

# Determinants of the continued use of self-service technology: The case of Internet banking

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## Abstract

This study focuses on buyers' continued use of self-service technology (SST). This area is often neglected because most studies focus on buyers' adoption or acceptance of SST. In comparison to new buyer acquisition, continued use is a cost-effective market strategy aimed at retaining buyers. Based on a sample of 1831 Estonian Internet banking customers, we find that continued use of SST is positively affected by buyers' perceived usefulness. We also find that continued use of SST is negatively affected by multichannel satisfaction. As our results show, two important issues are facing developers of SSTs and sellers using SSTs: First, continued use of SST is achieved when the buyer finds the SST useful. Second, SSTs need to be considered in the context of all channels in the buyer–seller interface because the buyer does not separate the service offering of an SST from other channels. The benefits associated with using SSTs will increase if these strategic issues are taken into account.

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## 1. Introduction

Increasingly, the role of face-to-face interaction between suppliers and buyers is being replaced with self-service technologies (SSTs), which allow the buyers to produce and use these services by themselves, without direct contact with any employees of the firm. Although it is evident that SSTs are gaining in popularity as a method of doing business, it is less clear what the drivers for buyers' continued use of this kind of service are (Yen and Gwinner, 2003).

An answer may be provided by the increasing body of research on information systems usage (Bhattacharjee, 2001). Research based on innovation diffusion theory (Rogers, 1995) has examined attitudinal variables that affect usage behavior, and the technology acceptance

model (TAM) (Davis et al., 1989) has examined attitudinal variables that influence behavioral intentions, which they find affect actual use. Whereas these theories add substantially to our understanding of why technologies are adopted and used, they do not explicitly focus on the continued use of the technology. Previous research has shown that consumer adoption and continuance behavior is influenced by different factors (Fernandes et al., 2006). Because more resources are required to attract a buyer than to retain an existing one, it is particularly important to analyze buyers' continued use of the technology (Reichheld and Sasser, 1990). In addition, as buyers gain experience using a technology, their needs and wants change (Blake et al., 2005). To continue to meet their needs and wants, sellers must, therefore, be aware of these changes. The goal of this study is to contribute to the innovation theories by investigating buyers' continued use of an SST. The initial acceptance of a technology is an important first step; however, the eventual success of the technology depends on its continued use (Bhattacharjee, 2001).

The purpose of this article is to conceptualize, develop, and validate independent variables that convey continued

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usage of Internet banking, an SST. In accordance with previous research (Bhattacharjee, 2001; Davis et al., 1989), we identify users' perceived usefulness of and satisfaction with Internet banking as indicators of their continued usage of this SST.

The rest of this article is organized as follows: We begin with a discussion of buyers' continued usage and antecedents of perceived usefulness and multichannel satisfaction. Based on the literature review, we propose three different hypotheses. After the literature review, the methods and data analysis are presented. Finally, the results of this study are presented, followed by a discussion of the implications.

### 1.1. Literature review

Buyers' continued use is central to the survival of SSTs. Market shares and revenues of a firm depend on both the number of initial adopters and the number of continued users (Bhattacharjee, 2001). The importance of buyers' continued usage versus initial adoption is evident from the fact that acquiring new buyers may cost as much as five times more than retaining existing buyers, based on the costs of searching for new buyers, setting up new accounts, and initiating new buyers to the use (Bhattacharjee, 2001). If a firm in the insurance industry increases its buyer retention by 5 percent, it conveys savings in operating costs by 18 percent (Bhattacharjee, 2001). Therefore, for sellers that use SST, it is crucial to focus on buyers' continued usage.

Buyers' continued usage depends on their acceptance of the technology and their satisfaction with service delivery. Whereas most studies examine these antecedents separately, it is likely that they both have an effect on buyers' continued use. The reason that these two antecedents of buyers' continued use have not been previously combined is that they build on two different research streams: technology acceptance and service/relationship marketing. In terms of technology acceptance, perceived usefulness has been found to be a good indicator of how a product or service relates to the buyers' or sellers' context. As defined by Davis et al. (1989), perceived usefulness is "the extent to which a person perceives increased benefits from using the SST." This definition emphasizes user context by asking users to focus on perceived benefits to them, regardless of the properties of the SST itself. Even though an SST may be considered excellent, users will not perceive it as useful if it does not provide a benefit to them. The situation specificity of the users' evaluation of usefulness is central because attitudes that are situation-specific are more likely to influence actual behavior (Foxall and Yani-de-Soriano, 2005). Research has often provided weak links between attitude and behavior (Wicker, 1969), but the theory of reasoned action provided a stronger link with the introduction of behavioral intention and behavioral expectation as intermediaries between attitude and behavior (Ajzen and Fishbein, 1980; Leone et al., 1999;

Warsaw and Davis, 2001). Recent research has found that controlling for the situation in which attitudes relate to behavior provides an even stronger means of establishing a link between attitudes and behavior (Foxall and Yani-de-Soriano, 2005; McBroom and Reed, 1992). Because a user's perceived usefulness of an SST is inherently situation-specific, this paper accepts that their perceived usefulness of an SST influences their behavior and is an antecedent of SST usage.

The second antecedent of continued use is buyer satisfaction, which is considered as the primary motivation for continued usage (Oliver, 1980). Buyers who are satisfied tend to continue their usage, whereas dissatisfied buyers discontinue their usage (Gianni and Franceschini, 2003; Paré et al., 2005). Studying buyers' level of satisfaction has interested many researchers, especially in the field of marketing (Cho and Park, 2001). Because the buyers' level of satisfaction is believed to affect the buyers' purchasing behavior, firms have focused on improving it (Cho and Park, 2001; Oliver, 1980). Every interaction between the firm and the buyer is a service encounter influencing the buyer's attitudes; therefore, all encounters should be considered (Oliva et al., 1992). Satisfaction refers to the SST offering, which means that satisfaction is usually an amalgamation of all channels into an interface between the selling firm and the buyer. For instance, the buyer may use the Internet to search for information during the pre-purchasing stage and then visit an individual store to make the final purchasing decision (Peterson et al., 1997). In addition, buyers may want to go shopping as part of a pleasure experience and use the Internet for conducting an information search or other purchases (Balasubramanian et al., 2005). For satisfaction to be context-specific, the multichannel exchange situation must also be considered. Research studies focusing on buyer channels have identified that most buyers make use of both the Internet and stores (Rangaswamy and Van Bruggen, 2005), and that the consumers brand loyalty in the traditional market positively correlates with the attitudes towards the brand's online channels (Wang et al., 2006a), which is why the definition of buyer satisfaction used in this study comprises all channels that firms use. We use the term *buyer multichannel satisfaction* to emphasize this point.

### 1.2. Perceived usefulness

If buyers believe that a certain application will help improve job performance, they will be more likely to use it than if they do not realize the application's usefulness (Davis et al., 1989). Davis et al. (1989) and many other researchers (Cheng et al., 2006; Doll et al., 1998; Gerrard and Cunningham, 2003; Karahanna et al., 1999; Venkatesh and Davis, 2000) have realized that perceived usefulness has a strong influence over buyers' acceptance of an application. Because perceived usefulness is a primary motivator of technology acceptance, it is reasonable that it

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