality, service quality, and attractor.

Measures/metrics are the *sine qua non* of solid, scientific research (Straub et al., 2002). Measuring attributes of a quality Web site in precise terms

can enhance our understanding and advance our thinking of the state of science. The goal to be achieved by this chapter is to determine a subset of the many variables that define a quality Web site. First, the literature on different theoretical perspectives on user acceptance of information systems (IS) and dimensions of IS success model (including ServQual and trust) is reviewed. Second, a conceptual framework is developed relating e-commerce Web site quality to customers' perceptions, followed by a discussion on four essential factors capturing the Web site quality. Third, the implications are discussed and a guideline is set for Web interface design.

## LITERATURE REVIEW

In this section, different theoretical perspectives on user acceptance of IS/Web site are first reviewed. They are followed by reviewing literature on dimensions of IS success model including ServQual and trust that may quantify various quality attributes of Web sites.

### Theoretical Perspectives on User Acceptance of IS/Web Site

Many researches address the issues of IT design and evaluation to enhance usability and acceptance and try to identify the determinants of IT use and acceptance (Davis et al., 1989). User acceptance is a critical factor to determine the success of a Web design project. Both practitioners and researchers have a strong interest in understanding how people accept e-commerce Web sites so that better methods can be employed to design and evaluate Web sites and predict customers' response. The acceptance theory seeks to extend the model of customer/user-centered design, which is advocated in usability approaches (Nielsen, 2000), from interface improvement to predictions of likely usage (Dillon & Morris, 1996). To enhance our understanding of the determining variables

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