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ScienceDirect

Journal of Interactive Marketing 44 (2018) 1–16

JOURNAL OF INTERACTIVE MARKETING

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Determinants of Retailers' Cross-channel Integration: An Innovation Diffusion Perspective on Omni-channel Retailing

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Abstract

The decision on whether and to what extent they should implement cross-channel integration is a crucial and complex task for multi-channel retailers. Although prior studies have sought to identify key determinants of this decision, most are descriptive or draw on divergent theoretical perspectives. The authors provide a cohesive theoretical model from the perspective of innovation diffusion, including not only technology-related but also organizational and environmental factors. The empirical findings based on the observations in the U.S. retail sector indicate that retailers' information-technology capabilities and private-label provision drive their cross-channel integration. Moderate diversity facilitates cross-channel integration more than does high or low diversity. Firms' financial resources seem to be less important or unimportant at a low level of industry concentration, but may influence retailers' cross-channel integration at a high level of industry concentration.

Keywords: Multi-channel retailing; Cross-channel integration; Channel decision-making; Innovation diffusion; Retail innovation

Introduction

The rapid pace of technological development, coupled with the continual emergence of new channels (such as kiosks, websites, mobile-phone apps, and social media), empowers consumers with more information and choices than ever before. Consumers use these channels as means of engaging with retailers across multiple touch-points (Aberdeen 2013). There is a real need for retailers to move from a multi-channel to an omni-channel retailing model (Brynjolfsson, Hu, and Rahman 2013; Rigby 2011; Verhoef, Kannan, and Inman 2015). Cross-channel integration, as a retailer's chosen way to implement the omni-channel strategy through combining multiple channels (Cao and Li 2015; Neslin et al. 2006), is attracting increasing attention in literature (Herhausen et al. 2015; Verhoef 2012; Zhang et al. 2010). Cao and Li (2015) define cross-channel integration as the degree to which a firm coordinates the objectives, design, and deployment of its channels in creating synergies for the firm and offering benefits to its consumers. The degree of coordination can range from complete separation of channels to their full coordination (Cao and Li 2015; Neslin et al. 2006). Each degree of coordination comprises different levels of benefits, outcomes, costs, and risks for retailers and consumers, and each requires the commitment of different levels of resources. Therefore, the determinants of cross-channel integration are an important topic for retailers to consider in deciding whether, if at all, and to what extent they should integrate their channels (Dholakia et al. 2010; Zhang et al. 2010).

Despite increased attention, the theoretical and empirical knowledge of cross-channel integration remains limited and offers few insights to help top managers in retail decide the right level at which to integrate their different channels. Two particular problems exist with the previous literature. First, most studies are descriptive (Berry et al. 2010; Neslin et al. 2006; Zhang et al. 2010). Second, a few empirical studies focus

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https://doi.org/10.1016/j.intmar.2018.04.003

1094-9968

only on limited factors, such as firm resources (Luo, Fan, and Zhang 2016; Steinfield, Adelaar, and Liu 2005), category of products (Levin, Levin, and Heath 2003; Steinfield, Adelaar, and Liu 2005), customer shopping orientation (Lee and Kim 2010), and intensity of competition (Brynjolfsson, Hu, and Rahman 2009). These studies are based on divergent theoretical perspectives. The resulting lack of a comprehensive theory base makes it difficult to integrate findings from different studies into a coherent body of knowledge. Therefore, it might be interesting to adopt a pertinent theoretical perspective that enables a cohesive theoretical model of the determinants of cross-channel integration to be built.

Although the channel-performance-oriented perspective is widely used in channel decision-making studies (Gensler, Dekimpe, and Skiera 2007; Sharma and Mehrotra 2007), it is poor at explaining the slow development of cross-channel integration in the real world of business. According to this perspective, retailers should accelerate their development of the strategy, since studies provide empirical evidence that cross-channel integration can increase consumer retention rate (Bendoly et al. 2005), consumer satisfaction (Montoya-Weiss, Voss, and Grewal 2003), and consumer loyalty (Van Baal 2014)—and, in turn, improve firm performance (Cao and Li 2015; Oh, Teo, and Sambamurthy 2012). However, a 2011 survey by Edge Research for Sterling Commerce, an IBM company, revealed that while 85% of consumers said they expected a seamless brand experience across all channels, only one in ten retailers felt they excelled at providing this (Stelzer 2011). A 2015 survey by Retail Systems Research also reported that retailers have still not made significant progress in integrating processes across their channels (RSR 2015). Why do these firms hesitate in developing cross-channel integration? Some important factors seem to be ignored by the channel-performance-oriented perspective.

The innovation-diffusion perspective has therefore been suggested as an alternative perspective from which to study the determinants of cross-channel integration, for three key reasons. First, this theory explains the innovation-diffusion structure and its driver. It investigates not only adoption but also use of innovation in an organization (Rogers 1995, 2003). It is relevant to consider cross-channel integration as a process of adopting and implementing innovation. Firms' strategic movement toward cross-channel integration requires retailers to adopt disruptive technologies such as radio-frequency identification (RFID), mobile apps, and centralized data warehousing (Cao 2014; Zhang et al. 2010). Furthermore, when adopted for cross-channel integration, these technologies should be routinized into retailers' operational activities for substantially modifying both customer and retailer behaviors (Berry et al. 2010; Pantano 2014; Zhang et al. 2010). For example, whereas consumers routinely use internet-enabled (and frequently mobile) devices to find information about potential purchases, they will freely choose any channel to buy because retailers' various channels have converged. Retailers are required to deliver a consistent marketing message, to synchronize their information systems across channels, and to redesign their organizational structures to adapt to changes (Verhoef, Kannan, and Inman 2015).

Second, the innovation of diffusion theory suggests that the diffusion of a technology will occur through stages, over time. Each of these stages will involve a decision-making process by the organization (Rogers 1995). As discussed earlier, the adoption and (in particular) implementation of cross-channel integration needs to be studied from an evolutionary perspective (Cao and Li 2015). Cross-channel integration requires retailers to change nearly every aspect of their businesses, including both front-end and back-end operations (Sousa and Voss 2006), supply chains (Piotrowicz and Cuthbertson 2014), and even organizational structures (Zhang et al. 2010). Chaffey (2010) and Zhang et al. (2010) therefore point out that most retailers need to follow a stage-adoption model to adopt and implement cross-channel integration strategy, because firms need to take a gradual approach, reviewing current approaches, benchmarking against competitors, identifying good practice from more advanced adopters, and creating a "roadmap" of future improvements.

Third, the innovation-diffusion perspective is especially relevant to firm-level studies (Giotopoulos et al. 2017), in order to identify the factors that influence firms' adoption and implementation of internet-related technologies such as electronic data interchange (EDI), RFID, e-business, and e-collaboration (Chan, Yee-Loong Chong, and Zhou 2012; Zhu, Kraemer, and Xu 2006). These factors are rooted in the specific technological, organizational, and environmental contexts of an organization (Tornatzky and Fleischer 1990). Compared to the channel-performance-oriented perspective, the innovation-diffusion perspective is more helpful in widening the scope of consideration.

The objective of this study is thus to answer, from an innovation-diffusion perspective, our research question: What are the determinants of cross-channel integration? We investigate this by integrating multiple secondary sources of longitudinal data on 77 publicly traded United States (U.S.) retail firms from 2008 to 2015.

This study makes three contributions to the literature on multi-channel retailing and retail innovation. First, it offers a suitable conceptual model to explain which factors determine firms' level of cross-channel integration given that cross-channel integration is a relatively new trend that is still considered an innovation process in the retail industry. We identify seven factors from three dimensions: (1) technology-related factors; (2) organizational characteristics; and (3) environmental context. We then build arguments for how these factors might determine each firm's decision about cross-channel integration. Second, this study deepens our understanding of decision-making on multi-channel strategy by identifying an alternative perspective on innovation diffusion. This perspective enables us to highlight technology-related factors and to introduce both organizational and environmental factors into the analytical framework. Third, this study extends our understanding of innovation adoption and implementation in retailing. Our findings provide further empirical evidence on the technology-related factors, organizational characteristics, and environmental context that drive the firm's adoption and use of innovation in retailing. In contrast, previous studies primarily offer conceptual frameworks or empirical evidence, focusing only on customer-level factors.