eTransQual: A transaction process-based approach for capturing service quality in online shopping

Hans H. Bauer [*], Tomas Falk [1], Maik Hammerschmidt [2]

University of Mannheim, Business School, L 5, 1, D-68131 Mannheim, Germany

Abstract

Existing e-service quality scales mainly focus on goal-oriented e-shopping behavior excluding hedonic quality aspects. As a consequence, these scales do not fully cover all aspects of consumer's quality evaluation. In order to integrate both utilitarian and hedonic e-service quality elements, we apply a transaction process model to electronic service encounters. Based on this general framework capturing all stages of the electronic service delivery process, we develop a transaction process-based scale for measuring service quality (eTransQual). After conducting exploratory and confirmatory factor analysis, we identify five discriminant quality dimensions: functionality/design, enjoyment, process, reliability and responsiveness. All extracted dimensions of eTransQual show a significant positive impact on important outcome variables like perceived value and customer satisfaction. Moreover, enjoyment is a dominant factor in influencing both relationship duration and repurchase intention as major drivers of customer lifetime value. As a result, we present conceptual and empirical evidence for the need to integrate both utilitarian and hedonic e-service quality elements into one measurement scale.
© 2006 Elsevier Inc. All rights reserved.

1. Introduction

The rapid expansion of information and communication technologies in daily business activities is the most important long-term trend in the business world (Rust, 2001). Accordingly, a large growth potential is forecasted especially for the provision of products and services via the Internet (Evanschitzky et al., 2004). If and how this potential can be exploited sufficiently depends largely on Internet retailer's ability to meet customers' expectations in the virtual shopping environment (Zeithaml et al., 2002). According to Meuter et al. (2000) the number of dissatisfied online customers experiencing service breakdowns, lost orders, or inadequate complaint handling is notable. These unsatisfying service encounters cause annual Web sales losses of several billion dollars per year (Rust and Lemon, 2001). Therefore, managing electronic service quality becomes an essential challenge for e-tailers.

In order to establish a comprehensive and effective service quality management, this article applies a transaction process-based framework to electronic service encounters incorporating both utilitarian and hedonic e-service quality elements. Conceptual underpinning for this approach is provided by insights from an extensive literature review, taking into account environmental psychology and flow theory. This article shows that the process-oriented characterization of e-services provides a sound and holistic conceptual framework for analyzing overall service quality in the Internet.

2. Literature review

2.1. E-services

A review of the relevant literature reveals the existence of various approaches to conceptualize e-services. Rust and Lemon (2001, p. 86) very generally describe e-services as "…

---

* Corresponding author. Tel.: +49 621 181 1572; fax: +49 621 181 1571.
  E-mail addresses: hans.bauer@bwl.uni-mannheim.de (H.H. Bauer),
tomas.falk@bwl.uni-mannheim.de (T. Falk),
maik.hammerschmidt@bwl.uni-mannheim.de (M. Hammerschmidt).
  [1] Tel.: +49 621 181 1562; fax: +49 621 181 1571.
  [2] Tel.: +49 621 181 1569; fax: +49 621 181 1571.

providing a superior experience to consumers with respect to the interactive flow of information". This broad understanding may serve as a basis for a further, more detailed investigation. Grönroos et al. (2000) provide a more differentiated definition in proposing the so-called NetOffer model, according to which online services can be divided into a functional dimension (what is delivered in terms of service outcome) and a technical dimension (how is it delivered in term of service process). Yet, to fully capture all dimensions of an electronic service the functional/technical approach has to be expanded by taking into account an additional dimension comprising all aspects that take place before the actual delivery of the service. Consequently, we suggest that a complete definition should cover all cues and encounters that occur before, during and after the electronic service delivery (Bauer et al., 2005; Parasuraman et al., 2005; Zeithaml et al., 2002).

2.2. E-service quality

In line with the different conceptualizations of electronic services, previous efforts to measure e-service quality also display different approaches and outcomes. In their seminal work on quality planning and analysis in the offline world, Juran and Gryna (1970) suggest four quality dimensions: capability (does the product perform as expected), availability (is the product usable when needed), reliability (is the product free from failure) and maintainability (is the product easy to repair when broken). These generic quality dimensions for traditional products and services are–at least partially–reflected in many of the following quality scales. Therefore they may serve as helpful starting points for substantiating a quality concept for e-services.

Barnes and Vidgen (2001) draw upon the SERVQUAL model in order to generate a pool of quality items. Based on an analysis in the field of online book trade, the authors extract five key dimensions each of which encompasses two subdimensions: tangibles (aesthetics, navigation), reliability (reliability, competence), responsiveness (responsiveness, access), assurance (credibility, security) and empathy (communication, understanding the individual). Overall, the developed WebQual scale focuses on technical quality aspects like ease of use and is therefore more useful for the field of interface design than for holistic quality measurement. We argue that not considering hedonic aspects of online shopping (e.g. fun or enjoyment) is a major omission.

Van Riel et al. (2001) propose a classification of service components which is based on the "technical/functional quality framework" by Grönroos et al. (2000) and comprises the following aspects: core services, facilitating services, supporting services, complementary services, and user interface. In doing so, they attempt to assess the quality of e-services by measuring customer satisfaction with these components of an e-service.

On the basis of online and offline focus groups, a sorting task and an online survey, Wolfinbarger and Gilly (2003) examine the dimensionality of service quality in Internet retailing. By means of exploratory and confirmatory factor analysis four quality dimensions emerge: fulfillment/reliability, Web site design, customer service and security/privacy. The extracted factors are represented by 14 items and explain 70% of the variance of a global e-tail quality judgment. Despite the high reliability and validity of the developed eTailQ scale, the elimination of quality items referring to hedonic aspects of online shopping has to be criticized.

Based on the explorative study by Zeithaml et al. (2002), Parasuraman et al. (2005) provide the most comprehensive work on e-service quality so far. They empirically test a multiple item scale (E-S-QUAL) for assessing service quality of online shopping providers. Their findings correspond to the insights of their explorative study: two different scales are necessary to measure electronic service quality. The E-S-QUAL scale addresses core service quality aspects and consists of four quality dimensions (efficiency, fulfillment, system availability and privacy). Additionally, the E-RecS-QUAL scale is proposed to be relevant when customers face "nonroutine encounters" during the online-shopping process which are related to service recovery like product returns, dealing with problems, etc. (Parasuraman et al., 2005). This latter scale is composed of three quality dimensions (responsiveness, compensation and contact). Despite their sophisticated scale development process and the sound statistical methods used, we express two concerns.

First, analogue to eTailQ (Wolfinbarger and Gilly, 2003), E-S-QUAL lacks of items referring to hedonic service quality elements. Parasuraman et al. (2005) state that "other experiential aspects such as fun or pleasure do not fall within the conceptual domain of service quality because such hedonic aspects are distinct benefits that may not be relevant in all contexts or to all customers" (p. 229). However, as noted by Babin et al. (1994, 2005), if shopping trips are assessed solely on the utilitarian benefits of products or services attained, the numerous intangible and emotional aspects related to a shopping experience are excluded. This idea is supported by implications from environmental psychology indicating that especially the tangible/physical environment generates more emotional than cognitive customer reactions during the service experience (Bitner, 1990). For example Wakefield and Blodgett (1999) extend traditional service quality research by empirically demonstrating that the design of the physical facilities (e.g. store layout) and ambient factors (e.g. music) induce customers' affective responses. Therefore, these studies propose that emotional components should be incorporated when assesing service quality in a retail context.

Comparable to the physical environment in the real world, we expect the Web site interface to provide extrinsic cues in virtual service encounters which trigger emotional responses (Van Riel et al., 2001; Yoo and Donthu, 2001). Furthermore, according to flow theory such feelings are aroused during electronic service encounters especially by Internet characteristics such as multi-media, interactivity, hypermediality and a high level of control during navigation (Childers et al., 2001; Csikszentmihalyi, 1988; Hoffman and Novak, 1996). The fact that affective reactions are of crucial importance for the evaluation of e-services is reflected in the finding that fun and enjoyment, which characterize a flow experience, are major determinants of Internet usage behavior (Van Riel et al., 2001).