Integrating Bricks with Clicks: Retailer-Level and Channel-Level Outcomes of Online–Offline Channel Integration

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Abstract

This research examines the impact of online–offline channel integration (OI), defined as integrating access to and knowledge about the offline channel into an online channel. Although channel integration has been acknowledged as a promising strategy for retailers, its effects on customer reactions toward retailers and across different channels remain unclear. Drawing on technology adoption research and diffusion theory, the authors conceptualize a theoretical model where perceived service quality and perceived risk of the Internet store mediate the impact of OI while the Internet shopping experience of customers moderates the impact of OI. The authors then test for the indirect, conditional effects of OI on search intentions, purchase intentions and willingness to pay. Importantly, they differentiate between retailer-level and channel-level effects, thereby controlling for interdependencies between different channels. The results of three studies provide converging evidence and show that OI leads to a competitive advantage and channel synergies rather than channel cannibalization. These findings have direct implications for marketers and retailers interested in understanding whether and how integrating different channels affects customer outcomes.

Keywords: Multi-channel management; Omnichannel retailing; Channel integration; Channel synergies; Channel cannibalization; Willingness to pay

Introduction

“There was a time when the online and offline businesses were viewed as being different. Now we are realizing that we actually have a physical advantage thanks to our thousands of stores, and we can use it to become Number 1 online.”

Raul Vasquez, Walmart.com Chief Executive (cited in Bustillo and Fowler 2009)

Retail firms with physical stores, such as Walmart, Macy’s, Best Buy and Staples have begun to realize that they may have a physical advantage over purely online players. However, evidence for the success of multi-channel retailers remains scarce.

Purely online players, such as Zappos and Amazon, tend to dominate the market for certain product categories and outperform their brick-and-click competitors, whereas some multi-channel retail firms with physical stores still struggle to answer the important yet unresolved question of whether they can create competitive advantage from a multi-channel strategy (Neslin and Shankar 2009). We believe that the reason is often due to the lack of integration between a firm’s Internet and physical stores. Firms could provide, for instance, in-store online terminals in a physical store or physical store locators and assortment availability information on the Internet. However, many firms seem either unable or unwilling to provide such services.

Traditionally, most multi-channel retailers have siloed structures, where the physical store division and the Internet store division operate independently of each other (Gallino and Moreno 2014; Rigby 2011). Consequently, real collaboration between retailers’ physical stores and digital stores remains rare. Indeed, a recent survey among 80 retail organizations found that the majority of multi-channel retailers have siloed their capabilities and systems (Aberdeen Group 2012). Other studies have
found similar results, indicating that channel integration has not yet been achieved (Accenture 2010). However, some business experts foresee that channel integration will soon become the main focus of retailers and channel managers (Google 2011). Booz & Company (2012, p. 1) even stated, “cross-channel integration is fast becoming a competitive necessity”.

Despite this optimistic appraisal of channel integration, important arguments support and oppose the integration of different channels. Promoters of integration state that channel integration could enrich the customer value proposition (Gallino and Moreno 2014) or prevent customer confusion and frustration (Gulati and Garino 2000). However, the advantages offered by channel integration are not without risks and potential downsides. Integrating different channels may increase research shopping – defined as the propensity of consumers to search in one channel and then purchase through another channel – by more than 25 percent as it reduces channel-specific lock-in effects (Verhoef, Neslin, and Vroomen 2007). This finding is critical given that showmorrowing – whereby customers evaluate products at one store but buy them elsewhere – is a major problem for physical stores (Zimmerman 2012) and Internet stores (Ryan 2013). In addition, a firm’s integration activities could be counteracted by the inherently missing complementarity between the firm’s distribution channels, which due to their different characteristics, such as price and assortment strategies, do not enable achieving synergies (Zhang et al. 2010). Finally, channel integration may be either a zero-sum game where advantages in one channel are offset by disadvantages in another channel (“dissynergies” or “cannibalization”; Falk et al. 2007) or may even harm firms in cases of negative spill-over effects from one channel to another (van Birgelen, de Jong, and de Ruyter 2006).

Thus, channel integration can present both opportunities and threats to firms, namely, channel integration can be performance enhancing and performance destroying. In light of the costs associated with channel integration, further insights into the consequences of channel integration are highly relevant in practical and theoretical terms. In this paper, we explore whether customers value integrated channels and whether firms integrating Internet and physical stores benefit from their investments. Given that Internet search and store purchase is acknowledged as the most common form of research shopping (DoubleClick 2004; Verhoef, Neslin, and Vroomen 2007), the importance of the Internet as an information source (Pauwels et al. 2011), and the relative lack of research (Bendoly et al. 2005 is a notable exception), our study focuses on online–offline channel integration (OI). In this context, OI is defined as integrating access to and knowledge about the offline channel into an online channel by, for instance, providing a store locator or store assortment availability information via the Internet store.

To gain insights into the current state of OI, we manually searched the websites of 62 leading European multi-channel retailers of fashion, electronics and household goods from March 2013 to April 2013. We found that the most common integration activities are efficient dealer search (introduced by 19 percent of leading multi-channel retailers), the ability to check product availability in the physical store via the Internet (34 percent), the possibility to reserve products online for purchase in the physical store (25 percent), and to return products purchased online at the offline store (15 percent). The relatively low percentage of multi-channel retailers that use online–offline integration activities confirms the notion that OI is a recent phenomenon that deserves more detailed examination. Focusing on customer reactions to OI, we address the following questions:

- Do customers value an integrated Internet store? Does online–offline channel integration lead to a competitive advantage for a focal retailer?
- How does online–offline channel integration affect customer search intention, purchase intention and willingness to pay in both Internet and physical stores? How strong are the cannibalization effects between the two channels?
- Does online–offline channel integration have the same effect on all customers? How do individual differences affect the outcome of online–offline channel integration?

To answer these questions, we used technology adoption research and diffusion theory to explain the potential effects of channel integration. We conducted three empirical studies to investigate how OI affects customer behavior. Importantly, we controlled for potential synergies and dissynergies across different channels (Avery et al. 2012; Falk et al. 2007). Although we acknowledge the importance of other channels for omnichannel retailing (e.g., catalogs, mobile devices), we focus on the Internet and physical store channels in view of the dominant role of these channels in multi-channel firms (Neslin and Shankar 2009, Rigby 2011).

**Conceptual Development**

**Definition of Online–Offline Channel Integration**

Channel integration is defined as the degree to which different channels interact with each other (Bendoly et al. 2005). There are two basic approaches to channel integration: (1) providing access to and knowledge about the Internet store at physical stores (offline–online channel integration), and (2) providing access to and knowledge about physical stores at the Internet store (OI). Integration can therefore occur either from the store to the Internet or from the Internet to the store. To integrate online features into offline channels, firms such as J.C. Penney and Louis Vuitton provide self-service or assisted online terminals in their physical stores. Researchers studying offline–online channel integration find that self-service online terminals and information on online channels can reduce the negative effect of non-availability for physical store customers (Bendoly et al. 2005), assisted online terminals can complement personal service (Glushko and Tabas 2009), and Internet banking

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2 Given the tendency of customers to use one channel for search and another for purchase, we believe it is important to differentiate between search intentions and purchase intentions in our investigation (e.g., Neslin and Shankar 2009; Verhoef, Neslin, and Vroomen 2007; Zhang et al. 2010).
assistance to customers in the branch is a valuable part of the offline service experience (Patrício, Fisk, and Falcão e Cunha 2008). To integrate offline features into their online channels, firms such as IKEA and John Lewis provide a physical store locator or physical store assortment availability information in their Internet stores. The only study that to our knowledge investigates OI finds that perceptions of OI moderate the negative effect of non-availability for Internet store customers (Bendoly et al. 2005). However, given their research design, the results of Bendoly et al. (2005) are unable to answer the important yet unresolved question of whether perceived integration affects channel evaluation or whether channel evaluation affects perceived integration. Thus, we extend the authors’ insights by investigating how and when OI affects retailer-level and channel-level outcomes with an experimental design that allows controlling for the causality of the observed effects.

Research Framework

From the customer perspective, OI provides the key potential of enhancing the Internet store experience (Bendoly et al. 2005). In this respect, OI enables firms to offer customers what they want at each stage of the buying process (Gensler, Verhoef, and Böhm 2012). However, when considering the outcomes in different channels, OI may also create unwanted consequences. This issue can be understood best through using technology adoption research and diffusion theory to explain the desired and potential dissenting effects of OI.

*Technology adoption research* has identified the mediating role of user evaluations of a new technology and the important role of system attributes as antecedents of these evaluations (Davis 1989; Davis, Bagozzi, and Warshaw 1989). The technology adoption framework has been widely used in multi-channel research. For example, Falk et al. (2007) find that the effect of a status quo channel attribute (satisfaction with the current channel) on new channel adoption decisions of customers is mediated by the perceived usefulness and the perceived risk of the new channel. Montoya-Weiss, Voss, and Grewal (2003) find that Website attributes, such as the navigation structure, the information content and graphic style, affect customer online channel usage decisions through evaluations of online channel service quality and risk perceptions.

In our research context, OI is a system attribute that affects user evaluations of the online channel and subsequent retailer or channel adoption decisions. Following prior research on retailer and channel adoption decisions (Cronin, Brady, and Hult 2000; Falk et al. 2007; Forsythe and Shi 2003), we use evaluations of perceived service quality and perceived risk of the online channel as parallel multiple mediators between OI and adoption decisions. However, these evaluations do not only affect online channel adoption decisions but also overall retailer adoption decisions or adoption decisions of alternative channels, such as the physical store channel (Montoya-Weiss, Voss, and Grewal 2003). In this context, user evaluations of the online channel act as a reference point for adoption decisions of the primary alternative channel. Increasing service quality or decreasing the risk of the online channel with OI may increase the reference point for the physical store channel, which could therefore lead to a lower adoption of this alternative channel (Falk et al. 2007).

*Diffusion theory* posits that adoption decisions of new technologies are influenced by the characteristics of the technology and by the personal characteristics of the adopter (Gatignon and Robertson 1985). In particular, personal patterns of experience moderate the influence of technological characteristics. This is in line with technology adoption research, which states that customer experience may interact with attributional antecedents of perceived usefulness and risk (Davis 1989). In our research context, channel evaluation and adoption decisions are based on subjective evaluations of a channel’s relative advantage and the compatibility of that channel with personal experience. Customers’ online shopping experience may therefore affect the impact of online channel attributes, such as OI, on user evaluations of the service quality and risk of the online channel (Nysveen and Pedersen 2004). The corresponding research framework is presented in Fig. 2. In the following section, we summarize specific arguments for the indirect effects of OI on search intention, purchase intention, and willingness to pay (WTP) through the perceived service quality and the perceived risk of the Internet store, and the moderating role of the Internet shopping experience. Importantly, in a multi-channel context, customers not only choose a distinct retailer but also one or more channels from a retailer’s alternative channels. Thus, we differentiate between the effect of OI on retailer-level and channel-level outcomes.

*Online–Offline Channel Integration and Customer Evaluations*

*Service quality perceptions* are defined as overall assessments of the perceived performance of the Internet store (Zeithaml, Parasuraman, and Malhotra 2002). *Risk perceptions* are defined as overall assessments of the uncertainty and potentially adverse consequences of the Internet store (Dowling and Staelin 1994). An integrated Internet store increases service quality and decreases risk because it helps combine online and offline channels according to their specific ‘conspicuous or experiential capabilities’ (Avery et al. 2012). In particular, an offline channel may complement an online channel in terms of service quality (i.e., by highlighting the possibility of a rich, multisensory brand experience and the ability of salespeople to increase the service experience) and risk (i.e., referring to the physical presence of the retailer and the possibility of touching and feeling products before purchasing them to reduce uncertainty). Arguments for such complementarities are provided by studies of customer satisfaction deriving from the availability of multiple customer touch points (Hitt and Frei 2002). Likewise, Stewart (2003) shows that an Internet store decreases risk perceptions when it signals its association with a physical store. Thus, we expect that:

**H1.** Online–offline channel integration (a) increases perceived service quality and (b) decreases perceived risk of the Internet store.
Customer Evaluations and Multi-channel Outcomes

We consider three different customer reactions on the retailer-level and channel-level as indirect multi-channel outcomes of OI: search intention, defined as the likelihood that customers use a focal retailer (retailer-level) or a certain channel (channel-level) for searching a product, search intention defined as the likelihood that customers use a focal retailer or a certain channel for purchasing a product, and WTP, defined as the maximum price at which a customer will purchase a product from a focal retailer or a certain channel.

In line with the technology adoption framework, research on channel design perceptions emphasizes that online service quality and online risk are important drivers of overall consumer satisfaction, regardless of channel choice (Montoya-Weiss, Voss, and Grewal 2003). In turn, customer satisfaction has been associated with higher search and purchase intentions (Cronin, Brady, and Hult 2000) as well as a higher WTP (Ratchford 2009). Furthermore, both overall customer usage intentions (Baker et al. 2002) and WTP (Grewal et al. 2010) are positively affected by service quality and negatively affected by risk. Likewise, although each channel may offer a unique value proposition, research findings suggest that online evaluations may drive overall retailer choice (Pauwels et al. 2011). Thus, we hypothesize that the perceived service quality of the Internet store constitutes a positive effect and the perceived risk of the Internet store constitutes a negative effect on overall customer reactions, that is, customers’ search intention, purchase intention, and WTP on the retailer-level.

Prior research further indicates that online service quality increases the intention to use the online channel, while online risk has the opposite effect and decreases online usage intention (Badrinarayanan et al. 2012; Falk et al. 2007; Forsythe and Shi 2003; Park and Jun 2003). Following these results and the above argumentation, we expect that service quality (risk) perceptions of the Internet store resulting from OI have a positive (negative) effect on customer Internet store reactions, that is, customers’ Internet store search intention, purchase intention, and WTP.

In the literature, both complementarity and substitution between alternative channels of the same retailer have been advocated. While some scholars find complementarity of different channels (Avery et al. 2012; Wallace, Giese, and Johnson 2004), others find that different channels substitute each other (Falk et al. 2007; Montoya-Weiss, Voss, and Grewal 2003). Research on cross-channel dissynergies states that satisfaction in one channel reduces the positive assessment of other channels due to increasing expectations of the alternative channels (Falk et al. 2007). Following this view, the online channel may act as a reference point for store channel assessment and usage decisions. In this context, higher online channel service quality and lower risk may raise expectations and lower the positive assessment of the offline channel (Montoya-Weiss, Voss, and Grewal 2003). As a result, the increase (decrease) in online service quality (risk) resulting from OI may negatively affect customers’ physical store reactions. Thus, channel cannibalization may occur, as in, for instance, the partial or full reduction of an offline channel’s sales due to the integration of an online channel.
**A: Effect of online-offline channel integration on discrete retailer choice for purchase**

![Graph showing discrete retailer choice for purchase](image)

*DV: Discrete retailer choice for purchase*

Conversely, research on cross-channel synergies finds that the negative direct effect of higher expectations of the alternative channel is offset by a stronger positive indirect effect through improved service experience (Wallace, Giese, and Johnson 2004). In addition, valuable brand associations attributed to one channel (Ailawadi and Keller 2004) and positive associations formed by the knowledge of one channel (Kwon and Lennon 2009) may transfer to other channels by way of a halo effect. Following this view, the alternative channel may benefit from investments in a different channel. Thus, the higher service quality and lower risk of the online channel may increase the positive assessment of the offline channel (Wallace, Giese, and Johnson 2004). In this case, channel synergies may occur and the increase (decrease) in online service quality (risk) resulting from OI may favorably affect customers’ physical store reactions.

Taken together, we expect that potential dissynergies resulting from increased expectations of the physical store and synergies resulting from an increased service experience in the Internet store offset each other, and that service quality and risk perceptions of the Internet store have no effect on physical store reactions, that is, customers’ physical store search intention, purchase intention, and WTP.

**H2.** Increasing the perceived service quality of the Internet store (a) positively affects overall retailer-related customer
reactions, (b) positively affects channel-related customer reactions to the Internet store, and (c) does not affect channel-related customer reactions to the physical store.

**H3.** Decreasing the perceived risk of the Internet store (a) positively affects overall retailer-related customer reactions, (b) positively affects channel-related customer reactions to the Internet store, and (c) does not affect channel-related customer reactions to the physical store.

**The Moderating Effect of Internet Store Experience**

Given the potential advantages of OI outlined above, a key question is whether all customers respond in a similar way to OI. In multi-channel management, customer segments are largely based on specific usage patterns of different channels (Neslin and Shankar 2009). Thus, we use customers’ Internet shopping experience – defined as the greater knowledge and experience of searching and purchasing products online in general (Menon and Kahn 2002) – to investigate differences in customer responses to OI. Customers with more Internet experience are likely to feel comfortable with a retailer’s online channel (Forsythe and Shi 2003; Montoya-Weiss, Voss, and Grewal 2003). Moreover, Internet experience has been identified as an important moderator in determining online channel assessments (Falk et al. 2007). Thus, customers with high Internet experience will judge OI as “just another addition to their existing Internet services” (Falk et al. 2007, p. 150). On the contrary, customers with less Internet experience will not be as comfortable with a retailer’s online channel and OI will thus provide more value in terms of service quality and risk reduction. Therefore, we expect OI to be more important in predicting service quality and risk perceptions of the Internet store for customers with low Internet experience:

**H4.** Customer’s Internet shopping experience (a) decreases the positive effect of online–offline channel integration on perceived service quality of the Internet store and (b) decreases the negative effect of online–offline channel integration on perceived risk of the Internet store.

A further hypothesis is implicit in the reasoning of the direct effects, namely that the multiple mediating effect of OI on multi-channel outcomes through service quality and risk perceptions of the Internet store is moderated by customers’ Internet shopping experience (Hayes 2013). We thus predict moderated mediation (Edwards and Lambert 2007; Muller, Judd, and Yzerbyt 2005). The corresponding model in Fig. 1 enables understanding the effects of OI, given that Judd, Yzerbyt, and Muller (2014, p. 654) note, “a full theoretical understanding of an effect of interest involves both understanding mechanisms (the question of mediation) and understanding limiting conditions (the question of moderation), and the knowledge gained from both of these assessments ultimately must converge”.

### Study 1

**Design, Participants, and Procedure**

The purpose of Study 1 was to test whether and how OI leads to a competitive advantage for retailers. The study used a $2 \times 2$ ($[Retailer 1: \text{integrated versus non-integrated}] \times [Retailer 2: \text{integrated versus non-integrated}]$) between-subject design. As the sensory product of interest, we chose Team Germany *Havaianas* Flip-Flops, an important product category given the upcoming 2014 World Cup in Brazil. A market research company assembled a sample of 107 German participants (50 percent women, $M_{age} = 43.92$ years). Participants were financially compensated and entered into a lottery for five 20 Euro gift vouchers. As an incentive-aligned treatment, participants chose one of the two retailers for the gift voucher.

Participants were consecutively presented the Internet stores of two anonymized multi-channel retailers, each either with or without OI. The non-integrated version was based on a typical retailer’s homepage and included features such as product descriptions, product ratings and reviews from customers, available sizes and colors, and a buy button. Based on the results of our exploratory study of multi-channel retailers, OI was operationalized by offering a physical store search function (including availability check and reserving products in the store) and the possibility of returning products bought in the Internet store to any physical store. Screenshots and text descriptions were used to visualize the different versions of the Internet store. To avoid confounding effects, the Internet stores of the two retailers offered exactly the same features.

Initially, participants were asked to imagine that they were looking for Team Germany *Havaianas* Flip-Flops and were shown a picture and the description of the flip-flops. The participants then indicated whether they knew the *Havaianas* brand prior to the study, their involvement with the world cup, the product category, and the brand *Havaianas*, and whether they had ever bought flip-flops from *Havaianas* or another brand. Participants were subsequently confronted with the Internet stores of the two retailers. Both retailers were described as multi-channel retailers with an Internet store and several physical stores, some of which were in the hometown of the participants. They were then randomly assigned to one of the four possible conditions. After participants had finished reading each scenario, they rated the perceived service quality and risk of the Internet store, overall search intention, purchase intention and WTP, together with a manipulation check. The evaluation order (i.e., dependent variables first vs. manipulation check first) was randomized to ensure that results would not be affected by a particular order. All respondents provided answers for both retailers.

Participants indicated perceived service quality (“Overall, how satisfied are you with the service offered in the Internet store of retailer [x]?”), perceived risk (“The risk concerning the product characteristics (e.g., size and color) is high when I would purchase the flip-flops in the Internet store of retailer [x]”), purchase intention (“How likely is it that you would purchase the flip-flops from retailer [x]?”), and search intention (“How likely is it that you would search in the Internet or
physical store of retailer [x] next time you look for flip-flops?”). In line with previous multi-channel research (Verhoef, Neslin, and Vroomen 2007), we used single items to measure mediators and dependent variables to reduce the timing of the research design, which was already relatively lengthy due to the introduction of both retailers and the repeated measurement.\(^5\) To measure WTP, we employed an open-ended question (“How much would you pay, in Swiss Francs, for the flip-flops at retailer [x]?”) adapted from van Doorn and Verhoef (2011). Furthermore, we measured discrete retailer choice for purchasing (Verhoef, Neslin, and Vroomen 2007). Here, respondents were asked to choose only one retailer for their purchase decision (including a no-choice option).

In addition to the above-mentioned controls, we asked participants to indicate their monthly disposable income and price consciousness (Wakefield and Inman 2003), and their internal reference price for similar flip-flops of the same quality from a comparable brand (Lichtenstein and Bearden 1989). Furthermore, participants rated the credibility of the scenario (not very credible/credible), the difficulty of the task (not difficult at all/very difficult), and chose one of the retailers for the gift voucher lottery. Finally, the participants provided their gender, age and what they thought was the aim of the study. None of the participants correctly guessed the purpose of the study (most assumed we were investigating WTP for world cup merchandise or flip-flops).

**Analysis and Results**

Manipulation and confound checks. Participants in the experimental groups rated the perceived integration of the Internet and physical store (“The services and functions offered at retailer [x]’s Internet and physical store complement each other”) higher than those in the control groups (Retailer 1: t(105) = 6.99, p < .01; Retailer 2: t(105) = 8.80, p < .01). The confound checks indicated no significant differences across conditions for credibility (p = .24; Mcredibility = 5.69) and difficulty (p = .72; Mdificulty = 1.22). The high (low) means suggest that all scenarios were considered credible and easy to understand. These analyses showed no effects for the evaluation order (all p > .15), and the data were collapsed across the two different order conditions. The means, standard deviations, and effect sizes for all studies are reported in Appendix.

Direct effects. We used regression analysis including all control variables to test our hypotheses. We found that OI has a positive effect on perceived service quality (R1: β = .43, p < .01; R2: β = .53, p < .01) and a negative effect on perceived risk (R1: β = −.29, p < .01; R2: β = −.40, p < .01), thus providing support for H1a and H1b. We found that an increase in perceived service quality increases overall search intention (R1: β = .37, p < .01; R2: β = .61, p < .01), overall purchase intention (R1: β = .42, p < .01; R2: β = .56, p < .01), and overall WTP (R1: β = .26, p < .05; R2: β = .28, p < .05), supporting H2a. A decrease in perceived risk did not significantly increase overall search intention, purchase intention, and WTP; thus H3a is not supported.

**Mediation.** We used Model 4 of the PROCESS macro (Hayes 2013) including all control variables to test for the multiple mediating effects of perceived service quality and perceived risk (Zhao, Lynch, and Chen 2010). The analyses conducted through bootstrapping (5,000 bootstrap samples) with 95 percent bias-corrected confidence intervals indicated indirect positive effects of OI on overall search intention (R1: β = .16, 95 percent CI = .07 to .30; R2: β = .33, 95 percent CI = .20 to .52), overall purchase intention (R1: β = .20, 95 percent CI = .10 to .33; R2: β = .31, 95 percent CI = .18 to .47), and overall WTP (R1: β = .11, 95 percent CI = .02 to .23; R2: β = .17, 95 percent CI = .05 to .32). Together, these results indicate that the indirect effect of OI on overall customer reactions is mediated by perceived service quality.

**Discrete retailer choice.** While customers may use multiple retailers for shopping, they can choose only one retailer for a specific purchase situation. We used the separately collected variables for discrete purchase and the gift voucher lottery to account for this unique choice. The distribution of retailer choices in the different experimental conditions is shown in Fig. 2, and differences were assessed using a multinomial logistic regression analyses. The overall fit indices suggest that the purchase model has a good fit (χ²(18) = 68.67, p < .01; McFadden’s R² = .32). Sixty-nine percent of the predicted choices were in line with the actual customer responses (Kendall’s Tau = .49 and Somer’s D = .50). The marginal effects analysis suggests that the OI of R1 increased (M.E. = .49, p < .01) and of R2 decreased (M.E. = −.30, p < .01) the likelihood that participants would choose R1, and that the OI of R1 decreased (M.E. = −.30, p < .01) and of R2 increased (M.E. = .40, p < .01) the likelihood that participants would choose R2 for purchasing the flip-flops. The OI of R1 decreased (M.E. = −.26, p < .01) and that of R2 did not significantly affect the likelihood that participants would choose the no choice option. The gift voucher lottery choice model (χ²(18) = 50.78, p < .01; McFadden’s R² = .30; 71 percent correct predicted choices; Kendall’s Tau = .48; Somer’s D = .49) replicates the retailer choice results and indicates that OI of R1 increased (M.E. = .41, p < .01) and that of R2 decreased (M.E. = −.33, p < .01) the likelihood that participants would choose R1, and that OI of R1 decreased (M.E. = −.35, p < .01) and that of R2 increased (M.E. = .38, p < .01) the likelihood that participants would choose R2 for the gift voucher lottery. OI did not significantly affect the likelihood that participants would choose the no participation option.

**Discussion of Study 1**

The results of Study 1 support the notion that OI has positive effects on overall purchase intention, search intention, and...
WTP, and thus that OI provides a competitive advantage for retailers. More specifically, and in line with technology adoption research, we found support for the indirect effects of OI: OI increases perceived service quality and reduces perceived risk of the Internet store, perceived service quality in turn increases purchase intention, search intention, and WTP for a retailer with an integrated Internet store. However, contrary to our expectations, perceived risk does not directly affect relevant outcomes. The discrete retailer choice analysis further revealed that OI increases the likelihood that customers choose a distinct retailer from multiple alternatives. However, given this study focused on retailer-level effects and overall customer reactions, examining channel synergies or cannibalization was not part of the design. To further extend insights into customer reactions across different channels, Study 2 explores whether OI has the expected channel-level effects in the Internet and physical store.

Study 2

Design, Participants, and Procedure

The purpose of Study 2 was to test whether, how, and under what conditions OI affects customer reactions in Internet and physical stores. The study used a generic between-subjects design, with the level of integration in the Internet store as a single two-dimensional treatment variable. The sensory product of interest is Wooden sunglasses from Woodfellas. A total of 129 Swiss undergraduates participated in the study (50.8 percent women, $M_{\text{age}} = 24.85$ years), all of whom neither knew the brand nor bought its products.\(^6\) As an incentive, participants were entered into a lottery for five movie gift cards and had the opportunity to directly buy the sunglasses using an incentive-compatible mechanism (Becker, DeGroot, and Marschak 1964).

The experimental procedure is comparable to the first study. Participants were presented one of two versions of a hypothetical Swiss Internet store for Woodfellas – either an integrated or a non-integrated version based on the brand’s German Internet store. As in Study 1, OI was operationalized by offering a physical store search function (including availability check and reserving products in the store) and the possibility to return products bought in the Internet store to any physical store. Initially, participants indicated their percentage of Internet purchases from overall purchases of products such as sunglasses and apparel (% Physical stores, % Internet stores [including mobile], % other channels [e.g., catalog or telephone]), which we used to operationalize the Internet shopping experience. They were then asked to imagine that they were looking for wooden sunglasses, the brand Woodfellas and specific sunglasses worth 159 Swiss Francs were introduced (without showing any price information). The participants then rated whether they knew the Woodfellas brand and whether they had bought products from Woodfellas prior to the study, how important sunglasses were to them, and whether they had bought wooden sunglasses of any other brand. Participants were then confronted with either the integrated or the non-integrated Woodfellas Internet store.

After participants finished reading the scenario, they rated a manipulation check, perceived service quality and risk of the Internet store, search intention, purchase intention, and WTP both for the Internet and the physical store. As consumers can use multiple channels for purchase and search decisions, all respondents provided answers for both channels. We measured discrete channel choice for purchasing where respondents chose only one channel for their purchase decision (with the following options: [1] Physical store, [2] Internet store, [3] Other online store, or [4] None of the options). Furthermore, we captured overall WTP with an incentive-compatible mechanism (Becker, DeGroot, and Marschak 1964). The order of evaluation between the manipulation check and dependent variables was randomized.

In addition to the aforementioned controls, we controlled for participants’ monthly disposable income, price consciousness, internal reference price, multichannel self-efficacy, defined as the confidence and ability to use different types of distribution channels (Compeau and Higgins 1995), need for touch, defined as the preference for physically experiencing and evaluating a product before purchase (Peck and Childers 2003), need for interaction, defined as the importance of interacting with a real employee (Dabholkar 1996), age and gender. We again asked participants what they thought was the aim of the study, but none of them guessed correctly.

Analysis and Results

Manipulation and confound checks. Participants in the experimental groups perceived the Internet store as more integrated than those in the control groups ($t(127) = 19.08, p < .01$). We found no significant differences across conditions for credibility ($p > .97$; $M_{\text{credibility}} = 6.23$) and difficulty ($p > .90$; $M_{\text{difficulty}} = 1.52$), and no effects for the order of evaluation ($p > .12$).

Direct effects. We used regression analysis including all control variables to test our hypotheses. We found that OI has a positive effect on perceived service quality ($H_{1a}$: $\beta =.58, p < .01$) and a negative effect on perceived risk ($H_{1b}$: $\beta =-.32, p < .01$). An increase in perceived service quality increases overall WTP ($H_{2a}$: $\beta =.31, p < .01$), while a decrease in perceived risk has no significant effect on overall WTP ($H_{2b}$). We found that an increase in perceived service quality increases Internet search intention ($\beta =.41, p < .01$), Internet purchase intention ($\beta =.38, p < .01$), and Internet WTP ($\beta =.38, p < .01$), supporting $H_{2b}$. A decrease in perceived risk has no significant effects on Internet search intention, purchase intention, and WTP; thus $H_{2c}$ is not supported. We further found that an increase in perceived service quality has no effect on store search intention but positive effects on store purchase intention ($\beta =.31, p < .01$) and store WTP ($\beta =.29, p < .01$), providing mixed support for $H_{2bc}$. A decrease in perceived risk has no significant effects on store search intention, purchase intention, and WTP; supporting $H_{2c}$.

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\(^6\) Woodfellas does not sell its products in Switzerland. However, three participants indicated that they knew the Woodfellas brand prior to the study, and one had already bought Woodfellas sunglasses. We excluded these participants to avoid the confounding effects of prior knowledge of the Woodfellas Internet shop and pricing.
predicted, we found a negative effect of the interaction between OI and Internet shopping experience on perceived service quality ($\beta = -0.16, p < 0.05$) and a positive effect on perceived risk ($\beta = 0.17, p < 0.05$), supporting $H_3$ and $H_4$. The simple slope analyses showed that the effect of OI on perceived service quality is stronger when Internet shopping experience is low ($\beta = 0.74, p < 0.01$) than when it is high ($\beta = 0.42, p < 0.01$), and that the effect of OI on perceived risk is only significant when Internet shopping experience is low ($\beta_{\text{low}} = -0.49, p < 0.01; \beta_{\text{high}} = -0.15, ns$).

**Moderated mediation.** We use Model 7 of the PROCESS macro (Hayes 2013) including all control variables to test for moderated mediation (Edwards and Lambert 2007; Muller, Judd, and Yzerbyt 2005). Bootstrapping analyses with 5,000 bootstrap samples and 95 percent bias-corrected confidence intervals indicated overall mediation effects of perceived service quality in the relationships between OI and overall WTP ($\beta = 0.11, 95\text{ percent CI} = 0.10 \text{ to} 0.24$), Internet search intention ($\beta = 0.23, 95\text{ percent CI} = 0.13 \text{ to} 0.40$), Internet purchase intention ($\beta = 0.22, 95\text{ percent CI} = 0.10 \text{ to} 0.38$), Internet WTP ($\beta = 0.21, 95\text{ percent CI} = 0.11 \text{ to} 0.37$), store purchase intention ($\beta = 0.18, 95\text{ percent CI} = 0.09 \text{ to} 0.31$), and store WTP ($\beta = 0.16, 95\text{ percent CI} = 0.07 \text{ to} 0.29$). These mediation effects were stronger at minus one standard deviation below the mean Internet shopping experience score ($\beta_{\text{overall-WTP}} = 0.15$, 95 percent CI = 0.01 to 0.32; $\beta_{\text{Internet search intention}} = 0.32$, 95 percent CI = 0.15 to 0.54; $\beta_{\text{Internet purchase intention}} = 0.29$, 95 percent CI = 0.13 to 0.52; $\beta_{\text{Internet WTP}} = 0.28$, 95 percent CI = 0.14 to 0.48; $\beta_{\text{store purchase intention}} = 0.24$, 95 percent CI = 0.11 to 0.42; $\beta_{\text{store WTP}} = 0.21$, 95 percent CI = 0.08 to 0.39) and weaker at plus one standard deviation above the mean Internet shopping experience score ($\beta_{\text{overall-WTP}} = 0.07$, 95 percent CI = 0.10 to 0.18; $\beta_{\text{Internet search intention}} = 0.15$, 95 percent CI = 0.08 to 0.30; $\beta_{\text{Internet purchase intention}} = 0.14$, 95 percent CI = 0.06 to 0.29; $\beta_{\text{Internet WTP}} = 0.13$, 95 percent CI = 0.06 to 0.28; $\beta_{\text{store purchase intention}} = 0.11$, 95 percent CI = 0.06 to 0.24; $\beta_{\text{store WTP}} = 0.10$, 95 percent CI = 0.04 to 0.22). Together, these results show that the indirect effects of OI on customer outcomes mediated by perceived service quality are significant, and that Internet shopping experience moderates these indirect effects.

**Discrete channel choice.** We used the separately collected discrete channel choice variable to account for the unique purchase choice. The distribution of channel choice in different conditions is shown in Fig. 3, Panel A. Differences in channel choice were assessed using a multinomial logistic regression ($\chi^2(27) = 52.85, p < 0.01$; McFadden's $R^2 = 0.20$; 68 percent correct predicted choices; Kendall's Tau = 0.28; Somer's $D = 0.38$). The marginal effects analysis suggested that OI increased the likelihood that participants would make purchases in the brand’s Internet store (M.E. = 0.18, p < 0.01) and decreased the likelihood that participants would make purchases in other online stores (M.E. = -0.09, p < 0.05). The effect on the likelihood that participants would make purchases in the brand’s physical store was insignificant. Thus, additional sales in an integrated Internet store are mainly drawn from other, third-party online stores, suggesting that OI does not significantly cannibalize the physical store.

**Discussion of Study 2**

**Study 2** finds evidence that OI has positive (negative) direct effects on perceived service quality (risk) of the Internet store, and positive indirect effects on overall WTP, as well as on Internet search intention, purchase intention, and WTP. We further find that Internet shopping experience moderates the direct and indirect effects of OI. As in **Study 1**, perceived risk does not directly affect the relevant outcomes. Moreover, OI does not negatively affect store search intention, purchase intention, and WTP. Contrary to our expectations, we also found positive and synergistic effects of OI on store purchase intention and store WTP. Thus, we found no evidence of unintended effects of OI on the physical store. In addition, a discrete channel choice analysis revealed that OI diverts mainly customers that would otherwise purchase from other, non-integrated online stores to an integrated Internet store. Thus, OI does not result in significant cannibalization across channels. In **Study 3**, we further test for the conditional indirect effects of OI with a sample of actual customers and a different operationalization of the Internet shopping experience based on archival firm data.

**Study 3**

**Design, Participants, and Procedure**

We conducted **Study 3** together with two retail firms: a European manufacturer and retailer of sporting equipment (Retailer A) and a German fashion manufacturer and retailer (Retailer B). Both retailers operate their own physical stores, sell their products in multiple channels (both directly and indirectly), compete with third-party online stores that sell the same products at fixed prices, and do not constitute OI to date. At Retailer A, a total of 138 Swiss newsletter recipients participated in the study (20.9 percent women, $M_{\text{age}} = 38.29$ years). As an incentive, the participants were entered into a lottery for an outdoor outfit worth 1,000 Swiss Francs. At Retailer B, a total of 577 Germans who receive the firm’s newsletter participated in the study (79.4 percent women, $M_{\text{age}} = 51.87$ years). Gift vouchers were used as incentives for participation. All participants of Retailer A had bought products from the firm’s physical store prior to the study but not from the Internet store (and belong to a “physical store” customer segment according to Retailer A’s management) while all participants of Retailer B had bought the majority of products from the firm’s Internet store prior to the study (and belong to a “multi-channel” customer segment according to Retailer B’s management).

We used OI as a two-dimensional treatment variable in both data collections. In the integrated version, OI was operationalized by offering a physical store search function (including availability check and reserving products). The retailers’ objections that such a feature could lead to increasing expectations of customers that could not be fulfilled in the near future prevented us from including the possibility of returning products purchased in the Internet store to the physical store. Thus, together with the different levels of Internet shopping experience (Retailer A = Store channel
A: Effect of online-offline channel integration on discrete channel choice for purchase in Study 2

![Discrete channel choice for purchase](image)

B: Effect of online-offline channel integration on discrete channel choice for purchase in Study 3a

![Discrete channel choice for purchase](image)

Fig. 3. Discrete channel choice in Study 2 and Study 3a. Note: \(N_{\text{Study 2}} = 129; N_{\text{Study 3a}} = 138\). Participants were asked to choose one of the following options: [1] purchase in the Physical store of the retailer, [2] purchase in the Internet store of the retailer, [3] purchase in other online stores or [4] none of the above options. Discrete channel choice for the Internet store \((p < .01)\) and other online stores \((p < .05)\) differs between integrated and non-integrated Internet stores in both studies (two-tailed tests).

customers with low Internet shopping experience; Retailer B = Internet channel customers with high Internet shopping experience), Study 3 uses a 2 × 2 ([Internet store: non-integrated versus integrated] × [Internet shopping experience: low vs. high]) between-subject design. The procedure was comparable to the previous studies and the sensory product of interest was a jacket from the respective brand.

We first measured perceived integration, then perceived service quality and risk of the Internet store, purchase and search intention for both the Internet and physical store, and controlled for participants’ monthly disposable income, experience with searching and purchasing online and offline, proximity to a physical store, multichannel self-efficacy, need for touch, need for interaction, product category involvement, brand involvement, age, and gender. In addition, we measured discrete channel choice for purchasing at Retailer A. Again, none of the participants correctly guessed the purpose of the study.

Analysis and Results

Manipulation and confound checks. Participants in the experimental groups perceived the Internet store as more integrated than those in the control groups (Retailer A: \(t(136) = 10.07, p < .01\); Retailer B: \(t(575) = 8.28, p < .01\), and participants’ general Internet shopping experience differed between store channel customers and Internet channel customers \((t(713) = 5.86, p < .01)\).
\( p < .01 \). We found no significant differences across conditions for credibility (\( p_A > .19; M_A = 5.96; p_B > .43; M_B = 5.74 \)) and difficulty (\( p_A > .93; M_A = 2.02; p_B > .32; M_B = 1.82 \)).

**Direct effects.** We used regression analysis including all control variables to test our hypotheses. We found that OI has a positive effect on perceived service quality (H1a: \( \beta = .58, p < .01 \)) but not on PR; thus H1b is not supported. We found that an increase in perceived service quality increases Internet search intention (\( \beta = .41, p < .01 \)) and Internet purchase intention (\( \beta = .20, p < .01 \)), supporting H2a. A decrease in perceived risk increases Internet search intention (\( \beta = -.10, p < .01 \)) and Internet purchase intention (\( \beta = -.17, p < .01 \)). We further found that an increase in perceived service quality has no effect on store purchase intention but a positive effect on store search intention (\( \beta = .12, p < .01 \)), providing mixed support for H3a. A decrease in perceived risk has no significant effects on store search intention and purchase intention, supporting H3c. As predicted, we found a negative effect of the interaction between OI and Internet shopping experience on perceived service quality (\( \beta = -.13, p < .05 \)) and a positive effect on perceived risk (\( \beta = .13, p < .05 \)), supporting H4a and H4b. The simple slope analyses showed that the effect of OI on perceived service quality is stronger when Internet shopping experience is low (\( \beta = .45, p < .01 \)) than when it is high (\( \beta = .12, p < .01 \)), and that the effect of OI on perceived risk is only significant when Internet shopping experience is low (\( \beta_{low} = -.32, p < .01; \beta_{high} = .01, ns \)).

**Moderated mediation.** We use Model 7 of the PROCESS macro (Hayes 2013) including all control variables to test for moderated mediation. Bootstrapping analyses with 5,000 bootstrap samples and 95 percent bias-corrected confidence intervals indicated overall mediation effects of perceived service quality in the relationships between OI and Internet search intention (\( \beta = .08, 95 \text{ percent CI} = .05 \text{ to } .11 \)) and Internet purchase intention (\( \beta = .04, 95 \text{ percent CI} = .02 \text{ to } .06 \)), but no significant mediation effects of perceived risk nor on store outcomes. The mediation effects of perceived service quality were stronger for low Internet shopping experience (\( \beta_{\text{Internet search intention}} = .19, 95 \text{ percent CI} = .12 \text{ to } .27; \beta_{\text{Internet purchase intention}} = .10, 95 \text{ percent CI} = .06 \text{ to } .16 \)) and weaker for high Internet shopping experience (\( \beta_{\text{Internet search intention}} = .05, 95 \text{ percent CI} = .02 \text{ to } .09; \beta_{\text{Internet purchase intention}} = .03, 95 \text{ percent CI} = .01 \text{ to } .05 \)). These results show that the indirect effects of OI on Internet outcomes mediated by perceived service quality are significant, and that Internet shopping experience moderates these indirect effects.

**Discrete channel choice.** The distribution of discrete channel choice for Retailer A is shown in Fig. 3, Panel B. The fit indices of a multinomial logistic regression suggest that the model has a good fit (\( \chi^2(26) = 76.52, p < .01 \); McFadden’s \( R^2 = .34 \); 78 percent correct predicted choices; Kendall’s Tau = .45; Somer’s \( D = .56 \)). The marginal effects analysis reveals that OI increased the likelihood that participants would make purchases in the retailer’s Internet store (M.E. = .16, \( p < .02 \)) and decreased the likelihood that they would make purchases in other online stores (M.E. = -.09, \( p < .10 \)), but did not significantly affect the likelihood that participants would make purchases in the retailer’s physical store. Thus, we find the same pattern of results as in Study 2.

**Discussion of Study 3**

The results of Study 3 replicate the patterns observed in Study 2 regarding OI’s indirect positive effects on Internet search and purchase intention, and support the notion that OI does not lead to channel cannibalization. We further provide additional evidence for the moderating role of the Internet shopping experience. In this respect, Study 3 increases the plausibility of the general mediated moderation model of OI. Although the pattern of results for the hypothesized paths is fairly consistent with the previous study, there are some discrepancies to note. Specifically, 6 of the 8 hypothesized results from Study 2 are replicated in Study 3. The two exceptions in Study 3 are as follows: OI does not affect perceived risk of the Internet store (H1b not supported), and perceived risk of the Internet store decreases search and purchase intention in the Internet store (H3b supported). In addition, we found mixed support for the expected non-significant effect of perceived service quality on store outcomes (H22) and no significant indirect effects of OI on store outcomes. We propose potential theoretical reasons for these findings in the general discussion section and provide ideas of how future research could test these propositions.

**General discussion**

Researchers have explored the causes and consequences of multi-channel shopping (Venkatesan, Kumar, and Ravishankar 2007) and provided first insights regarding the moderating role of channel integration for non-availability and firm switching behavior (Bendoly et al. 2005). However, there is no thorough examination of the consequences of OI to date. Addressing this gap, this research is the first to determine whether and how OI leads to a competitive advantage for retailers, whether OI leads to synergies or cannibalization among channels, and whether OI has the same effects on all customers. Table 1 gives an overview of the results obtained. In a series of independent studies, evidence is provided for most of the hypothesized effects. The findings support the premises (1) that OI directly increases perceived service quality of the Internet store; (2) that perceived service quality of the Internet store increases overall and Internet outcomes; (3) that OI indirectly increases overall and Internet outcomes via perceived service quality of the Internet store; (4) that the direct and indirect effects of OI are moderated by customers’ Internet shopping experience; and (5) that OI does not negatively affect the physical store. These findings have important implications for multi-channel theory and practice, which we discuss next.

**Theoretical Implications and Extensions**

Creating a competitive advantage with OI. To the best of our knowledge, our research is the first to examine whether and how OI leads to a competitive advantage for retailers. The results of our studies provide evidence that customers value an integrated Internet store and that OI leads to more favorable
behavior toward a retailer and its Internet store. Our experimental design enabled us to inform the customer satisfaction perspective of multi-channel management (Neslin and Shankar 2009) by providing first empirical evidence of the causal relationship between OI, service quality perceptions of the Internet store, and retailer-level and channel-level customer outcomes. OI not only enhances search intention, purchase intention, and WTP in the Internet store but is also a source of competitive advantage for the whole firm. To date, research on channel perceptions focused solely on the channel level (Verhoef, Neslin, and Vroomen 2007). In taking the analysis to the retailer level, we provide evidence that customers choose retailers offering integrated online channels over retailers with non-integrated online channels. Given that only brick-and-click retailers are able to integrate their channels (but not purely online retailers), OI is a promising route for these retailers to establishing a competitive advantage. Moreover, we find the service quality of the Internet store fully mediates the relationship between OI and multi-channel outcomes. This finding is in accordance with technology adoption research (Davis 1989), which posits that attributes (OI) only indirectly influence customer behavior (search intention, purchase intention, and WTP) through influencing customer evaluations (perceived service quality). Thus, we also inform multi-channel theory by providing the mechanisms of how OI leads to a competitive advantage.

No significant cannibalization of the physical store. Some scholars cautioned that OI may lead to negative spillover effects from one channel to another or be a zero-sum game without benefits (e.g., Verhoef, Neslin, and Vroomen 2007). However, we found no negative effects of OI on physical store outcomes across the studies, and only weak and insignificant cannibalization of the physical store resulting from OI. Thus, we find further support that Internet channels complement rather than substitute physical channels (Avery et al. 2012). We not only confirm prior findings but also extend them to integrated Internet stores. Although OI increases the service quality of the Internet store, customers do not show lower search intention, purchase intention, and WTP in the physical store. Further support is provided by the analysis of discrete channel choice. OI mainly attracts additional customers to the Internet store who would otherwise purchase in non-integrated online stores from competing retailers. These findings underline that OI is a potential source of competitive advantage for multi-channel retailers.

No undesired effects of OI on customers’ WTP across channels. We found positive effects of OI on overall WTP, Internet WTP, and store WTP. These effects extend theoretical knowledge on the antecedents of online and offline retail pricing (Grewal et al. 2010). OI is a channel factor that increases WTP across channels and thus also customer perception and acceptance of higher prices across channels. In particular, our results in Study 2 suggest that OI can be used as an instrument to sell products with non-digital attributes (such as sunglasses) offline and online at competitive prices. This finding further supports the notion that higher service quality of the Internet channel resulting from OI does not negatively affect physical channels.

The effects of OI vary across customers with different levels of Internet shopping experience. By considering the individual level of Internet shopping experience as a moderator, we inform theory on whether the effect of OI is stronger or weaker for certain types of customer segments. These findings are important given that retailers need to allocate marketing resources across customer channel segments (Neslin and Shankar 2009). Our results show that customers with higher levels of Internet shopping experience are less influenced by OI. These findings are in line with technology adoption research, which states that customer experience may interact with attributional antecedents of perceived usefulness (Davis 1989). Thus, we provide new insights on a contingency condition of OI, which suggests that multi-channel retailers should focus OI efforts on customer segments with lower Internet experience because these customers value integrated channels more than customer segments with high Internet experience.

Managerial Implications

Our work has direct practical relevance for multi-channel retailers since physical retail and Internet retail are often conducted through separate entities or divisions within the same firm. Thus, integrating these separate channels is first and foremost a cost-intensive investment and a key question for managers is whether OI pays off. We respond to this question and offer several implications for retail managers. First, although conventional wisdom holds that channel integration influences overall
bottom-line outcomes, limited published evidence supports this notion – particularly regarding different channels. The present studies therefore provide important evidence of the effect of integration on consumer attitudes and intentions, suggesting that managers from brick-and-click retailers should feel confident in using OI as a means of achieving a competitive advantage in the marketplace. Second, our findings suggest that OI creates synergies rather than cannibalization. The results of the discrete channel choice analyses suggest that additional sales in integrated Internet stores are generated from customers that would otherwise buy from non-integrated, third-party online stores and not from physical stores. This is an encouraging finding that may help retail managers “sell” integration strategies to their physical stores. Third, our results are particularly encouraging for multi-channel retailers that operate Internet and physical stores since OI leads to a 28 percent increase in overall WTP for flip-flops in Study 1 and a 35 percent increase in overall WTP for sunglasses in Study 2. Moreover, OI also increases Internet WTP by 22 percent and store WTP by 7 percent in Study 2. Thus, by integrating online and offline channels, brick-and-click retailers may be able to reduce price competition with purely online competitors and charge higher prices online. Finally, based on the results from the moderation analysis, retail managers should analyze the channel usage behavior of target customer groups and accordingly focus OI efforts on customer segments with lower Internet experience. Such a strategy should help multi-channel retailers increase the benefits of OI and offset the costs associated with channel integration.

Differences Across the Studies and Future Research Directions

While the results across the studies are fairly consistent (Table 1), there are some interesting discrepancies to note. Differences across studies include (1) the effect of OI on perceived risk of the Internet store, (2) the effects of perceived risk of the Internet store on Internet store outcomes, and (3) the effects of perceived service quality of the Internet store on physical store outcomes. We conducted some additional post hoc analyses to address these inconsistencies.

First, we used a multigroup analysis to investigate the non-significant effect of OI on the perceived risk of the Internet store in Study 3. While OI decreases perceived risk of the Internet store for physical store customers of Retailer A (β = −.33, p < .01), it does not affect perceived risk of the Internet store for Internet store customers of Retailer B (β = .01, ns). Thus, the insignificant effect of OI on perceived risk of the Internet store may be explained by the fact that respondents from Retailer A already bought products from the retailer’s Internet store. The low mean for the perceived risk of the Internet store across the integrated and non-integrated conditions (M_{No, Integration} = 3.21; M_{Integration} = 3.19 for Retailer B compared to M_{No, Integration} = 4.47; M_{Integration} = 3.55 for Retailer A) confirms that respondents from Retailer B have a high level of trust in the Internet store regardless of OI. Indeed, perceived risk of the Internet store for the non-integrated condition is lower for respondents from Retailer B than for all other respondents across the different studies (all p < .01). These findings suggest that the channel-patronage behavior of customers (Inman, Shankar, and Ferraro 2004) may be an additional moderating condition beyond customers’ Internet shopping experience that strengthens and weakens the effects of OI. Customers that already have sufficient positive purchase experience with the Internet store may show higher initial confidence in this channel. Thus, the risk reduction aspect of OI could be significantly less relevant for these customers. Future research should examine this interplay in more detail.

Second, we addressed the non-significant effects of the perceived risk of the Internet store on overall and Internet store outcomes in Study 1 and Study 2. We followed prior research (Falk et al. 2007) on channel adoption decisions and included an additional path in our conceptual model, namely, from the perceived risk to the perceived service quality of the Internet store to account for serial multiple mediation (Hayes 2013). The rationale behind this path is that the service quality of the Internet store will be rated lower by customers if its usage entails taking a risk. We then recalculated all analyses using structural equation modeling with maximum-likelihood estimation and a non-parametric bootstrapping routine, thereby accounting for the effect of perceived risk on perceived service quality of the Internet store.7 The results suggest that all reported regression parameters remained stable (i.e., no changes in the significance levels) and that perceived risk decreases customer outcomes indirectly via perceived service quality (for all indirect effects of perceived risk β ≤ −.05, p < .05). In other words, customer behavior is not directly affected by risk perceptions but that higher risk leads to lower service quality, which in turn decreases overall and Internet store search intention, purchase intention, and WTP. This indirect path of perceived risk may explain conflicting empirical results concerning the direct effect of risk perceptions on channel usage decisions (e.g., Kwon and Lennon 2009; Montoya-Weiss, Voss, and Grewal 2003). However, future research is needed to clarify the ambiguous relationship between channel service quality perceptions and risk perceptions.

Third, we investigated the potential reasons of why OI leads to synergies in Study 2 (i.e., significant indirect effects of OI via perceived service quality of the Internet store on physical store purchase intention and WTP) but not in Study 3. Notably, participants in Study 2 had never bought a product from the retailer prior to the experiment (and did not know the retailer’s brand in advance), while participants in Study 3 were frequent customers at the respective retailer prior to the experiment. Thus, the sample of Study 2 consists of first-time customers, and the sample of Study 3 consists of repeat customers. First-time customers are more likely than repeat customers to require a more sophisticated shopping experience (Avery et al. 2012). Given that OI enriches the shopping experience, one could expect that it affects store outcomes for first-time customers but not for repeat customers. In addition, van Birgelen, Jong, and de Ruyter (2006) compared cross-channel effects for non-routine and routine services and

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7 Structural equation modeling results for all studies are available from the first author.
found that complementary effects between the Internet and store channel can only be observed for non-routine services. For the first-time customer, buying a product from a new retailer may be a “non-routine task”, whereas a (re-)purchase from a well-known retailer may be a “routine task” for the repeat customer. Again, this could be a potential explanation for the observed differences regarding the synergic effects of OI across the studies. Nevertheless, investigating the conditions under which OI lead to synergies holds promise for further research.

Research Limitations and Future Research Directions

Our findings should be viewed as a first step toward understanding the effects of OI on retailer-level and channel-level outcomes. Further research is needed to extend the conceptual model and to overcome the following limitations. Due to the objections of the cooperating retailers, we excluded the possibility of returning products bought in the Internet store to the offline store from our operationalization of OI in Study 3. Although we replicated most of the findings from Study 2 with different operationalizations of OI, we cannot rule out that customers value some elements of OI more highly than others. Future research should therefore investigate how different design elements of OI such as the ability to check availability in the physical store via the Internet and the ability to return products purchased online to the offline store, and their interactions, affect customer outcomes.

Using a prototype design for OI enticed us to use behavioral intention as a proxy for actual search and purchase behavior across channels. Although the use of intentions is generally accepted as an indicator of behavior (Badrinarayanan et al. 2012; Verhoef, Neslin, and Vroomen 2007), similar studies could make more insightful claims by adopting a longitudinal research setting and including actual behavior. A potential approach for such a study would be to accompany the introduction of OI at a retailer with a quasi-experimental, longitudinal design.

We also relied on a self-reported general measure of Internet shopping experience in Study 2 and a retailer-specific operationalization of online shopping experience provided by the cooperating retailers in Study 3 since we were unable to collect objective data on participants’ general Internet shopping experience. Future research should try to measure participants’ general Internet shopping experience with objective data that accounts for all online purchases regardless of specific retailers, for example, using actual transactions data from customer credit cards. Moreover, we employed single-items for purchase and search intentions; future research should strive to improve the measurement of these outcomes.

Although we studied the effects of OI in several product categories, we only considered sensory products with non-digital attributes (flip-flops, sunglasses, jacket). Further research should study additional, non-sensory product categories with digital attributes such as books or CDs (Lal and Sarvary 1999). One would expect that OI is less important for such products as their attributes can readily be communicated on the Web and do not require physical inspection. Testing this assumption provides an interesting avenue for future research. A potential moderating condition beyond customers’ Internet shopping experience and the product attributes that may affect the effects of OI is how customers’ pre-perceptions of the retailer affect the findings. For example, would the results equally hold if the retailer were a well-established brick-and-mortar retailer that launches an e-commerce site and if the retailer were a well-established e-commerce site that launches brick and mortar stores? (xxx)

Furthermore, in light of the trend toward omnichannel retailing, channel integration may appear in combination by simultaneously providing online terminals in physical stores and a physical store locator in mobile channels. Reactions to joint channel integration may differ from our results. Future research should investigate whether the addition of offline–online channel integration affects our findings. Given the challenge to design channels to grow or at least maintain a retailer’s loyal retail shopper base and to ensure a retailer obtains its share of competitive research shoppers (Neslin and Shankar 2009), another promising avenue for future research constitutes the question of whether and how OI affects channel lock-in and cross-channel synergies among different channels.

Acknowledgments

The authors thank Eric T. Anderson, Paul Liu, Antonio Moreno, and Rick Wilson for helpful comments on an earlier draft of this manuscript. In addition, they gratefully acknowledge the constructive guidance of J. Jeffrey Inman and thank the three anonymous reviewers for their constructive comments during the review process. Special thanks go to the cooperating retailers for creating the stimulus material and their valuable feedback.

Appendix. Mean (SD) Results Across Experimental Conditions

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Retailer 1</th>
<th>No integration (n = 56)</th>
<th>Mean</th>
<th>SD</th>
<th>Integration (n = 51)</th>
<th>Mean</th>
<th>SD</th>
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*We thank an anonymous reviewer for this suggestion.
Study 1

Retailer 2

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<th>No integration (n = 53)</th>
<th>Integration (n = 54)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Perceived service quality</td>
<td>3.55a</td>
<td>1.53</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>4.71a</td>
<td>1.74</td>
</tr>
<tr>
<td>Overall search intention</td>
<td>3.21a</td>
<td>1.61</td>
</tr>
<tr>
<td>Overall purchase intention</td>
<td>3.25a</td>
<td>1.47</td>
</tr>
<tr>
<td>Overall willingness to pay (in €)</td>
<td>12.53a</td>
<td>8.50</td>
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</tbody>
</table>

Study 2

<table>
<thead>
<tr>
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<th>Integration (n = 64)</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Internet shopping experience (in percent of overall purchases)</td>
<td>29.12a</td>
<td>28.51</td>
</tr>
<tr>
<td>Perceived service quality</td>
<td>3.46a</td>
<td>1.38</td>
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<tr>
<td>Perceived risk</td>
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<td>Internet search intention</td>
<td>3.06a</td>
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<tr>
<td>Internet purchase intention</td>
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<tr>
<td>Internet willingness to pay (in Swiss Francs)</td>
<td>82.54a</td>
<td>64.62</td>
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<td>Store search intention</td>
<td>3.66a</td>
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<td>Store purchase intention</td>
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<tr>
<td>Store willingness to pay (in Swiss Francs)</td>
<td>98.35a</td>
<td>66.15</td>
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<tr>
<td>Overall willingness to pay (in Swiss Francs)</td>
<td>68.00a</td>
<td>59.07</td>
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Study 3

Retailer A: Store channel customers

<table>
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<tbody>
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<td></td>
<td>Mean</td>
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<tr>
<td>Perceived service quality</td>
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<td>Perceived risk</td>
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<tr>
<td>Internet search intention</td>
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</tr>
<tr>
<td>Internet purchase intention</td>
<td>2.99a</td>
<td>1.46</td>
</tr>
<tr>
<td>Store search intention</td>
<td>5.31a</td>
<td>1.34</td>
</tr>
<tr>
<td>Store purchase intention</td>
<td>5.69a</td>
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</table>

Retailer B: Internet channel customers

<table>
<thead>
<tr>
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<th>No integration (n = 293)</th>
<th>Integration (n = 284)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
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<tr>
<td>Perceived service quality</td>
<td>5.68a</td>
<td>1.33</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>3.21a</td>
<td>1.36</td>
</tr>
<tr>
<td>Internet search intention</td>
<td>5.71a</td>
<td>1.12</td>
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<tr>
<td>Internet purchase intention</td>
<td>4.96a</td>
<td>1.54</td>
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<td>Store search intention</td>
<td>4.94a</td>
<td>1.61</td>
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<tr>
<td>Store purchase intention</td>
<td>3.98b</td>
<td>1.96</td>
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</table>

Note: For each dependent variable, means not sharing a common subscript differ at p < .05 (two-tailed tests). If not specified otherwise, the possible range of scores for listed values is 1–7, with higher values indicating more positive responses. We calculated effect sizes with the following formula: Cohen’s $d = (M_A - M_B) / \sigma$, where $M_A$ and $M_B$ are the two means, and $\sigma$ refers to the standard deviation for the population. For Cohen’s $d$, values of .05, .15, and .25 represent small, medium, and small effect sizes.

The effect of OI on Internet willingness to pay becomes significant when controlling for participants income and reference price.

References


Please cite this article in press as: Herhausen, Dennis, et al, Integrating Bricks with Clicks: Retailer-Level and Channel-Level Outcomes of Online–Offline Channel Integration, Journal of Retailing (xxx (x), 2015), http://dx.doi.org/10.1016/j.jretai.2014.12.009

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