Development of a service continance model with IT service antecedents

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ABSTRACT

This study make provides service marketers, particularly those delivering information technology (IT) related service, with insight to the factors that consumers use when evaluating IT services. We develop a service continuance model that includes the antecedents of the consumer's decision to continue using information technology (IT) related services in a B2C service environment. Using data from the smart phone service consumers, a covariance-based structural equation modeling analysis is used to test the research model. Results from our empirical study suggest that the association between service usefulness and service continuation intention is fully mediated by service satisfaction. Though both system-service quality and customer-service quality are positively associated with service satisfaction, consumers of IT related services attach greater importance to system-service quality than to custom service quality. Likewise, the indirect path to service continuation intention is stronger in system-service quality than in customer-service quality. Our findings have practical implication for growing market share in IT related services by recognizing the importance of system-service quality in technology service delivery.

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1. Introduction

In the United States, the service sector continues to be the main source of employment and output (Bartsch, 2009). In 2008, more than 75% of jobs came from this sector (Bureau of Labor Statistics, 2012). While the service sector has been historically human resource dependent, more recently, a large number of service providers are depending on technology, especially information technology (IT) to enhance both efficiency and effectiveness of their operations. Building upon the work of Daunt and Harris (2012) as well as Vargo and Lusch (2004) we address a gap in the existing literature by developing a service continuance model that examines customer centered antecedents to IT related service loyalty.

Examples of IT services that have expanded into everyday activities including IT based order taking and processing in traditional service sectors are fast food restaurants, hotel and motel, and airlines industries. IT's impact on a firm's return is stronger in the service sector than in the manufacturing sector (Dewan and Ren, 2011; Mullaney et al., 2003). Provisioning of services via IT has become an important component of a business service model. Customers are delighted to purchase services virtually; in such situations, the customers are in firm control of the service encounter. For service providers, it offers an opportunity to grow their business with fewer boundaries. Although many studies have been conducted regarding technology impact on a firm's performance (Zhou et al., 2005; Wu et al., 2006), interestingly little exists on the use of technology as a platform for IT-enabled services and the factors that contribute to the creation of a successful platform to enhance consumer loyalty. Our study addresses this gap by investigating the factors that contribute to consumer loyalty towards IT-enabled services, by specifically focusing on technology as the platform for service delivery. In order to do so, we develop and test a new model based on established IT acceptance research.

We focus on the customer centered antecedents to IT related service loyalty because it is the customer who ultimately co-creates value for themselves (Daunt and Harris, 2012; Chen, 2012). Further, like most services, IT related service loyalty is dependent upon service experience quality (Lovelock and Wirtz, 2008; Parasuramann et al., 1988). This quality exists for both the core

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of the service as well as the IT component of the service. We operationalize loyalty as continued usage and not the initial adoption of IT related service, it is the continued usage that ensures the long term success of any service, including IT related service.

We use mobile phone service as our research context because mobile phones and their associated IT platform are now a ubiquitous part of modern life. As smartphones proliferate, a third of all American adults are cutting the computer cord and moving to these devices for internet access (Kang, 2011). Cisco claims that by 2015, the current web traffic generated by traditional PCs will decline from 63% to 46% (Cisco, 2011).

It is not just PCs. Mobile telecommunication devices are having a profound effect on seemingly unrelated products such as cameras, watches, GPS, music, movies and entertainment, financial transactions, and even the way we use language and give value to various social relationships. Yet, while a quarter of Americans own smartphone devices, only 10% currently use them as their primary internet and e-mail device (Kang, 2011). We contend that it is not just the device or the service provider, but the service quality of the internet access that plays a major role in both consumer satisfaction and loyalty. Further, the telecommunication industry is becoming increasingly fragmented with numerous providers delivering a diverse array of services. Until firms have a clear understanding of the key drivers of consumer satisfaction and consumer service continuance, they risk being at a competitive disadvantage (Oliveira et al., 2002). Thus, the mobile phone industry provides an ideal setting for this study. From a practitioner's perspective, the findings of this study will help service firms (including IT-related service firms) to understand customer retention which is vital to remain competitive in today's dynamic market (Bolton, 1998; Rust and Zahorik, 1993). Further, the findings will help retail and service firms to better leverage IT in value creation and delivery for their customers. Managers need to ensure that IT services provide a quality service experience in order to maintain customer loyalty.

2. Literature review

In this study, we use the technology acceptance model (TAM) to anchor our hypotheses. There are a number of key theories in IT literatures that are useful and relevant in comprehending how consumers behave towards mobile telecommunication services (Wang et al., 2006; Bhattacherjee, 2001). The technology acceptance model (TAM) and theory of planned behavior (TPB) are the two most used theoretical frameworks that address consumers' acceptance or rejection of IT (Legris et al., 2003). Of the two, TAM has a slight empirical advantage over TPB in explaining user intention to use IT systems (Chau and Hu, 2002; Mathieson, 1991). First, TAM is easily applied, is specific to IT usage, and is more parsimonious than TPB. Second, TAM takes into account the general information on users' opinions about a system opposed to TPB, which provides specific information that better guide development. Third, TAM needs no unique operationalization when using it in different situations (Mathieson et al., 2001).

TAM explains information technology and information systems' acceptance and usage, using two key constructs – perceived usefulness and perceived ease of use (Davis et al., 1989). While these two constructs are well investigated in the IT literature (Hur et al., 2011; Vijayasarathy, 2004) we tend to look at how useful technology is in supporting both hardware and software environment of services or procedures. With this goal, we focus on perceived usefulness and customer satisfaction as antecedents to the outcome variable of loyalty. Customer satisfaction is also investigated extensively as a key determinant of service loyalty in the services literature (Baumann et al., 2012; Pollack, 2009).

The other service quality focused constructs are borrowed from marketing literature (O'Cass and Carlson, 2012; Olorunniwo et al., 2006). We next elaborate on each one of these factors.

2.1. Outcome variable

Loyalty is a highly desired outcome variable for any business. However, it is operationalized in many ways. Ajzen (1991) and Davis et al. (1989) present *intention* as the most immediate and strongest predictor of purchase behavior. Cognitive dissonance theory (Festinger, 1957) justifies the assertion that individuals tend to behave in conformity with their intentions. Furthermore, numerous marketing and IT studies have found strong correlations between intentions and behaviors (Taylor, 2012; Taylor and Todd, 1995). Thus, building upon work by Bhattacherjee (2001), we focus on consumer *intention to continue* to use a mobile telephone services as our outcome variable. We next focus on the immediate antecedent of *intention to continue* using mobile telephone service, which is consumer satisfaction.

2.2. Consumer satisfaction

In consumer behavior literature, satisfaction is the key factor that influences a consumer's decision to continue using a service or product (Thong et al., 2006; Chow et al., 2008). Expectation confirmation theory (ECT) posits that satisfaction with a product or service is the primary incentive for IT service continuance (Oliver, 1980). Consumer satisfaction is a central concept and an important goal of all business activities (Tontini and Silveira, 2007). Satisfaction is an ex poste evaluation of the consumer's initial experience with the service (Anderson, 1973) that is captured as a positive feeling (satisfaction), indifference, or negative feeling (dissatisfaction). We conceptually define satisfaction as "the outcome of purchase and use resulting from the buyer's comparison of the rewards and costs of the purchase in relation to the anticipated consequences" (Churchill and Surprenant, 1982, p. 493). In both marketing and IT literature, there is support for the hypothesized link between satisfaction and continuance intention (Martin et al., 2008; Whittaker et al., 2007). Viewed from a different perspective, studies confirm that dissatisfaction causes a consumer to discontinue a service (e.g. Bhattacherjee, 2001; Aldas-Manzano et al., 2011). Users complaining of server outages, late order fulfillment, late deliveries, and out-of-stock items are examples of dissatisfaction (Primo et al., 2007; Bhattacherjee, 2000).

Research from a wide variety of service industries provides empirical evidence of the significant impact consumer satisfaction has on behavioral intention (Bolton et al., 2006; Hellier et al., 2003). This includes IT services (Bock et al., 2005; Wixion and Todd, 2005). Other studies suggest that higher rates of consumer retention, positive word of mouth and higher profits are a result of consumer satisfaction (Zeithaml, 2000). In line with this evidence, we hypothesize that:

H1. Satisfaction with mobile telecommunication service will be positively associated with service continuation intention.

2.3. Usefulness

TAM (Davis et al., 1989), adapted from the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975), is an application of attitude theories to an IT use context. It is a well-established model that broadly predicts and explains human behavior in various domains (Chen et al., 2002). One of the most important determinants for system use is *usefulness*. Usefulness is defined as the user's subjective probability that using a particular IT system