Chapter 13
A Theoretical Framework
Measuring the Usability
of Retail Sites

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ABSTRACT
The motivation for this research effort is the failure of usability in Human Computer Interaction (HCI) to consider the needs of users as potential consumers. The hypothesis underlying this research is that it is possible to construct a framework based upon the needs of computer users who are at the same time consumers. The aim of this research is to build a theoretical framework that addresses the needs of a retail site user as a potential consumer. To achieve this we examined the literature relating to usability in HCI as well as Social Attitude Theories. Two empirical studies were conducted using existing sites. The first aimed at incorporating attributes from the fields of Social Attitude Theories and Retail Marketing the second at developing a theoretical framework measuring the usability of retail sites.

INTRODUCTION - POSITIONING THE RESEARCH
Forecasts for future growth in e-commerce sales are very promising and the benefits for both the retailer and the potential consumer are evident. At the same time there is evidence that users are becoming more discriminating in their use of the Internet. Ward & Lee (2000) argue that more experienced users tend to be more proficient shoppers. At the same time, other studies indicate that the usability experience of using retail sites may often be less than satisfactory with studies carried out by Forrester and Jupiter revealing that sales growth is decreasing in a number of product categories (Richtell & Tedeschi, 2007).
Many researchers have raised concerns about the lack of specific usability attributes and the lack of measurement validity for specific attributes in web site usability. To this end, it is argued that current usability evaluation frameworks for retail sites do not specifically address the needs of users as potential consumers, thus not evaluating critical consumer criteria and requirements unique to retailing or unique to the user as a consumer. This problem arises because researchers and practitioners in Human Computer Interaction (HCI) while carrying out numerous studies over the last decade (e.g. Ethier et al., 2008; Ho & Wu, 1999; Lavie & Tractinsky, 2004; Lee et al., 2000; Liang & Huang, 1998; Lin & Lu, 2000; Liu & Arnett, 2000; Zviran et al, 2006) have paid little, if any, attention to Social Attitude Theories. For example, Morris & Dillon (1997) argue that the otherwise well-known Technology Acceptance Model has received little attention by HCI researchers and practitioners. These authors conclude that “…this is unfortunate because TAM appears to offer HCI professional a theoretically grounded approach to the study of software acceptability that can be directly coupled to usability evaluations” (Morris & Dillon, 1997, p.59) This research examines the potential of these theories to add to the theoretical underpinnings and thus to better understanding of retail web site usability from the consumer’s viewpoint.

Establishing the Role of Social Attitude Theories in Human Computer Interaction

In this section first a definition and dimensions of usability as viewed for Business –to-Consumer web sites will be given. The difficulties in defining these dimensions in the web environment will be discussed. From the consideration of these difficulties researchers and practitioners have made attempts to integrate material from the Social Attitude Theories, seeking to understand the web user as a potential consumer. These studies indicate that usability, as traditionally considered by HCI, is poorly defined and new attributes need to be considered.

Web Site Usability

Within HCI the need for evaluating the usability of traditional software has long been recognised. Shackel (1991) pointed out that as “computers become cheaper and more powerful, usability factors will become more and more dominant in the acceptability decisions made by users and purchasers.” A decade later Nielsen (2000), went a step further and reasoned that the importance of web usability can be simply viewed as an equation: “In product design and software design, customers pay first and experience usability later. On the web, users experience usability first and pay later” (p. 12). Thus, usability has become an imperative quality criterion when designing web user interfaces.

ISO (1995) defines usability as the effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments. To adapt this to the web user interface, Bevan (1997) adapts effectiveness, efficiency, and satisfaction and defines these three attributes for web user interfaces.

Aside from the attributes suggested by ISO (1995) and adapted by Bevan (1997) researchers have recognised that there are other attributes that also affect the usability of a web user interface: ease of navigation and content (Nielsen, 1999); attractiveness, control and learnability (Kirakowski et al., 1998); efficiency or accessibility (Helander & Khalid, 2000; Nielsen, 1999); helpfulness (Fleming, 1998; Kirakowski et al., 1998).

Further, usability has been recognised as a multi-dimensional property, the dimensions being: (i) the relevant attributes of the user; (ii) the tasks the user carries out; and (iii) the equipment and environment whereby the user uses a specific product (ISO, 1995; Shackel, 1991; Preece et al., 1994). Understanding these dimensions in the web environment raises several issues.
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