



Technology readiness in a B2B online retail context: An examination of antecedents and outcomes



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ABSTRACT

This paper develops and empirically tests a model that examines the role of technology readiness (TR) in the business-to-business (B2B) context. The research investigates how retailers' TR, and its antecedents, impacts their evaluation of a credence based B2B service, namely web solution service providers (WSSPs). It responds to previous research calls by extending the TR construct from the business-to-consumer (B2C) perspective that is traditional in the extant literature into the B2B domain. The findings of a survey conducted with 133 firms in the retail industry are that TR is an important contributor to the eventual achievement of service quality and satisfaction. The contributions of this study are; first it develops and validates a measure of TR in a B2B context; second it investigates the antecedents of TR in this domain, demonstrating the impact of past inexperience, industry trust and switching costs on firms' level of technology readiness to adopt online operations; and third, it finds that service quality and satisfaction are outcomes of TR. The key management implication for WSSPs is the need to address the TR levels of existing and potential clients if they wish to deliver successful e-business solutions to them. Their clients' TR can be better managed by making the offering more easily understood, building relational rapport, reducing risk perceptions and adopting a client centric perspective throughout the process.

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1. Introduction

Evans and Wurster (1997, p.71) predicted that the Internet would represent the 'most important wave in the information revolution'. Arguably this prediction has become a reality: the Internet's commercial influence is highly visible in the retail industry, where online shopping has shifted from a minority to a mainstream activity in less than two decades, and online retailing is predicted to continue to expand rapidly in the future (Experian, 2012; Mulpuru, 2011). As a result, increasing numbers of retailers have responded to these changes in shopping behavior by building web stores and enhancing the online shopping experience they offer, so as to attract and to retain customers in this highly interactive channel (Doherty & Ellis-Chadwick, 2010a). But to succeed in the Internet arena, online retailers need access to appropriate resources and capabilities: as these often cannot be sourced internally, they may seek the expertise they need externally, often from third party web solution service providers (WSSPs). Retailers rely on such service providers to make up for their internal skills shortages, and so need to develop strong

relationships with them if their online ambitions are to succeed (Ellis-Chadwick, Doherty, & Anastasakis, 2007). But, in utilizing such external expertise to compensate for capabilities they lack internally, retailers are exposed to potential risks associated with their choice of third party service partners.

Moreover, acquiring this type of external expertise is far from straightforward. As the web industry is still in the early stages of development, there are a complex range of web solution services available, a shortage of skilled web developers and programmers and a general lack of structural assurances, safeguards, guarantees and lines of legal recourse (Chien, Chen, & Hsu, 2012; Del Aguila-Obra & Padilla-Melendez, 2006). So, while employing external expertise can deliver positive benefits for small and medium sized retailers by acting as a mechanism that can deliver greater profitability, achieve better competitive positioning online and lower the cost of developing an online presence within constrained budgets (Ray & Ray, 2006; Wagner & Sutter, 2012), there are also potential negative outcomes. For example, retailers can experience a perceived loss of control of their online web operations and/or loss of ownership of their intellectual property when dealing with WSSPs. This can increase their perceived switching costs and potentially create a lack of trust between the retailer and the WSSP (Li, Pienkowski, Moorsel, & Smith, 2011). Such uncertainties highlight the importance of the success of the retailer–WSSP relationship, as it is likely to have a significant impact on the former's online performance and longer term success. The service provided by the WSSP can be seen as a credence based service,

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since it is difficult for the retailer to evaluate due to their own lack of expertise and experience in the online arena.

Previous research on technology readiness in the manufacturer–retailer dyad (Richey & Autry, 2009; Richey, Daugherty, & Roath, 2007) has suggested that business interactions and exchanges were easier to coordinate where there was a good technology ‘fit’ between the two. Technology readiness at the firm level implies that the firm possesses the inclination to embrace, and the ability to use, relevant new technological assets (Parasuraman, 2000; Richey, Tokman, & Skinner, 2008) – in the specific context of this study, web related technologies. Richey et al. (2008) posit that, from the retailers’ perspective, information technology is almost worthless if management is not ready for its implementation. Where retailers and service providers are compatible in terms of technological readiness both parties are likely to enjoy greater payoffs. In essence, if retailers are more ‘technology ready’ they will be better able to appreciate the potential benefits WSSPs could offer in supporting their retail efforts, and so are likely to be more satisfied with the relationship. In turn, this implies that WSSPs can build and develop retailers’ technology readiness by increasing their experience of such services, which will also serve to increase industry level trust for this relatively new credence based service.

This study focuses on the fit between retailers and their external WSSPs by looking at the impact of past inexperience, industry trust and switching costs on technology readiness, and then the effect these antecedents have on small and medium-sized retailers’ evaluations of their web developments. This industry sector was chosen as such organizations have often been found to be relatively late adopters of new technology, adopting a “wait and see” attitude to developing online retail channels (Del Aguila-Obra & Padilla-Melendez, 2006; Weltevreden & Boschma, 2008). Previous Internet retail research has largely focused on the behavior of large firms and on consumers’ interactions with virtual shopping environments (Doherty & Ellis-Chadwick, 2010b), rather than exploring issues associated with how businesses get online, and how they develop the technology solutions needed to create and manage retail web sites.

The next section of this paper examines the literature on credence based services and the antecedents and outcomes of technology readiness. This analysis of the existing literature provides a platform for creating a conceptual model on which to base the research hypotheses. A succinct discussion of the study’s research methodology follows, after which structural equation modeling is used to test the research hypotheses and the results reported and discussed. Finally, the management implications and limitations of this study are considered, along with suggestions for future research.

2. Literature review

2.1. Credence based technology services and technology readiness

Services whose attributes are predominantly credence-based are the most difficult for buyers to verify and evaluate (Darby & Karni, 1973). Such services lack physical evidence of the service process, so customers often do not have clear expectations of what to expect from them and such customer uncertainty will be greater when the services are new. Customers may lack the expertise to identify and describe their own needs accurately (Eisingerich & Bell, 2007; Galetzka, Verhoeven, & Pruyn, 2006), and this can be an especially problematic issue when they need to source technology based solution services. Galetzka et al. (2006) suggest that clients who don’t fully understand what the dominant characteristics of a service are will use heuristic cues or other information available to them about how to evaluate the service encounter, such as service reliability and human contact, and the importance of this relational component between the parties in the provision of solution services has recently

been recognized (Pennttinen & Palmer, 2007; Sawhney, 2006; Storbacka, 2011).

Technology readiness (TR) has attracted considerable attention in the academic literature. The technology readiness index (TRI) (Parasuraman, 2000) emanates from a stream of research which posits an individual’s personality as being central to their acceptance of technology (Lin & Chang, 2011; Walczuch, Lemmink, & Streukens, 2007), and measures their readiness to use new technology in general using four personality traits: optimism, innovativeness, discomfort and insecurity. To date, TR studies have been largely confined to the business to consumer (B2C) domain (Lai & Ong, 2010; Lin & Hsieh, 2006) and few have considered technology readiness in an organizational context (Richey et al., 2007, 2008). This is interesting, given that many consider readiness to adopt web related technologies as a crucial indicator in developing an online presence (Lai & Ong, 2010). Research on the readiness of small organizations to adopt technology is even more limited (Kuan & Chau, 2001; Molla, Heeks, & Balcells, 2006), which is again interesting as firm size has been identified as influencing the likelihood of firms adopting web related technologies (Doherty, Ellis-Chadwick, & Hart, 2003). That said, it is perhaps the context of past studies – rather than theory per se – which has limited their scope, as small firms are especially reliant on the behavior of key individual employees.

Services provided by qualified professionals whose expertise and skills are key to the quality and success of those services (Gounaris, 2005; Ladhari, 2008) are even more significant when such services are customized or specialized, as in the case of web solution services. A potential solution to overcoming deficiencies in purchasing firms’ technology readiness is for service providers and their clients to form collaborative business relationships to manage the provision of appropriate solutions in competitive high technology business environments more proficiently (Chien et al., 2012; Evanschitzky, Wangenheim, & Woisetschlager, 2011).

2.2. Constructs

TR has previously been investigated within the manufacturer–retailer dyad (Richey & Autry, 2009; Richey et al., 2007, 2008), but these studies conceptualized and validated different outcomes of TR to those on which this study focuses. Only limited extant research investigates the components of TR, so knowledge about TR at the firm level is still lacking. Given the novelty of this research stream and the paucity of empirical research into this context, studies of business adoption of the Internet were investigated to identify potential antecedents to TR (Del Aguila-Obra & Padilla-Melendez, 2006; Doherty et al., 2003; Teo & Pian, 2004; Weltevreden & Boschma, 2008). Antecedents such as depth of knowledge, e-business know-how, and innovation experience (Bordonaba-Juste, Lucia-Palacios, & Polo-Redondo, 2012; Oliveira & Martins, 2010; Pavlou & Gefen, 2004) were identified, which encouraged the use of past inexperience as a construct.

Another common dimension that has emerged from previous Internet adoption studies has been the importance of switching costs to organizations. Research suggests that the costs of switching providers tends to be higher for services than for goods, and particularly for services that are intrinsically difficult to evaluate, or where there are only a limited number of suppliers (Garry & Harwood, 2009; Jones, Reynolds, Mothersbaugh, & Beatty, 2007). The final construct examined in this study – that of industry trust – draws from the institutional view of trust (Pavlou, 2002) which has been adopted by e-commerce researchers. McKnight, Choudhury, and Kacmar (2002) describe institution-based trust as a critical part of Internet transactions. Firms new to the online trading environment are likely to rely on such institutional mechanisms to reduce their perceived risk, so industry trust was adopted as the most appropriate trust construct for this research.

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