RESEARCH

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Online Channel Integration

Value Creation and Customer Reactions in Online and Physical Stores

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Jochen Binder
St. Gallen, Switzerland

Dissertation Universität St. Gallen, Schweiz, 2014

ISBN 978-3-658-04572-2 ISBN 978-3-658-04573-9 (eBook)
DOI 10.1007/978-3-658-04573-9

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at http://dnb.d-nb.de.

Library of Congress Control Number: 2013956822

Springer Gabler

Printed on acid-free paper

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Springer DE is part of Springer Science+Business Media.
www.springer-gabler.de

Vorwort des Autors

Diese Dissertation ist während meiner Zeit als wissenschaftlicher Mitarbeiter am Institut für Marketing der Universität St. Gallen entstanden. An dieser Stelle möchte ich mich herzlich bei allen bedanken, die mich in den letzten Jahren unterstützt und zur Fertigstellung der Arbeit beigetragen haben.

Mein Dank gilt in erster Linie meinem Doktorvater, *Prof. Dr. Marcus Schögel*. Ohne seine wertvolle fachliche und persönliche Unterstützung hätte die Arbeit in dieser Form nicht entstehen können. Vor allem bedanke ich mich für das mir von ihm entgegengebrachte Vertrauen sowie die Möglichkeit im Rahmen von Unternehmenskooperationen, der Mitarbeit in der Führungskräfteweiterbildung und wissenschaftlichen Beiträgen, eine Vielzahl interessanter Fragestellungen bearbeiten zu dürfen und die Praxis mit der Wissenschaft verbinden zu können. Ebenso bedanke ich mich bei *Prof. Dr. Torsten Tomczak*, der als Ko-Referent diese Arbeit an entscheidenden Stellen durch äusserst wertvolle Hinweise bereicherte.

Teile dieser Dissertation sind entstanden, während meiner Zeit als Visiting Scholar am Marketing Department der Kellogg School of Management, Northwestern University. Ich möchte dem Schweizer Nationalfonds (SNF) dafür danken, dass er mir diese äusserst lehrreiche und sehr interessante Zeit in Evanston ermöglicht hat. *Prof. Dr. Eric T. Anderson* danke ich für sein Interesse an meiner Forschung, die ausgesprochen lehrreiche Zusammenarbeit und seine wertvollen Kommentare zu meinem Projekt.

Ein spezieller Dank geht an meinen Kollegen *Prof. Dr. Dennis Herhausen* für seine wertvollen Hinweise. Auch möchte ich mich bei den Teilnehmern der Marketing Forschungstagungen in Berlin, Graz und Jena sowie der Doktorandenseminare an der Universität St. Gallen ganz herzlich für die hilfreichen Kommentare und die konstruktive Kritik zu meiner Arbeit bedanken.

Besonders bedanke ich mich bei allen Kollegen am Institut für Marketing für die stets angenehme Zusammenarbeit und das grossartige Arbeitsklima. Ebenfalls bedanke ich mich bei den Verantwortlichen der beiden anonymen Unternehmen die mir die Datenerhebung für meine empirische Untersuchung ermöglichten sowie bei den Kooperationspartnern und Experten, dass sie ihr wertvolles Praxiswissen mit mir geteilt haben.

Schliesslich haben mich viele Weggefährten und Freunde durch die Promotionszeit begleitet. Mein spezieller Dank gilt hier *Dr. Nicolas Pernet* für die guten Tipps sowie

die lustige Zeit am Institut und darüber hinaus, *Dr. Julia Bendul, Dr. Antonia Erz, Friederike Rieder, Dr. Frauke Rüther* und *Dr. Philip Schnaith* für perfekte Dinner Abende, *Dr. Karl Neumüller* für die Wohngemeinschaft, *Dr. Thomas Fischer* und *Prof. Dr. Marco Zeschky* für die Bergtouren, *Michael Hafner* und *Tania Marcela Penuela Gomez* für die Freundschaft ausserhalb der Universität, *Manuel Hermosilla, Caroline Roux, Nicha Tanskul* und *Tae Jung Joon* für Inspiration und Motivation in Chicago, sowie *Jasmin Eberharter, Dr. Lydia Ebersbach, Prof. Dr. Peter Fischer, Dr. Johannes Hattula, Dr. Oliver Malms, Kirsten Mrkwicka, Cansu Oral, Dr. Alexander Schagen* und *Carla Thaper* für die unvergessliche Zeit in St. Gallen.

Mein grösster Dank gilt allerdings *Dr. Bettina Maisch* und insbesondere meinen lieben Eltern *Ilse Binder* und *Gerhard Binder*, die immer an mich geglaubt und mich in meinem Werdegang vorbehaltlos unterstützt haben.

Ihnen widme ich diese Arbeit.

St. Gallen, Oktober 2013 Jochen Binder

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Abbreviations

ANOVA	Analysis of Variance
AVE	Average Variance Extracted
CEO	Chief Executive Officer
CFI	Comparable Fit Index
CR	Composite Reliability
CRM	Customer Relationship Management
e-commerce	Electronic Commerce
e.g.	exempli gratia (for example)
et al.	et alii (and others)
etc.	et cetera (and the rest)
e-tailer	electronic retailer
i.e.	id est (that is)
IV	Instrumental Variable(s)
MCM	Multichannel Management
no.	Number
RMSEA	Root Mean Square Error of Approximation
ROPO	Research Online Purchase Offline
SEM	Structural Equation Model
S-R-Model	Stimulus-Response Model
S-O-R-Model	Stimulus-Organism-Response Model
TAM	Technology Adoption Model
TLI	Tucker-Lewis Coefficient
U.S.	United States (of America)
vs.	versus
WTP	Willingnes To Pay

Abstract

The Internet has changed the competitive landscape in many industries. Most firms simultaneously employ online and offline distribution channels. Customers combine online and offline channels to search for information and purchase products and services. The most prominent form of cross-channel customer behavior is to search online for available products and place the purchase at a physical store. Previous conceptual research suggests that firms employing multiple channel formats can increase customer value and realize a competitive advantage over their online pure play competitors by combining the online and offline channels. However, most multichannel firms still operate in channel silos. Online integration signifies the interaction of a firm's online and offline channels to create a seamless customer experience. Today, there is still no clear understanding whether channel integration is can be used to increase customer patronage and create competitive advantages for multichannel firms. The effects of such an integration strategy on customer reactions in online and offline channels have not been fully explained.

This dissertation addresses this issue and investigates how, why, and to what extent an integrated online channel increases customer value and leads to higher willingness to pay, customer loyalty, and purchase intention in a firm's online shop. Furthermore, this work also explores the cross-channel synergistic and cannibalistic impact of online integration for the physical store. To this end, online integration is operationalized and transferred into a conceptual framework which is subsequently tested through three experimental studies. The conceptual framework suggests that the effect of online integration on online willingness to pay, loyalty, and purchase intention is mediated by perceived purchase risk and service quality in the online channel. Additional analyses revealed that online integration has no negative cannibalistic effects on willingness to pay and the decision to purchase in the physical store. Furthermore, the results suggest the existence of positive channel synergies from an integrated online shop to customer loyalty in the physical store. The results have important implications for the multichannel literature and managerial practice and suggest that online integration helps generate a strategic advantage of multichannel firms and that channel cannibalization may be overestimated. The dissertation also develops a guide for managers who aim to integrate their channel system. More specifically, a process is recommended in which the customer and competitive perspective is aligned with the internal organizational consequences and capabilities of the specific company.

Zusammenfassung

Das Internet hat das Wettbewerbsumfeld in vielen Branchen verändert. Die meisten Unternehmen setzen sowohl elektronische als auch physische Absatzkanäle ein. Kunden kombinieren beide Kanalarten bei der Informationssuche und beim Kauf von Produkten und Dienstleistungen. Die verbreitetste Kanalkombination ist hierbei die Informationssuche im Internet und der anschliessende Kauf im physischen Geschäft. Die bisherige konzeptionelle Forschung deutet darauf hin, dass Mehrkanalfirmen durch die Kombination ihrer online und physischen Kanäle den Kundenwert erhöhen und Wettbewerbsvorteile gegenüber den Einkanalunternehmen realisieren können. Die meisten Firmen setzen ihre Absatzkanäle jedoch noch getrennt voneinander ein. Online Integration bezeichnet das Zusammenspiel der online und physischen Kanäle mit dem Ziel ein nahtloses Kauferlebnis für die Kunden zu schaffen. Jedoch gibt es bis heute noch kein klares Verständnis darüber, ob die Kanalintegration die Kundenbindung erhöht und Mehrkanalunternehmen Wettbewerbsvorteile erzielen können. Die Auswirkungen einer solchen Kanalintegrationsstrategie auf die Kundenreaktionen in online und physischen Absatzkanälen wurden noch nicht vollständig erklärt.

Die vorliegende Dissertation widmet sich diesen Fragen und untersucht wie, weshalb und in welchem Ausmass ein integrierter Online Shop den Kundenwert verbessert und zu höherer Zahlungsbereitschaft, Loyalität und Kaufabsicht im Online Shop führt. Des Weiteren werden die kanalübergreifenden Synergien und negativen Wirkungen der Online Integration für die physischen Kanäle untersucht. Hierfür wird das Konzept der Online Integration zunächst operationalisiert und anschliessend in ein Modell überführt, das in drei experimentellen Studien überprüft wird. Dieses Modell postuliert einen positiven Effekt von Online Integration auf Zahlungsbereitschaft, Loyalität und Kaufabsicht im Online Shop durch die Verringerung des Kaufrisikos sowie der Erhöhung der Servicequalität. Zusätzliche Analysen zeigen keine negativen Effekte auf Zahlungsbereitschaft und Kaufabsicht offline. Jedoch existieren positive Synergien bezüglich Online Integration und Loyalität zu physischen Kanälen. Die Untersuchung leistet einen wichtigen Beitrag für Forschung und Praxis. Sie zeigt, dass Online Integration Wettbewerbsvorteile schafft und dass die Kannibalisierung der offline Kanäle oft überschätzt wird. Die Arbeit entwickelt zudem einen praktischen Leitfaden zur Integration des Kanalsystems. Es wird ein prozessuales Vorgehen vorgeschlagen, das die Kunden- und Wettbewerbsperspektiven mit den internen organisationalen Konsequenzen und Fähigkeiten der Unternehmung abstimmt.

A Research Background

1 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 No. 1 online."

Raul Vasquez, Walmart.com chief executive (Bustillo and Fowler 2009)

1.1 Motivation and Relevance

As the new technologies opened new routes to market, the practice of multichannel customer management has proliferated. The emergence of the Internet, for example, has pushed many established companies to expand their multichannel systems and to develop e-commerce strategies (Geyskens et al. 2002). Changing customer needs have resulted in more complex buying patterns and the use of multiple channels (Verhoef et al. 2007a). Today, consumers use different channels depending on their current purchase needs, situational factors, and the specific purchase occasion (Rangaswamy and Van Bruggen 2005). They have become accustomed to using multiple channels within the buying process and choose channels based on their specific shopping goals at a particular instance (Hutchinson and Eisenstein 2008). The Internet has revolutionized retailing with the emergence of new selling formats (e.g., digital music and movies at the Apple iTunes Store). Selling products and services online has created new possibilities for customers and businesses alike. Most firms employ both channel formats simultaneously. Today, customers can choose from more channel formats than ever before.

The increasing propensity of consumers to engage in "channel hopping" and switch between the different channel types has led to new purchase patterns and increasing mutual exchange between online and offline touch points (e.g. Emrich 2011; Emrich and Rudolph 2011). The most prominent form of multichannel customer behavior is the so-called "research-online-purchase-offline" (ROPO) shopping behavior. Even though the vast majority of purchases, about 90% of all retail sales, still take place offline, 40% of the offline shoppers in Europe (US 60%) search online before visiting

J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9_1,

a physical store (Google 2011). Furthermore, several studies qualify multichannel and ROPO customers as the most valuable customers who spend more compared to single channel shoppers (Ansari et al. 2008; DoubleClick 2004; Kumar and Venkatesan 2005; Kushwaha and Venkatesh 2008; Myers et al. 2004; Neslin et al. 2006; Thomas and Sullivan 2005a). Hence, firms that do not employ multiple channels might miss an opportunity to generate additional sales with their most valuable customer segments.

In the light of these developments multichannel customer management (MCM) provides unique opportunities for firms to increase their business performance by increasing customers' perceived value of their distribution services (Levenburg 2005). MCM as *"the design, deployment, and evaluation of channels to enhance customer value through effective customer acquisition, retention, and development"* (Neslin et al. 2006, p. 96) is not only about identifying and adding innovative customer touch points to the channel portfolio. It has developed into a strategically important marketing function. Its goal is to design the channel system as a whole in order to better reflect the customers' needs during all phases of the buying cycle. Hence, the key question is not whether multiple channels should be utilized, but rather how and to what extent. Within the process of managing multiple channels in a profitable and sustainable way firms face the important but yet unresolved question how they can *"[...] create competitive advantage from a multichannel marketing strategy"* (Neslin and Shankar 2009, p. 77). Apart from product innovation, today's competitive strategy is also based on innovation of routes to market (Wilson and Daniel 2007).

Multichannel systems offer greater possibilities for how customers can combine touch points and where they can make transactions (Mathwick et al. 2002). Retailers and manufacturers employing multiple online and offline channel formats are therefore generally better equipped to meet the consumer need to combine these touch points according to the specific context of the purchase task. However, a firm's customers can only fully benefit from its channel system if they are aware of the existing alternatives and if it is easy for them to make the transition across channels. A frequently expressed idea in multichannel management postulates that a firm should use its distribution channels to support and complement the other channels in such a way that the overall channel system constitutes more than the sum of its parts (Van Baal and Dach 2005). By breaking up the channel silos, a multichannel firm can harness the full potential of its channel system and create a truly seamless purchase experience that will in turn increase total sales (Brynjolfsson and Smith 2000). Thus, integrating the channel system from the customer's point of view may be a way for multichannel

companies to create a competitive advantage compared to their single-channel competitors in terms of creating additional value for their customers.

Apart from the new possibilities of combining different online and offline channel formats, the Internet has created new challenges for traditional physical distribution and multichannel firms in particular. The emergence of the Internet as a marketplace has intensified the competitive environment for the traditional physical channels. New competitors in the online domain such as Zappos and Amazon have been able to capture important market shares (Levenburg 2005). The Internet has made markets more transparent in terms of offerings and prices (Ratchford 2009). Customers take advantage of the increased information availability and compare products and services across online and offline channels. Thus, physical channels are in direct competition with online distribution formats in terms of offerings, product assortment, service provision, and prices. The traditional retail formats risk losing sales and customers to the new online business models if they do not succeed in finding approaches to use and integrate the online business.

The transparency and the relative ease with which customers can switch between sellers on the Internet, have made price an important factor to attract and retain customers in the online marketplace. Furthermore, many online pure-play sellers compensate their lacking ability to offer personalized service, physical inspection and testing of the products by offering attractive prices. Especially multichannel firms face the problem that they often cannot match the prices of the cheaper online pure-plays. Costs in the physical stores are usually higher than in online channels. In addition, the majority of multichannel firms are reluctant or even unable to differentiate prices between their online and offline presences due to the threat of internal channel conflicts (Wolk and Ebling 2010). Hence, it is the multichannel firms and the traditional physical stores that particularly suffer from the increased price competition on the Internet.

When customers use a firm's channels to obtain information at a specific online store or firm's homepage but ultimately place their business with a different supplier, they engage in channel free-riding (Van Baal and Dach 2005). While the possibility of channel free-riding applies to all different channel formats, it is particularly likely to occur between the Internet and the physical channels (Carlton and Chevalier 2001). The Internet as a highly efficient source of information generally increases the risk of channel free-riding from multichannel firms to cheaper online pure-plays. Cross-

channel free-riding challenges multichannel firms in two ways. First, it increases the potential of channel conflicts between a firm's own channels (Coughlan et al. 2006). Many multichannel firms run their individual distribution formats as different business units. However, multichannel customers do not differentiate between a seller's online and offline stores. Thus, the different channel entities of a firm compete with each other for the same customers (Ratchford 2009). The second challenge of channel free-riding behavior occurs when customers use a firm's channels only to obtain information but purchase at a different online or physical retailer. Consumers use information obtained online to improve their purchase prospects in the physical transactions (Brown and Goolsbee 2002; Zettelmeyer et al. 2006). The low customer lock-in of the Internet makes it easy for customers to search at a high quality information channel, such as a manufacturer's homepage, and conclude the transaction at a low-cost online shop or use price matching algorithms to find the cheapest offer on the Internet. ROPO-customers, on the other hand, may prefer to shop at a different supplier's physical store that is better adapted to their purchase preferences.

As a consequence, the low customer lock-in of the Internet and ROPO-purchase patterns increase the risk of losing the customer between the search and purchase phase. Van Baal and Dach (2005) show across 11 product categories that 66.2% of ROPO-shoppers switched retailers between online information search and offline purchase. If multichannel firms do not find a way to increase customer loyalty towards their own channels across purchase phases, they not only risk losing new customers to the online competitors in the short run but also their loyal shoppers in the long run. If multichannel firms cannot answer the question how to compete with online pure-play retailers and how to retain their ROPO customers when they switch from the Internet to the offline store, multichannel strategies could even be a disadvantage compared to online or offline single channel business models.

Firms need to take into account the new requirements resulting from increasing competition due to new online market players, the risk of channel cannibalization, and loss of market shares and reflect them in their own channel systems. Firms operating multiple channels cater to the customers' need for channel hopping. The possibility for customers to switch channels may serve as an important strategic advantage compared to one-channel firms that cannot provide this benefit to their customers. However, by failing to keep shoppers in their own channels, the effort of maintaining multiple channels may be in vain or even unadvisable. It is crucial for companies selling via the Internet and physical stores to transform their channel service efforts into sales and a

loyal customer base. Especially in the online environment it is important to create additional customer value. Multichannel companies may increase the value propositions in the online store by creating links to their offline channel and integrating the physical stores into the online shops. An integrated channel system may then increase customer lock-in between online and offline channels and reduce cross-firm channel free riding.

An important question in MCM is whether customers actually value integrated channel systems and whether firms operating online and offline channels can generate benefits from bringing the online and physical stores closer together. Many practitioners emphasize the future importance of online and offline integration to tackle the challenges of multichannel management. However, there is still no clear understanding whether channel integration is actually desired and valued by customers and how it can be managed efficiently (Anderson et al. 2010b). Furthermore, in order to harness the potentials of their distribution systems, multichannel firms must know exactly which aspects of the electronic and physical channels their customers appreciate and how they can combine both channels to increase the overall value for the customers. In the light of multichannel usage by customers and the costs associated with channel integration, further insights into the consequences of channel integration are of high practical and theoretical relevance. Thus this work addresses the following central research question:

> *Do customers perceive an integrated online channel as beneficial and what are the consequences on online and offline channel patronage?*

In practice multichannel firms have traditionally integrated online and offline channels for certain generic aspects. For example, most firms use the same brands and offer the same products and services across online and physical channels (Schramm-Klein 2010). Some companies have already gone one step further and communicate offline availabilities via their online shops or allow online purchases to be collected at a physical store. At IKEA.com customers can check online if the desired product is available at a certain store. Walmart and Best Buy allow customers to choose if they want to pick up their online purchases at a nearby local outlet. Many firms now offer applications for smartphones and other mobile devices to conduct customers to their physical stores and enhance their offline shopping experience (Bendoly et al. 2005). The upscale fashion retailer Nordstrom and the apparel and accessories manufacturer American Eagle Outfitters are both prominent examples. The mobile applications of

these US-based companies not only offer the possibility to purchase products online, they also make it easy to find the nearest physical outlet, provide a bar-code scanner to check product information and availability, and provide updates on rebates as well as upcoming events at physical stores.[1]

These examples of integrating online and offline channels with the goal to create a seamless customer experience are only the beginning. It is expected that channel integration will be the focus of retailers and channel managers for the next five years (Google 2011). Today however, practical experience with channel integration is still in its infancy. Despite the importance of providing a seamless customer experience, many firms still operate in channel silos. Integrating distribution channels affects the company as a whole and is very costly. Firms are reluctant to change their distributional culture and to make the often enormous investments to build up the necessary logistical capabilities and infrastructure. The reasons for this passive behavior are looming internal conflicts and the uncertainty about the effects of a channel integration strategy on overall and channel specific sales. Today, there is still no clear understanding whether channel integration is actually desired and valued by customers and how it can be managed efficiently (Anderson et al. 2010b). To date, there is only little empirical insight into the consequences, contingency factors, mechanisms and effectiveness of channel integration activities. Hence, in addition to the lack of practical experience, there are important gaps in formal research that need to be filled in order to provide guidance for multichannel companies on whether integrating online and offline stores may be worth the effort.

1.2 Research Gaps and Goals of this Work

In order to fully answer the overarching question of customer perception, evaluation, and the consequences of online integration[2], it needs to be broken down into the constituting sub-questions that have previously not been addressed by research. Specifically, existing studies have not tackled the following aspects of online integration: First, it remains unclear whether an integrated online shop is perceived by

[1] Based on the author's own inquiries (November 2012).

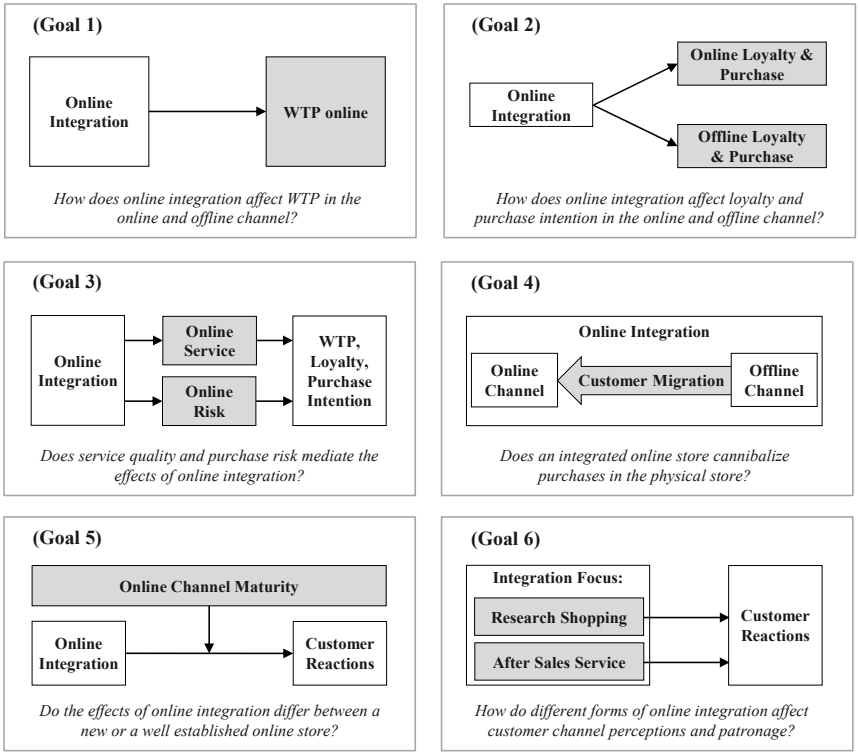
[2] The term "online integration" describes the method of enhancing a firm's online shop by embedding features and aspects of a firm's physical stores with the goal to create a positive image transfer from the stationary outlets to the online shop, to bring the physical channel to the customers' minds during the search phase, and to make it easier for them to switch between the firm's online and offline channels.

customers as favorable compared to a traditional stand-alone online store without integration features. Second, research and practice lack an understanding of whether an integrated online shop increases willingness to pay in the online store. Third, only little is known whether online integration translates into higher customer lock-in in the online shop and generates synergies for the physical stores. Fourth, existing research has not investigated if online integration affects channel migration. Specifically, it is unclear whether integrating the online shop will entice customers to purchase online and cannibalizes sales for a firm's physical stores. Fifth, managers and researchers still lack an understanding of how situational factors influence the relative importance of online integration for customer channel patronage. Finally, little is known about the impact of different types of online integration.

The objective of this dissertation is to fill the critical research gaps related to online channel integration with an in-depth examination of customer perceptions, reactions, contingency factors, and consequences of an integrated online shop. Due to the large number of online and offline customer touch points, there are numerous ways to connect and integrate distribution channels. In principle, integration activities can assume many forms. However, the ROPO-effect is currently the most prominent form of customer cross-channel usage. Its effects and consequences are still not fully understood. Finding ways to harness and effectively manage this type of research shopper phenomenon has become an important theoretical and practical issue. Enhancing the online channel to increase intra- and inter-firm lock-in for a firm's most valuable multichannel customers is one of the most widely discussed forms of channel integration managerial practice.

This dissertation acknowledges the relevance of the ROPO customer purchase behavior. It therefore particularly focuses on the aspects and effects of online integration in terms of providing a close link to the physical channels in a firm's online store. The resulting research questions that tackle the six research gaps are displayed in Figure 1.

Figure 1: Research Questions



Research Gap 1: The empirical findings of previous research comparing online and offline price levels are mixed, even for physically identical products such as books and CDs, (e.g., Bailey 1998; Brynjolfsson and Smith 2000). Thus, it is unlikely that the Internet has been the big equalizer to drive down prices to the lowest possible level. However, there is clear empirical evidence that consumers perceive price levels to be lower for online pure-plays compared to offline and bricks-and-clicks retailers (Pan et al. 2002a; Pan et al. 2002b). Furthermore, previous research has shown that traditional physical retailers have the highest posted prices followed by multichannel (online and offline) retailers while pure-play e-tailers offer the lowest posted prices (Ancarani and Shankar 2004). These results suggest that multichannel firms provide extra customer

benefits enabling these companies to charge higher prices (Neslin et al. 2006; Neslin and Shankar 2009). At the same time, the findings may also illustrate that multichannel firms risk to be stuck in the middle concerning their pricing strategy. They cannot match the low prices of online retailers but have to compete in the same market place. To the best of the author's knowledge, to date no empirical research has been conducted in order to test if online integration activities will increase consumers' willingness-to-pay (WTP) in an online shop. However, insights on this question are crucial for managerial practice and the benefits of an integrated channel system.

Goal 1: Assessing whether online integration increase WTP online without negatively affecting customers' WTP in a firm's offline channel.

Research Gap 2: It has been widely acknowledged by previous research that multichannel customers tend to have higher sales volumes than single channel customers (Ansari et al. 2008; Kumar and Venkatesan 2005; Myers et al. 2004; Neslin et al. 2006). Thomas and Sullivan (2005b) report that adding another channel format to any single channel customer increases customer spending. In an extensive longitudinal study covering 24 product categories, Kushwaha and Venkatesh (2008) show that a regular multichannel customer spends about $467 more compared to an offline only shopper and even $791 more than an online only customer. At the same time, the authors emphasize that there are two types of multichannel customers: The competitive customer who combines channels across different firms and shows low retailer loyalty; the loyal research shopper who uses multiple channels but only switches between the channels of a single firm.

The challenge of a multichannel firm is to design its distribution channels in such a way that they will increase loyalty and share of wallet of the existing customer base and turn more competitive multichannel and ROPO-shoppers into loyal customers (Neslin and Shankar 2009). Previous research has not addressed whether online integration (1) increases customer loyalty and purchase intention in the online shop, and (2) generates cross-channel synergies by positively influencing customer loyalty and purchase intention for a firm's physical channel. Initial research suggests that channel synergies exist (Schramm-Klein 2010; Verhoef et al. 2007a), but results are somewhat ambiguous as e.g. Falk et al. (2007) also report dis-synergies between physical and electronic channels. However, no formal research exists on whether online integration activities can be used to actively manage and enhance channel

synergies, establish positive cross-channel lock-in, and eventually increase customer loyalty and purchase intention for the offline channel.

Goal 2: Determining whether online integration increases online loyalty and purchase intention in the online shop and the physical stores.

Research Gap 3: Academic articles, as well as more practically oriented publications, have frequently stressed the importance of an integrated channel system to increase customer value and make a firm's online offer more competitive (Neslin et al. 2006; Neslin and Shankar 2009; Zhang et al. 2010). However, these expectations still lack a considerable amount of empirical verification. Specifically, only little is known whether the creation of an integrated online channel actually increases the perceived customer benefits in the online store and whether this improvement increases customer willingness to pay and patronage of a firm's online store (Schramm-Klein 2010). Previous research on Internet shopping and technology adoption has focused on perceived usefulness and purchase risk as crucial factors of online channel adoption and usage. Following these research traditions, the third goal of the dissertation project will therefore include the assessment of whether online integration activities positively affect customers' evaluation of a firm's online channel in terms of increased service quality and reduced purchase risk.

Goal 3: Understanding how online integration influences service quality and purchase risk in the online channel.

Research Gap 4: Adding channels or altering the characteristics of an existing channel, such as service provision or assortment (Avery et al. 2012; Fernández-Sabiote and Román 2012), leads to changes in customer channel selection in the short run (Herhausen et al. 2012) and shifts in the allocation of sales shares across a firm's channels in the long run (Ansari et al. 2008). Online integration is likely to alter service and risk perceptions of the online channel (see Goal 3). This may entice a number of customers who have previously preferred to shop at the physical store to switch to a firm's online shop. Hence, online integration potentially increases internal channel conflicts due to cannibalization of the offline stores by the integrated online channel. On the other hand, if the cross-channel synergies created by the integration activities are strong enough, the positive effects of online integration may counteract the tendency to shop online. In this case, offline cannibalization would be negligible and channel conflicts are less likely to occur. Avoiding channel conflicts is an

important strategy for many multichannel firms. It is therefore necessary to understand how online integration affects the channel purchase decisions. No previous studies have estimated these effects for integrated and non-integrated online stores.

Goal 4: Assessment of the channel cannibalization effects between online and offline stores due to online integration.

Research Gap 5: Although perceived service quality and purchase risk both play an important role for a firm's customers to adopt and purchase from its online channels, their relative importance may differ based on how long the company has implemented their online touch points. When a company is launching a new online store, integration features might serve as strong signals and mental links to the existing channels since customers have not been able to make their own experiences and judgments. Thus, customers might react more strongly on the integration of a firm's online activities when the online store is new. In a similar manner, online integration measures may play a stronger role for acquiring new customers than for the increase of customer value with the existing customers. Thus, the fifth goal of this research is to examine whether the maturity of a firm's online channel influences the importance of online integration, service quality, and online purchase risk for channel adoption and usage.

Goal 5: Determining how the maturity of the online channel affects the relative importance of online channel integration for online and offline channel patronage.

Research Gap 6: Online channel integration can take on many forms. Research on the integration and coordination of multichannel system is still in its early stages (Shankar and Yadav 2010). Most work has centered around conceptualizations and frameworks of how channels could be coordinated and managed jointly from an organizational perspective (see Chapter A.2.3.3 of this dissertation). Less research has been devoted to defining channel integration from the customer point of view. Although some previous research has taken on the consumer perspective and developed conceptualizations and practical examples of channel integration from the perspective of the customer, no empirical studies have tested the effectiveness and differences among distinctive realizations of online integration. While providing a seamless customer purchase experience is the overarching concept of online channel integration, the practical realization of an integrated online shop can either focus on steering

customers towards the offline channel by Facilitating Research Shopping or equalling out the deficits of the online shop to increase purchase intention online. Businesses operate in different market contexts, possess specific resources, capabilities, and pursue specific performance objectives. According to configuration theory, each business has to adjust its own marketing activities to fit the specific implementation requirements of its strategic goals (Venkatraman 1989; Vorhies and Morgan 2003). Thus, depending on the firm's objectives, integrating the online channel to either facilitate research shopping or to equal out online deficits may be the dominant strategy. The final research question addresses the differences of these two specific forms of online integration and their implications for customer channel selection and loyalty.

Goal 6: Assessing the effects of different forms of online integration on online service quality, purchase risk, and channel patronage.

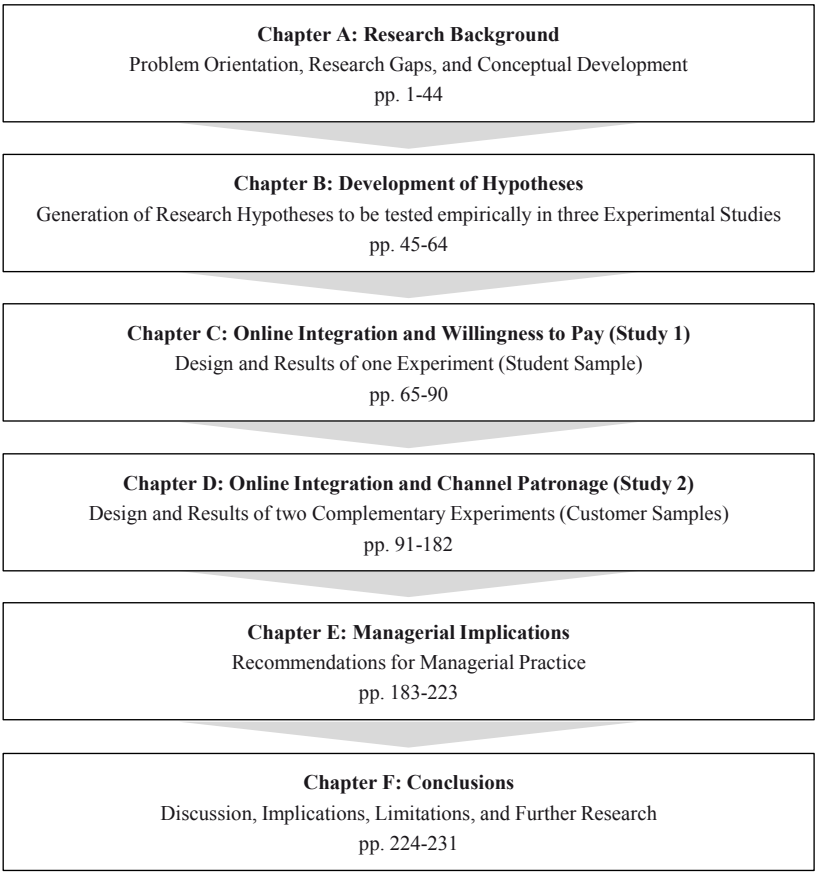
1.3 Structure of the Dissertation

The dissertation is structured into the following chapters: Chapter A presents an introduction into the topic and defines the central research questions that will be addressed in the course of the dissertation. This includes the theoretical background of the research as well as an overview of the existing marketing literature on multichannel frameworks and channel integration. On the basis of previous research, two generic forms of online integration are identified and the conceptual framework for the dissertation is developed.

In Chapter B a number of research hypotheses are developed along the conceptual framework and the research questions of this work. In order to examine if these hypotheses can be empirically validated, a total of three data collections were conducted. The design, procedure, and results of the first study are presented in Chapter C. This study assesses the effects of online integration on online and offline WTP (goal 1), as well as the mediating effect of service quality and purchase risk (goal 3). Chapter D reexamines and extends the initial mediation results of the first study by focusing on channel loyalty and purchase intention. Two complementary experiments comprising 1,026 existing customers of two companies were used to test the effects of

online integration on customer loyalty as well as purchase intention in the online and offline store (goal 2), cannibalization effects across channel formats (goal 4), the moderating effects of online shop maturity (goal 5), and the differences between two different forms of online integration (goal 6). Chapter E translates the results into managerial recommendations. Chapter F concludes the findings and discusses the work's limitations as well as promising possibilities for further research. The structure of the dissertation is summarized in Figure 2.

Figure 2: Structure of the Dissertation



2 Conceptual Development

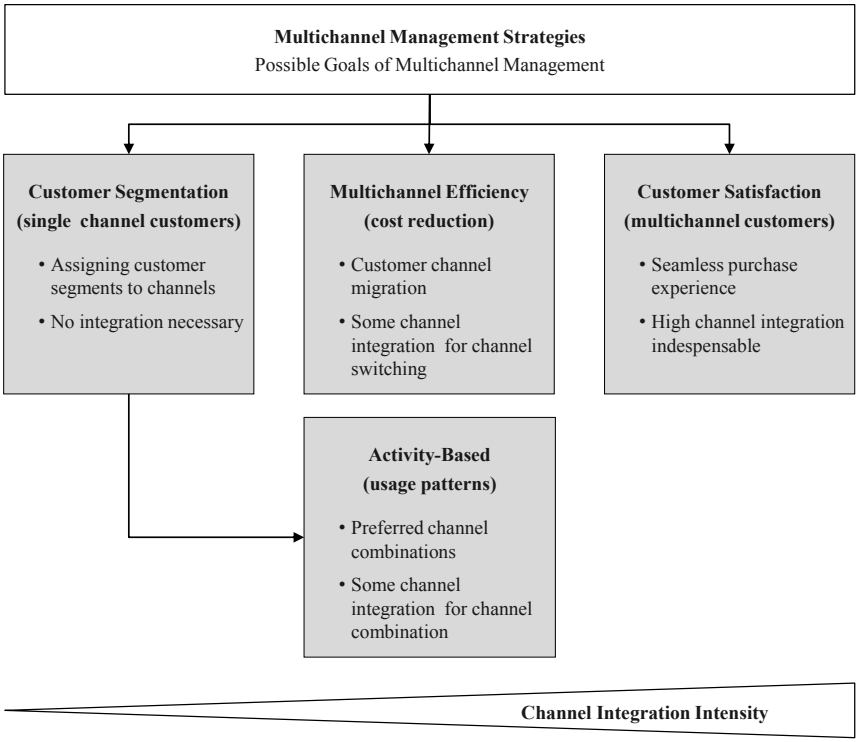
2.1 Forms of Multichannel Strategies

There are a number of possibilities to design channel strategies that define the specific functions of the customer touch points, the organization of the channel system, and the relations among the distribution channels. There are also different philosophies about which underlying goals should drive a multichannel strategy. Neslin and Shankar (2009) suggest that the major visions driving a multichannel management are efficiency, segmentation, and customer satisfaction. The efficiency perspective sees multichannel management as a way to reduce distribution costs, e.g. by enticing customers to use channels that are less costly to run or by sharing organizational structures and processes across channels. In the segmentation approach, the multiple channels are used to divide the markets into customer segments. This approach centers on the idea that each distribution format attracts specific, mutually exclusive customer segments. In this case, each channel or touch point category should be designed to maximize the shopping value of that customer segment (Konus et al. 2008). Finally, the customer satisfaction approach is based on the idea that customers are multichannel in nature. It builds on the "integrated marketing paradigm" for developing strong customer relationships by allowing shoppers to experience the firm's products, services, and marketing channels in an individualistic way (Calder and Malthouse 2005). According to the customer satisfaction philosophy, the main goal of a multichannel strategy should therefore be to increase overall satisfaction and shopping enjoyment by encouraging customers to use and combine different channels according to their situational preferences, provide an integrated and coherent channel system, and make it easy to switch between channels during the purchase process (Berman and Thelen 2004). Figure 3 gives an overview over these three strategic directions.

The overall goal of adopting any multichannel strategy is to improve success in terms of revenue and profit. Previous research suggests that employing multiple channels are indeed a source of improved financial performance (Coelho et al. 2003; Easingwood and Storey 1996; Geyskens et al. 2002; Wolk and Skiera 2009). The form and configuration of a firm's multichannel strategy depends on the specific market situation and its internal capabilities. However, there may be more than one strategy that leads to superior multichannel performance. According to configuration theory,

the performance acts as an indicator of how well the employed resources are coordinated and form a coherent configuration (Vorhies and Morgan 2003).

Figure 3: Strategic Options for Multichannel Management



Multichannel efficiency strategy: Companies that adopt a multichannel efficiency strategy are concerned with cost-efficient management of their sales channels. This strategy may be driven by the goal to migrate customers from expensive and cost-intensive touch points to channels that are less costly to operate (Payne and Frow 2004; Schulten 2008). Costs are usually lower in direct online distribution channels (Kumar and Venkatesan 2005). For example, it may be less cost intensive for a firm if

customers order and pay online compared to using a call center (Gensler and Böhm 2006). Adding an Internet channel is also an easy, quick, and relatively cost-efficient way to access new markets and thus the ability to exploit economies of scope without having to invest in additional physical stores (Zhang et al. 2010).

However, migrating customers to the online channel is not without risk. The higher competition on the Internet may erode prices and margins (Degeratu et al. 2000), cannibalize the existing channels, and decrease customer profitability by decreasing purchase frequency and loyalty (Ansari et al. 2008; Sullivan and Thomas 2004). Thus, it is important to increase customer value and satisfaction in the target channel (the online store) for the migration strategy to produce the expected results and not to disappoint customers (Herhausen et al. 2012). Furthermore, certain customer types may prefer a certain channel format due to its specific attributes (e.g. personal service, convenience) and not be willing to adopt a new channel. In this case, the channel migration strategy may not work and a segmentation strategy could be a more meaningful multichannel approach.

Customer segmentation strategy: The customer segmentation channel strategy postulates that there are different customer segments that prefer to interact with different channel types (Neslin and Shankar 2009; Payne and Frow 2004). The critical aspect for the segmentation approach of multichannel management to be successful is the existence and the identification of distinctive channel segments. If specific customer segments coincide with specific distribution formats, marketers can design each channel according to the needs and preferences of these segments. However if all customer segments tend to shop across channels, it is neither sensible nor possible to target select customer types with a particular distribution channel (Konus et al. 2008).

Previous studies of customer channel segmentation show that there is a growing segment of multichannel customers searching and shopping across different channel formats (Konus et al. 2008; Kumar and Venkatesan 2005; Rangaswamy and Van Bruggen 2005; Verhoef et al. 2007a) and that these customers spend more money with a particular firm (Neslin et al. 2006). Studies on channel segmentation have found meaningful relations between psychographic customer characteristics and channel usage. For example, multichannel users seem to be less loyal (Ansari et al. 2008), are more price conscious (Konus et al. 2008), and perceive different levels of shopping enjoyment (Verhoef and Langerak 2001). However, customer segments so far could not be linked to sociodemographic customer characteristics (Ailawadi et al. 2001; Gupta et al. 2004; Keen et al. 2004; Knox 2006; Konus et al. 2008; Kushwaha and

Venkatesh 2008). This not only implies that the psychographic measures are more important factors for understanding and identifying customer channel preferences and selection, but also poses challenges in identifying channel segments in managerial practice (Schögel et al. 2002).

Activity-based channel strategy: Zhang et al. (2010) argue that due to the growth of Internet business, most consumers will turn into multichannel shoppers. Therefore the customer segmentation strategy is likely to lose its importance as a multichannel approach. Hence, the so called "activity-based" channel strategy (Payne and Frow 2004) may provide a more meaningful and manageable way of achieving a customer-channel classification. The goal of the activity-based channel strategy is to identify predominant channel usage patterns and channel-specific activities that many customers engage in. One example of such a dominating pattern is ROPO-behavior since most customers use the online channel for purchase but prefer to conclude the transaction offline.

Previous attempts to describe channel usage patterns also suggest that channel preferences and multichannel usage are influenced by product characteristics. For example, "high touch" and "low touch" product categories produce different channel usage patterns (Lynch et al. 2001). The "high touch" products such as clothing, musical instruments, or insurance contracts, which need to be inspected or for which customer need personal assistance before purchase, imply preference for brick-and-mortar shopping (Dholakia et al. 2010; Lynch et al. 2001). The "low touch" category refers to products whose quality can be assessed remotely (e.g. music, books or airline tickets). For these products, consumers are more likely to stay online for purchase due to higher convenience (Konus et al. 2008). By identifying popular channel combinations and matching them to customer segments, the specific functions of the individual touch points can be further improved and designed to fit the overall channel system (Sousa and Voss 2006).

Customer satisfaction strategy: The customer satisfaction strategy strives to provide an optimal customer purchase experience across all channels. More importantly, the channel system becomes a strategic means of generating and enhancing customer value. Firms employing a customer satisfaction multichannel strategy aim at satisfying their customers' needs by exploiting the benefits of a certain channel to overcome the deficiencies of others (Zhang et al. 2010) and create a seamless purchase experience. This approach is closely related to channel integration. All available channels are

designed to optimally serve customers and allow for quick and easy transitions between and within purchase phases. The customer satisfaction strategy is a customer-centric interpretation of multichannel management. The channel system as a whole is designed to create synergies and thus maximize customer value within and across all customer touch points. Within this framework customer segmentation as a driver for channel strategy becomes obsolete since the relevant segments will self-select into their preferred channels or channel combinations.

The customer satisfaction strategy follows a customer-centric philosophy as it places the customers at the center of the channel design and generates an organic connection with the company. In this respect, the multichannel satisfaction strategy is in line with the roots of integrated marketing philosophy (Calder and Malthouse 2005). The goal is to understand the customer as a whole and to focus on their purchase situations and processes. Based on this understanding, the channel management function is to design and connect the customer touch points to fit into the daily lives of the consumers in order to create a superior service and shopping experience. The second central aspect of a satisfaction strategy is the multichannel customer view. Providing seamless channel experiences can only create value when the customers search and shop across different channel formats. Due to the rising importance of multichannel customer behavior and the high monetary value of multichannel shoppers, the channel satisfaction strategy has gained increasing attention among researchers (Neslin et al. 2006; Neslin and Shankar 2009; Zhang et al. 2010) and practitioners alike (see Chapter A.2.3.3).

2.2 Channel Configuration

The adoption of a certain multichannel strategy has important implications on a firm's organizational structure (Langerak and Verhoef 2003). When companies use online and offline channels as part of their distribution policy, they have the basic choice of either combining or separating the alternative channels (Chavez et al. 2000; Emrich 2011). If firms follow the strategy of separating alternative channels, interaction between online and offline customer touch points is avoided. The processes and functions are not interlinked from the customer perspective. On the other hand, a channel integration strategy combines the different channels in order to create a

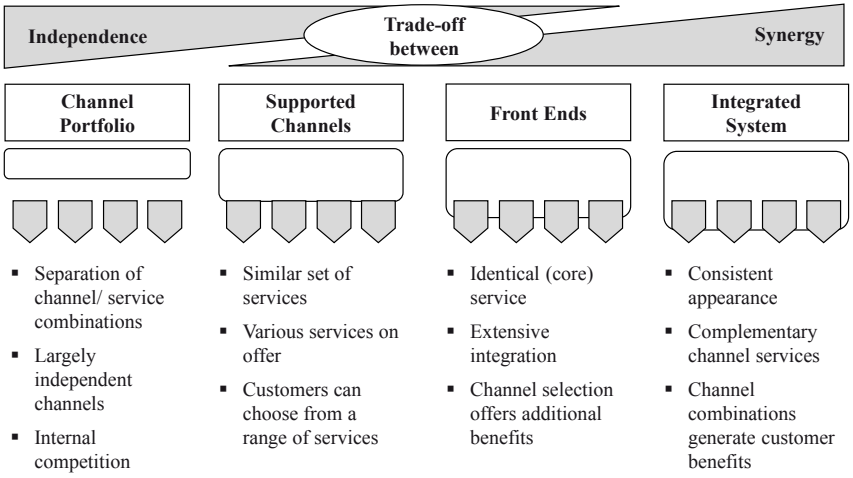
seamless transition between the different customer touch points (Gulati and Garino 2000).

The design of the channel system involves the definition of the types of channels a firm wants to employ, their specific tasks, and how these channels relate to each other (Schögel and Tomczak 1999). Designing the inter-channel relations within a channel system is a continuum between creating completely separated and self-sufficient channels or fully inter-locking and integrating all customer touch points. The level of integration or interconnectedness of the channel system is contingent on the type of multichannel strategy a firm has adopted. The relation between channel strategy and integration intensity is included at the bottom of Figure 4. The customer segmentation strategy requires virtually no channel integration activities, since the customers are not expected to switch between touch points and each channel is designed to be used by one segment exclusively. The efficiency strategy requires some integration. When customers are to be migrated to less costly channels, the transition has to be easy and convenient to be successful. The same holds true for the activity-based multichannel strategy. The channels have to be integrated at least to the extent as to support the dominant multichannel usage patterns of the consumers. Finally, the customer satisfaction strategy implies the highest level of channel integration. The benchmark is the multichannel shopper. In order to generate maximum multichannel customer value, this kind of channel system should not impose any restrictions on usage patterns and paths that customers can take along their purchase cycle. This requires a smooth transition between all channels and in all directions. Integrating channels is complex, the necessary monetary investments are considerable, and the outcomes may entail adverse or unwanted side effects such as channel cannibalization or conflicts among channel entities. It is therefore important to find an adequate equilibrium between channel synergies and separation and adopt the right amount of inter-channel connection. Schögel (2012) distinguishes four typical multichannel system configurations along the continuum between independent and synergistically organized channels. These are depicted in Figure 4 and are described in the following.

Channel portfolios: Firms that pursue the portfolio-approach separate their channels. The predominant goal of this configuration type is to focus on the optimal fit between channel characteristics and customer groups. The channel portfolio enables firms to optimize each channel separately and to tailor them to optimally meet the needs of a specific customer segment. Thus, this channel structure has a large fit with the multichannel segmentation strategy. The level of links and interactions between the

different channels are actively omitted and the channels are managed peripherally and independently. The separation yields a high freedom to adjust service levels, branding, product categories, assortment, and even prices within each channel. This implies that the distribution channels do not necessarily use the same resources or the same logistic backbone. Due to the high independence and the clear alignment of each channel for a specific customer segment, the threat of channel conflicts is comparably small in a channel portfolio. Furthermore, a channel portfolio configuration is more flexible with respect to unique competitive market situations in each channel and helps attract executives who are specialized at managing a particular channel format (Gulati and Garino 2000).

Figure 4: Configuration for Multichannel Management[3]



Supported channels: Within a system of supported distribution channels, the single customer touch points still act largely independently from each other. However, the overall integration level is significantly higher in terms of products and the resource

[3] According to Schögel, M. (2012).

base. Usually the brands and at least the basic product assortment are the same across all channels. The channel offerings differ in the amount and types of additional services they provide. Due to these similarity restrictions customer segmentation is more difficult to achieve compared to the portfolio approach and usually is not the main strategic focus of this type of channel configuration. Customers are free to choose the channel that best fits their current purchase situation. The channels usually use the same resource base, such as procurement and logistics. This makes it possible to implement standardized back office processes and thus realize efficiency gains. Furthermore, by providing different assortment depths and service levels across channels, firms can implement pull- and push-measures to migrate customers to the desired channels (Schulten 2008). Thus, the channels should offer just enough integration so as not to confuse customers and to make it relatively easy for them to switch channels. However, the channels are still distinct from one another in terms of serving different purposes and emphasizing different service aspects. Therefore, this configuration approach is suited specifically for firms that pursue the efficiency strategy of multichannel management.

Front ends: This configuration type is characterized by strongly integrated channels that also use the same back office resource base. The processes are largely standardized across channels. The major objective of this kind of channel system is to offer the optimal channel solution for each purchase task in each stage of the customer buying cycle. Thus, channel switching should be simple for the customers, which implies a rigid alignment of communication, assortment, and pricing activities between the different touch points. The underlying premise of a front end channel system is an extensive multichannel shopping behavior for a large part of the existing and potential customers. The front end approach should be used when the customer base engages in different forms of channel switching behavior and values the possibility to switch channels between the search, purchase, and after sales phase. If the consumers display certain patterns of channel usage, the channels can be further optimized along these dominant paths across the channel system to optimally serve the shoppers across all purchase stages and commit the customer to the channel system. Therefore, the front ends channel approach is best suited to firms that pursue an activity-based or customer satisfaction multichannel strategy.

Integrated system: In an integrated channel system, the coordination between channels is paramount. The goal of this type of channel configuration is to combine the channels in such a way that the channel system as a whole is a significant driver of

customer value. Products, brands, assortments, and prices should be harmonized as much as possible. In addition, all internal as well as customer-related processes have to be fully standardized to provide the required consistency among the customer touch points. The shared resource base ideally includes customer data such as purchase history, personal preferences, and billing information. The goal is to reduce the boundaries between the touch points so that customers perceive the channel system as one. The major goal of an integrated channel system is to maximize customer value in terms of shopping experience, convenience, and satisfaction. Therefore, the complete integration of the channel system especially makes sense for firms pursuing a customer satisfaction strategy and that sell high involvement products for which customers engage in an extensive purchase process. The implementation of a fully integrated channel system usually involves large logistical, organizational and financial challenges. As with all highly integrated channel systems, channel conflicts are very likely to occur since it becomes difficult, if not impossible, to identify the specific contribution of each channel to sales and profits. Thus, an integrated channel system should be centrally managed. The integration of indirect retailers into the shared processes and resources is therefore a critical aspect of the integrated channel system.

2.3 Channel Integration

2.3.1 Dimensions, Risks, and Potentials of an Integrated Channel System

Grounded in the customer-centric understanding of marketing management Goersch (2002) defines multichannel integration as *"[…] the simultaneous and consistent employment by a retailing organization of Web sites and physical store-fronts […] in addition to other channels, such that customers derive a seamless experience when they switch channels during their interaction with the retailer"* (Goersch 2002, p. 749). Using the multichannel system to create a seamless customer shopping experience is the central theme of channel integration (see literature review in Chapter A.2.3.3). Thus, the basic concept of channel integration from the customer perspective is to design and use channels so that they mutually support the channel end-user in all purchase activities (Bendoly et al. 2005) and make services accessable across all distribution formats (Emrich 2011). In this respect, channel integration helps give *"[…] customers what they need at each stage of the buying process - through one channel or another […]"* (Nunes and Cespedes 2003, p. 98). Marketing activities in a

certain channel potentially affect customer behavior in all other channels (Berry et al. 2010). This opens up the possibility to profit from customer cross-channel usage and shopping behavior. However, channel integration is a multi-faceted construct that influences many aspects of practical channel management. Furthermore, its effects on customer behavior have not yet been fully understood.

This understanding of channel integration as seamless customer experience builds on the principles of customer relationship marketing (Berry 2003). Distribution channels are the central link between firms and their customers (Schögel and Sauer 2002). As such, they become a powerful instrument for shaping and developing sustainable customer relationships, especially in a world where the number of (electronic) distribution channels is further increasing (Schögel et al. 2002). Channel integration can be used as a means to further add to the value proposition of the whole channel system in order to build relationships of mutual value between firms and their customers (Gronroos 1996; Grönroos 1994). It is about creating customer lock-in between the stages of the purchase process and to build a long-lasting and profitable customer relationship. It is this understanding of channel integration from the customer perspective that this research is based upon.

An important prerequisite for channel integration to increase customer value is that the majority or at least a critical mass of the customer base actually uses multiple channels simultaneously. Furthermore, as shown in the previous Chapters, a highly integrated channel system adopts a uniform customer model (Schramm-Klein 2010) since the focus lies not in tailoring the distribution channels to the needs of specific customer segments, but to reconcile touch points and marketing instruments in such a way that the customers will self-select into the appropriate channels. Nevertheless customers use channels for different purposes, such as collecting information, payment, or using after sales services (Berry et al. 2010). Since the channel formats differ in their specific characteristics they each make a discrete value contribution to the shopping experience and provide unique customer value. For example, in stores consumers can directly interact with employees or other shoppers (Mahajan et al. 1990), whereas online channels provide a different access to social interaction over forums, reviews, or user generated content (Dwyer 2007). Linking different channel formats therefore potentially increases the number of possible customer experiences. Furthermore, by bringing the channels closer together, they may mutually compensate certain disadvantages. Therefore, channel integration constitutes a potential strategic

advantage with respect to single-channel competitors that cannot counterbalance these channel deficiencies.

However, channel integration is not without potential risks and challenges. When cross-channel activities are lacking the underlying strategic and theoretical rationale or if they are not executed properly, loosening the channel silos may lead to customer confusion and distrust (Berry et al. 2010). Inconsistencies in product assortments or prices may confuse shoppers. If the customer base does not engage in multichannel shopping, then the investments may be in vain. Channels do not automatically enforce each other. It is also possible that they act as substitutes instead of complements. Especially when demand is rigid and the channels compete for the same customers integrated multichannel systems could increase complexity and distribution costs without contributing to overall sales (Van Baal and Dach 2005). Increasing customer value by adding new channels and making them accessible for all customers might even harm customer loyalty. For example, firms have introduced electronic self-service technologies as a way to save on distribution costs (efficiency strategy) and as a means to attract new customer segments (segmentation strategy). For customers, self-service technologies provide additional value due to higher convenience, time savings and potentially lower costs (Meuter et al. 2000). However, self-service technologies have been shown to erode customer loyalty due to weaker personal bonds with the firm (Selnes and Hansen 2001). Furthermore, Tomczak et al. (2006), as well as Schögel and Schulten (2006) show that the profit contribution of multichannel customer steering is rather low and risky.

Interactive services have been shown to influence customer behavior differently in the short and long run (Bolton and Drew 1991; Bolton and Lemon 1999; Bolton and Myers 2003). Thus, increasing interactivity between customers and the distribution system must be considered over time. For example, Avery et al. (2012) show that adding offline stores to an existing direct electronic channel reduces online sales in the short run, but helps increase offline sales in the long term. Thus, channel integration may be a means to effectively manage customer relationships and to better meet the need of the customers but its positive effects and pay-offs are not self-evident and might even be negative in some cases. Therefore, it is necessary for firms to develop a clear strategy of the purpose of their multichannel management, to define the tasks of each channel. It is also important to understand the rules of the market, the channel strategies of competitors, and the customer needs in the industry before taking the decision to integrate channels.

Integrated distribution channels and seamless customer interfaces call for operational synergies between the single channels. These operational synergies may be difficult to realize since the management of each channel format requires specific skills and resources (Zhang et al. 2010). Smooth operational coordination between channels are less likely to be achieved when the channels serve different target markets and operate as separate business units with unique assortments and prices. While a separate organizational structure may be a good solution for a channel portfolio strategy, the lack of coordination in separately organized and peripheral channel leadership structures are likely to hinder a firm's channels to become tightly integrated and provide a coherent customer experience. Today, partly due to historic reasons since many multichannel firms originally started out with only one channel, it is still common that most business operate their channels through independent departments that are often evaluated based on their channel-specific sales volumes (Hughes 2006; Neslin and Shankar 2009). The results of a study conducted by Gartner Inc. show that 76% of multichannel retailers had not fully integrated their brand marketing by 2006. According to the report, the main reasons for the missing coordination among channels are cultural gaps, different skill sets, the failure to share customer information to support joint marketing relationship activities, and the use of multiple agencies in a non-coordinated promotion approach (InternetRetailer.com 2006). However, when firms pursue the strategy to integrate their customer touch points, they will also have to develop their internal channel coordination capabilities in terms of a suitable management framework and responsibilities.

Schögel (1997) develops a conceptual framework of consistent combinations of channel coordination approaches. Within the "relaxed" form of channel management, each direct and indirect channel has a large scope of action to adapt to their specific situation and operates mostly independently from the manufacturer. Targets are jointly negotiated among the channel partners (Schögel 2012). On the other end of the continuum lies the "strict" form of channel management where the manufacturer internalizes the channel coordination tasks, sets the rules for channel cooperation, and defines channel functions centrally. While the "relaxed" form of channel management allows for a high flexibility to react to external changes and creating external fit, the "strict" approach of channel management is geared towards realizing internal channel consistency and to achieve internal fit between the distribution channels (Schögel 1997). Marketing integration goals cannot be achieved without the creation of internal fit (Rinehart et al. 1989). Recent research findings support that internal channel coordination capabilities improve the channel performance of an integrated channel

system (Yan et al. 2010) and help firms efficiently provide current channel offerings and create innovative channel solutions (Oh et al. 2012).

Figure 5: Internal Channel Coordination and External Channel Integration

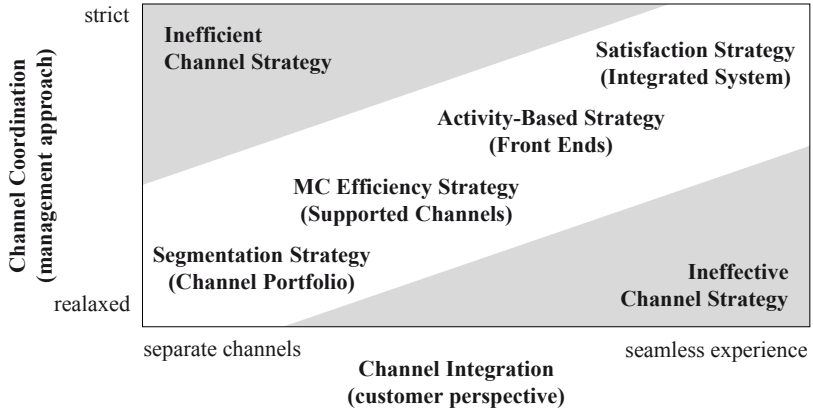


Figure 5 aligns the underlying strategic dimensions (Chapter A.2.1) and channel configuration approaches (Chapter A.2.2) of multichannel management along the internal coordination approaches and the external customer-related integration goals. The framework suggests that the channel strategies should be managed differently according to the level of channel integration they involve. Against this background, the segmentation strategy calls for a relaxed form of channel coordination with largely independent touch points and a peripheral channel management structure. It seems possible that separate channels could, in principle, be managed jointly. However, it is likely that the complexity of the channel portfolio would lead to inefficiencies due to the lack of specific channel expertise, knowledge about the customer segments, or the competitive environment. At the same time, focusing on providing a seamless customer experience by pursuing a satisfaction strategy should be combined with a central management style that allows for an efficient calibration of channel functions and relations. Creating channel synergies in a system of independent channels will be ineffective due to inherent channel conflicts and functional redundancies.

2.3.2 The Relevance of the Internet for Channel Integration

The Internet has been the major driver for today's proliferation of customer touch points (Neslin et al. 2006; Neslin and Shankar 2009). Most of the newly developed channels and the innovations in the traditional touch points are web-based. Today, virtually all companies offer information through their websites, and a large part of these websites enable customers to purchase online (Van Nierop et al. 2011). The Internet is still a comparably small market. However, it is growing faster than the traditional forms of retailing. For example, in 2009 the Internet only accounted for 6% of total retail sales in the U.S., but online retail sales grew by 11% while all retail sales grew by just 2.5% (Chu et al. 2010). The fast growth of e-commerce suggests that the Internet as a sales channel complements traditional physical stores. The Internet and the conventional brick-and-mortar stores each have unique features. While offline stores offer personalized service and the possibility to physically examine the product under consideration, online shops offer higher convenience and more flexible shopping hours.

However, apart from having become a significant sales channel, the Internet has had a large impact on customer behavior and the kind of services which consumers expect from a firm. This is especially the case in the pre-transaction and information search phase of the customer purchase cycle. The Internet has dramatically reduced the search costs for customers. Consumers now have virtually unlimited access to information. More specifically, it has become easy for consumers to find alternative offers and to compare prices and products. Thus, the Internet has shifted power from manufacturers and retailers to those who buy the products (Varadarajan et al. 2010). A competing offer is only a few clicks away (Shankar et al. 2003). Several studies suggest that the Internet possesses lower customer lock-in. Customers do not necessarily purchase from the website at which they searched for information; online conversion rates seldom exceed the 5% barrier (Moe and Fader 2004). The Internet entices customers to engage in channel free riding behavior (Huang et al. 2009).

Firms employing brick-and-mortar stores in their channel system face new challenges since the Internet has gained increasing consumer acceptance as a touch point and has redefined the competitive rules of many market places (Bendoly et al. 2005). Not only are they competing with online pure play retailers, but they also have to simultaneously manage their online and offline channels and the looming channel

conflicts. On the other hand, the Internet also offers new opportunities for brick-and-click companies since their combination of online and offline channels makes them better equipped to react to new customer purchase patterns. Past research has shown that consumers often engage in research-online-purchase-offline (ROPO) behavior where online search precedes offline purchase, particularly for search products (Alba et al. 1997; Weathers et al. 2007) or for customers with technology anxiety and high purchase risk perceptions (Hoffman et al. 1999; Roy and Ghose 2006). Furthermore, a majority of consumers still prefers to make the actual transaction in a physical store (Kacen et al. 2002; Van Nierop et al. 2011). Many customers mainly use the Internet to search online and compare products and prices but purchase offline (Mendelsohn et al. 2006).

The Internet has created new challenges how companies should interact with their customers. Internet technologies enable companies to develop and maintain cross-channel relationships (Payne and Frow 2004). Early on it was recognized that these challenges can only be successfully met if firms understand the impact of the Internet on customer behavior, learn how to overcome organizational barriers, and understand how to combine online and physical channels within an integrated approach to marketing (Levary and Mathieu 2000; Machlis and Vijayan 1999; Rigby 2007). This integrated approach to marketing translates into an integrated approach of channel management in order to provide a seamless customer experience, especially for the online and ROPO shopper segments. The Internet not only creates new opportunities of channel integration, but channel integration may be especially relevant for relating the online and offline customer touch points to address real customer needs and create significant customer value and customer relationships.

The Internet provides two basic approaches to channel integration: (1) providing online access at traditional stores, and (2) providing information and access concerning physical outlets via the online shop or the homepage. Thus, integration can go both ways and firms have already implemented both forms of integration (e.g. REI and Bonobos). However, in the light of the dominant form of ROPO shopping behavior and the importance of the Internet as information source, channel integration in terms of providing offline access via the online channel is currently the dominant and most relevant form of integrating online and offline touch points in research and practice (see section 2.3.3 for details). Acknowledging the different directions of channel integration, this dissertation focuses on online integration activities within the online

store due to the lack of empirical evidence and the high practical importance for the participating firms of this work (see section 2.3.4).

2.3.3 Research on Channel Integration

2.3.3.1 Conceptual Research related to Channel Integration

There is a vast body of literature capturing a variety of aspects of multichannel management. Neslin et al. (2006) and Neslin and Shankar (2009) provide a detailed overview of existing research and key issues in multichannel research. Previous research on multichannel customer behavior has been mainly focused on the potential beneficial or adverse effects of a multichannel system per se. The differences between online and physical shopping environments have been at the center of many important conceptual developments of the impact of channel proliferation on customer reactions (e.g., Burke 2002; Grewal et al. 2003; Keeney 1999). Likewise, the previous empirical studies on multichannel customer behavior center around the differences between customer price perceptions and price search (e.g., Choi and Mattila 2009; Kacen et al. 2002; Zettelmeyer et al. 2006), customer characteristics and segmentation (e.g., Konus et al. 2008; Kumar and Venkatesan 2005), and the (dis-)synergies of multichannel systems and channel additions (e.g., Ansari et al. 2008; Deleersnyder et al. 2002; Falk et al. 2007; Verhoef et al. 2007a). While these previous research endeavors have shed light on mutually positive or negative effects of multichannel systems - especially between online and offline channels - conceptual research activities that focus on the proactive generation of cross-channel synergies are relatively new. Table 1 summarizes the conceptualizations of channel integration. This research is reviewed in the following.

In an early conceptualization of multichannel integration Steinfield (2002) argues that multichannel firms can obtain a competitive advantage over Internet pure plays by actively integrating their online and offline channels. Channel integration generates positive spillover effects across channels. The sources of these synergies are common infrastructure and operations, common marketing and sales activities, common buyers (multichannel customers), and complementary assets of channels. The effects of channel synergy development are identified as cost savings, market extension, improved customer trust, and differentiation from online pure plays through value-added services.

Goersch (2002) was also among the first who argued that multichannel firms employing online and offline channels can use channel integration to enhance their overall customer acquisition and retention capabilities. He lays out a framework that builds on the notion that multichannel firms should offer a consistent and superior shopping experience across their channels. This includes that Internet channels should not solely focus on their sales function, but also have to support customers in their interaction with the firm along all purchase phases. The new possibilities that online channels provide in customer relationship management (CRM), as well as website design and functionality, play an important role for achieving this goal.

Sousa and Voss (2006) also identify a seamless customer shopping experience across all channels and purchase phases as central aspect of channel integration. Specifically, they conceptualize a framework of multichannel service quality distinguishing between virtual quality (i.e. automatic delivered services), physical quality (i.e. people delivered services), and channel integration quality. As a new concept, the latter is defined as the provision of a seamless service experience across a firm's channels. The authors identify integration quality as a key new service component for multichannel firms. Berman and Thelen (2004) focus on the ability of customers to easily switch between channels during their purchase process. They argue that each channel has specific advantages along the customer purchase cycle and that the synergies of a well-integrated channel system arise from convenient channel hopping. Thus, channel integration should be about creating consistency and the simultaneous and coordinated management of channels in such domains as promotions activities, product consistency, the creation of a joint information system, and the selection of appropriate channel partners.

Payne and Frow (2004) emphasize the role of CRM for successful channel integration. They define CRM as a cross-functional activity that helps improve the customer purchase experience and that should be developed along with the careful selection and adoption of a suitable multichannel strategy based on the firm's specific internal and external circumstances. Hughes (2006) also emphasizes the important role of organizational structures and processes for an integrated management of multiple channels. He identifies the currently prevalent focus on separate functional channel silos, internal concentration on channels and products instead of customers, and the historical context of the channel structure as main challenges for multichannel integration.

Van Bruggen et al. (2010) acknowledge that the multiplicity of channels with which most of today's firms are confronted calls for a major redefinition of the channel concept. On the one hand, they argue that technological innovations have made it easier for firms to engage in direct relations with their customers. On the other hand, these customers have become more empowered. Furthermore, they emphasize that the rules of the market have changed because the number of independent sources of information providers and independent sales channels has increased considerably. According to the authors, the power of defining who is in charge of leading the channel system and setting the strategic agenda has shifted away from the manufacturers. Thus, new ways of channel management must be found to meet these challenges. The authors suggest a broader understanding of "distribution channel" which includes the collectivity of all touch points and which is not focused on channel ownership issues but defined by its value-adding potential. The goal is once more to optimize customer experience by combining the channels and their individual value adding functions.

To date, Zhang et al. (2010) provide the latest synthesis of the current literature and industry practice on integrated multichannel strategies. They identify access to new customers, the creation of strategic advantages, and customer satisfaction and loyalty as the most important potentials of a well-integrated channel system. However, going multichannel and increasing integration is also associated with operational difficulties and increased costs. The challenges for synergy creation across channels are identified as channel cross promotion management, data integration, customer cross-channel price comparisons, shared assets and operations, and the distribution of digitized services as support for physical products. The authors acknowledge that a multichannel firm must define the intensity and scope of its integration activities along a continuum of channel harmonization and complete homogenization of its channel system.

Although these frameworks highlight different aspects related to multichannel integration, they all emphasize that creating a seamless customer experience is the major potential of channel integration. Furthermore, all approaches include operational prerequisites and the importance of the Internet and new technologies in their considerations:

1. *Creating a Seamless Customer Experience:* All kinds of channel integration are rooted in the understanding that customers have become multichannel in nature. Successful channel integration should therefore always be designed to win the customers by addressing these new needs and purchase patterns, even when the primary objective is cost savings.

2. *Operational Prerequisites:* Integrating channels requires customer information sharing, joint planning of assortment and prices, inventory management, and other processes and operations across all channels. Many multichannel firms are not equipped with the adequate logistical and technological infrastructure. Constructing the necessary capabilities and employee mindsets is a costly and time consuming process.

3. *The Role of the Internet:* The Internet and the new possibilities for product and service distribution has been the most important driver for multichannel management. At the same time, the web offers the highest potential of channel integration, due to new purchase patterns in which online search plays a dominant role across product categories and the distinct differences between online and physical stores that are the source of creating mutual synergies.

Table 1: Conceptual Research related to Multichannel Integration

Authors	Emphasis	Definition	Key Findings	Managerial Implications
Steinfeld (2002)	*Channel Synergy Creation* Channel integration enables firms to capitalize on potential synergies, yielding competitive advantages	*Spillover Effects between Online and Offline* Online and physical channels create mutual spillover effects that result in increased demand and reduced costs in the other channel	Sources of channel synergies are: Common infrastructures, common operations, common marketing, common customers, and complimentary assets. Benefits of synergies are: Cost savings, increased trust, market extensions, and differentiation through value-added services.	In order to achieve synergy benefits, the management must minimize conflicts and ensure the necessary alignment of goals, coordination and control, and development of capabilities. Employees must adopt the view of the firm as a whole.
Goersch (2002)	*Internet retailing* implications of multi-channel integration for design and functionality of retail Web sites	*Customer experience* simultaneous and consistent employment of Web sites and physical stores, such that customers derive a seamless experience when switching channels	Channel Integration is the preferred strategy for multichannel firms to improve customer acquisition, extension and retention.	Possible synergies for channel integration should be identified along the customer buying cycle. CRM capabilities play an important role of successful channel integration.
Berman et al. (2004)	*Channel Synergy Creation* Ability to choose channels based on their unique strengths	*Channel Hopping* Integrated channels should facilitate channel switching behavior	Each channel has specific advantages. Customers combine the channels according to these strengths. ROPO is the most common form of channel combination.	Managers need to address operational questions concerning cross-selling opportunities, consistency, channel functions, information systems, and logistics
Payne and Frow (2004)	*CRM* Channel integration as strategic role of customer relationship management	*CRM as Integration Enabler* Channel integration is about creating valuable customer interactions. CRM helps obtain a unified single view of the customer across channels and enhance customer experience	Multichannel strategies should be based on building a multichannel objecitive, identification of needs of the customers and customer channel usage patterns, available channel options and integration intensity.	Communicate multichannel benefits to customers. Explain multichannel strategy to employees. Changing sales force behavior. Create clear view of business processes. Implement new incentive systems. Clear objective for channel integration activities
Hughes et al. (2006)	*CRM* *Integration as harmonization of organizational structures, processes and technologies*	*Effective Channel Management* Integration requires that all channels share knowledge about a customer's relationships with the company	Channel integration is a strategic issue potentially requiring structural changes to the organization and changes in the behaviour of customers.	Channel integration is a strategic issue potentially requiring structural changes to the organization and changes in the behaviour of customers.
Sousa and Voss (2006)	*Integration Quality* Integration quality is a new and key service component of a multichannel retailer.	*Customer Experience* A multichannel system offers high integration quality when customers experience a seamless service experience across multiple channels	Two deminsions of integration quality: 1. Channel service configuration (breadth of channel choice & transparency of service configuration), 2. Integrated interactions (content consistency & process consistency)	A good online store alone does not provide optimal service. Designing a multichannel service delivery system, managers need to address, in a coordinated and simultaneous manner, virtual, physical, and integration quality.
Van Bruggen et al. (2010)	*Channel Multiplicity* Customers increasingly rely on multiple sources of information, sales channels, and and support outlets. They require the seamless transition from information to transaction to after-sales	*Broadening the Channel Concept* The channel is defined according to its ownership but as a series of value-adding functions and/or services that combine together to create enhanced customer experiences (e.g., more choice and competitive comparisons, greater objectivity, independent advice, and trustworthiness).	New technologies have created new market realities: Purchase behavior has become more fragmented. Customers have become empowered and are more demanding. Channel suport services become more important. Firms are now now able create more direct links to their customers. Direct distribution formats are becoming more important.	Managers must find ways to cope with the fragmentation of the purchase behavior and the channel system itself. Questions of channel leadership and multichannel coordination will become more complex since more participants are involved. Managers should broaden their concept of distribution intensity from «presence per channel» to «presence per multiple channels»
Zhang et al. (2010)	*Channel Synergy Creation* Proactive design of multichannel structure to create cross-channel synergies	*Cross-Channel Synergies as Categories* Synergies between channels arise from: Communication, market research, price comparisons, digitization, and shared operations.	Synergies can either be obtained by focusing on individual channel strengths or a seamless customer experience. The main challenge is to find and define an optimal management structure of the channel system.	Multichannel management has to decide between the level of homogenization and harmonization of the channel system along the lines of pricing, assortment, return policies, and promotions.

2.3.3.2 Empirical Studies on Channel Integration

Even though several studies have been conducted to show the positive and negative effects of a multichannel system on customer behavior, to date, only few empirical studies have been conducted that explicitly investigate the performance implications of an integrated multichannel system. These studies are synthesized in Table 2. Bendoly et al. (2005) investigate the impact of channel integration in case of product unavailability in a channel. They find a positive relationship between perceived integration and the intention to search for the unavailable product at another channel of the same firm. Thus, they infer that channel integration increases customer firm loyalty and "stickiness" to stay with the initial service provider. Furthermore, they show that perceived channel integration also moderates the relationship between product availability anticipations and channel choice. Customers are less likely to shop at a different channel format when they know that channels are integrated. Stuart-Menteth et al. (2006) focus on channel integration in terms of consistency of experience quality between channel formats. They show that inconsistent evaluations between different channels can negatively influence the overall service evaluation of the channel system. For example, nicely designed storefronts are not as effective, if the website design does not live up to the same standards in the eye of the customers.

Pentina and Hasty (2009) identify a positive effect of channel integration and sales volume. However, this direct effect is only marginally significant at the .6-level. Interestingly, their results also suggest that it does not matter whether the channel functions are carried out by a third party (externalized) or whether the firms internalize the channel functions via a direct distribution format. Wang et al. (2009) investigate the effect of the congruity between a firm's website and physical presence. Their results indicate that prior attitudes play an important role of how customers evaluate and perceive multichannel integration and that channel integration may not always produce positive effects for all customers. Schramm-Klein (Schramm-Klein 2010) finds a positive relationship between channel integration and loyalty towards the channel system as a whole. This effect is positively mediated by the attitude towards the retailer measured as likeability and appreciation. Surprisingly, trust does not mediate the effect of perceived integration on customer loyalty due to a missing significant effect between integration and trust. Emrich et al. (2011) define channel integration as consistency between customer touch points in terms of retail mix elements (e.g. price, assortment). They find that multichannel assortment integration positively influences customers' perceived choice, exploration, and choice confidence.

Table 2: Empirical Studies on Channel Integration

Authors	Emphasis		Method	Research Design			Key Findings
	Construct	Definition of Construct		Outcome	Industry	Channel System	
Bendoly (2005)	Perceived Integration	*Perceived Integration* is defined as mutual support and interchangeability between channels across many channel tasks.	Conceptual and operational development. Empirical research (n = 1,598 customers of three firms)	Effect of availability on channel selection (-), Firm loyalty (+)	clothing, consumer electronics, or music retail industries	Internet: Online stores, Offline: Physical outlets	Perceived online integration is associated with greater loyalty and «stickiniess» to a certain firm. Perceived integration reduces the impact of product availability on channel choice.
Stuart-Manteth et al. (2006)	Consistency between channels	*Channel integration* is viewed as the perceived consistency of customer experience quality between channels	Empirical research (n = 73 UK Lexus customers from 10 dealerships)	Customer relatonship quality (+)	Automobiles (Toyota premium brand Lexus)	TV, print, direct mail, showroom, customer contact center, manufacturer website	The experience quality of interactive channels associated with customer relationship quality. Consistency between channels is important in the customer relationship.
Pentina and Hasty (2009)	Multichannel coordination	*Multichannel coordination* refers to simultaneous and consistent employment of to create a seamless customer shopping experience.	Empirical Research (n = 50 websites of multichannel retail companies)	Online sales in terms of money (+)	general merchandise, food stores, apparel, home furniture, miscellaneous retail	Online store, physical store, catalogs (where applicable)	A higher degree of interchannel coordination increases retailers' online sales. No significant effects were found for externalized vs. internalized channel functions.
Wang et al. (2009)	Retailer-Website Congruity	*Retailer-Website Congruity* is the overall similarity or match perceived by a consumer in regards to the multi-channel retailer's physical store and its website	Empirical Research (n = 290 existing customers with offline but no online experience from 8 multichannel retailers)	Attitude Toward the Website	U.S. retailers: Sears, J.C. Penny, Target, Lowe's, Barnes & Noble, Nordstrom, K-Mart, and T.J. Maxx	Online shops, physical stores	Congruity between the retailer's known offline and their online presence decreases the emphasis new visitors place on website characteristics and increases the influence of their prior attitudes towards the firm.
Schramm-Klein (2010)	Channel Integration Grade	*Channel Integration Grade* is a formative construct consisting of the dimensions of the integration of goods and processes as well as information and orientation	Empirical Research (n = 786 consumers representing the average online shopper in Germany)	Customer Loyalty towards the channel system (recommendation intention)	Online Shops, Physical Stores, Catalogues	apparel, books, groceries, and cosmetics	Channel integration shows a positive impact on customer loyalty towards the channel system. The impact of channel integration is mediated by consumer attitudes. Channel integration intensifies potential existing cross-channel synergies, and leads to a more differentiated use of the retailer's whole multichannel system.
Emrich et al. (2011)	Channel Assortment Integration	Channel Integration is defined as „Channel Assortment Integration" i.e. how consistent multiple channels of the same company are in terms of retail mix elements (e.g. price, assortment)	Empirical Research (n = 786 consumers representing the average online shopper in Germany)	Perceived Freedom of Choice, Exploration, Choice Confidence	Scenario-based fictitious Retailer (e.g. Electronics, Interior Accessories)	Typical Online Shops and Physical Stores	Multichannel Assortment Integration positively influences customers' perceived choice, exploration, and choice confidence. Different interactions between Channel Assortment Integration and Assortment relations are unveiled. The effectiveness of Assortment Integration depends on customers' personal need for structure and their level of involvement.

It is noteworthy that all existing studies focus or at least include electronic channels in their channel integration assessments. As emphasized in the conceptual studies, this highlights the important role the Internet as distribution and information channel plays for the concept of channel integration altogether. However, several limitations result from the existing studies and call for a more detailed examination of the effects of channel integration.

1. *Synergies from the online shop to the physical stores:* Do channel integration activities in the online channel positively influence customer loyalty and channel choice in the offline stores? Previous research has created the link from the offline to the online store (Wang et al. 2009). Synergies in the reverse direction have not yet been examined. However, synergies from online to offline are important for companies that want to create customer lock-in for the research (or ROPO) shoppers. In order to create strategies for an effective management of channel conflicts, it is also important to answer the question whether the cross-over effects from online to offline are actually positive and whether an integrated online shop strengthens offline loyalty and store traffic.

2. *Changes in consumer perceptions:* None of the existing studies examines the effectiveness of online integration activities on the perceived level of integration and resulting customer reactions. For managerial practice it is important to understand whether channel integration and potential channel synergies can be managed proactively and if customers actually value a firm's integration efforts. Moreover, it is equally important to understand how different forms of channel integration perform in generating channel synergies and creating customer value.

3. *Shifts within the Internal Channel System:* Even though channel integration may have overall positive effects in terms of loyalty or purchase intention for a given manufacturer or retailer, it is important to understand the shifts within the channel system in terms of sales and transaction channel choice (i.e. cannibalization effects between the channel formats).

In conclusion, the current knowledge gaps limit the full understanding of the effects of channel integration for research and practice. Especially, the separate influence of integration activities on online and offline behavior and the effect of different forms of channel integration have not yet been researched. Hence, the operationalization of channel integration for this study will focus on these two research gaps.

2.3.4 Operationalization of Channel Integration: Online Integration

Several steps were followed in order to operationalize the concept of channel integration for this study so that its effects can be tested in a meaningful way and create new and relevant insights for managerial practice and marketing research. First, a list of possible integration activities was generated from existing conceptual and empirical publications on channel integration (see previous section). Second, current managerial issues and the expected role and benefits of channel integration were collected. Third, based on the initial list of channel integration activities and managerial topics, possible channel integration activities were discussed with the participating firms of this study. From these discussions, two forms of channel integration emerged that were subsequently implemented and tested in the empirical part of this dissertation. The operationalization procedure is described in the following.

Previous operationalization suggestions: The suggestions from previous conceptual and empirical research on how to implement channel integration are summarized and synthesized in Figure 6. The operationalization suggestions were aggregated into four functional categories by the author of this dissertation. The first category "Facilitating Research Shopping Behavior" includes all integration activities that intend to help multichannel shoppers who search for information on a firm's homepage or online shop to prepare their visit to the physical store. Thus, these implementation activities are targeted to providing a seamless channel transition from online to offline and increase customer lock-in. Facilitation of research shopping takes place during the online search phase.

The second category "Improvement of Online After Sales Services" is derived from the finding that the online channel particularly underperforms with respect to the post purchase phase (e.g., Verhoef et al. 2007a). The general notion of improving perceived online after sales service through channel integration rests on the concept that a seamless purchase experience is not restricted to the transition between search and purchase phases, but also between purchase and post-purchase phases. By actively communicating customers that online purchases can be returned at physical outlets, a positive image transfer from offline to online may be facilitated and customers are more likely to develop trust in the online offer.

The third category comprises all forms of "Channel Consistency" across channel formats. The concept of consistency is referred to in different ways in a number of studies. Thus, most multichannel researchers agree that equality in prices, assortments,

marketing activities, brands, and customer processes are prerequisites or at least important building blocks of an integrated channel system. Today, consistency is probably the integration category with the highest implementation rate among multichannel firms. Most companies use the same brands across channel formats (Schramm-Klein 2010) and the vast majority of multichannel firms use equal pricing across their different distribution channels in order to prevent customer confusion and internal channel conflicts (Wolk and Ebling 2010).

Finally, the fourth category "Cross-Channel Reference and Information Availability" contains these activities that aim to make alternative channels, their services, and offerings known to customers. This involves the active participation of all channel members. Specifically, the employees have to understand the purpose of channel integration and be proficient not only in their own channel domain but also in the other customer touch points to provide the seamless customer shopping experience.

Figure 6: Channel Operationalization Activities in Previous Research

Emphasis	Implementation Examples	Source
1. Facilitating Research Shopping Behavior	▪ Possibility to seach online and pick-up products offline ▪ Dealer search option and address informaton via homepage ▪ In-stock status verification at selected stores through the firm's homepage/online store	Berman (2004) Bendoly (2005) Schramm-Klein (2010)
2. Improve Online After Sales Service	▪ Possibility to return online purchases at physical store	Bendoly (2005) Berman (2004)
3. Channel Consistency	▪ Equal prices across channels ▪ Equal (or at least similar) assortments ▪ Coordinated promotion activities applying to all channels ▪ Utilizing the same processes in all channels (e.g. payment possibilities) ▪ Using the same brands across channels	Bendoly (2005) Berman (2004) Goersch (2002) Schramm-Klein (2010) Sousa and Voss (2006) Steinfield (2002)
4. Cross-Channel Reference and Information Availability	▪ Overview of alternative channels in all channels ▪ In-store online terminals ▪ In-store staff refers customers to website ▪ Including web address on shopping bags and advertisments ▪ Advertising website at local stores	Bendoly (2005) Berman (2004) Goersch (2002) Schramm-Klein (2010) Sousa and Voss (2006)

Managerial issues of channel integration: In an expert retailing workshop that was carried out in 2010 by the IfM-HSG and a German car manufacturer, marketing executives from different industries (travel, food, printing presses, Internet startup) discussed the success factors of introducing an online shop. With respect to channel integration, the most important issues were the handling of conflicts with the existing channels, the realization of cost savings, and creating synergy effects by increasing customer value. Several executives stressed the loss of customers to online pure play retailers and that it was crucial to differentiate offers in order not to lose customers. In a second series of multichannel strategy workshops, which was carried out in 2011 with one of the participating companies of this study, possible approaches of increasing multichannel efficiency were elaborated. Even though the company had already made considerable progress in providing high customer value across channels, the common understanding among the retail executives of this firm is to break up channel barriers even further and to provide an optimal purchase experience by offering a seamless and well-integrated channel system. However, channel conflicts between indirect and within the firm's own direct channels is still an important topic that had not yet been fully resolved.

Integration measures of the home shopping channel (especially the online shop) were discussed. The most heavily discussed topic was the potential cannibalization of the direct physical stores by an integrated online channel. The author's synthesis of the expert workshops yields the following main issues:

1. Embedding the online shop into the channel portfolio to satisfy existing customer needs of easy transition between channels and to offer a holistic multichannel experience.

2. Increase customer lock-in between online and offline channels to reduce the risk of losing ROPO-customers and decrease channel free riding.

3. Reduce the dependence on indirect distribution channels. Increase market coverage of own brands and products with direct channels.

4. Attract new customers and increase customer loyalty of existing customers. Efficiently manage customer relationships and increase share of wallet.

5. Differentiation from online pure play competitors. Using the offline channels to offer additional value in the online channel.

6. Reduce internal channel conflicts: Avoid cannibalization between own direct channels.

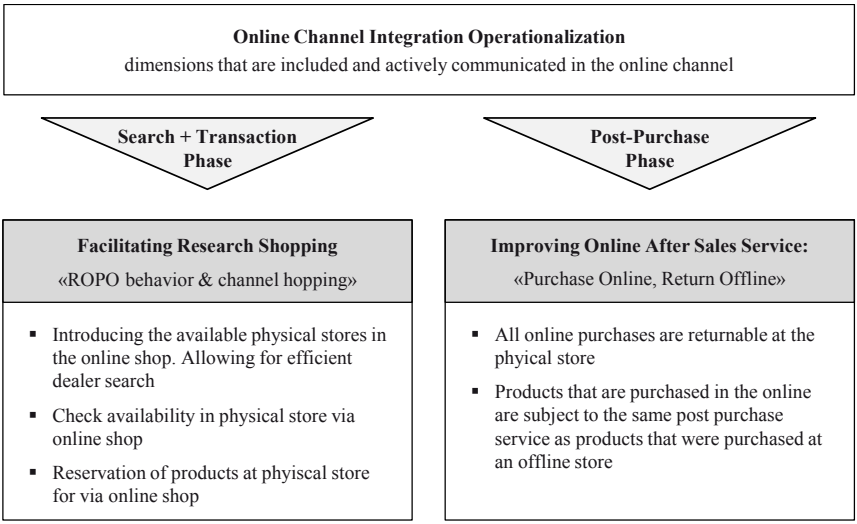
Prioritization of channel integration activities: Two independent companies were interested in participating to test the effects of channel integration on their customers. The companies were recruited in January 2012 using a project proposal describing the goal and insights of the intended study. Both firms agreed on defining integration activities and testing them with their customer base. The first company is a European manufacturer of sporting goods (firm A); the second cooperating company (firm B) is a German manufacturer of sports fashion. Based on the insights on operative integration suggestions from previous publications as well as the current practical issues of multichannel integration identified in the previously conducted expert workshops, feasible and sensible integration measures were discussed independently with each participating firm.

The discussions were not structured but followed a loose pattern. The first part consisted of a recapitulation of the current channel strategy and managerial issues for the firms' multichannel system. In this initial phase of the discussions, the idea behind channel integration was presented and examples given. The current channel strategy of the firms was assessed based on the competitive position as well as the present and future customer channel needs of each company. Both firms identified that their customers use different channel formats simultaneously and that ROPO-behavior is a common purchase pattern for outdoor and fashion products. Consequently, the seamless multichannel shopping experience was identified as the most important factor and central theme of an integration strategy. Furthermore, due to the strength of the ROPO-customer segment, the role of the online store was agreed upon as one of the most relevant topics and an interesting starting point of channel integration for both firms. With respect to the online shop, the most notable difference between both companies is the fact that firm A had previously not employed a direct online channel. Thus, even though e-commerce was identified as most important field of action, the individual reasons were slightly different for each firm. While firm A focused on investigating in an exploratory manner whether a direct online shop should ideally include integration features with respect to the offline channels, firm B wanted to test further integration possibilities for its existing online shop and further develop its multichannel customer value strategy.

Based on the results of the first discussion round several integration options were identified jointly by the firms' channel managers and the author of this dissertation. In

a second round, the initial list of integration options was used to define a feasible set of relevant and realistic ways to implement and realize integration activities across channels. Due to the importance of the online channel - both from a theoretical perspective and from the current practical concerns of the participating companies - it became apparent that the integration activities should be tested for the online channel within a research shopping environment. Thus, the integration activities were designed based on the online search and ROPO shopping behavior and built into a hypothetical (firm A) or the already existing (firm B) online shops of the participating firms. Overall, the identification process of a feasible set of integration activities produced two integration forms that were chosen to be tested. These integration activities are displayed in Figure 7.

Figure 7: Integration Activities used in this Study



The two integration features that form the basis of the empirical studies of this work can be classified into two dimensions: (1) Facilitating Research Shopping, and (2) Improving After Sales Service Online. Both integration features intend to provide a

seamless shopping experience across online and offline channels. By reminding the customers of the available offline stores and allowing for availability checks and product reservations, the Facilitating Research Shopping category creates mental connections and halo effects from the offline stores to the online shop and helps ROPO customers plan their offline transaction. Improving After Sales Service Online by allowing online purchases to be returned at a physical store is also intended to ease the perceived transition from online to offline in the post purchase phase and thus obliterate perceived channel barriers. In addition, customers may perceive lower purchase risk and increased service in the online shop when they know that product failures or wrong deliveries are not handled in a "black box" but can be solved personally at a physical outlet. Furthermore, both integration dimensions can be distinguished along the purchase process of the customer. The first dimension (Facilitating Research Shopping) concentrates on the search and purchase phase of the multichannel shoppers; the second dimension (Improving After Sales Service Online) tests for the effects of an integrated online store in the post purchase phase.

2.4 Conceptual Framework

Figure 8 displays the conceptual framework for this dissertation. The framework intends to shed light on how, when, and why the integration measures identified for this study affect the online and the offline channel in terms of customer reactions and perceptions. Generally, the framework follows a structural S-O-R approach. Integration activities are stimuli affecting customer perceptions and evaluations that in turn lead to an adaption of customer responses in terms of channel usage (e.g. Jacoby 2002). Due to the focus of channel integration on the online channel (online integration), the proposed structure of the conceptual model is borrowed from Technology Adoption Model (TAM). The TAM has demonstrated the important intervening role of user evaluations and the antecedents of these evaluations to adopt technological interfaces (Davis 1989; Davis et al. 1989). The TAM has also played an important role in explaining general customer online shopping behavior. It emphasizes perceived usefulness, service quality, and perceived risk as major driving factors of consumers' intention to use online channels, as well as for their general adoption and usage behavior of the Internet as a distribution channel (e.g., King and He 2006; Montoya-Weiss et al. 2003; Pavlou 2003). Specifically, the model proposes that Facilitating Research Shopping behavior and improving perceived after sales service

in the online shop are strategic actions that will increase customer value online and thus generate a competitive advantage. An online shop that provides a better seamless purchase experience and the option for customers to switch to the offline store will then eventually lead to positive customer reactions in terms of loyalty and purchase intention in the online channel and potentially generate channel synergies for the physical stores as well.

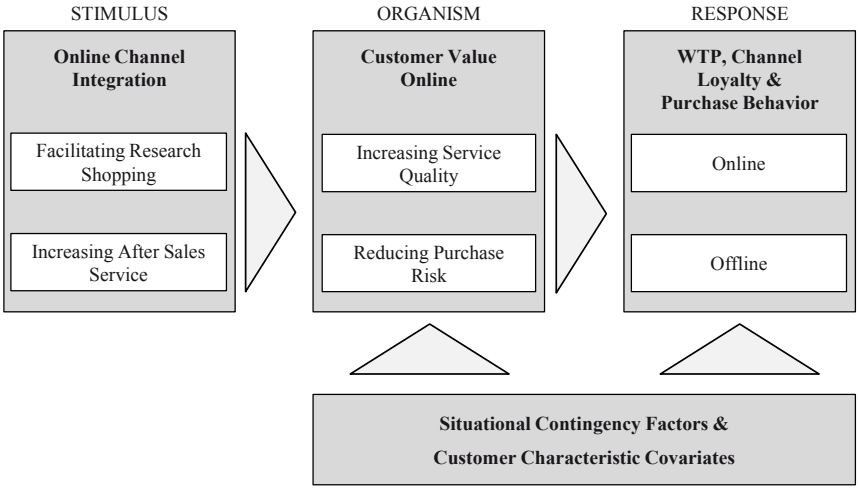
Customer value arises from the product and service attributes that help customers achieve their goals in usage situations (Woodruff 1997). In this respect, an integrated online shop increases customer value for multichannel shoppers because it helps them combine online and offline channels according to their specific purchase situations and channel preferences. From the Technology Adoption Model perspective, this online customer value is manifested in a higher perceived service quality and a lower purchase risk for a firm's online shop. Increasing customer value in the online shop will affect customer reaction across all channel formats. Thus, channel integration measures are likely to affect all channel formats simultaneously. Higher customer value online will lead to higher willingness to pay (WTP), customer loyalty, and purchase intention in the online channel.

However, reducing purchase risk and increasing service quality online also improves the evaluation of the online channel relative to the remaining touch points in the channel system. For example, an increase in purchase likelihood in the online channel may be negatively related to the purchase in another channel since customers can only choose one channel to conclude the transaction. This is especially true for durable product categories that are subject of this study. On the other hand, channel integration may also create synergies by designing the online channel in a way that better fits the customers' desire to use several channel formats, as proposed by the existing conceptual and empirical works on channel integration. Thus, the mechanism of how an integrated online shop affects customer responses in the offline channel are complex and may even produce conflictive outcomes. The existence of positive cross-channel effects in terms of loyalty and purchase behavior depends on whether the integration activities actually generate a seamless purchase experience that is valued by the firms' customers.

Moreover, contingency factors that potentially moderate the effect of integration activities on purchase risk and service quality in the online channel, as well as on online and offline customer loyalty and purchase are included in the framework.

Channel choice and evaluation of multichannel customers depend on the specific purchase situation and purchase experience with a certain channel format. Therefore, the focus lays on these situational end experiential contingency factors. Furthermore, customer characteristics are covariates that need to be taken into account. The following chapter will translate the proposed general framework into a testable structure of hypotheses.

Figure 8: Conceptual Framework



B Development of Hypotheses

1 The Role of Perceived Service Quality Online

In a multichannel context, customers are very likely to be experienced and proficient in multiple channels. They choose between different channels depending on situational factors and their specific preferences in each stage of the purchase process. Each purchase channel excels in specific characteristics that make it especially suitable for certain purchase situations and product categories. Especially customers who use multiple channel formats combine the different channels according to their needs arising from a certain purchase task and their situational preferences (Montoya-Weiss et al. 2003). Thus, previous research suggests that customer service satisfaction is inherently different across online and offline channels, but not necessarily always lower online (Shankar et al. 2003).

The online channel has traditionally been perceived as useful in the early stages of the purchase cycle. Due to its comparably low search costs and easy provision of access to information, it is especially suitable for the search of products and to obtain an overview of the available options (Alba et al. 1997; Bakos 1997; Lynch Jr and Ariely 2000). Several studies have also confirmed that the Internet can perform well in terms of purchase convenience. Online shops are not restricted to specific store opening hours. Consumers can shop from their homes without having to travel to the store. This is especially relevant if the next offline store is relatively far away or inconvenient to reach. Furthermore, online shops usually have a higher assortment since they are not restricted to physical space constraints. Hence, the online channel has specific advantages that make it preferable to the physical store in many aspects.

Despite these important positive features of the online channel, it also has some important drawbacks compared to its physical counterparts. Especially in the case of search goods, when product features and characteristics cannot be easily evaluated before purchase, or if the purchase decision involves a considerable monetary risk due to a high price, the Internet may not provide the necessary services for the final purchase decision. It is also possible that service satisfaction is initially lower online due to lower responsiveness of the online channel: The availability of human contact is usually not provided, and qualified sales personnel is usually not accessible on the Internet (e.g., Meuter et al. 2000). Despite the generally lower empathy and

J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9_2,

responsiveness of the online channel, previous research suggests that both are important factors for online customer satisfaction (Ahn et al. 2005; Bauer et al. 2006). Even though timely and reliable service might not play a role for customers during the information search phase, it becomes highly relevant when customers are making purchase transactions online (Cai and Jun 2003). Peck and Childers (2003) show that the confidence in product judgments is affected positively when customers can touch a product during evaluation. Consequently, the authors argue that purchase environments that do not provide the possibility of physical examination may create frustration and lead to non-touch channel (i.e., Internet) avoidance in certain customer segments. Furthermore, multichannel customers tend to have poorly defined prior online service expectations and thus use the alternative channels as reference points to form online service performance evaluations (Mick and Fournier 1998; Montoya-Weiss et al. 2003; Zeithaml et al. 2002). If online channel service is compared relative to the offline benchmark, customers might experience negative disconfirmation and become dissatisfied.

Even though service quality perceptions between online and offline channels highly depend on situational factors and customer characteristics, it is reasonable to expect that, overall, customers perceive lower service quality in the online channel with respect to the context of this research. The analysis focuses on search goods (outdoor and dress jackets) of relatively high priced brands. Clothing can only be fully assessed if it is tried on before the purchase. Furthermore, the products are highly functional and state of the art which makes the assistance of an expert sales person more desirable. Hence, it is expected that customers will perceive the physical stores as more suitable for this type of purchase. It is therefore hypothesized that

H_1: *The perceived service quality is lower in the online channel than in physical stores.*

2 The Role of Perceived Online Purchase Risk

The concept of perceived risk – the consumer's *"subjectively determined estimation of loss"* (Mitchell 1999, p. 168) has been used to explain online shopping behavior. In this respect, several studies show that risk perceptions play an important part of online purchase decisions. Likewise, the level of transaction security strongly influences

customers' propensity and willingness to buy from the Internet channel (Jarvenpaa et al. 1999; Jarvenpaa et al. 2000; Swaminathan et al. 1999). Verhoef, Neslin, and Vroomen (2005) show that risk in terms of privacy concerns plays a higher role for the purchase decision in online stores compared to physical shops.

Extant research results indicate that shopping via the Internet is perceived to be riskier than in-store shopping (Donthu N 1999; Tan and Teo 2000). Lack of website trust is one of the most important barriers to shop online (Urban et al. 2009). One important disadvantage of the Internet channel over traditional channels is its lack of tangibility. Just as in any in-home shopping format it is impossible for customers to test and examine products and services prior to a purchase. In addition to the lack of physical examination capabilities, customers seem to expect higher difficulties in returning defective products or false deliveries, as well as a generally lower after sales service performance in online channels (Jiang and Rosenbloom 2005; Verhoef et al. 2007a).

While shoppers do not have to disclose any personal information in a physical store, purchases on the Internet require customers to provide at least their credit card information and mailing addresses. Privacy concerns such as personal data protection and the reluctance of sharing their credit card information has been one important reason for customers not to shop online (Maignan and Lukas 1997). Hence, the high importance of security and trust have been emphasized in early studies of customer online shopping behavior (e.g. Miyazaki and Fernandez 2001; Park and Kim 2003; Szymanski and Hise 2000; Yoon 2002). Urban et al. argue that building online trust should be a central concept for building a successful e-commerce strategy and to generate a competitive advantage online (Urban et al. 2000).

In this context, the findings of Forsythe and Shi (2003) also suggest that perceived risk is a useful and relevant context to explain barriers to online shopping that must not be neglected. In particular they show that the following three types of perceived risk are important determinants for the decision to purchase online: (1) financial risk that comes from the potential misuse of credit card data, (2) product performance risk that arises from poor product choices due to the inability of prior physical examination, and (3) time/convenience risks that are associated with (technical) difficulties of using the website and longer waiting times due to product shipping. The findings of Biswas and Biswas (2004) reveal that perceived risk perceptions are initially higher in online compared to in-store settings. Interestingly, they find that this difference especially holds for non-digital physical products such as clothes and apparel that are associated

with high involvement. Several other studies investigate the crucial role of trust for customer usage and advocacy of the online channel (e.g. Bart et al. 2005; Büttner and Göritz 2008). In the light of these prior research findings, I hypothesize that

H_2: The perceived purchase risk is higher in the online channel than in physical stores.

3 The Effects of Online Integration on Perceived Purchase Risk and Service Quality Online

The positive transference of attitudes and trust from a multichannel retailer's physical to its online stores has been suggested by previous research results (Badrinarayanan et al. 2010). Likewise, Stewart (2003) shows that online shops increase customers' trusting beliefs when they signal their association with a physical store. Firms can provide references to other customer touch points in their channels and hereby increase trust towards that channel. Wang (2009) find that existing attitudes towards a retailer's offline stores play a crucial role in forming the customers' attitudes towards a firm's online shop. Thus, the presence of such cues may be crucial to the formation of trust and positive behavioral intentions for the online store. Online integration activities provide these cues to the offline channel. By increasing the connection and the ease of transfer between a firm's online and offline channels, it is therefore likely that this positive image transfer becomes more salient for the consumers. More specifically, in online integration the primary goal lies in equaling out the perceived deficits that are inherent to the online store: service provision, risk of making a wrong purchase, and after sales performance. This can be achieved by increasing the perceived service level and brand/product experience for the customer in the online shop, by reducing perceived purchase risk online, or by increasing perceived online after sales service. The goal of enhancing the functions of the Internet channel is to directly increase trust and functionality of the online store. Hence, integrated online channels are likely to be of higher use for customers. With respect to the integration activities defined for this study, Facilitating Research Shopping and Increasing After Sales Service Online, customers may favorably realize these additional integration efforts. By offering assortment information for physical stores and making it possible to collect or return products ordered on the Internet, firms provide an easy and safe transfer from online search to offline purchase, as well as increased after sales performance. Both factors

may eventually lead to higher perceived service in the online channel and reduced purchase risk.

Consumers may evaluate a firm's channel system in a holistic way. Schramm-Klein (2010) suggests that customers also perceive a firm's distribution channels as an overall package from which they pick the appropriate channel for a given shopping situation. Actions to improve the integrated functioning of a firm's distribution channels may therefore positively affect how consumers evaluate the combined use of the alternative channels and how they evaluate the integrated functioning of the channel system as a whole (Schramm-Klein 2010; Sousa and Voss 2006). Thus, measures to increase the complementarity between distribution channels will in turn lead to a higher rating of perceived integration of the channel system. Furthermore, it may be inferred from hypotheses 1 and 2 that perceived channel integration acts as a mediator between a firm's channel integration activities and the perceived service quality and purchase risk. Thus, it is hypothesized that:

H_3: Online integration in terms of (a) perceived integration, (b) Facilitating Research Shopping, and (c) increasing after sales service will lead to higher perceived service quality of the online channel.

H_4: Online integration in terms of (a) perceived integration, (b) Facilitating Research Shopping, and (c) increasing after sales service will lead to lower perceived purchase risk in the online channel.

4 Online Integration and Willingness to Pay across Channel Formats

The main argument that the Internet has intensified price competition lies in the notion that the online medium significantly reduces customer search costs (Bakos 1997; Clemons et al. 2002). In addition to higher transparency in online markets, Internet retailers realize cost economies over their physical competitors due to savings on lower inventory levels and sales personnel (Ratchford 2009). These effects suggest lower overall prices on the Internet compared to physical stores. Even though results are somewhat ambiguous and there are exceptions for certain product categories and

market types (Bailey 1998; Clay et al. 2002; Erevelles et al. 2001), previous research largely supports this expectation. Several studies show that the prices are on average lower online than in physical stores for a multitude of products and services. Brown and Golsbee (2002) show that customers who searched for information on the Internet paid 8-15% lower insurance prices between 1995 and 1997. Brynjolfsson and Smith find that the same products generally sell for less online (2000) Zettelmeyer et al. (2006) assess the reasons how the Internet lowers prices in the automotive industry. They find that referrals and price data on the Internet help customers make better informed choices, and consumers who used the Internet prior to the purchase decision eventually pay 1.5% lower transaction prices for the same car. Shankar et al. (1999) find that even though price importance for customers is not significantly different across the online and offline media, the online medium increases the proclivity to search for prices.

The online and offline channels are inherently different in the services they provide for shoppers (Neslin et al. 2006; Ratchford 2009). However, there is ample evidence that the offline store still outperforms the online store in several purchase related attributes such as perceived physical inspection of the products (Kacen et al. 2002), service quality (Montoya-Weiss et al. 2003), after sales service (Verhoef et al. 2005), and risk (Forsythe and Shi 2003). On the other hand, the online channel is perceived to be advantageous mainly in attributes related to purchase convenience and information search (Ratchford et al. 2003). The latter being an attribute that is likely to lead to higher market transparency and ultimately lower prices, as stated in the previous paragraph. Price sensitivity tends to be higher online due to the relative ease with which consumers can compare prices (Anderson et al. 2010a). Kuswaha and Shankar (2008) show that for the customers of an apparel and shoe accessories firm the store customer segment shows the largest margin and the multichannel and online customers are more price sensitive and that the average returns are highest for the multichannel customer and lowest for the online-only segment.

To date, only little research has been conducted on the direct differences in customer WTP in these channels. To the best of the author's knowledge, lower willingness to pay online has only been hypothesized (Ratchford 2009; Zhang et al. 2010). One exception being the working paper of Kacen et al. (2002) who show that unless prices are 8-22% lower, online customers prefer to shop offline. In the light of the previous research findings and the overall strong indications that the Internet has lowered

reference prices in the online channel. In line with these expectations it is hypothesized that:

H_5: WTP is lower in a firm's online store than in its offline store.

If an online channel is integrated with a firm's physical stores, it essentially offers better service, more flexibility, and more functionality to the consumers. This increase in service provision works in two ways: First, online integration adds specific advantages to an online store that traditional online shops do not provide. Second, by referring customers to the offline channel during the search and purchase process, integrated online channels create a mental connection between a firm's online and physical store. When the physical channels are more salient for Internet customers, a positive image transfer from the physical store to the electronic channel is easier and more likely to happen. Given that initial WTP is higher for an offline store, customers might thus be more willing to acknowledge higher prices in the online shop as well. Especially, if the integrated online channel encourages channel switching and research shopping, customers are more likely to expect the same price levels online and offline. As a result, online integration may lead to increase WTP in a firm's online channel relative to the offline price expectations and thus may help close the gap between WTP online and offline.

H_6: Online integration measures will increase a customer's online WTP.

For the physical stores, it is not directly apparent if online integration measures lead to offline synergies or dis-synergies in terms of WTP at the offline stores. Even though online integration measures make it easier for customers to e.g. find the nearest store or check availabilities, once the customer arrives at the physical store the provided service on-site does not change. Therefore, there is no direct reason for customers to have higher offline WTP when they have searched and prepared their store visit at an integrated online store. However, the integrated online shop may contribute to the overall shopping experience and increase overall service satisfaction with a firm and its channel system. In this context, online integration may indirectly increase perceived service quality and WTP in the traditional store.

On the other hand, by bringing online and offline channels closer together, the image transfer that is created by online integration may be negative for the physical store since the customers could mentally connect their lower price expectation online with a

firm's offline channel. Furthermore, by improving the online channel, the physical stores lose their specific advantages over the online shop. As a consequence, the relative advantages concerning purchase risk and service quality decrease. In this case online integration measures may create channel dis-synergies and WTP offline could be even smaller if customers prepare their offline visit in an integrated online shop. To the best of the author's knowledge, no previous research exists that suggests which mechanism prevails. In the light of these contradicting results, it is unclear if an integrated online store influences WTP in the offline touch points in a particular direction. However, the direct influences concerning overall service satisfaction and negative image transfer may cancel each other out and be weaker compared to the fact that service content stays unchanged in the physical store. Based on the above, it is proposed that online integration has a neutral effect on offline WTP:

H_7: Online integration measures do not change WTP in the physical store.

For integration measures that are designed to reduce purchase risk on the Internet and to improve the customer service within an online store it may be inferred from hypotheses 4, 5, and 6 that increased service quality and reduced risk act as moderators for the hypothesized positive influence of online integration on online WTP. Previous research has shown that satisfied customers (Homburg et al., 2002) are willing to pay more, while higher perceived purchase risk (Huang 1993; Savage 1993; Weber and Hsee 1998) significantly reduces WTP. Therefore, the following mediation mechanism is proposed: Online integration will reduce perceived online purchase risk and increase service quality, which in turn will lead to a higher WTP in the online shop. The expected mediation is further backed by the results of Fassnacht and Köse who find that online service quality and trust in online shops increases willingness to pay more (Fassnacht and Köse 2007). Thus, it is hypothesized that:

H_8: The positive effect of online integration on online WTP is mediated by a) perceived online service quality and b) perceived online purchase risk.

5 Loyalty and Purchase Intention in the Online Store

In online integration, the goal not only lies in further improving the online channel's specific strengths, but also in equaling out the perceived deficits compared to the other

channels. As shown previously, these are specifically: service level, risk of making a wrong purchase, and after sales service. Online channel integration may be implemented with the goal to reduce perceived purchase risk online and increase after sales service by e.g. making it possible to collect or return products ordered on the Internet. However, a firm's offline presence may also directly reduce uncertainty about buying through a direct online channel if a firm promotes its physical stores in the online shop. Perceived risk may be lower in an integrated online store because customers know that there is a physical place to go if problems occur. Previous research has shown that customers are more cautious about purchasing online and that their concerns can be reduced when a firm is physically present in their local market (Tang and Xing 2001). Hence, integrated online channels are likely to be of higher use for customers. Additionally, the positive transference of attitudes and trust from a multichannel retailer's physical to its online stores has been suggested by previous research results (Badrinarayanan et al. 2010). Positive brand connotation attributed by the physical store may transfer to a firm's other channels (Jacoby and Mazursky 1984; Keller 1993), and valuable prior experiences, knowledge, or patronage of an offline store can create a halo effect for the online channel (Kwon and Lennon 2009). By increasing the connection and the ease of transfer between a firm's online and offline channels, it is therefore likely that this positive image transfer becomes more salient for the consumers. It is therefore expected that:

H_9: Online integration in terms of (a) perceived online integration, (b) Facilitating Research Shopping, and c) Increasing After Sales Service Online will increase online loyalty.

H_{10}: Online integration in terms of (a) perceived online integration, (b) Facilitating Research Shopping, and c) Increasing After Sales Service Online will increase online purchase intention.

Previous research has established service quality as an antecedent of purchase intention and customer loyalty. Carrillat et al. (2009) conduct a meta-analysis of 86 previous studies and find large effects of service quality on customer loyalty and purchase intention. Concerning the online domain, traditional technology adoption literature has provided strong empirical support that perceived usefulness constitutes an important positive factor for an individual's intention to use an electronic distribution channel (Featherman and Pavlou 2003; Schepers and Wetzels 2007). In

this context, previous research suggests that perceived usefulness is closely related to service evaluations and that perceived service quality itself is an important driver for online purchase intention (Kim et al. 2012; Verhoef et al. 2007a).

Research has confirmed the long-term effect of service quality for building a lasting relationship with the firm (Kwon and Lennon 2009). The positive association between service quality and customer loyalty has recently been verified in a more general context (Fernández-Sabiote and Román 2012; Verhoef and Donkers 2005) and also specifically for online distribution channels (Bauer et al. 2006; Cai and Jun 2003; Kim et al. 2012). Following these previous findings it is hypothesized that

H_{11}: Online service quality increases (a) online loyalty and (b) purchase intention in the online channel.

Previous research suggests that a customer's decision to change, avoid, or postpone a purchase decision is strongly influenced by the perceived risk associated with the purchase (Taylor 1974). Perceived risk not only plays a role for the purchase decision itself. Consumers' risk perceptions are also considered to negatively influence the store loyalty and shopping modes (Ross 1975). In a similar vein, factors of perceived risk have been shown to constitute an important barrier to adopt a technology-based distribution channel (Dowling and Staelin 1994) and reduce the motivation to use such a customer touch point (Meuter et al. 2005). Thus, customers will not choose to use the online shop when they associate an unacceptable amount of risk with the channel format. In analyzing consumer switching behavior from offline to online channels, Gupta et al. (2004) identify channel risk perceptions of the online channel as a major driving factor not to switch to purchase via the Internet.

Apart from single online purchase decisions, previous research suggests that perceived risk is also negatively related to consumers' loyalty towards electronic distribution channels (Anderson and Srinivasan 2003). Forsythe and Shi (2003) found empirical evidence that perceived risk has a negative influence on the frequency of Internet searches with the intention to buy, the frequency of purchasing online, and the frequency of the amount consumers had spent in shopping online within the last six months. In the light of these previous findings, it is hypothesized that:

H_{12}: Online purchase risk decreases (a) online loyalty and (b) purchase intention in the online store.

One may infer from hypotheses H_{11} and H_{12} that perceived service quality and perceived purchase risk will act as mediators for the effect of online integration on online customer loyalty and purchase intention. Specifically, customers will be more willing to purchase and show higher loyalty to a firm's integrated online shop because they perceive it to be less risky and to provide better service than the non-integrated version.

H_{13}: *Perceived online service quality and purchase risk will moderate the effect of online integration on online loyalty.*

H_{14}: *Perceived online service quality and purchase risk will moderate the effect of online integration on online purchase intention.*

5.1 Online Integration and the Relative Performance of the Online Channel

Channel evaluations are always based on the other available and relevant channel alternatives (Montoya-Weiss et al. 2003). This raises the question how modifications in one channel affect its relative position in the whole channel system with respect to customer perceptions, usage intentions, and performance. A related question is how the availability of multiple channels and, more specifically, the quality of a single channel, affects a firm's other distribution channels. For example, a high quality online shop might also have positive effects on how customers evaluate a firm's physical store due to an image transfer from the online shop to the physical store and because it is easy and convenient for them to prepare their store visit beforehand.

These mutual cross-channel influences, or channel synergies, within multichannel systems have been the subject of a number of initial conceptual publications and studies. The findings of previous research on the existence of channel synergies are ambiguous. Some researchers suggest that the online channel may provide a direct link to the offline channel during a customer's online search and thereby making it more convenient to stay within a firm's own channel system (Bendoly et al. 2005; Zhang et al. 2010). Zhang et al. (2010, p. 176) also make a compelling argument for mutual channel synergies when stating that *"if multichannel retailers had only encountered cannibalization [...] the phenomenon would have been short lived."* If these

argumentations hold, online integration would increase customer lock-in for ROPO- and multichannel customers and eventually increase loyalty and sales in the offline channels, as well. There is some initial empirical evidence of the positive cross-channel effects of multichannel systems. Schramm-Klein (2010) finds that customers who perceive a firm's multichannel system to be well-integrated, are more satisfied, have higher trust in the firm's channels, and are more loyal. The results of Fernandez-Sabiote and Roman (2012) suggest a positive link between offline perceived service value and online perceived service value. Strebel et al. (2004) show that word-of-mouth and traditional information channels act as complements.[4] Verhoef et al. (2007a) find that the search attractiveness of the online channel enhances customers' intention to purchase offline. Montoya-Weiss et al. (2003) show that multiple channels act complementarily when it comes to overall customer service satisfaction. Higher perceived quality of all channels contributes to the customer experience as a whole, and eventually will lead to higher total customer service satisfaction. As a result of increased customer satisfaction provided by the availability of multiple customer touch points, customer loyalty towards the brand or the retailer may be enhanced, as suggested by several studies (Campbell and Frei 2006; Danaher et al. 2003; Hitt and Frei 2002; Shankar et al. 2003; Wallace et al. 2004).

However, a firm's integration activities could be counterbalanced by an inherently missing complementarity between the distribution channels. For many product categories, especially durables, total customer demand is rigid and not easily expandable. Thus, despite the overall positive effects of a multichannel system on customer value generation and retailer retention, the single channels of a firm compete for the existing customers' share of wallet. This intra-firm competition may be worsened in an integrated channel system and result in channel cannibalization (Deleersnyder et al. 2002). Even studies supporting synergistic channel effects show that the introduction of an online channel at first decreases offline sales before exceeding the previous sales level in the long run (Avery et al. 2012) and that the existence of synergistic effects between channels depends on the channel types under consideration (e.g. Strebel et al. 2004; Verhoef et al. 2007a). Some studies find that a multichannel strategy may have drawbacks in terms of channel dis-synergies (Ansari et al. 2008; Moriarty and Moran 1990; Shih and Venkatesh 2004; Van Birgelen et al. 2006). For instance, van Birgelen et al. (2006) found that a multichannel strategy may cause channel cannibalization and reduce sales.

[4] Whereas traditional physical stores and the Internet act as substitutes for information search.

If customers perceive integration measures as beneficial in only one touch point, the different channels may actually act as substitutes instead of complements. This missing complementarity between channels might also be rooted in consumer psychology. Montoya-Weiss et al. (2003) show that positive evaluation of the old channel can hinder the adoption of a new channel. In a similar way, Falk et al. (2007) use status quo bias theory to explain channel dis-synergies. Verhoef et al. (2007) simulate the effects of an online-channel service improvement on offline sales. They find that Internet purchasing increases by approximately 10% at the expense of store sales. This is in line with basic microeconomic theory where the value of the offline channel is defined relative to the alternative purchase option (i.e. the online store). If the online store increases in value, the relative perceived value of the store decreases.

In the light of these controversial theoretical argumentations and empirical findings, it is difficult to derive clear indications of the effect of an integrated online channel on customer reactions within the overall online-offline channel system. Based on the initial hypotheses of online integration and customer reactions in a firm's online store, it is expected that online integration increases online purchase intention and loyalty towards the online store. With respect to the physical channel, the critical question is whether an integrated online shop creates strong enough synergistic effects for customers to be more loyal and display higher purchase intention in the physical store as well. If these synergies are not strong enough, offline loyalty and purchase intention may stay unchanged or even be reduced in favor of online channel patronage. In the latter case, online integration would cannibalize the offline stores. Customer channel usage and eventually share of wallet would be lost for the offline channel in favor of the online store. Although channel cannibalization may be a desired goal under certain circumstances, e.g., when it comes to customer acquisition from competing firms or retailers, it might cause serious internal conflicts between a firm's distribution channels.

The hypotheses of the effects of online integration on the combined customer perception of the online and offline channel are based on the previous argumentation that online integrations increases customer value online via increased service and lower purchase risk in the online channel. It is unlikely that online integration directly affects service quality and purchase risk in the offline stores since their basic characteristics are not affected by an integrated online channel. Consequently, the focus lies on the relative improvement of the online shop compared to the physical stores caused by higher online service quality and purchase risk. Online integration

activities are directly designed to improve the service provision and reduce purchase risk in the online shop. It is therefore expected that the effect of online integration on online service quality and purchase risk improves loyalty and purchase intention in the online channel to a higher extent than in the offline store.

As previously elaborated, online integration might have positive or negative effects for the physical channel, depending on whether channel synergies or cannibalization effects are the dominant mechanism. In the case of channel synergies, the positive effect of online integration activities on the physical store is expected to be lower for the offline store. The reason is that customers can only experience the integration effects indirectly after visiting the online store. The positive effects of an integrated online store are thus associated with additional efforts. Furthermore, the improved performance of the integrated online shop itself may dampen synergistic effects on offline purchase intention and loyalty at least to a certain extent. In the case of channel dis-synergies, an integrated online shop will increase the negative effects on offline loyalty and purchase intention even further. Thus, in either case, online integration will increase the relative performance of the online shop compared to the offline channel for loyalty and purchase intention. It is therefore parsimoniously suggested that:

H_{15}: Online service quality increases (a) online loyalty and (b) purchase intention relative to the offline channel.

H_{16}: Online purchase risk decreases (a) online loyalty and (b) purchase intention relative to the offline channel.

5.2 Moderation Effects for Perceived Online Service Quality and Purchase Risk

As previously stated, it is widely acknowledged that service quality and risk are important reasons for many Internet users not to shop online (see Chapter B.1 and B.2). Thus, risk reduction and service provision are important factors to increase trust in an online channel. It is therefore important that an online shop is designed to reduce perceived purchase risk and offers a high service quality. Knowledge, experience, and expertise with the Internet in general can provide a greater sense of comfort with a firm's online channel and help reduce the perceived uncertainty and risk that is

associated with it (Montoya-Weiss et al. 2003). Given that customers develop perception of trust with a website based on their interaction with the site (Bart et al. 2005), previous findings suggest that security concerns about online purchases are lower for customers with higher online experience (Forsythe and Shi 2003; Miyazaki and Fernandez 2001; Park and Stoel 2005) and familiarity with a certain online shop (Bart et al. 2005; Yoon 2002). If past online purchases did not involve serious problems (e.g. faulty delivery, product failure, etc.) customers who have already gained experience with an online shop are more likely to have established an initial level of trust with the specific online shop. Hence, customers who have previously purchased via an online shop are likely to perceive this channel to provide better service and be less risky compared to new customers. Channel integration activities that bring online and offline channels closer together are therefore likely to represent stronger signals for new customers with lower initial risk perceptions, service quality expectations, and overall trust towards the online shop compared to customers who already know the online channel.

In other words, the positive image transfer of a firm's offline channels (Badrinarayanan et al. 2010) or brand reputation (Kwon and Lennon 2009) to the online store that can be achieved by integration measures is stronger when customers are new and have not yet formed initial beliefs about the service quality and the purchase risk of a firm's online channel. In a similar manner, the effect of online integration features may be stronger when the firm is launching a new online store (which, per definition, no customer has been able to gain experience of). This is the case for customers of firm A which had not operated its own direct online shop. At the same time, if online integration measures are implemented in an existing online store, as in the example of firm B, the positive effects on perceived purchase risk and service quality are expected to be relatively lower for the existing multichannel customer base of that online shop. It is thus inferred:

H_{17}: The effect of perceived online integration on a) perceived service quality and b) perceived purchase risk in the online store is stronger for customers with low online purchase experience (firm A) than for customers with high online purchase experience (firm B).

Just as the absolute values of perceived service quality and perceived risk may differ between existing and new online customers, the importance of service quality and purchase risk may differ between these two customer segments. In examining the relative importance of service attributes in the context of Internet commerce, Yang and Jun (2002) find that security of an online shop - and in that matter risk reduction - is the most important factor for inexperienced online shoppers while service attributes such as reliability, ease of use, and personalization were more important for experienced Internet shoppers.

This result suggests that perceived risk may act as a precondition for customers to consider purchasing from a certain online store. Once customers have learned from experience that purchasing at the online shop is not risky, they are open and willing to appreciate additional online services that are not directly related to risk reduction but enhance the online purchase experience. For new customers without prior purchase experience in a specific online store, it may be more important to know that the transaction will not produce any problems than being able to use additional services. Repeat customers, on the other hand, may know that risk is not the most important issue for a certain online shop. For these customers, service quality of an online shop is intended to play a more important role than purchase risk. Since the customers of firm A had not had the possibility to gain previous purchase experience in the new online shop while firm B's customers are loyal online shoppers (see Chapter D.3) it is expected that risk is relatively more important for firm A's respondents:

H_{18}: Compared to customers with high online purchase experience (firm B), perceived risk has a higher importance for customers with low online purchase experience at a specific online shop (firm A) for a) loyalty and b) intention in the online channel relative the physical store.

5.3 Channel Synergies and Cannibalization

The previous hypotheses focus on the relative performance of the online shop compared to a firm's physical channels. They are agnostic about the existence of cross-channel synergies or dis-synergies. However, an important question is whether the integrated online shop has a direct positive effect on a firm's offline stores in terms of customer loyalty and purchase; or whether online integration creates dis-synergies and

drives customers away from the physical outlets and leads to channel cannibalization. Thus, despite the controversial conceptual and empirical evidence concerning cross-channel customer behavior, this section develops a set of cautious hypotheses on the potential direct effects of an integrated online store on offline customer loyalty and purchase decisions.

Contrary to the competitive effects of multiple channels for the customer in terms of offline cannibalization, the basic premise of the argumentation of channel synergies is that customer assessments of online integration are manifested in the level of satisfaction with the overall purchase experience. In other words, an integrated online channel caters to the need of multichannel and ROPO-customers and therefore increases positive customer lock-in and usage intentions for the offline channel. Previous findings support these expectations by establishing the link between an online and offline channel's perceived usefulness and quality on channel evaluation and behavioral intentions (e.g. Frambach et al. 2007). Furthermore, customer satisfaction research suggests that customers' evaluations of competing purchase alternatives and distribution channels contribute to overall satisfaction (Dröge et al. 1997). When online integration activities are designed to make the physical stores more accessible, the customer value generated in the online shop may positively influence the offline channel. Particularly those customers who intend to visit the offline channel in order to conclude the transaction may thus profit from online integration. In a similar vein, previous research on trust beliefs suggest that trust will transmit from a known entity to a similar or related formerly unknown entity (Doney et al. 1998; Strub and Priest 1976). If two objects are perceived as connected and belonging to a group, it is more likely that trust is transferred from one object to the other (Campbell 1958; Stewart 2003). Thus, when customers encounter a new object, they will assume it to be trustworthy when they perceive high proximity to another trusted object (Stewart 2003).

Even though existing studies on image and trust transfer in the multichannel context have focused on how positive attitudes of the physical store positively influence the online channel (Badrinarayanan et al. 2010; Stewart 2003; Wang et al. 2009), it is likely that the effect also exists in the other direction for online loyalty when the online shop is integrated. Avery et al. (2012) find that when an online pure-play adds a physical sales channel loyalty in both channel format increases over time. In fact, loyalty is created with the firm itself and with a specific channel (Ansari et al. 2008; Reynolds and Beatty 2000); the online and offline distribution formats complement

and substitute for the other channel capabilities (Avery et al. 2012). By increasing channel services and links between channels, consumers could become more loyal to the firm across all of its channels and less likely to switch to competitors. Especially when it is easy to profit from the specific online and offline channel characteristics because it is easy to switch between both channel formats, the multichannel customers may be attracted to use the offline channel more often.

Furthermore, the loyalty concept is long term in nature since it serves as an indicator of the strength of the relationship and the repeat patronage of a brand or a store (Dick and Basu 1994). Therefore, customer loyalty towards a distribution channel is not a decision of choosing either the online shop or the physical store. Thus, consumers can independently develop channel loyalty for each channel. Online and offline channels each have specific strengths and weaknesses. Each channel excels for certain purchase goals, depending on the specific shopping context of a customer. Whereas the Internet caters goal-directed shopping, the physical store generally performs better when it comes to experiential shopping (Avery et al. 2012; Mathwick et al. 2002; Neslin et al. 2006). Thus, the loyalty for a firm's channels could become complementary if channels referred to each other (Pauwels et al. 2008). Customers would then be more likely to shop in all channels and combine them according to their current shopping motives.

When online and offline stores complement each other, customers may perceive lower search costs, perceive a firm's alternative channels as more available, and eventually purchase more from the firm in the long run (Bhatnagar and Ratchford 2004; Kumar and Venkatesan 2005). Online integration makes the physical stores more present in the online channel. Thus, the availability of the alternative channel option is likely to generate additional positive cross-channel effects for the offline store. Since the loyalty concept is related to the long-term customer relationship with a firm and does not compete with online channel loyalty, it is likely that the complementarity between online and offline channels will have positive effects on customer loyalty towards the physical store. Customers who perceive a firm's channels to be closely linked, well-integrated and easy to switch, may therefore be more loyal towards the online as well as the offline channel. Therefore, it is expected that:

H_{19}: Online integration in terms of (a) perceived online integration, (b) Facilitating Research Shopping, and c) increased online after sales service has a positive direct effect on offline loyalty.

When customers face the practical decision to actually purchase a product, they can only use one specific channel to conclude the transaction. These channels may be different across specific purchase situations and thus equal each other out in the long run. But in the short run, the purchase decision involves to select one of the available distribution channels. The long-term complementary effects of online integration may therefore not hold when it comes to a concrete purchase decision. If customers perceive a firm's channels to be well-integrated they are more likely to switch to the offline channel, especially when they are shopping for experiential products that need to be tested before purchase. Customers who visit a firm's homepage to search for products and encounter an online shop that offers additional services to make it easy to engage in research shopping behavior are also more likely to make the purchase offline.

If customers are likely to engage in ROPO shopping behavior and switch to the online channel, then perceived online integration and Facilitating Research Shopping will most likely not cannibalize the physical store but help customers prepare their offline store visit. On the other hand, well-integrated online stores profit from a potential halo effect from the offline channels. As previously stated, customers feel more secure when they associate a firm's online shop with its offline presences and are more inclined to purchase on the Internet. These two contradicting effects make it difficult to infer clear expectations for the cross-channel effects of online integration on offline purchase behavior. Nevertheless, positive cross-channel synergies may be particularly strong when online integration is designed to facilitate research shopping behavior. On the other hand, when an online shop offers better after sales service by making it possible to return online purchases at the nearest physical store, customers may partly shift their purchase intentions to the online channel and only use the physical retailer in the case of an emergency. Therefore, Increasing Online After Sales Service may be associated with fewer offline sales.

If online integration facilitates research shopping:

H_{20}: *Online integration in terms of a) perceived channel integration and b) Facilitating Research Shopping will not cannibalize the offline channel.*

H_{21}: *Online integration in terms of increased online after sales service, will cannibalize the offline channel.*

Table 3: Overview of Hypotheses

Online Service Quality and Purchase Risk		
H_1:	Perceived Online Service Quality < Perceived Offline Service Quality	-
H_2:	Perceived Online Purchase Risk < Offline Purchase Risk	-
H_{3a-c}:	Online Integration (PI, RS, AS)[5] → Online Service Quality	positive
H_{4a-c}:	Online Integration (PI, RS, AS) → Online Purchase Risk	negative
Willingness to Pay (WTP) Online and Offline		
H_5:	WTP Online < WTP Offline	mediation
H_6:	Online Integration → Online WTP	positive
H_7:	Online Integration → Offline WTP	neutral
H_{8a}:	Online Integration → Online Service Quality → Online WTP	mediation
H_{8b}:	Online Integration → Online Purchase Risk → Online WTP	mediation
Loyalty and Purchase Intention in the Online Store		
H_{9a-c}:	Online Integration (PI, RS, AS) → Online Loyalty	positive
H_{10a-c}:	Online Integration (PI, RS, AS) → Online Purchase Intention	positive
H_{11a}:	Online Service Quality → Loyalty towards Online Store	positive
H_{11b}:	Online Service Quality → Purchase Intention in Online Store	positive
H_{12a}:	Online Purchase Risk → Loyalty towards Online Store	negative
H_{12b}:	Online Purchase Risk → Purchase Intention in Online Store	negative
H_{13a-c}:	Online Integration (PI, RS, AS) → Service Quality/Purchase Risk → Online Loyalty	mediation
H_{14a-c}:	Online Integration (PI, RS, AS) → Service Quality/Purchase Risk → Online Purchase Intent	mediation
Loyalty and Purchase Intention Online Relative to the Offline Store		
H_{15a}:	Online Service Quality → Online Loyalty Relative to the Offline Store	positive
H_{15b}:	Online Service Quality → Online Purchase Intent Relative to the Offline Store	positive
H_{16a}:	Online Purchase Risk → Online Loyalty Relative to the Offline Store	negative
H_{16b}:	Online Purchase Risk → Online Purchase Intent Relative to the Offline Store	negative
Moderating Effects of Firm Type		
H_{17a}:	Firm Type × Perceived Online Integration → Online Service Quality	moderation
H_{17b}:	Firm Type × Perceived Online Integration → Online Purchase Risk	moderation
H_{18a}:	Firm Type × Online Purchase Risk → Online Loyalty Relative to the Offline Store	moderation
H_{18a}:	Firm Type × Online Purchase Risk → Online Purchase Intention to the Offline Store	moderation
Channel Synergies and Cannibalization		
H_{19a-c}:	Online Integration (PI, RS, AS) → Loyalty towards the Physical Store	positive
H_{20a-b}:	Online Integration (PI, RS) → Offline Purchases	neutral
H_{21}	Online Integration (AS) Offline Purchase	negative

[5] PI = Perceived Online Integration; RS = Facilitating Research Shopping; AS = Increasing After Sales Service

C Study 1: Online Integration and Willingness to Pay

1 Study Design, Procedure, and Participants

The first experiment was conducted in order to test hypotheses 1 to 8 concerning the basic effects of online integration on service quality, risk perceptions, and WTP as well as to derive first insights into the effects of channel integration on online purchase intentions. The analysis was conducted as an online experiment using a 2 (online integration: integrated vs. non-integrated) by 2 (purchase place: online store vs. physical store) between subjects design. A total of 308 students from the graduate and undergraduate level of the University of St.Gallen participated in the study. The sample consisted of 106 (34.6%) females and 200 (65.4%) males.

Participation in the study was voluntary. As an incentive, the participants were entered into a draw for a 400 Swiss Franc cash price and a contribution of one Swiss Franc was made for each completed survey. Since students are not representative of the general population, the use of non-random student samples in consumer research has been criticized (Peterson 2001; Winer 1999). However, Calder, Philipps, and Tybout (1981, p. 198) point out that student samples are justified if the goal of the research is merely to identify and initially test *"scientific theories that provide a general understanding of the real world"*. As the first experiment is intended to set the foundations and explore the basic principles of customer reactions on channel integration measures, this applies to the first study. The study design is depicted in Figure 9.

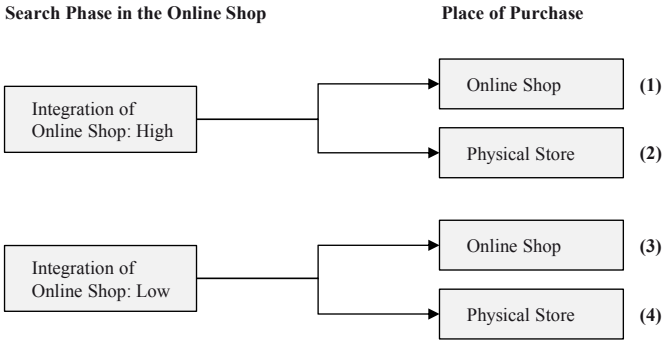
For the experiment a scenario-based approach was chosen. The procedure was inspired by the work of Choi and Mattila (2009). The authors use written scenarios to investigate customers' price fairness perceptions when prices differ across channels for travel and hotel services. Since their main objective is to assess fairness perceptions the authors only focus on the information phase and use posted prices as framing condition. However, the goal of this study is to derive WTP stated by the respondents themselves. Therefore, the purchase channel is also included into the scenarios. To ensure external validity of the experiment one of the two cooperating firms, an existing brand of a Eurpean sports equipment manufacturer, was used for the study.[6] The

[6] Due to confidentiality reasons neither the brand name nor other information that might indicate the company name can be disclosed.

J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9_3,

company is well established in its markets and sells its products through its own physical channels, as well as indirect dealers. The firm has used the Internet for brand presentation and information purposes only; currently it does not operate its own direct online store. In order to test the hypothesized relationship concerning WTP in the online and offline environment the author closely cooperated with the firm in developing two versions - an integrated and a non-integrated user interface - of a hypothetical online store for its main brand. The design and layout of the hypothetical online store was developed in close exchange with firm officials to ensure a realistic design of a potential online shop concerning the specific sports brand.

Figure 9: Study Design of the First Experiment

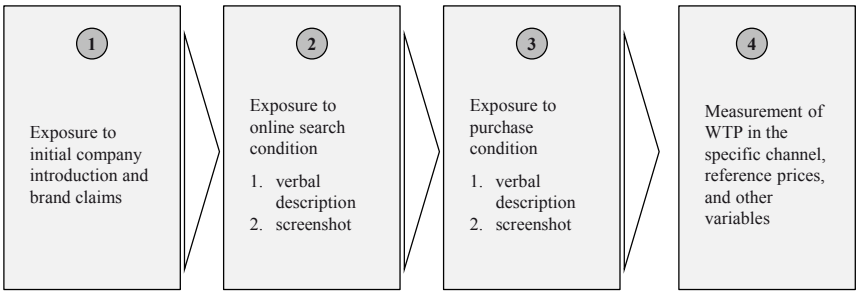


Initially, after a short introduction and two demographic questions concerning age and gender, all participants of the study were exposed to brand claims and a brief introduction of the brand's physical dealerships. This was done to make participants aware that offline channels exist and that the brand offers high quality service through their physical stores. After reading through the initial information, participants were exposed to a scenario depicting a fictitious purchase process of a winter jacket. The product category was chosen to take into account that jackets are one of the company's main product categories.

In the first part of the questionnaire, the students were asked to imagine that they were searching for a new outdoor jacket on the Internet and that they were interested in a certain jacket in the brand's online store. In the second part of the experiment every participant was exposed to one of the two scenarios that described a purchase process. In these scenarios the integration level of the online store with the firm's physical presences (high integration vs. low integration), as well as the type of channel the customer used for purchase (either online or one of the firm's physical stores) was manipulated. The verbal/written scenario descriptions were backed by realistic depictions of the hypothetical online shop and the brand's direct offline stores (see section 2 for a detailed description).

After the participants had worked through the scenarios, they were asked to indicate their WTP in the respective channel of purchase and filled out a series of covariates, manipulation checks, as well as confound checks. The participants of the study were allowed to work through the scenarios at their own pace. After the participants worked through the scenarios, they indicated their willingness to pay and purchase intention, as well as a series of covariates and manipulation checks. The whole survey took about 18 minutes to complete (mean: 18.1 minutes).

Figure 10: Procedure of the First Experiment



2 Manipulation of the Independent Variables

Depending on the integration level of the online store (non-integrated and highly integrated) and the final place of purchase (online or offline), four different scenarios were developed for the experiment. To ensure that customers are aware of the firm's offline stores, and in order to avoid possible bias due to prior differences the perceived features of the offline channel and the brand itself, it was necessary to initially introduce and describe a typical brand store and characteristic traits. To create a common baseline to which WTP online and offline can be related, all participants were exposed to a description of the specific brand. This description was taken from the brand's homepage and adapted slightly:

> *The European brand [brand name] is a leading supplier of high quality sports equipment. For [XX] years brand has been a symbol of outstanding quality, innovative solutions, and strong customer support. The products combine design and functionality for all performance levels.*
>
> *The company's philosophy is reflected in the way it sells its products. The brand is marketed predominantly via its own brand stores and selected specialty stores. The brand stores are situated at distinguished locations and showcase a large proportion of the product line.*
>
> *The stores are nicely furnished and aim at letting the customers directly experience the products. For example, all brand stores offer specific test systems to try out the desired product under realistic conditions. The sales personnel are well trained and very helpful. The company takes pride in the fact that many of their salespeople have turned their hobbies into their profession. Apart from its physical stores, the brand has also set up an online store.*

In order to ensure that all participants were exposed to one of the two versions of the online channel, and to create the link between the online and purchase channel, the scenarios started out with an information search phase on the firm's online channel. The company's channel managers confirmed that the customer base regularly visits the Internet and the brand homepage to retrieve product information and that most of their customers search on the Internet before making the final purchase. The level to which the online channel was integrated into the offline stores was manipulated in the context of available features in the online shop. As formulated below, the non-integrated version of the hypothetical online store was based on the brand's homepage and included typical features of an online store, such as a buy button, product descriptions,

sizes, and available colors. The integrated version additionally comprised several integration aspects for the two identified integration dimensions. Specifically, the hypothetical online store explicitly informed the customers that products bought in the online store can also be easily returned at any physical store (Increasing After Sales Service). The dealer search function also included the possibility to check for product availability in a specific offline store as well as the offer to directly contact a sales person via telephone or chat[7] (Facilitating Research Shopping).

In the first part of the experiment the participants of the study were randomly assigned to either the integrated or the non-integrated online channel condition. In these scenarios, the integration levels of the online store were manipulated as described above. First, a short scenario introduction described the brand's online store and the available functions. This was done to ensure that each participant understood the specific functions and capabilities of the online store. Thus it was ensured that differences in channel evaluations are not due to faulty or unclear design aspects of the online store. The exact verbal manipulations were as follows:

> *No integration:*
>
> *Imagine you are looking for a high quality winter jacket. During your initial search you are also looking for suitable jackets in the online shop of [brandname].*
>
> *The navigation is convenient and you have the possibility to specifically select the available products according to categories, materials, and application purposes. The online shop also briefly explains the technical and functional aspects of each jacket using bullet points.*
>
> *The overall graphic presentation of the online store is high-class. You are browsing the online shop and use the available information and consultation services in order to find a suitable jacket.*
>
> *The result of your search is depicted in the following rendering of the online store. Please have a close look at the [brand's] online shop.*

[7] Technically, the expert chat and the call function does not direct customers towards the offline store. However, it further increases the information quality of the firm's online store and therefore supports research shopping in terms of higher informational value. However, this aspect was dropped for subsequent analyses and the separation of effects between Facilitating Research Shopping and Increased After Sales Service.

High integration:

Imagine you are looking for a high quality winter jacket. During your initial search you are also looking for suitable jackets in the online shop of [brand name].

The navigation is convenient and you have the possibility to specifically select the available products according to categories, materials, and application purposes. The online shop also briefly explains the technical and functional aspects of each jacket using bullet points.

It is also possible to immediately obtain further information from an expert of [brand] via a toll free phone number or a chat window.

The online shop also offers a dealer search function that provides information for each specific store. In addition, it is possible to check whether the desired products are available at a certain physical store and reserve them for your next visit. If the product is not in store at your location, it is possible to have your selection shipped directly to the dealership for further testing.

The online store also informs you that the same conditions concerning service and the return of products apply across all distribution channels. It is also possible to return or exchange online purchases in any offline store without any further questions asked.

The overall graphic presentation of the online store is high-class. You are browsing the online shop and use the available information and consultation services in order to find a suitable jacket.

The result of your search is depicted in the following rendering of the online store. Please have a close look at the [brand's] online shop. As you can see, it is very important for the company to offer the same services online and offline, as well as to closely link its online shop to the physical stores.

After the description of the specific features of the online store, the participants were exposed to a screenshot of the online shop that showed a jacket in the hypothetically selected check-out page. In order not to confuse the participants when they had to state their WTP and to avoid possible anchor effects, the online store did not contain the list prices. Pretests confirmed that this did not obstruct the credibility of the online shop. Furthermore, two versions were developed for women and men. These screenshots only differed in the type of jacket displayed. The jackets selected represented the average price and performance range of the firm's assortment of outdoor jackets. Both had a suggested retail price of 400 Swiss Francs.

The place of purchase was manipulated in the second part of the experiment. For the final purchase the participants were told that they either stayed in the online store or visited the physical store to purchase the jacket. Since the participants were randomly assigned to one of the two purchase channels they could not freely decide where to make the purchase. Therefore, it was necessary to create a plausible reason to visit the physical store since this would otherwise have created a confounding effect. The nature of the reason of channel selection needed to fulfill the requirement to be neutral with respect to the integration features of the online store. This means that the store visit would not take place explicitly due to the integration features to the online store. Pretests and management consultation revealed that time constrictions are a relevant reason to visit a certain distribution format but was unrelated on the general purchase preferences of the online or the offline channel. In other words, depending on the nature of the time constraint, people either prefer to shop online or offline. In the case where immediate possession is the constraint, a store purchase is more likely. If store hours are the limiting factor, people tend to shop online. The exact wording of the manipulation was as follows:

> *Online Purchase:*
>
> *Since you are somewhat time constraint next week, you will not be able to visit a [brand] store. However, you would really like to use your new jacket for your trip the following weekend. You therefore think about purchasing the jacket over the [brand's] online store.*
>
> *Based on your initial search result you have another glance at the assortment of the online shop. From what you can see, the model you found earlier is still the one that best fits your needs.*
>
> *After you have made your decision, you place the jacket in the virtual shopping cart and browse through the online shop for the other products. The following picture gives you an impression of the online shop.*
>
> *Offline Purchase:*
>
> *Since you will have enough spare time to visit a [brand] store next week, you use the online shop to prepare your purchase.*
>
> *When you visit the [brand] store, your expectations concerning the store features and customer service are fully met. With the help of a friendly and helpful sales person you find out that the model you have initially selected in the online store actually fits your needs best.*
>
> *After you have made your decision, you take the jacket and browse the shop to have a look at the other products. The following picture gives you an impression of the firm's physical store.*

3 Selection of Measures

3.1 Dependent Measure

The dependent variable, willingness to pay (WTP) for the jacket, was the central measure of interest for the first experiment. Several methods have been developed to measure WTP. These can be roughly divided into a direct measurement approach in which consumers are asked to directly indicate their WTP for the product under consideration (e.g. Jones 1975; Kalish and Nelson 1991) and an indirect approach e.g., choice based conjoint analysis (Louviere and Woodworth 1983) in which WTP is derived from customers' choices from different product alternatives that differ across several attributes including price (Miller et al. 2011).

A direct open ended approach was used to measure WTP in each channel using an open ended question format. Depending on the purchase scenario, participants of the study were asked how much they would hypothetically be willing to spend for the jacket either in the brand's online or offline store (e.g. Carmon and Ariely 2000). To account for WTP defined as the *"[…] maximum price a buyer is willing to pay for a given quantity of a product*" (Wertenbroch and Skiera 2002), respondents were specifically asked to state the price at which they felt the jacket was expensive but would still be willing to buy it. The exact wording of the question was: "At what price do you think the jacket is very expensive, but would still be willing to buy it".

The open ended stated preference approach is well established and has been widely used to measure customers' WTP for physical products (e.g., Cameron and James 1987; Coursey et al. 1987; Homburg et al. 2005; Krishna 1991). However, some researchers have pointed out the drawbacks for survey-based measurement approaches of WTP (Hoffman et al. 1993). Specifically, survey-based methods only measure consumers' hypothetical WTP as opposed to the true amount of money a respondent is willing to sacrifice (Wertenbroch and Skiera 2002). As long as the stated WTP is not linked to an incentive alignment mechanism, in which the customers have a monetary incentive to reveal the maximal amount of money they are willing to pay, the survey based measurement approaches might generate a hypothetical bias (Andersen et al. 2008). However, more recent research has shown that the hypothetical approaches potentially lead to correct estimates of WTP (Miller et al. 2011) and seem to be systematic in nature (Backhaus et al. 2005; Ding et al. 2005; Silva et al. 2007). Since the focus lies on the relative differences between WTP in the online and offline

channel rather than the correct absolute values of price acceptance, a possible hypothetical bias applies for both distribution channels. Hence, there is no reason to expect that the use of an incentive aligned approach would have produced fundamentally different results.

Additionally, general service satisfaction was measured with a single item ("Overall, satisfied are you with the service that [brand] has offered in the scenario just described?" measured with a seven-point Likert scale) adopted from Homburg et al. (2005). The question was anchored *"not at all satisfied/very satisfied"*. Purchase risk was operationalized using the scale for perceived risk developed by Stone and Gronhaug (Stone and Grønhaug 1993). The scale was slightly adopted to match the context of this study. One item was dropped ("I have a feeling that purchasing this item would really cause me lots of trouble"). The remaining three items were retained as originally devised and were anchored *"extremely agree/extremely disagree"* ($\alpha = .830$).

3.2 Covariates

Income is directly linked to the available budget a consumer can spend and has been regarded as one of the most important purchase decisions in connection with prices (Ofir 2004). Income and household budget has been shown to increase the search for lower prices (Kolodinsky 1990; Ratchford and Srinivasan 1993; Urbany et al. 1996), as well as to increase price recall (Estelami et al. 2001; Gabor and Granger 1979; Wakefield and Inman 1993), and price sensitivity (Han et al. 2002; Wakefield and Inman 2003). In the context of this study it is therefore reasonable to assume that lower disposable budget of the respondents in our sample will be negatively linked to WTP. Thus, it seemed important to control for the influence of income. Monthly disposable income was measured using a single five-point scale adopted from Wakefield and Inman (2003) where every cell represented an income category. Respondents had the possibility to opt out from this question in order to increase the validity of the answers.

Involvement is another factor that potentially influences WTP for a given product. Involvement is often defined as the relevance or importance that a consumer associates with an object (Petty and Cacioppo 1984; Zaichkowsky 1985). Among the different

classifications of the construct involvement, previous research has identified and focused on product involvement as especially relevant for price acceptance and willingness to pay: Highly involved consumers are more focused on the product itself, its positive or negative features, and thus place an overall lower importance on price, while uninvolved consumers evaluate products more heuristically and hence also place more importance on low prices (Chaiken 1980). For example, Lichtenstein et al. (1988) found a positive relationship between involvement and price acceptance. In the same study, the authors also found product involvement also to be positively influence a consumer's internal reference prices (Lichtenstein et al. 1988), and while uninvolved customers largely display linear decreasing price acceptability functions, this measure tends to be an inverted U-shape (Ofir 2004). Since winter jackets are fashionable and functional products it is very likely that product involvement also plays an important role for WTP in this experiment. Product involvement was measured with a three-item seven-point scale adopted from Chandrashekaran (2004). The items were anchored by *strongly disagree/strongly agree* ($\alpha = .864$).

Price plays a comparably important role in the purchase decision for a price conscious customer. This type of customers is more likely to invest time to look and find lower prices. Less price sensitive consumers may be willing to accept higher prices in return for an attractive product or if the store environment is appealing (Monroe 1990). Customers who enjoy searching extensively for the best deals and sharing this information with their peers are called "market mavens" (Feick and Price 1987). As might have been expected, the concept of market mavenism is positively related to the propensity to price search (Urbany et al. 1996). Sinha and Batra (1999) show that price consciousness is a significant reason why consumers opt for the cheaper alternative and decide to choose private labels over national brands. It is reasonable to expect that price consciousness also has an important influence on WTP in this study. It was therefore included as a covariate. Price consciousness was measured using a two-item scale developed by Wakefield and Inman (2003). The items were anchored as strongly disagree/strongly agree ($r = .899$).

Past research in behavioral pricing has emphasized reference prices as an important factor for understanding customer reactions on price cues and decision making (e.g. Homburg and Koschate 2005; Kalwani et al. 1990; Lattin and Bucklin 1989; Winer 1986). Consumers evaluate prices not only with respect to their absolute value, but also relative to an anchor point (Homburg and Koschate 2005). Consumers use prices they have encountered in the past as reference points to form general price concepts

and beliefs about certain products and brands. These concepts influence their current perception of prices (Greenleaf 1995; Kalwani and Yim 1992). Price levels that were formed on past prices are called "internal reference prices" as opposed to "external reference prices" that denote reference prices that are communicated to the consumers by manufacturers and retailers in ads or at the point of purchase (Homburg and Koschate 2005). The external reference prices also serve as anchors to evaluate prices of products and services.

It is the first form of reference prices that is relevant in the current context. No direct external price cues were used in the experiment. Hence, the participants had to rely on their price knowledge derived from prices they paid in the past for similar products or their beliefs about these prices, i.e. their internal reference prices. Internal reference prices were measured with a single item adapted from Lichtenstein and Bearden (1989) asking for the participant's estimate of an average price for a similar product of the same quality and comparable brand in the opposite channel. Thus, participants in the online purchase scenario had to name their reference prices for the offline channel while participants in the physical purchase scenario rated the prices for the online channel. This procedure was chosen for two reasons. First, if internal reference prices are explicitly evoked, participants might place too much importance on them when answering the WTP measure. Evoking a reference price for the opposite channel helps diminish this effect for the purchase channel. Secondly, by dividing the sample into offline and online reference prices, it is possible to test for differences in reference prices between the two channels of distribution (for details and the results refer to section C.4).

Demographic variables have been frequently used as surrogates of search efficiency in studies of price search behavior (e.g., Carlson and Gieseke 1983; Doti and Sharir 1981; Kolodinsky 1990). As Urbany et al. (1996) point out, the demographic variables such as gender are supposed to reflect the level of purchase experience and are therefore related to search efficiency. However, the same authors argue that demographic factors are related to several other customer traits, e.g. tastes (Blaylock and Smallwood 1987; Fast, Vosburgh, and Frisbee 1989), and that directed hypotheses concerning the effects of demographic variables are not advisable (Urbany et al. 1996). To account for possible influences of demographics on willingness to pay, past research approaches are followed by including age and gender as covariates. Gender also serves the purpose to test whether the different jackets used for men and women confounded the results of the study.

The subsequent analyses showed that internal reference price, price consciousness, and income were significant covariates. Involvement, age, and gender did not yield any significant effects. These variables were therefore excluded from the analysis. Additionally, the non-significant effect of gender also indicates that the different jackets for men and women used in the scenario screenshots did not influence the results in a relevant manner. This suggests that the scenarios between men and women were perceived in a similar way by the participants and are comparable to one another.

3.3 Manipulation and Confound Checks

To ensure that online integration was manipulated successfully, participants rated their perceived integration of the two channels with a scale consisting of four seven-point items ($\alpha = 0.83$). One of the items referred to the perceived ease of switching between the online and offline channel, the other three items were related to the perceived alignment between the online shop and the physical stores. The scale was adopted and combined from previous research on channel integration from Burke (2002), Chiu (2011), Ranganathan (2003), Schramm-Klein (2010). All items were anchored as *"completely disagree/completely agree"*. Furthermore, participants also rated credibility *(not very credible/credible*) on a seven-point scale (Gürhan-Canli and Maheswaran 2000), as well as their difficulty of the task (*not difficult at all/very difficult*), which was also measured on a seven-point item (Van Gerven et al. 2002). The measures used in the study, their reliability levels, and their respective sources are summarized in Table 4.

Table 4: Overview of Measures used in the First Experiment

Measure	Number of Items	Reliability	Source
Dependent Variable			
Willingness to Pay (WTP)	1	n.a.	Homburg et al. (2005)
Mediating Variables			
Perceived Service Quality	1	n.a.	Homburg et al. (2005)
Perceived Purchase Risk	3	α = .826	Gronhaug (1993)
Covariates			
Price Consciousness	2	r = .899	Wakefield and Inman (2003)
Reference Price	1	n.a.	Lichtenstein and Bearden (1989)
Income	1	n.a.	Wakefield and Inman (2003)
Manipulation Check			
Perceived Integration	4	α = .810	Burke (2002)
Confound Check			
Credibility	1	n.a.	Gürhan-Canli/Maheswaran (2000)
Task Difficulty	1	n.a.	Van Gerven et al. (2002)

4 Results

4.1 Manipulation and Confound Checks

In order to ensure that channel integration was successfully manipulated a univariate ANOVA was performed between the integrated and non-integrated conditions. A significant main effect revealed that the integration measures in the online store increased the perceived level of integration between the online and the offline channel (M_{integ} = 5.15, $M_{non.integ}$ = 3.77, $p < .001$). It was also tested whether the second independent variable, the place of purchase, or the interaction between the two independent variables had an effect on the manipulation check. This was done to rule out an unintended effect of the other independent variable. As expected, neither the second treatment - the place of purchase (M_{online} = 4.43, $M_{offline}$ = 4.53, p = .503) - nor the interaction between the two independent variables (p = .417) had an effect in the manipulation check. It can therefore be concluded that the manipulation of the integration of the online channel was successful.

Two univariate ANOVAs were performed to ensure that the scenarios did not differ in terms of credibility and cognitive load. The results indicate that there are no significant differences across the conditions (ps > 0.600). This suggests that all scenarios were equally credible as the effort to complete the study was similar for participants across the conditions.

4.2 The Effect of Online Integration on WTP

To analyze how WTP changed as a function of the type of purchase channel and channel integration measures, two congruent estimation methods were employed. First, a two-way analysis of variance (ANOVA) was used to generate insights into the basic effects of purchase channel type and integration treatment. Second, an ordinary least square (OLS) regression was conducted to reproduce the results and display the direction of the proposed effects and the covariates. The results of both analyses are shown in Table 5 and Table 7. The means for the dependent variables and the included covariates appear in Table 6.

WTP: It was predicted that the participants' WTP was lower in the online purchase condition than when participants were assigned to the offline channel to make the purchase. In addition, it was expected that the WTP in the online channel would be higher when participants had been assigned to an integrated online channel in the search phase. In contrast, the impact of online integration of the online channel should be attenuated when the purchase was made in the offline environment. The results support these predictions. The measure of WTP does not differ across the two channel formats ($p > .55$). This might seem somewhat surprising. However, the two-way ANOVA (see Table 5) reveals a significant main effect for purchase channel type (F_{WTP} (6,299) = 30.92, $p < .001$). This indicates that significant differences between the online and offline channels exist in terms of initial WTP. More importantly, this main effect was qualified by an interaction between purchase channel type and the existence of online integration measures (F_{WTP} (6,299) = 4.70, $p < .031$).

Table 5: ANOVA Results of Study 1

ANOVA	Dependent Variable	F(1, 299)	p
Online Integration	Willingness to Pay	2.85	$p < .100$
	Perceived Service Quality	21.49	$p < .001$
	Perceived Purchase Risk	2.75	$p < .100$
Purchase Channel	Willingness to Pay	30.92	$p < .001$
	Perceived Service Quality	14.88	$p < .001$
	Perceived Purchase Risk	190.90	$p < .001$
Online Integration × Purchase Channel	Willingness to Pay	4.70	$p < .031$
	Perceived Service Quality	4.95	$p < .027$
	Perceived Purchase Risk	4.58	$p < .034$

Following the logic of hypotheses 1 to 7, a series of planned contrasts were performed within the four scenarios. As expected, initial WTP was significantly lower on the Internet ($M_{WTP\text{-}online}$ = 308.83 CHF) compared to the physical store ($M_{WTP\text{-}phyical}$ = 318.62 CHF, $F(1,154) = 26.15$, $p < .001$) in the case where participants had not been shown an integrated online shop. This result supports H_5. In hypotheses 6 and 7 it was expected that the differences in WTP become less pronounced if the online channel is closely integrated to the physical store. The results strongly indicate that this is the case. Even, a significant reverse pattern was found between the differences in WTP when the online channel was highly integrated in the search phase. WTP in the online channel was affected more positively ($M_{WTP\text{-}online}$ = 329.73 CHF) compared to WTP in the physical store ($M_{WTP\text{-}physical}$ = 323.57 CHF, $F(1,142) = 7.27$, $p < .01$) when the participant had been exposed to an integrated online channel. These main and interaction effects providing initial support for H5 to H7 are also depicted in Table 5.[8]

[8] As a side effect it also becomes obvious that the reference prices are significantly higher in the offline channel (Mref_offline = 292.28 CHF; Mref_online = 247.80 CHF; $F(1,304) = 16.95$; $p < .000$) and are not related to the integration treatments ($p < .000$).

Table 6: Mean Values for the Dependent Variables and Covariates

	Purchase in Online Store		Purchase in Physical Store	
	No Integration	**High Integration**	**No Integration**	**High Integration**
WTP	308.83 (109.13)	329.73 (112.11)	318.62 (109.50)	323.57 (106.30)
service quality	5.19 (1.03)	5.9 (.89)	5.88 (.90)	6.13 (.91)
purchase risk	4.56 (1.30)	4.06 (1.40)	2.32 (.85)	2.38 (1.02)
reference price	243.35 (82.85)	253.03 (87.02)	296.53 (109.00)	288.04 (97.29)
price consciousness	4.63 (1.21)	4.43 (1.35)	4.68 (1.11)	4.67 (1.09)
income	2.95 (1.32)	2.41 (1.16)	2.95 (2.05)	2.78 (1.96)

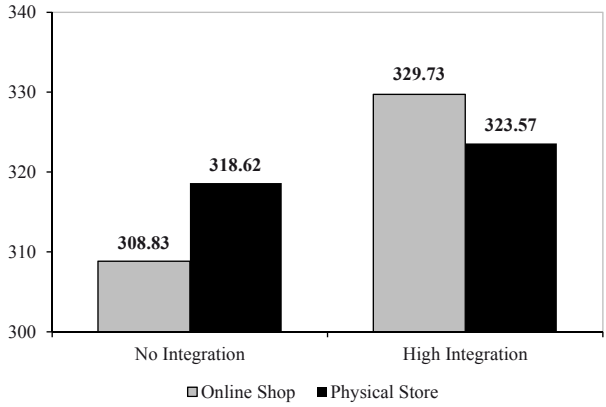
Remarks:
Numbers in paretheses represent standard deviations; WTP and reference price are measured in Swiss Franks (CHF) the other measures ar on seven-point scales such that higher numbers represent higher mean scores.

In line with hypotheses 6 and 7 the previous findings suggest that WTP in the online channel even surpasses the WTP in the physical store if integration in the online store is high. However, it is not clear whether the online integration influences the WTP in the offline channel. Figure 11 suggests that an integrated online channel leads to an increase in WTP online and at least does not significantly change the WTP in the offline store. In order to follow up on these assumptions two planned contrasts were performed.

Conforming to the initial results, participants' WTP was significantly higher in the integrated online channel ($M_{WTP\text{-}online}$ = 329.73 CHF) than in the online shop without integration characteristics ($M_{WTP\text{-}online}$ = 308.83 CHF; $F(1/151) = 7.62$; $p < 0.01$). Thus, hypothesis 6 is supported. On the other hand, WTP in the offline store did not significantly differ when the participants had initially been exposed to an integrated

online shop ($M_{WTP\text{-}physical}$ = 323.57 CHF) compared to the online shop without integration measures ($M_{WTP\text{-}physical}$ = 318.62 CHF; F(1/145) = .17; p < .69). Hence, online integration measures only had a significant positive effect on WTP in the case when participants were making the purchase in the brand's online shop that yields support for the hypothesized neutral effect of online integration on WTP offline in H_7.

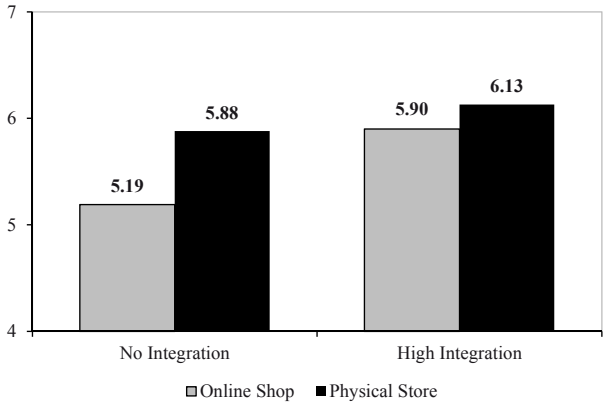
Figure 11: Mean WTP Ratings in Study 1



Service Quality: Support for hypothesis 1 can be found by analyzing how respondents rated the perceived service level in each channel. Hypothesis 1 postulated that perceived service was generally higher in the physical store due to channel specific characteristics (e.g. testability of the products, sales personnel). A two-way ANOVA yielded a significant main effect for the type of purchase channel (F(1, 306) = 14.81; p < .001), a significant main effect for the integration measure (F(1, 306) = 20.84; p < .001), and a significant interaction effect between these two variables (F(1, 306) = 4.71, p < .031). To follow up on these results, two planned contrasts were conducted. As expected, the perceived service quality of the online channel ($M_{service\_online}$ = 5.19) was rated significantly below the service level of the physical store ($M_{service\_physical}$ = 5.88; F(1, 159) = 17.25; p < .001) in the case where the online shop was not closely linked to the offline stores (i.e. integrated), providing support for H_1. When the online

channel was integrated its service ratings improved considerably ($M_{service\_online} = 5.90$) and were not significantly different from the perceived service quality of the physical stores ($M_{service\_physical} = 6.13$; $F(1, 147) = .97$; $p = .325$). This finding provides general support for hypotheses 3a-c: Online integration raised the service level in the online channel without having a negative impact on the perceived service of the physical store. The results are shown in Figure 12.

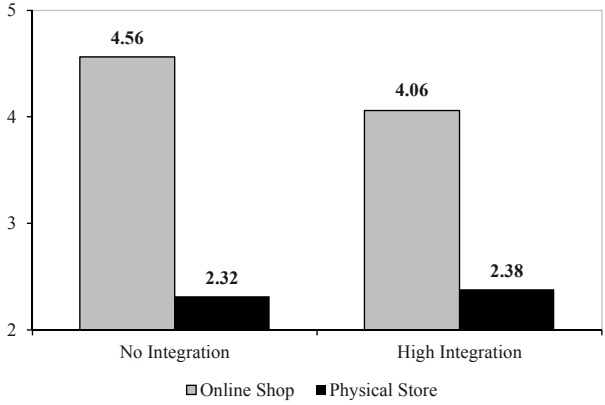
Figure 12: Mean Service Quality Ratings in Study 1



Purchase Risk: From Figure 13 it becomes obvious that the perceived purchase risk is significantly higher in the online shop than in the physical stores. Accordingly, a two-way ANOVA revealed a highly significant main effect for the purchase channel type ($F(1, 305) = 190.32$; $p < .001$), a non-significant main effect for the integration measure ($p > .100$), and a significant interaction effect between the purchase channel and integration treatments. Two planned comparisons indicate that respondents indeed perceived the online channel to be riskier in both, the non-integrated version ($M_{risk\_online} = 4.56$; $M_{risk\_online} = 2.32$; $F(1, 158) = 151.39$; $p < .001$) and when the online channel was integrated ($M_{risk\_online} = 4.06$; $M_{risk\_online} = 2.38$; $F(1, 147) = 59.75$; $p < .001$), supporting H_2.

More importantly, a second set of planned comparisons suggest that the non-integrated online channel ($M_{risk\_online} = 4.56$) was rated as significantly riskier than the integrated online shop ($M_{risk\_online} = 4.06$; $F(1, 155) = 5.04$; $p < .030$) and thus generally support hypotheses 4a-c. The overall lower risk level did not differ for the offline channel when the online shop was integrated ($M_{risk\_physical} = 2.32$), compared to when the online channel was not integrated ($M_{risk\_physical} = 2.38$; $F(1, 150) = .24$; $p < .624$). These results are depicted in Figure 13.

Figure 13: Mean Purchase Risk Ratings in Study 1



The OLS results replicate the previous findings and provide some further insights concerning the direction of the effects and the influence of the covariates. The treatments were specified as dummy variables (0/1). For channel type, zero signified the offline store and one indicated online purchase scenarios. The dummy variable for the integration measure was set to zero when no integration was available and to one for the integrated online channel. Like the ANOVA findings, the OLS results yield significant main effects for the channel type ($\beta = -.25$, $p < .001$) and the interaction effect between integration measure and channel type ($\beta = .12$, $p < .05$). The interpretation also follows the previous findings: While WTP online is significantly lower compared to the offline store in absence of integration measures in the online

channel, it is significantly increased when the online channel is integrated. At the same time, the WTP in the physical store remains unaffected by the integration measures in the brand's online shop.

The covariates provide further interesting insights. Income (β = -.09, $p < .01$), price consciousness (β = -.13, $p < .001$), and reference price (β = .84, $p < .001$) all highly influence the participants' WTP in all channels. Notably, it is the latter that accounts for a large amount of the variance of the independent variable. Given the fact that the participants were not given any external reference points concerning the actual price of the jackets, this strong effect of reference price is not surprising and is in line with findings in previous research. Participants strongly rely on their internal reference prices in the absence of further price cues. Due to the strong influences of the covariates, the OLS and ANOVA yielded a very high model fit with about 70% of the variance explained (Adjusted R^2 = .708). The OLS regression results are depicted in Table 7.

Table 7: OLS Results of Study 1

OLS Regression	**WTP**		**Perceived Service Quality**		**Perceived Purchase Risk**	
Treatments	**β**	**t-Value**	**β**	**t-Value**	**β**	**t-Value**
Online Integration	-.02	-.34	.13	1.68	.02	.34
Purchase Channel	-.25	-5.59 **	-.34	-4.38 **	.74	11.64 **
Online Integration × Purchase Channel	.12	2.17 *	.21	2.23 *	-.16	-2.14 *
Covariates						
Reference Price	.84	26.12 **	-.03	-.52	.01	.26
Price Consciousness	-.13	-4.15 **	.10	1.87	.01	.18
Income	.09	2.73 **	.00	.03	.01	.32
N = 306	R^2 = 0.714		R^2 = 0.139		R^2 = 0.430	

** = $p < .01$; * = $p < .05$; β = standardized estimates.

4.3 Mediation Analysis: How Online Integration Increases WTP in the Online Channel

The previous results strongly confirm the initial expectations that the channel integration measures increase WTP, improved service quality, and reduce perceived purchase risk in the online channel. For the physical store, on the other hand, none of these effects is significant. In the offline channel, none of WTP, service, or purchase risk was affected negatively or positively by an integrated online channel in the search phase. Thus, in order to investigate the underlying mechanisms of how online channel integration leads to higher WTP, the focus of the subsequent analyses was put on the online domain.

Hypotheses 8a and 8b proposed that the impact of the channel integration on WTP is mediated by perceived service quality and purchase risk. To test for the potential mediation in these conditions, a set of regressions analyses were conducted. The procedure followed the recommendations of Baron and Kenny (1986). The first regression yielded a positive and significant effect of online integration (dummy variable: no integration = 0, high integration = 1) on the dependent variable WTP_{online} ($\beta = .115$, $p < .01$).

In a second step, two regressions tested the impact of the independent variables on the two intervening variables service quality and purchase risk. The results indicate that channel integration significantly affects perceived service quality ($\beta = .350$, $p < .001$), as well as perceived purchase risk ($\beta = -.183$, $p < .05$). Thirdly, perceptions of online service quality ($\beta = .123$, $p < .01$) was a significant predictor of WTP_{online}. However, this was not the case for perceived purchase risk ($\beta = .048$, $p = 0.273$). The level of riskiness is not significantly related to the WTP in the online channel.

In the last step, WTP_{online}, both the integration treatment and the two intervening variables were included in the regression model. The mediating variable of perceived service quality remained a significant predictor for WTP_{online} ($\beta = .095$, $p < .050$), whereas the impact of the independent variable was reduced beyond statistical significance ($\beta = .085$, $p = .054$). As expected, the effect of perceived risk remained insignificant after the inclusion of the treatment variable in the model ($\beta = .054$, $p = .208$). Thus, the mediation analysis supported H_{8a} but not H_{8b}. These results are also summarized in Figure 14.

Figure 14: Mediation Model in the Online Purchase Condition

Note: The total effect between the predictor and the criterion (i.e., before controlling for the mediator) is given in parentheses; the direct effect (i.e., after controlling for the mediator) is given outside the parentheses. */** p significant at $p < .05/.01$ level.

5 Discussion

The purpose of the first experiment was to test hypotheses 1 to 8. Initially, the perceived service quality of the physical stores was significantly higher compared to the service level rating in the online shop. Participants found the service to be generally higher in physical shopping environments. This finding has previously also been observed in other studies and supports the expectations in H_1 and H_2. In support of $H3_{a-c}$ the results indicated that perceived service quality for the Internet channel was higher in the integrated scenario compared to the online channel without integration features. The service quality rating in the online channel was raised to the same level as in the physical store. At the same time, participants perceived lower purchase risk in an integrated online channel that provides initial support for H_{4a-c}. However, the purchase risk score of the Internet channel strongly exceeded the score of the physical stores in all purchase scenarios. Hence, even though the results suggest that it is possible to reduce purchase risk in the Internet by linking it to traditional shops, the reduction was not enough to equal out the initial advantage of the physical channel.

In support of H_5, it was found that participants displayed a significantly higher WTP for the offline channel compared to the online channel when the two channels were not integrated. As stated in the introduction, the implementation of integrated channels is

still in its infancy. Therefore, the non-integration scenario can be considered the baseline or status quo with respect to the online channel. The WTP in the online channel was lower compared to the offline channel in the case where the online shop was not linked to the physical stores. However, even though the difference was significant, it is not very high nominally. The participants' WTP in the offline stores exceeded the WTP offline by only 9.79 CHF (about 3.2%).

The results also suggest support for H_6 and H_7. The difference in WTP between the two channels depended on whether the participants rated an integrated or the non-integrated version of the online channel. When participants were exposed to the integrated online shop they displayed a WTP in the online store that was at least on the same level as WTP offline. In contrast, as already previously stated, WTP in the online shop was significantly lower compared to the offline channel when the online channel was not integrated with the physical stores. At the same time the presence of an integrated online shop did not have a negative impact on the WTP in the offline environment. Participants were willing to spend the same amount of money in the physical shop whether they had seen an integrated or a non-integrated online channel in the online search phase. This indicates that it actually may be possible to increase WTP in the online shop to the offline level without diluting the WTP in the physical stores.

No significant effects were found for online integration on service quality and purchase risk in the offline channel. The integration activities in the online store did not affect the offline channel format in terms of perceived service quality and purchase risk. A subsequent mediation analysis revealed that perceived online service quality mediates the positive relation between channel integration and WTP in the online channel and thus supports H_{8a}. Customers in the integrated channel scenario perceive higher service quality in the online channel. The improved service experience will then ultimately lead to higher WTP. Even though integration helped lower the perceived purchase risk online, the study yielded no evidence that this risk reduction translated into higher WTP. Therefore, H_{8b} was not supported.

Even though initial WTP was lower and could be increased by integrating the online shop, the differences were relatively small (6.8%) compared to the reference prices in the two channel formats where the reference price of the offline store exceeded the internal reference point of on the Internet by 18.6%. Even though one should be cautious to infer general conclusions from these findings, the small difference in WTP

could be attributed to the fact that participants rated the online channel of the particular brand. Even though price perceptions differ between the channel formats, customers might not make this distinction when they deal with the channels of a particular brand or retailer. It seems as if customers expect prices to be the same in both channels for a particular firm. In this case, discriminating prices across channels is only sensible under differing company or brand names. Consequently, by bringing channel formats closer together, customers might increasingly expect uniform pricing. As a result, firms should keep prices constant across online and offline channels if they sell under the same name and if their channels are integrated. More importantly, channel integration can be used by a multichannel brand or retailer to justify higher price levels compared to discount online pure-plays.

The experiment provides first insights into the effects and underlying processes of online integration on willingness to pay. The results are encouraging in as much as they suggest that multichannel firms operating both channel formats might actually be able to sell over the Internet using the same (high) price points as in their physical channel, especially when they integrate their online channels with their offline stores. By providing superior service online, customers are willing to pay as much on the Internet as they would in a traditional store. The study shows that integration aspects are a relevant factor to improve the service level of the online store. The fact that only multichannel firms can link their online shops to their physical dealers, and that this service cannot be provided by online pure-plays, makes channel integration an interesting strategic opportunity to obtain a competitive advantage online.

The general findings are: (1) WTP online was initially lower than offline, but could be increased by integrating the online channel. (2) Without an integrated online channel perceived service is lower and perceived risk is higher online compared to offline. (3) Integration of the online channel increases perceived service quality and reduces perceived purchase risk in the online shop. (4) The online integration did not affect the levels of perceived service quality and purchase risk of the physical store. These results are intriguing considering the fact that participants rated a hypothetical online shop that was described verbally and with screen shots. The respondents of the study could not actually test and use the integration features, e.g. use the expert chat or check availability in the store. Hence, customers might already perceive greater service quality and lower risk when they know that an online channel is supported by an infrastructure of physical stores.

As elaborated in the first part of the dissertation, an overwhelmingly large proportion of multichannel firms still sell at equal prices across their channels and do not actively differentiate prices across online and offline formats (Wolk and Ebling 2010). Price setting and price differentiation also only plays a minor role for managers when deciding to integrate their channel systems. Discussions with the responsible channel managers of both firms participating in the study revealed that customer acquisition, retention, and migration between channels are the predominant concerns and intentions of channel management. Price setting between online and offline channels only seems to be an issue in terms of whether it is justified to sell at the same price points online as in the physical stores.[9] The results of the first experiment largely support the managerial heuristics of equal pricing strategies. Initially, even though reference prices are lower for the Internet, this difference seems not to be much smaller for the online channel of a multichannel firm. In addition to these findings a firm can increase perceived service and decrease purchase risk by integrating their online channel with their traditional physical outlets. Thus, integrating the online channel might help these firms justify a higher price to their customers. Customers seem to expect and accept equal pricing across channels. This acceptance could be strengthened by linking online and offline channels closer to each other.

The first experiment used a student sample to gain first insights and test the initial hypotheses of value creation. Even though the use of student samples is appropriate in this context, further investigation of the integration mechanism calls for a more elaborate sample. This is especially true considering that the experiments used existing brands instead of hypothetical clothing manufacturers. The follow-up studies therefore used existing customers of these firms to obtain a closer approximation of the real customer base, derive insights on the effects of channel integration and customer migration between both channels, and thus increase external validity of the research project. The current experiment was designed to exclusively measure WTP in each channel. This included the creation of a hypothetical purchase scenario for a certain channel. Since participants could not freely choose from which channel they want to purchase, measuring channel choice and preference may have been distorted. Furthermore, simultaneously asking participants to state their WTP and channel choice bears a high risk of creating dependencies among the WTP and choice variables. Hence, independent channel choice, purchase intentions, and loyalty measures were excluded from the study.

[9] Insights from the workshop that was conducted in 2010 with executives from different industries.

Considering the predominant issues of customer retention and channel migration for channel managers, it is crucial to generate deep insights on shifts of channel preference, patronage, and channel choice that might occur due to enhanced integration. The current experiment also concentrated on two single states of channel integration. The scenarios differed in whether the online store was completely integrated with the offline channel or not; however, no differentiation was made between specific forms of integration strategies. Hence, it seemed particularly important to (1) concentrate on the dependent variables of channel choice and customer retention, and (2) assess the impact of the two identified generic types of integration of the online channel using existing customers of the cooperating companies. These questions will be addressed in the second and third experiment.

D Study 2: Online Integration, Channel Loyalty, and Channel Choice

1 Study Designs

In order to test the relationships between online integration on customer channel selection and retention, customer data was collected with two experimental studies. The respondent base consisted of the existing customers of the two cooperating firms, with firm A being the same company as in the first experiment. Both firms are described in detail in Chapters D.1.1 and D.1.2. Analogous to the previous experiment on WTP, participants were exposed to an online shop of the firms within a fictitious purchase scenario. The online shops differed in their level of integration with the firms' offline stores. Since both experiments measure purchase intentions and loyalty effects between the online and offline channel, the participants of the study were not a priori assigned to a purchase scenario in one of the two channels. The scenarios only comprised the product search in the online channel (note that online search plays an important part in the information phase for customers of both firms and that both companies strongly rely on their online appearances as important information source for their customers).

The scenario development was similar to the first study. In both experiments, the scenarios also described a fictitious search for a new winter jacket (firm A) or a fashionable sports coat (firm B). However, some important adjustments were made for the second set of experiments. Brand and firm descriptions were not included at the start of either experiment since the sample exclusively consisted of current or past customers of both brands. Differences in brand descriptions and previous experiences could have confused the participants or changed their prior beliefs and impressions about the firms. For the same reason, an initial description of the physical stores was omitted. The integration of the online channel was manipulated along the same dimensions as in experiment one. The only exception being that the scenarios for firm A included both integration types (Facilitating Research Shopping and Increased After Sales Service Online), whereas the integration scenario for firm B only included Facilitating Research Shopping integration features. The scenario for each study is also described in detail in Chapter D.1.

J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9_4,

1.1 Data Collection 1: Manipulation of the Independent Variable: Facilitating Research Shopping

The second experiment was conducted with the customers of firm B and concentrated on the impact of the channel integration type of Facilitating Research Shopping (online availability check and reservation at physical channels). The effects were tested using a generic between-subjects design with the level of integration for the online store as a single two-dimensional treatment variable (availability check and reservation: offered vs. not offered in the online channel). For firm B, the already existing online store was used for the un-integrated basis scenario. Building on the existing design, integration features were added. The design changes were made in close cooperation and consulting with the online and channel managers in charge. As in study one, screenshots were used to visualize the online stores and the products used in the scenarios. In addition to the screenshots, short text descriptions were used to ensure that comprehensibility and recognition of the specific integration functions were not influenced by design aspects of the online store.

The degree to which brand B's online channel allowed for the search of the availability of products offline and the possibility to reserve products at the nearest offline dealer was manipulated by whether such a service was implemented in firm B's online channel. At the beginning of experiment two, customers were asked to provide demographic information and answer a set of questions on previous information search and purchase behavior. Before the actual purchase scenarios, the initial purchase situation was briefly described. Each screenshot of the (non-) integrated version of the online shop was preceded by a brief description of its functions. Closely replicating the current set up of the firm's online shop, the hypothetical online shop consisted of different sections with varying depth of product descriptions. Each of these sections was displayed by one single screenshot. After the participants had worked through the scenarios, they were exposed to a series of questions on the dependent variables including service satisfaction, purchase risk loyalty, and purchase intention for the firm's online shop and offline channels.

The study was carried out with the German speaking newsletter recipients of firm B. Hence, the original scenario descriptions were in German. The detailed scenario descriptions and exemplary screenshots are documented in the appendix. Due to confidentiality reasons, the screenshot depictions were altered to ensure the anonymity of firm B. This includes the omission of the firm's brand name, as well as the alteration

of the products used for the study and the design elements that identify the original online store. Table 8 provides a description of the scenario framework and the descriptions used for each scenario translated into English.

Table 8: Integration Scenarios for Firm B

NO INTEGRATION & FACILITATING RESEARCH SHOPPING	
Below you will find a description of a purchase situation in the online shop of [brand]. Please imagine that you actually experience this situation and contemplate how you as a customer would decide. *Please try to relive this purchase situation the best that you can and visualize the purchase incidence the best that you can.*	
No Integration Scenario	**Integration Scenario** **(Facilitating Research Shopping)**
Imagine that you are looking for a new jacket. On [brand]'s online shop you discover a jacket which you like and suits your general style of dressing. The jacket is briefly described in the "product" section. The picture on the following page displays the "product" section of the online shop. Please take your time and look at the displayed page of the online shop and its functions.	Imagine that you are looking for a new jacket. On [brand]'s online shop you discover a jacket which you like and suits your general style of dressing. The jacket is briefly described in the "product" section. The online shop offers the possibility to check whether the jacket is on stock at your nearest retailer and to reserve it for a fitting. If the jacket is not available, it is possible to order it to your nearest store without any further costs or obligations. The picture on the following page displays the "product" section of the online shop. Please take your time and look at the displayed page of the online shop and its functions.
Screenshot 1: Non-Integrated "product" Section	**Screenshot 1: Integrated "product" Section**
The "details" section displays the most important features of the jacket using bullet points. The picture on the following page shows the "details" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the online shop.	
Screenshot 2: Non-Integrated "details" Section	**Screenshot 2: Integrated "details" Section**

1.2 Data Collection 2: Manipulation of the Independent Variables: Facilitating Research Shopping & Increasing After Sales Service

In the third experiment both integration types (Facilitating Research Shopping and Increasing Online After Sales Service) were tested. The study participants were recruited from the customer base of firm A. This experiment used 2 (availability check and reservation: offered vs. not offered in the online channel) × 2 (return of online purchases at offline stores: possible vs. not possible) between subjects design. The same fictitious online channel was used for firm A as in experiment one. Please note that in the case of firm A this online store does not exist. However, as for firm B, the design changes were made in the responsible channel and online managers to ensure the realistic description and depiction of the online store. Moreover, short text descriptions were used to ensure that comprehensibility and recognition of the specific integration functions were not influenced by design aspects of the online store.

The basic layout of experiment three was exactly the same as for the second experiment. Initially, participants provided demographic information and information on previous information search and purchase behavior. A brief description of the purchase situation followed before each participant was randomly assigned to one of the four treatments. The online shop was described verbally and using the screenshots with varying integration levels. After the participants had worked through the scenarios, they were exposed to the same series of questions on the dependent variables as in the experiment conducted for firm B. The first two of the four scenarios (no integration vs. Facilitating Research Shopping) are depicted in Table 9. Table 10 provides an overview across the remaining set of scenarios (Increasing After Sales Service Online and "full integration" using both integration types).

Following the logic of firm A's homepage, each scenario consisted of two basic sections: the "overview" section, and a "details" section with additional product information. Increasing Online After Sales Service was operationalized with amended screenshots in the "overview" and "details" sections. Facilitating Research Shopping was operationalized by including a "dealer search" section which connected the online shop to the physical stores and included an availability check of offline assortments. Thus, scenario I/II were the same across the first two and III/IV across the third section.

Table 9: Integration Scenarios I and II Firm A

NO INTEGRATION & FACILITATING RESEARCH SHOPPING	
Below you will find a description of a purchase situation in the online shop of [brand]. Please imagine that you actually experience this situation and contemplate how you as a customer would decide. *Please try to relive this purchase situation the best that you can and visualize the purchase incidence the best that you can.*	
No Integration	**Integration Type: Facilitating Research Shopping**
Imagine that you are looking for a new outdoor jacket. Since you want to buy a high-quality product, you look for information on [brand]'s homepage. You discover firm A's online shop in which you find a jacket that you like and meets your requirements. The characteristics of the jacket and its range of applications are briefly described in the "overview" section. The picture on the following page displays the "overview" section of firm A's online shop. Please take your time and look at the displayed page of the online shop and its functions.	
Screenshot 1: Non-Integrated "overview" Section	**Screenshot 1: Integrated "overview" Section**
The "details" section describes the features of the jacket in more detail using bullet points. This also includes additional information on type of material and weight. The picture on the following page shows the "details" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the online shop.	
Screenshot 2: Non-Integrated "details" Section	**Screenshot 2: Integrated "details" Section**
n.a.	The section "dealer search" lets you find the location of the nearest brand or specialty store. The picture on the following page shows the "dealer search" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the online shop. Additionally, it is possible to check online whether your jacket of choice is on stock at your nearest dealer and to reserve it for a fitting. If the jacket is not available, it is possible to order it to your nearest store without any further costs or obligations. The picture on the following page shows the "dealer search" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the online shop.
n.a.	**Screenshot 3: No Increased After Sales Service**

Table 10: Integration Scenarios III and IV Firm A

INCREASED AFTER SALES SERVICE & COMPLETE ONLINE INTEGRATION	
Below you will find a description of a purchase situation in the online shop of [brand]. Please imagine that you actually experience this situation and contemplate how you as a customer would decide. *Please try to relive this purchase situation the best that you can and visualize the purchase incidence the best that you can.*	
Integration Type: Increased After Sales Service	**Both Integration Types**
Imagine that you are looking for a new outdoor jacket. Since you want to buy a high-quality product, you look for information on [brand]'s homepage. You discover firm A's online shop in which you find a jacket that you like and meets your requirements. The characteristics of the jacket and its range of applications are briefly described in the "overview" section. Firm A actively points out that all items that were purchased in the online shop can be returned or traded in at a brand shop or any retailer of your choice without difficulty. This also includes the handling of complaints that might occur after an online purchase. The picture on the following page displays the "overview" section of firm A's online shop. Please take your time and look at the displayed page of the online shop and its functions.	
Screenshot 1: Non-Integrated "overview" Section	**Screenshot 1: Integrated "overview" Section**
The "details" section describes the features of the jacket in more detail using bullet points. This also includes additional information on type of material and weight. Firm A actively points out that all items that were purchased in the online shop can be returned or traded in at a brand shop or any retailer of your choice without difficulty. This also includes the handling of complaints that might occur after an online purchase. The picture on the following page shows the "details" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the shop.	
Screenshot 2: Non-Integrated "details" Section	**Screenshot 2: Integrated "details" Section**
n.a.	The section "dealer search" lets you find the location of the nearest brand or specialty store. The picture on the following page shows the "dealer search" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the online shop. Additionally, it is possible to check online whether your jacket of choice is on stock at your nearest dealer and to reserve it for a fitting. If the jacket is not available, it is possible to order it to your nearest store without any further costs or obligations. The picture on the following page shows the "dealer search" section. Please take your time and look at the displayed page of the online shop and also pay attention to the functions of the online shop.
n.a.	**Screenshot 3: Increased After Sales Service**

2 Selection of Measures

All scales were measured at the customer level. The customers were asked to relate the purchase scenario to their own situation and to answer the questions as if they would make the purchase for themselves. For measures referring to firms' offline channels, respondents were asked to rate their previous experiences with the physical specialty stores in general without specifically referring to the branded stores. Wherever possible, the constructs were measured with scales from publications in high ranking marketing journals, adapted for the specific topic of this study. The scales were held constant across the experiments for firm A and B with minor adaptions due to the product type and website specific contexts of the two online shops. Scale validity tests were conducted separately for each experiment, as well as for the overall pooled sample of respondents. Where applicable, the same scales were used as in experiment one. All scales were measured on a seven-point scale unless indicated otherwise.

2.1 Dependent Measures

Purchase intention was measured using a single item measure for both channels. For the online store, participants rated their willingness to purchase the jacket directly from the firm's website. To accommodate the research shopping aspect of an online search scenario, the measure for the physical store was framed as the intention to examine the jacket at a physical retailer. Both items were measured on a seven-point scale that was anchored by *absolutely unlikely/absolutely certain.* A similar measure was used in precedent studies (e.g. Cronin Jr and Taylor 1992; Dabholkar and Bagozzi 2002). Since the respondents face a trade-off between directly purchasing the product in the online shop and going to a physical store, the two intention measures are not independent from each other.

The questionnaire of the experiment for firm A also included a discrete channel choice question that was asked at a later stage of the questionnaire. The respondents indicated where they would make the purchase if they had to pick one channel (Verhoef et al. 2007a). The options were *the firm's online store, other online stores, a physical dealer/the firm's brand store, no purchase.* The discrete channel choices represent an alternative measure of purchase intention that can be contrasted with the continuous intention measures.

Loyalty to the distribution channel was measured with the scale developed and refined by Nijssen et al. (2003) to assess the extent to which a customer plans to search for products and shop at a specified channel format in the future. To omit confusion, loyalty was measured at the online versus offline level with online loyalty referring to the firms' specific online stores. Offline loyalty was defined as the likelihood to make future visits to the brand stores or independent physical retailers to search for and purchase for the firms' products.

It is not possible to rule out a mutual influence of the intention to purchase online or visiting the store and vice versa. Since the customer can purchase the jacket only once, the likelihood of using the online channel will also affect the decision to visit the store. On the other hand, if a customer prefers to visit the offline store, this will also influence the intention to purchase online. The same reasoning applies to channel loyalty. Online and offline loyalty might influence each other reciprocally. To control for these possible endogeneity problems, a difference score was calculated for the purchase intention and loyalty measures by subtracting each scale item referring to the online shop from its offline equivalent. This difference score can be interpreted as the relative likelihood of a customer to purchase online compared to visiting the traditional store in the case of the intention measures. Likewise the difference score for the loyalty measures can be interpreted as a respondent's loyalty to the online store relative to the stationary channels. Thus, positive values indicate an online advantage, while negative scores are obtained for a higher offline value.

2.2 Perceived Online Service Quality and Purchase Risk as Mediator Variables

Perceived service quality, the degree to which participants believed that the online shop met their needs, was measured with four items capturing the degree of service provided in the online channel. The scale was developed by Hiu et al. (2004) and was inspired by the work of Westbrook (1980). The wording of one item was adapted and an additional one adopted from the channel quality scale of Montoya-Weiss et al. (2003) to emphasize the aspect of helpfulness of the distribution channel. Online purchase risk was operationalized using the scale for perceived risk developed by Laroche et al. (2005) based on the original work of Stone and Gronhaug (1993). This scale measures the extent to which the respondents believed that the purchase of the

product would not yield the expected results. The scale was slightly adopted to match the context of this study. One item was dropped ("I have a feeling that purchasing this item would really cause me lots of trouble") and replaced with an item that focused on the performance risk associated with the purchase (Gürhan-Canli and Batra 2004). The resulting scale consists of four items which were all anchored by *"extremely agree/extremely disagree"*.

2.3 Moderator Variables and Covariates

Since previous study suggests that proximity to local physical stores matters for channel choice (Forman et al. 2009), respondents also provided information on their distance to the nearest physical store that carried the respective firm's products. An open ended question format was used in which customers indicated the estimated distance to the nearest stationary retailer measured in kilometers, regardless of whether it was a brand store or independent retailer. In order to obtain information on previous channel usage, dummy variables were used to separately measure which channels customers generally prefer. For the product categories and the specific brands used in the study, the dummy variables separately denote whether customers use the Internet or physical stores when engaging in product search or purchase. Since consumers can use multiple channels for search and for purchase across time, respondents were allowed to select multiple channel formats (Verhoef et al. 2007a).

Demographics included age measured in years and a gender dummy variable. Brand awareness was measured as the percentage of participants that indicated on a single yes or no question whether they recognized and knew the two brands at the time they were taking part in the study (Hoyer and Brown 1990). Product involvement, describing the customer's personal relevance and interest of the product category, was measured with the scale developed by Chandrashekaran (2004). To measure brand involvement, expressed as the interest a customer has in the specific brand, an adopted two-item scale developed by Voss et al. (2003) was used. Experience at researching and purchasing the product category on the Internet was measured with single items relative to the general population (Wallace et al. 2004).

Multichannel self-efficacy, which indicates the confidence and ability to use different types of distribution channels (Compeau and Higgins 1995), was operationalized using

a newly developed scale that was strongly influenced by the previous work of Chiu et al. (2011), McKee et al. (2006), and Wang and Netemeyer (2002). Need for touch was measured with four items based on the work of Peck and Childers (2003), reflecting the preference to haptically experience and evaluate a product before the purchase: *"[The] preference for the extraction and utilization of information obtained through the haptic system"* (Peck and Childers 2003, p. 431). Need for interaction, the importance a customer places in the interaction with a real employee, was measured using the three-item scale developed by (Dabholkar 1996).

2.4 Manipulation and Confound Checks

To ensure that online integration was manipulated successfully, participants rated their perceived integration of the two channels on the same scale as in experiment one. The newly developed scale consists of four seven-point items that are based on previous work of Burke (2002), Chiu (2011), Ranganathan et al. (2003), and Schramm-Klein (2010). All items were anchored as *"completely disagree/completely agree"*. This scale also served as an additional independent variable for the first analysis. Overall, significant main effects revealed that the respondents perceived the channels to be more integrated in the integrated conditions than in the non- or less-integrated conditions for firm A and firm B ($ps < .001$). Thus, it can be concluded that online integration was successfully manipulated.

As in study one, participants also rated credibility *(not very credible/credible*) on a seven-point scale (Gürhan-Canli and Maheswaran 2000), as well as their difficulty of the task (*not difficult at all/very difficult*) that was also measured on a seven-point item (Van Gerven et al. 2002). Two univariate ANOVAs served to ensure that the scenarios did not differ in terms of credibility and comprehensibility. The results indicated that there were no significant differences across conditions for firm A ($ps \geq .05$) and firm B ($ps > .06$), which suggests that all scenarios were considered to be equally credible and easy to understand.

3 Participants of the Study and Sample Description

The participants for the experiment were recruited from the existing customer base of the two independent companies who decided to cooperate for this research project. The first company (firm A) is the same as described in experiment 1: A Central European brand of high end sporting goods. The second company (firm B) is a German manufacturer of fashion and sports apparel selling under its own brand name. The assortment of both firms comprises sports apparel. However, there are some important differences among both firms. Firm A not only sells clothes but also other sports equipment and accessories such shoes and backpacks. Apart from fashionable aspects, the majority of firm A's products are designed with focus on functionality and performance. Even though this could also be said about the products of firm B, its focus leans more towards the fashion aspects. The assortment of firm B also consists of shoes, accessories and fine clothing such as blazers and jeans that are not intended to be worn or used for sports activities. Although there is some overlap in product categories and both companies share the performance sports image, the discussions with both sides revealed that they do not perceive each other as serious competitors. Both firms attract customers that are at the same time very sports oriented, place high importance on quality goods, and are fashionable. A casual and heuristic description of the differences of both customer groups could describe firm A's customer as purchasing high performance gear that looks good, whereas firm B's customer would be the one that intends to look good during sports activities and strives to convey a sporty image. Table 11 contains an overview of the sample composition for both firms, as well as a description of the channels which participants indicated to regularly use for information search and purchase.

The study participants were recruited via each firm's newsletter. A link for the study was included and mailed to 40,000 recipients at firm A and 5.000 recipients at firm B. The newsletter was mailed on June 19, 2012 for firm B and the questionnaire was online for two weeks. Firm A's newsletter was sent out on July 16, 2012 and was online for one week. Both newsletter invitations included incentives for participation. Firm A entered all the participants who completed the survey into a draw for one complete set of high-end winter sporting equipment, consisting of a jacket and matching trousers (total worth > 1,000 EUR). Firm B offered each participant who completed the survey a money-off voucher worth 50 EUR. The combined amount of completed questionnaires for firm A and B consisted of 1,296 customers (481 / 37.1% firm A and 815 / 62.9% firm B). The aggregated response rate is 2.9%.

Table 11: Sample Characteristics for Respondents of Study 2

	Firm A	Firm B	Aggregate
Sample Size			
Total	481	815	1296
Percent	37.1%	62.9%	100.0%
Demographics			
Percent Female	21.8%	81.2%	59.2%
Age in years	39.02 (11.64)	51.75 (11.05)	47.03 (12.84)
Brand & Product related Features			
Brand Awareness	99.6%	99.4%	99.5%
Product Category Involvement	6.41 (1.11)	6.10 (1.24)	6.22 (1.21)
Brand Involvement	5.97 (1.61)	5.65 (1.35)	5.77 (1.29)
Information Channel			
Information Search on the Internet	88.4%	83.1%	85.2%
Information Search at Physical Dealerships	79.2%	69.8%	73.3%
Previous Purchase Channel for Product Category			
Purchase of Product Category Online	57.2%	80.4%	71.8%
Purchase of Product Category in Physical Store	95.0%	78.4%	84.6%
Previous Purchase Channel for Brand			
Purchase of Brand A/B's Products on the Internet	50.1%	94.4%	78.0%
Purchase of Brand A/B's Products in Physical Stores	89.3%	61.8%	72.0%
Purchase of Brand A/B's Products in Brand Store	58.3%	59.5%	59.1%

Note:
Percentages indicate the proportion of respondents who answered positively; numbers represent averages; numbers in parentheses depict standard deviations (where applicable)

Both firms differ considerably in terms of the respondents' gender distribution. Firm A's sample consisted mainly of men (about 78%). The percentage was inverted for firm B. Approximately 81% of the study participants were female. The respondents of the performance-oriented firm A are also nearly 12 years younger (39.02 years average age) than fashion-prone firm B's study participants (51.75 years of age). The sample age standard deviation is similar across firms. Despite these differences, the sample approximates the actual customer compositions of both firms quite well. Brand awareness represents the proportion of study participants who indicated that they had

known the respective brand before the survey. Both brand awareness rates are close to 100%, as was initially expected. Product category involvement was measured using on the scale developed by (Chandrashekaran 2004). Each item was measured on a seven-point scale ($\alpha_{combined}$ = .84; α_{firmA} = .94; α_{firmB} = .81) with seven indicating very high involvement with the respective product category. Table 11 reveals that the respondents of both firms share a very high involvement for the respective product categories (6.41 firm A; 6.10 firm B). A similar result was obtained for the respondents' average brand involvement. Brand involvement was measured by the two item construct ($r_{combined}$ = 0.86; r_{firmA} = .89; r_{firmB} = .86) of Voss et al. (2003). Each item was also measured on a seven-point scale with seven coded as maximal involvement. Both respondent groups display high levels of brand involvement (5.97 firm A; 5.65 firm B). The comparably high averages of product and brand involvement across both firms were to be expected since customers who agree to join a company newsletter usually are higher involved with the firm's products, as well as the product category overall.

The participants were asked to indicate which channels they usually use for information search in the respective product category (apparel). Multiple answers were possible to allow for the fact that people use more than one channel to become informed. The answers clearly show that the large majority of respondents (85.2% in total) for both firms engage in Internet search to collect information on sports and fashion apparel. Not surprisingly, the physical stores remain an important source of information as well. In the combined sample 73.3% of the respondents stated that they actively visit physical stores to search for information on sports or fashion apparel. These high percentages are not surprising, given the fact that participants are highly involved with the product categories. However, it is notable that across both data collections more respondents stated the Internet as an information source compared to physical stores.

In terms of purchase channel usage the participants responded to two questions. First, they were asked to indicate in which channels they had previously made sports or fashion apparel purchases. Secondly, the study respondents were asked whether they had previously purchased firm A(B)'s products on the Internet, firm A(B)'s direct physical brand stores, or third party physical offline stores (e.g., independent retailers). Again, multiple answers were allowed to account for multichannel purchase. The answers to the first question on the product category level indicate that both channel formats generally play an important role for apparel purchase. Overall, 71.8% of the

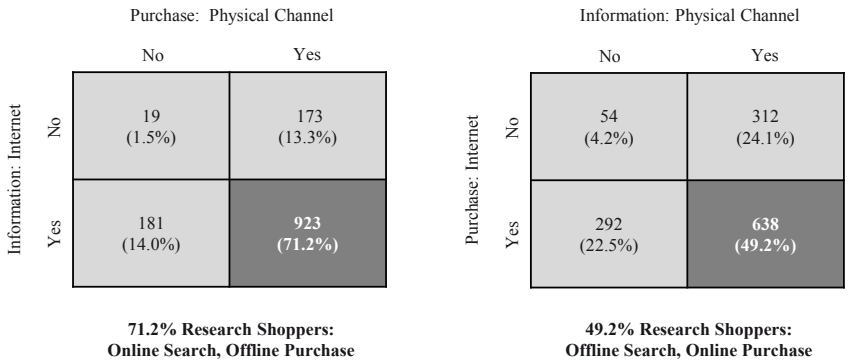
respondents indicated that they have previously bought online, while 84.6% had visited the traditional stores to purchase sports or fashion apparel. Thus, the pattern is reversed compared to the information choice: the offline channel slightly dominates the Internet. In the past, firm A's respondents had clearly preferred to purchase at physical stores (95.0% offline vs. 57.2% online). About the same percentage of B's respondents purchased from the Internet as from the traditional stores (80.4% vs. 78.4%). The reason why considerably more respondents of firm B stated a previous purchase from the Internet might be due to the fact that firm B had already successfully implemented its own online shop while firm A was not selling directly to its customers over the Internet. Customers who wanted to buy firm A's products online had to turn to the online shops of retailers that carried firm A's products in their assortments. Both manufacturers use their direct stores to showcase their assortment, communicate a distinctive brand experience, and offer high-quality personal service. Across both companies 59.1% of respondents indicated that they had previously bought at the direct physical stores. This percentage is roughly the same for each firm.

The responses suggest that the participants of both studies engage in research shopping. Research shoppers use different channels for information search and purchase. By combining different distribution channels across purchase phases, consumers are able to select for each single step of the purchase phase the specific customer touch point that best satisfies their needs. In the presence of an online and offline channel, there are two possible directions of research shopping. The first possibility is to search for information and products online before switching to the physical store to make the final purchase. This is currently the most prominent and common form of research shopping among consumers (DoubleClick 2004). Consumers profit from the quick and convenient access to information that is provided by the Internet before they take advantage of being able to physically examine the product by making the purchase in the traditional store. However, it is also possible to conduct product search in physical stores before purchasing over the Internet. The reasons behind this form of research shopping might be connected to the intention to reduce purchase risk by first examining the products offline before making a convenient purchase online. Since the online channel is often associated with lower prices (see experiment 1), it is likely that this form of research shopping is especially attractive for price sensitive and risk adverse customer segments.

Figure 15: Research Shopping Behavior of the Combined Respondent Sample shows the overlap of respondents who indicated that they regularly engage in online (offline)

search and have also made purchases from the physical stores (the Internet). These instances are represented by the dark shaded area in each diagram.

Figure 15: Research Shopping Behavior of the Combined Respondent Sample



Perhaps the most striking difference between firm A and firm B is the fact that the former had not sold its products in its own direct online store. In contrast, the latter has had several years of experience in selling over its website and had turned its online store into an important selling channel that accounts for a substantial share in overall sales. Hence, for firm A's customers that participated in the experiment, the online store was completely new. Up to the time of the survey, they had only been able to purchase the company's products over third party online stores (e.g., retailers that also operate their own online stores).

This inherent difference allows for the analysis of effects of channel integration for newly introduced online shops compared to firms with established online stores. As mentioned earlier, the lower purchase experience on the Internet and the relatively higher importance of the physical dealerships as purchase channel for firm A's respondents, might be interpreted as the result of lacking a direct online shop for the brand.

4 Datasets Derived from the Experiments

The conducted experiments with firms A and B yielded two generic datasets. The first experiment, which was conducted with the respondents of firm B, tested online integration in terms of making it easier for customers to engage in research shopping. The second experiment with firm A additionally tested the effects of online integration as increased after sales service. The availability of two similar datasets allows for the replication of the analyses and thus increases the robustness of the results.

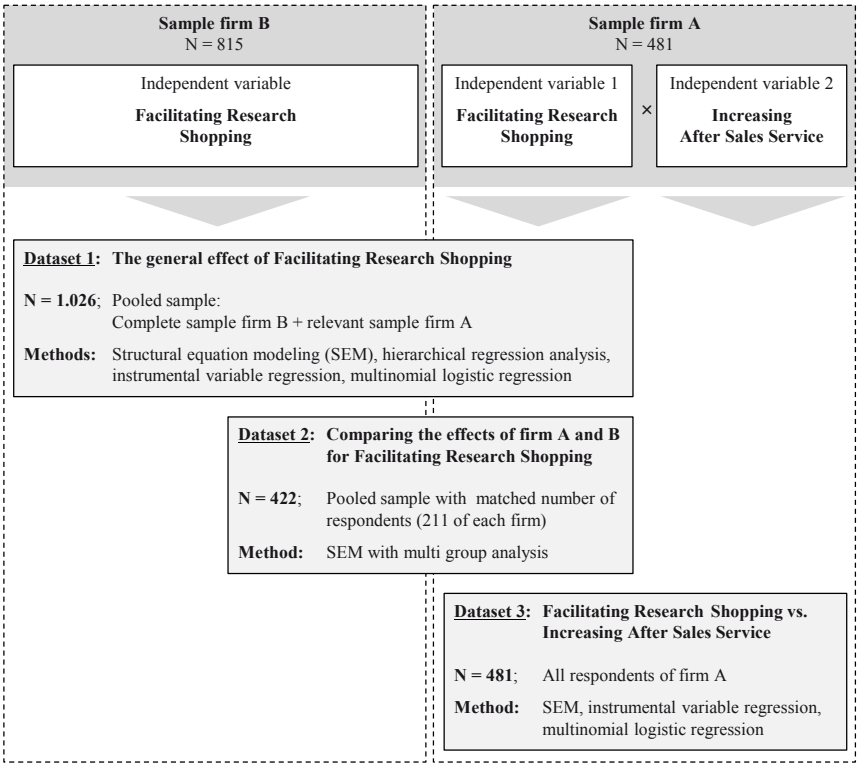
In order to allow for direct firm comparisons and further increase the explanatory power of the analyses, a pooled dataset was created that contains the relevant and comparable responses across the two firms. More specifically, the complete sample of firm B was combined with those respondents of firm A who were either exposed to the non-integrated scenario or the scenario associated with the increased ease of research shopping. The resulting dataset consisted of 1,026 usable respondents, 815 from firm B and 211 from firm A. Pooling firm B's data with the corresponding answers of firm A's customers has specific advantages: First, it is possible to derive general effects of online integration across both firms. The results are thus more generalizable and not as dependent on a specific company. Second, it is easier to observe and compare differences between both firms within one single model. Thus two datasets are obtained that complement one another.

The pooled dataset only contains one integration treatment (Facilitating Research Shopping). However, it consists of a larger sample size and allows for the estimation of general effects and the comparison between the two firms. Since the initially created pooled sample contained about four times as many cases of firm B than of firm A, it is likely that the larger group influences the results more strongly than the group with the smaller sample size. Multi group analyses based on unequal sample sizes may be biased (Schumacker and Lomax 2010). In order to rule out the possibility of biased results, a second reduced dataset with equal respondent sizes was created. A randomly drawn subsample of 211 cases of firm B's responses were added to the 211 participants of firm A. This resulted in an overall sample size for the second analysis of 422 respondents who were exposed either to the non-integrated online shop or to the scenario created to display increased ease of research shopping.

The third dataset used in the subsequent analyses represents the original dataset obtained from the experiment with firm A's customers. It does not yield general effects across firms but allows for comparisons between the two different types of online

integration. Figure 16 gives an overview of the subsamples and the methodologies that were created for each analysis. These three datasets were used in all subsequent analyses.

Figure 16 : Subsamples and Methods used in Study 2



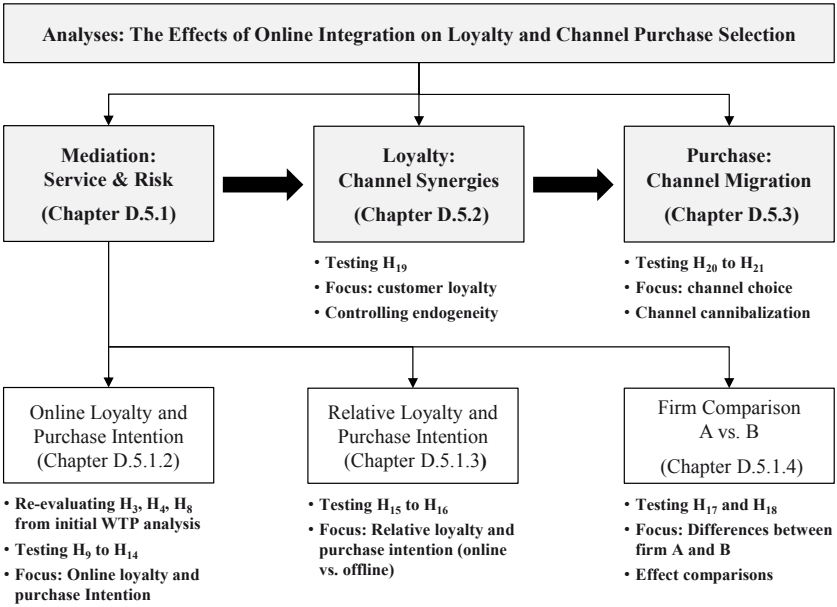
5 Overview of Analyses

Three analyses are used to test the hypotheses concerning the effects of online integration on channel loyalty and purchase intention. The first analyses in Chapter D.5.1 shed light on the general effects of online integration on relative online loyalty and purchase intention. Specifically, the focus lies on the mediating role of perceived online service and the differences between the responses of firm A and firm B's customers. Furthermore, differences in the effectiveness of the two integration methods are assessed.

In order to control for potential endogenous effects of the dependent variables, the analyses in section D.5.1 used difference scores as dependent variables. Even though this procedure is well suited for the test of the initial hypotheses, it is not possible to derive clear answers concerning channel (dis-)synergies. In section D.5.2, the second analysis is therefore designed to discover potential synergetic effects between the online and offline channels. The focus lies on disentangling the interrelationships between online and offline loyalty and deriving estimates of the direct effects of online integration on online and offline loyalty. This includes the use of alternative methodologies to test and control for endogenous effects.

In section 5.3 the third set of analyses assesses the effects of online integration on customer channel migration. The initial results of section 5.1 are extended by elaborating whether online integration increases the likelihood of customers to choose different channels for product purchase and whether this channel migration leads to the the cannibalization of the physical stores by the integrated online shop.

Figure 17: Analyses for Loyalty and Channel Purchase Choice



5.1 The Mediating Role of Perceived Service Quality and Purchase Risk

5.1.1 Rationale and Methodology

Building on the initial insights of the first experiment on WTP, the rationale of the second set of studies is to further investigate the role of online integration for creating customer value online in terms of increased service quality and reduced purchase risk. Specifically, the analyses test the mediating framework of how an integrated online store increases absolute and relative customer loyalty and purchase intention in the online shop via service quality and purchase risk. In hypotheses 3a-c and 4a-c it was expected that online integration measures lead to higher perceived service quality and lower purchase risk in the online channel. Based on the previous findings, the effect of

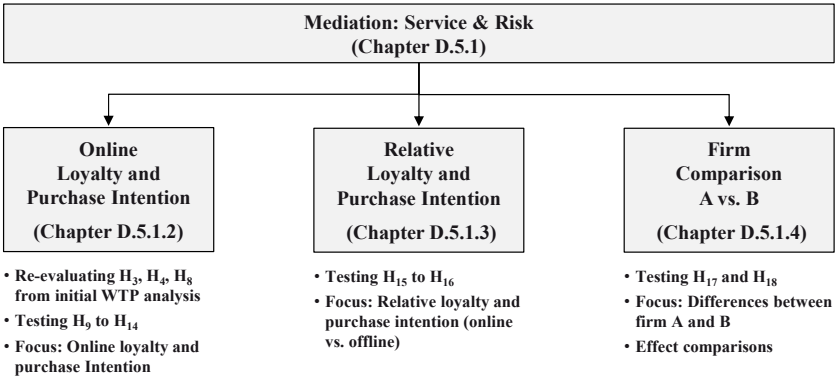
increased service quality and lower purchase risk due to an integrated online channel is extended to loyalty and purchase intention. The hypothesized relationships were tested with four separate analyses.

As a first step, the mediation analysis from the first experiment was repeated for online loyalty and online purchase intention instead of online WTP in order to test if the mediation also holds for these different dependent variables. Furthermore, since the results from the WTP study did not allow for testing the hypothesized relationships for different types of online integration, the analysis also includes Facilitating Research Shopping and Increasing After Sales Service as separate effects in the mediation framework. Thus, the initial regression analyses of the previous WTP studies are extended by assessing the relationship of different forms of online integration on online service quality and purchase risk.

The second analysis includes loyalty and purchase intention in the offline store in addition to the online measures. Difference scores are used to elaborate on the relative effects of online integration purchase intention and customer loyalty online compared to offline. This approach allows for the generation of first insights on how online integration changes customer patronage of the two channel formats relative to each other. The effects were first estimated for the pooled sample using structural equation modeling that allows the control for measurement error of the psychometric constructs. The results were replicated using hierarchical linear regression which is more convenient for the inclusion of several covariates. Second, the structural equation model was calculated using the sample of firm A in order to account for the separate effects of Facilitating Research Shopping and Increasing Online After Sales Service that could not be observed in the pooled sample.

Finally, the third analysis concentrated on the moderating effects of firm type. A multi group structural equation modeling approach was used to derive insights into the different strengths of the effects of online integration on perceived online service quality and purchase risk, as well as the different importance of these constructs for customer loyalty and purchase intention between firm A and firm B. Figure 19 gives an overview of the analyses focusing on the role of perceived service quality and purchase risk or online integration, loyalty, and purchase intention.

Figure 18: Data analysis strategy for the basic mechanism



5.1.2 Online Loyalty and Purchase Intention

For the initial analysis to test hypotheses H_9 to H_{14} the participants of firm A who were either exposed to the null scenario or to the scenario for the integration type of Facilitating Research Shopping were pooled into a dataset comprising 1.026 respondents (211 respondents of firm A, and 815 respondents of firm B). As in the WTP study, the mediation analysis was tested with linear regression models following the approach of Baron and Kenny (1986). The results of the first mediation analysis are depicted in Table 12. An initial ANOVA analysis to test the manipulation of perceived online integration by Facilitating Research Shopping was successful ($M_{no\_integ} = 4.25$, $M_{integ} = 5.29$, $F(1; 1.025) = 104.98$, $p<.001$).

The findings suggest that perceived online integration has a positive effect on perceived service quality in the online shop ($\beta = .27$, t-value = 8.92, $p<.01$) and is negatively associated with online purchase risk ($\beta = -.05$, t-value = -1.68, $p<.10$). Thus, hypotheses 3a and 4a are again supported. However, the effect of perceived online integration on purchase risk reduction is only significant at the .10-level. This weak relationship may be caused by the relatively large percentage of respondents of firm B in the pooled sample (62.9%). These customers already know the firm's existing online store and most of them have previously purchased from it. Since the overall evaluation of the online channel is highly positive (see Chapter D.3) firm B's

customers are likely to have experienced their online purchases positively. Therefore, the online shop is no longer perceived as very risky since these customers have been able to develop a high initial level of trust.

The direct effects of perceived online integration on loyalty towards the online shop ($\beta_{loyalty}$ = .19, t-value = 6.29, p<.01) and purchase intention in the online shop ($\beta_{purchase}$ = .13, t-value = 4.06, p<.01) are significant, providing evidence for H_{9a} and H_{10a}. The significance of both effects is reduced ($\beta_{loyalty}$ = .04, t-value = 1.73, p < .90) and ($\beta_{lpurchase}$ = .03, t-value = 1.12, p > .10) when perceived online service quality and purchase risk are included as independent variables. At the same time, the effects of perceived online service quality on loyalty ($\beta_{loyalty}$ = .52, t-value = 19.19, p < .01) and purchase intention ($\beta_{purchase}$ = .29, t-value = 9.79, p < .01) are significant supporting H_{11a} and H_{11b}. The same result is obtained for perceived online purchase risk and online loyalty ($\beta_{loyalty}$ = -.18, t-value = -6.99, p < .01), as well as online purchase intention ($\beta_{purchase}$ = -.30, t-value = -10.31, p < .01), supporting H_{12a} and H_{12b}. These results also indicate that perceived online service quality and purchase risk partially mediate the respondents' loyalty towards the online store (H_{13a} supported) and fully mediate the intention to use the online shops for purchase (H_{14a} supported).

Table 12: Mediation Analysis for Perceived Online Integration

	Perceived Online Purchase Risk		Perceived Online Service Quality		Loyalty towards the Online Shop				Purchase Intention in the Online Shop			
	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value
Perceived Risk	-	-	-	-	-	-	-0.18	-6.99 **	-	-	-0.30	-10.31 **
Perceived Service Quality	-	-	-	-	-	-	0.52	19.19 **	-	-	0.29	9.79 **
Online Integration	-0.05	-1.68 †	0.27	8.92 **	0.19	6.29 **	0.04	1.73 †	0.13	4.06 **	0.03	1.12
R Square		0.00		0.07		0.04		0.37		0.02		0.23
F		2.84		79.61 **		39.61 **		198.50 **		16.45 **		100.77 **
N		1026		1026		1026		1026		1026		1026

** = p<.001; * = p<.05; † = p<.10; standardized estimates; N = 1.026

The effects of the different integration types were tested using the same methodological approach for mediation analysis suggested by Baron and Kenny

(1986). Since only the experiment conducted for firm A tested both forms of online integration - Facilitating Research Shopping and Increasing Online After Sales Service - the sample consisted of the 481 customers of that company. The results are displayed in Table 13. Two initial ANOVA analyses suggest that the manipulation of perceived online integration by Facilitating Research Shopping ($M_{no\_research\_shopping}$ = 4.55, $M_{research\_shopping}$ = 5.92, F(1; 480) = 148.68, p<.001) and Increasing Online After Sales Service (M_{no_return} = 4.78, M_{return} = 5.72, F(1; 480) = 59.93, p<.001) was successful. More importantly, both forms of online integration yielded significant effects in the expected directions for perceived online service quality and purchase risk. Hypotheses 3bc and 4bc were thus supported. Customers who were exposed to an online shop that focused on Facilitating Research Shopping perceived lower purchase risk (β = -.13, t-value = -2.52, p<.05) and higher service quality (β = .20, t-value = 4.08, p<.01) in the online shop. A similar result was obtained for increasing after sales service by allowing for product returns of online purchases at physical stores that decreased perceived online purchase risk (β = -.11, t-value = -2.29, p<.04) and increased online service quality (β = .10, t-value = 2.01, p<.01).

Secondly, loyalty to the online shop was significantly related to Facilitating Research Shopping ($\beta_{loyalty}$ = .19, t-value = 3.90, p<.01) but not for increasing after sales service ($\beta_{loyalty}$ = .08, t-value = 1.65, p=.10), supporting H_{9b} but not H_{9c}. As was expected in H_{10b} and H_{10c}, the intention to purchase at firm A's online shop was significantly associated with easier research shopping ($\beta_{purchase}$ = .19, t-value = 3.84, p<.01) and also increased after sales service provision ($\beta_{purchase}$ = .19, t-value = 3.81 p<.01). Thirdly, when both perceived online risk and service quality were included as independent variables, in addition to the two integration treatments, the mediators remained significant for loyalty towards the online shop (perceived service quality: $\beta_{loyalty}$ = .55, t-value = 14.60, p<.01; perceived risk: $\beta_{loyalty}$ = -.16, t-value = -4.42, p<.01) and purchase intention in the online shop (perceived service quality: $\beta_{purchase}$ = .20, t-value = 4.86, p<.01; perceived risk: $\beta_{purchase}$ = -.34, t-value = -8.25, p<.01), whereas the influence of online integration was eliminated for the respondents' loyalty towards the online store (Facilitating Research Shopping: $\beta_{loyalty}$ = .06, t-value = 1.54, p = .124; increasing after sales service: $\beta_{loyalty}$ = -.01, t-value = .20, p = .839) or reduced in the case of online purchase intention (Facilitating Research Shopping: $\beta_{purchase}$ = .10, t-value = 2.33, p<.05; increasing after sales service: $\beta_{purchase}$ = .13, t-value = 2.88, p<.01).

Thus, the results of the mediation analyses support $H_{11b,c}$ and $H_{12b,c}$. With respect to the expected mediation effects the findings support that perceived online purchase risk and service quality fully mediate the effect of online facilitating customer research on loyalty towards firm A's online store (H_{13b}) and partially mediate the respondents' intention to purchase at this online shop (H_{14b}). The analysis for the effects of online integration in terms of increased after sales service yield similar results. Perceived online service quality and purchase risk partially mediate the positive relationship of increased online after sales service on purchase intention (H_{14c}). However, the results do not strongly support the expected mediation effect of increased after sales service on customer loyalty towards the online shop (H_{14c}) since the direct effect of increased after sales service on loyalty towards the online channel is only significant on the .10-level.

Table 13: Mediation Analysis for Two Different Forms of Online Integration

	Perceived Online Purchase Risk		Perceived Online Service Quality		Loyalty towards the Online Shop				Purchase Intention in the Online Shop			
	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value
Perceived Risk	-	-	-	-	-	-	-0.16	-4.42 **	-	-	-0.34	-8.25 **
Perceived Service Quality	-	-	-	-	-	-	0.55	14.60 **	-	-	0.20	4.86 **
Facilitating Research Shopping	-0.13	-2.52 *	0.20	4.08 **	0.19	3.90 **	0.06	1.54	0.19	3.84 **	0.10	2.33 *
Increasing After Sales Service	-0.11	-2.29 *	0.10	2.01 *	0.08	1.65	0.01	0.20	0.19	3.81 **	0.13	2.88 **
R Square		0.04		0.07		0.06		0.41		0.10		0.28
F		10.50 **		17.59 **		14.82 **		82.50 **		26.62 **		46.42 **
N		481		481		481		481		481		481

** = p<.001; * = p<.05; † = p<.10; standardized estimates; N = 481

5.1.3 Relative Loyalty and Purchase Intention

5.1.3.1 Pooled Sample Structural Equation Model Results

For the analysis, all participants of firm A and firm B who were either exposed to the null scenario or to the scenario for integration type A were pooled into a dataset of

1.026 respondents (211 cases in firm A, and 815 cases in firm B). The hypotheses were estimated using structural equation modeling. The resulting covariance structure model of the main effects is displayed in Figure 19. The estimates from the full model are signified by bold numbers; bracketed estimates were derived from the pooled data with equal sample sizes. MPlus 6.0 was used to model the structural relationships from the theoretical framework. The global fit of the covariance structure model (X^2/df = 3.27, Comparable Fit Index = .971, Tucker-Lewis Index = .962, and Root Mean Square Error of Approximation = .047 [90%-confidence interval: .041/.053]) suggests good overall fit of the model (Bagozzi and Yi 1988; Baumgartner and Homburg 1996; Muthen and Kaplan 2011).

Customer reactions: The results support the expected relationships between online channel integration (in terms of the possibility to check product availability online and make reservations at a stationary channel) and the relative service quality of the online channel and online purchase risk. The model suggests a positive and significant relationship between the integration scenario and the perceived level of online integration (γ = .707, p < .01). Furthermore, as expected in H_{3a}, relating the online store to the physical channel significantly influences the perceived service quality of the online shop relative to the offline store (γ = .357, p < .01) in a positive direction. According to H_{4a} the relationship between perceived purchase risk in the online shop and the tested integration measures is negative and significant (γ = -.132, p < .01). This indicates that the integrated version of the online shop is correlated with lower perceived risk of purchasing from the online store.

The relative service quality of the online channel has a significant, positive impact on the relative loyalty towards the online store (γ = .223, p < .01) and the intention to purchase online instead of going to a physical store (γ = .169, p < .01). These findings support H_{15a} and H_{15b}. In turn, as expected in H_{16a} and H_{16b}, online purchase risk significantly influences relative online loyalty (γ = -.226, p < .01) and relative online purchase intention (γ = -.368, p < .01) in a negative direction. Furthermore, the relationship between relative online loyalty and relative online purchase intention is significant and positive (γ = .319, p < .01). Overall, these findings support the proposed sequential mechanism of the integration measures for the online channel proposed by the technology adoption theory: Online integration → attitude towards the online channel (satisfaction and reduced risk) → channel usage (loyalty and purchase intention).

Mediation analyses: In order to test the sequential pattern of the effects resulting from online channel integration, formal mediation tests were performed using X^2-difference tests (Bagozzi and Dholakia 2006; Bentler and Bonett 1980). Direct paths from the integration scenario (coded as a 0/1-dummy variable) to relative online service quality, online purchase risk, relative online loyalty, and online purchase intention, as well as from perceived online integration to relative online loyalty and relative online purchase intention were tested. Two paths resulted in a significant improvement of model fit compared to the baseline model (Table 14): A direct link from perceived online channel integration to relative online channel loyalty and a direct link from perceived online channel integration to relative online purchase intention. This result suggests that relative online service quality and online purchase risk only partially mediate the effect of perceived online channel integration on relative online loyalty and relative online purchase intention.

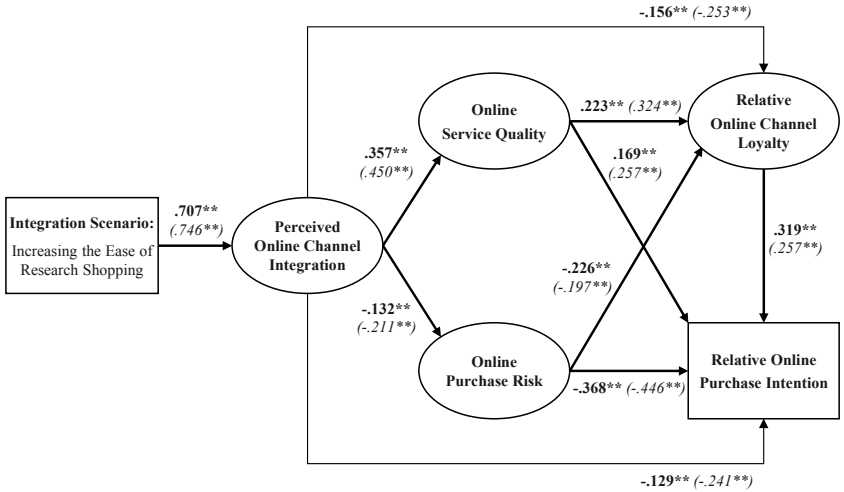
Table 14: Mediation Tests

	Model	**Goodness-of-Fit**	**Test of Hypotheses**
0.	Target Model	$X^2(81) = 155.197$	-
1.	Scenario → Relative Online Loyalty	$X^2(80) = 152.732$	$\Delta X^2(1) = .44$, *p=.51*
2.	Scenario → Relative Purchase Intention	$X^2(80) = 154.994$	$\Delta X^2(1) = .22$, *p=.64*
3.	Perceived Integration → Relative Online Loyalty	$X^2(80) = 155.152$	$\Delta X^2(1) = 15.16$, *p<.01*
4.	Perceived Integration → Relative Purchase Intention	$X^2(80) = 154.192$	$\Delta X^2(1) = 15.62$, *p<.01*
5.	Scenario → Relative Service Quality Online	$X^2(80) = 151.900$	$\Delta X^2(1) = .35$, *p=.55*
6.	Scenario → Purchase Risk Online	$X^2(80) = 152.319$	$\Delta X^2(1) = 1.56$, *p=.21*

The construct of relative online loyalty and the single item variable depicting relative online purchase intention were calculated as a difference score by subtracting offline loyalty values from the corresponding online measures. Therefore, the direct effects which are not explained by the sequential pattern indicate possible channel (dis-) synergies. The direct effects of perceived online integration on relative online channel loyalty (-.156; p<.01) and relative online purchase intention (-.129; p<.01) are

negative. This not only means that perceived online integration affects the dependent variables beyond the mediating constructs. It also suggests that online integration has an additional decreasing effect on offline channel loyalty and offline purchase intention.

Figure 19: Structural Equation Model Results: Full Sample and Equal Sample Sizes



* = p<.05; ** = p<.01; **bold**: full sample (N = 1,206); *italics*: equal sample size (n = 422)

5.1.3.2 Hierarchical Regression Results

In order to verify the results of the structural equation model and to test for the effects of control variables, hierarchical OLS regression analyses were conducted for the dependent and mediating variables. As shown in Table 15, four linear regression analyses were run for each intervening variable: (1) including a firm dummy plus general demographic information and control variables; (2) adding information on past channel selection and preferences concerning information search and purchase location; (3) adding variables concerning customer characteristics that are directly

related to customer channel evaluation; and (4) adding perceived online integration as predictor for relative online service quality and perceived purchase risk in the online shop. The regression analyses were conducted with the pooled dataset for both firms. Of the 1.026 data points only 988 entered the analyses. Thirty eight cases were excluded due to missing values on one control variable (distance to the nearest physical store). The variance inflation factors suggest that multicollinearity is not a problem in any of the regressions (all tolerance factors >.51). The results of the linear regressions are in line with the structural equation model, indicating that the control variables do not distort the basic findings of the first analysis. Thus, the regression analyses provide further support for the hypothesized mechanisms of online integration on customer online loyalty and purchase intention.

Relative Online Service Quality: The control variables account for 12% of the variance. The firm and gender dummy variables show significant and positive effects *(Model 1)*. The significant effect of the firm variable suggests that there are inherent disparities between the two firms. This is an initial support of the hypothesis $H_{17a,b}$ and $H_{18a,b}$. Previous research suggests that gender potentially moderates the attitude towards online environments and electronic distribution channels (Falk et al. 2007; Ling and Ding 2006; Rodgers and Harris 2003). Compared to men, women tend to place higher importance on interpersonal relationships (Ling and Ding 2006) and are also more likely to value service factors and physical stores more than men (Hofstede 1980). The significant negative effect of gender on relative online service satisfaction is in line with these previous research findings on gender differences and Internet purchase behavior. Furthermore, age and brand involvement were positively related to the service quality rating of the online store.

The inclusion of channel preference for information search and purchase yields a 2% increase in R^2. Respondents were asked in which channels they usually look for product information and purchase the product category used in this study (please refer to the Appendix for an exact rendering of the wording). Customers that tend to use the Internet for information search also perceive higher relative online service quality, while physical store preference did not yield significant effects *(Model 2)*. The effects of the variables need for touch and multichannel self-efficacy are significant and explain an additional 3% of the variance. The effect of previous purchases at physical stores becomes negatively significant *(Model 3)*. Finally, in *Model 4*, online integration has a positive and significant effect on relative online service satisfaction (β = .25, t = 8.69). Furthermore, firm type (β = .10, t = 2.51), gender (β = -.14, t = -

4.04), age (β = .13, t = 3.93), brand involvement (β = .21, t = 5.58), previous information search on the Internet (β = .08, t = 2.29), previous purchases at physical stores (β = -.08, t = -2.19), need for touch (β = -.07, t = -2.12), and multichannel self-efficacy (β = .14, t = 4.67) continue to have positive and significant main effects.

Perceived Online Purchase Risk: Control variables account for 10% of the variance. As in the first hierarchical regression, firm type and gender are also significant predictors for perceived online purchase risk. Garbarino and Strahilevitz (2004) find that women perceive higher risk when purchasing online compared to men. The same reasoning applies to the positive effect of gender on perceived online purchase risk. Furthermore, brand involvement is related negatively to perceived purchase risk. Involved customers tend to process information more deeply and have higher product knowledge and purchase experience than uninvolved customers. Therefore, it is likely that highly involved customers are more comfortable purchasing on the Internet and thus perceive a lower level of purchase risk in electronic channels. Surprisingly, online purchase risk is also negatively and significantly related to the distance to the nearest physical store. Even though it seems intuitively sensible that purchase risk declines when physical stores become less accessible, this effect does not survive the series of regressions for this dependent variable *(Model 2)*. When channel preferences are entered into the regression, an additional 3% of variance is explained. Information search on the Internet has a significant negative effect on perceived purchase risk online *(Model 3)*. More interestingly, another 12% of variance is accounted for by the inclusion of need for touch, need for interaction, and multichannel self-efficacy in the model. Even though need for interaction has a positive effect at the .05-level, the rather large increase of explained variance is mainly due to the strong positive effect of need for touch on perceived online purchase risk. It is not surprising that respondents who place high importance in physical examination perceive the online store as riskier than the physical channels *(Model 3)*. In the fourth model, online integration (β = -.06, t = -2.17), firm type (β = -.09, t = -2.31), gender (β = .09, t = 2.75), brand involvement (β = -.09, t = -2.41), need for touch (β = .34, t = 10.48), and need for interaction (β = .06, t = 1.98) have significant main effects on perceived online purchase risk.

Table 15: Hierarchical Regression Analyses including Control Variables

	Relative Online Service Quality								Perceived Online Purchase Risk								Dependent Variables			
	Model 1		Model 2		Model 3		Model 4		Model 1		Model 2		Model 3		Model 4		Rel. Online Loyalty		Rel. Online Purchase	
	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value	β	t-Value
Firm Dummy (0=firm A; 1=firm B)	0.11	2.81 **	0.09	2.13 *	0.09	2.12 *	0.10	2.51 *	-0.18	-4.50 **	-0.15	-3.69 **	-0.09	-2.23 *	-0.09	-2.31 *	0.14	3.52 **	0.25	7.60 **
Gender Dummy (0=male; 1=female)	-0.13	-3.59 **	-0.13	-3.61 **	-0.14	-4.01 **	-0.14	-4.04 **	0.11	3.12 **	0.11	3.02 **	0.09	2.78 **	0.09	2.75 **	-0.03	-0.90	-0.03	-0.93
Age in Years (log)	0.11	3.34 **	0.14	4.04 **	0.13	4.00 **	0.13	3.93 **	-0.02	-0.52	-0.04	-1.25	-0.03	-1.00	-0.03	-0.95	-0.02	-0.51	-0.02	-0.70
Distance to Physical Store (log)	-0.04	-1.43	-0.05	-1.71	-0.04	-1.39	-0.05	-1.67	-0.06	-1.97 *	-0.04	-1.29	-0.04	-1.39	-0.04	-1.33	-0.01	-0.42	0.07	2.73 **
Product Involvement	0.01	0.27	0.02	0.44	0.00	0.12	0.00	-0.05	0.02	0.46	0.01	0.30	-0.01	-0.26	-0.01	-0.22	-0.03	-0.84	0.01	0.17
Brand Involvement	0.25	6.33 **	0.23	5.97 **	0.22	5.63 **	0.21	5.58 **	-0.15	-3.65 **	-0.13	-3.30 **	-0.09	-2.47 *	-0.09	-2.41 *	-0.03	-0.65	0.00	-0.09
Information Search on the Internet			0.10	2.90 **	0.08	2.27 *	0.08	2.29 *			-0.08	-2.11 *	-0.06	-1.70	-0.06	-1.69	0.03	0.87	-0.04	-1.71
Inforation Search at Physical Stores			0.01	0.39	0.02	0.55	-0.01	-0.25			0.07	1.76	0.02	0.54	0.03	0.75	0.06	1.95	0.05	1.84
Previous Purchase on the Internet			0.04	1.13	0.01	0.22	0.01	0.17			-0.06	-1.51	-0.01	-0.36	-0.01	-0.35	0.11	3.56 **	0.06	2.46 *
Previous Purchase at Physical Stores			-0.06	-1.67	-0.08	-2.12 *	-0.08	-2.19 *			0.07	1.84	0.03	0.93	0.03	0.92	-0.04	-1.33	-0.07	-2.70 **
Need for Touch					-0.07	-2.17 *	-0.07	-2.12 *					0.34	10.49 **	0.34	10.48 **	-0.05	-1.32	-0.09	-3.16 **
Need for Interaction					0.02	0.47	0.01	0.46					0.06	1.98 *	0.06	1.99 *	-0.19	-5.71 **	-0.11	-3.91 **
Multichannel Self-Efficacy					0.17	5.36 **	0.14	4.67 **					0.01	0.22	0.01	0.44	0.00	0.07	-0.01	-0.55
Online Integration							0.25	8.69 **							-0.06	-2.17 *	-0.06	-1.86	-0.05	-2.22 *
Online Service Quality	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	3.90 **	0.07	2.63 **
Perceived Online Purchase Risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.09	-2.57 **	-0.12	-4.54 **
Relative Online Loyalty	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.29	11.05 **
R Square	0.12		0.14		0.17		0.23		0.10		0.13		0.24		0.25		0.23		0.48	
Adusted R Square	0.12		0.14		0.16		0.22		0.09		0.12		0.23		0.24		0.21		0.47	
F	23.18 **		16.47 **		15.53 **		20.92 **		17.60 **		14.35 **		24.29 **		22.98 **		17.67 **		52.72 **	
R Square Change	-		0.02		0.03		0.06		-		0.03		0.12		0.01		-		-	
F Change	-		5.73 **		10.77 **		75.47 **		-		8.65 **		50.20 **		4.71 *		-		-	
N	988		988		988		988		988		988		988		988		988		988	

** = p<.001; * = p<.05; standardized estimates; N = 988 due to 38 missing values for variable "Distance to nearest Physical Store"

5.1.3.3 Facilitating Research Shopping vs. Increasing Online After Sales Service

The primary objective of the previous analyses was to show that the facilitation of research shopping affects perceived online integration that can increase the relative advantage of the online shop. The following study extends these findings in two important ways. First, it aims to revalidate the results in a setting in which the online integration treatment serve as direct predictors of the dependent variables. Second, and most important, it is examined whether different integration measures trigger different customer reactions. More concretely, in addition to Facilitating Research Shopping via the possibility to check availabilities and to make reservations offline, the study also tested the effects of being able to return online purchases at local stores.

The effects of both integration measures were assessed using the basic conceptual framework used for the previous structural equation model. As initially described, participants for the study were recruited from the newsletter subscribers of firm A. Hence, the dataset used for this analysis consists of all 481 responding customers of firm A. The study was conducted as a 2 × 2 factorial design. The participants of the study were randomly assigned to the four scenarios (see Chapter D.1.2 for the detailed scenario description). The hypotheses were estimated using structural equation modeling. MPlus 6.0 was used to model the structural relationships from the theoretical framework. The global fit of the covariance structure model ($X^2/df = 2.23$, Comparable Fit Index = .968, Tucker-Lewis Index = .953, and Root Mean Square Error of Approximation = .049) suggests a close fit of the model. The resulting covariance structure model and the results of the main effects are displayed in Figure 20.

Moderation effects: Since the study design included two dichotomous treatment variables, it was necessary to test for interaction effects of the interaction measures. No hypotheses were made concerning the existence and the direction of interactions. Nevertheless, failing to include significant interaction effects may result in misspecification of the model structure and eventually lead to interpretation of the main effects (Cortina 1994; Hair et al. 2006). The existence of interaction effects between the two independent treatment variables was tested using two approaches: First, a separate interaction variable was calculated by multiplying the two dummy variables representing the online integration measures that was included as a third independent variable into the equation model (Baron and Kenny 1986; Ping Jr 1995). The model estimation including the interaction yields insignificant coefficients for the

interaction variable *(ps > .63)*. Second, one dichotomous predictor from the model was excluded and used as a grouping variable. Based on the two levels of the grouping variable, chi-square difference tests were performed to assess coefficient differences for the remaining treatment (e.g. Aiken et al. 1994). This procedure was performed for each of the two integration variables. The results indicate that there are no significant differences between the coefficients, neither when the possibility to return online purchases offline is used as moderator (*χ2-difference=.102, d.f.=1, p=.75*) nor when the possibility to check product assortment offline is modeled as moderator (*χ2-difference=.197, d.f.=1, p=.66*). Based on these findings, it is concluded that the two treatment variables do not significantly interact. The interaction term was thus excluded from the final model and the subsequent interpretation. Furthermore, as in experiment two, analyses for the two integration measures were performed using X^2-difference tests.

Customer reactions: The estimates suggest that online integration in terms of increasing the ease of research shopping positively affects the perceived service quality of the online shop (γ = .224, p < .05). However, the model did not reveal a significant effect of after sales service on perceived online service quality (γ = .138, p = .191). The results support the hypothesized negative relationships of online integration in terms of ease of research shopping (γ = -.288, p < .01) and after sales service (γ = -.262, p < .05) on perceived purchase risk online. Furthermore, perceived online service quality significantly influences relative online channel loyalty (γ = .302, p < .01) and relative online purchase intention (γ = .120, p < .05) in a positive direction. Online purchase risk has a significant, negative impact (γ = -.419, p < .01) on relative online purchase intention. However, relative online loyalty was not significantly influenced by online purchase risk (γ = .015, p < .797). Relative online loyalty influences relative online purchase intention in a significant and positive direction (γ = .138, p < .01). The results support the proposed sequential pattern that online integration increases online loyalty and purchase intention via higher perceived service quality and reduced purchase risk in the online shop. The results of the structural equation model are displayed in Figure 20.

Mediation tests: As for the pooled sample, the model was tested for direct paths from the integration scenarios (coded as 0/1-dummy variables) to relative online loyalty and online purchase intention. Formal mediation tests were performed using chi-square difference tests (Bagozzi and Dholakia 2006; Bentler and Bonett 1980). One path resulted in a significant improvement of model fit compared to the baseline model: A

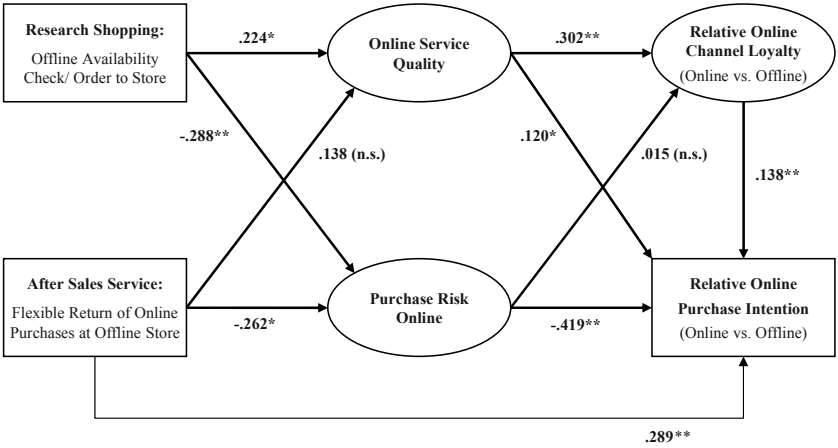
direct link from increased after sales service to relative online purchase intention. The results of the interaction and mediation analyses are listed in Table 16.

Table 16: Interaction and Mediation Tests

	Model	Goodness-of-Fit	Test of Hypotheses
0.	Target Model	$X^2(53) = 122.951$	-
1.	Offline Returns → Relative Online Loyalty	$X^2(52) = 122.924$	$\Delta X^2(1) = .027$, $p = .89$
2.	Offline Returns → Relative Purchase Intention	$X^2(52) = 111.386$	$\Delta X^2(1) = 11.565$, $p < .01$
3.	Availability Check & Reservation Offline → Relative Online Loyalty	$X^2(52) = 122.340$	$\Delta X^2(1) = .611$, $p = .43$
4.	Availability Check & Reservation Offline → Relative Purchase Intention	$X^2(52) = 119.553$	$\Delta X^2(1) = 3.398$, $p = .07$

The result of the mediation analysis suggests that online purchase risk only partially mediates the effect of increased after sales service in terms of flexible return conditions on relative online purchase intention. Possible explanations for this finding can be found in the marketing literature. Besides reducing the risk, better and more flexible return conditions may influence other constructs that make it more attractive to purchase via the online shop. For example, integration measures that increase the flexibility of the after sales services may contribute to higher overall convenience of the purchase process or lead to positive image transfers of the physical stores to the online shop. Another possible explanation for the partial mediation is increased trust. The customers of firm A who did not have previous experience in the online store may place higher trust in the new channel if they can refer to the channels they are familiar with when problems occur. Thus, offering flexible return conditions in the online shop may contribute to the intention to purchase online beyond the effect of online risk reduction.

Figure 20: Results from Structural Equation Model for Firm A



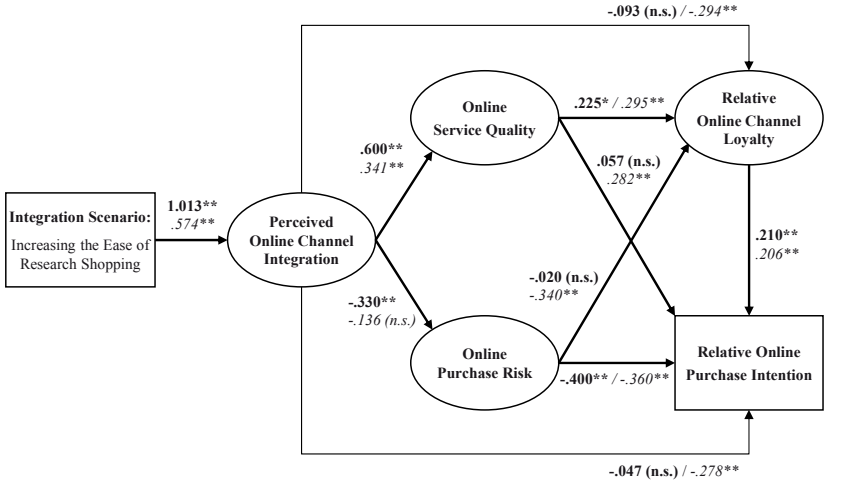
5.1.4 Multiple Group Analyses

To assess differences between the two firms, the same structural equation model as in the analysis in section 5.1.3.1 was calculated using a balanced dataset consisting of the 422 cases (211 customers of firm A and B). The 211 entries for firm B were created by randomly selecting 211 out of the 815 responses. These were added to the 211 cases of firm A. This balanced dataset was used to conduct multi group analyses between both firms. The same model specification and software was used to estimate the parameter coefficients as in the initial structural equation model. The global fit of the covariance model of the two groups ($\chi 2/df = 1.82$, Comparable Fit Index = .975, Tucker-Lewis Index = .967, and Root Mean Square Error of Approximation = .044 [90% confidence interval: .32/.55]) is good and generally in the same range as the full model.

The results from the multiple group analysis are displayed in Figure 21. The analysis used an equal sample size of 211 responses for both companies. Overall, even though the total sample size has been reduced substantially from 815 to 211 data entries, the same structural pattern is reproduced for firm B. More specifically, all modeled relationships stay significant and do not change in signs. However, for firm A the pattern changes to a certain extent and some paths become non-significant. Especially

the direct effects of perceived online integration on relative online loyalty (coef.= -.093; p = .420) and relative online purchase intention (coef .= -.047; p = .637) are not significantly different from zero while their counterparts of firm B are significant. The same applies for the effects of online service quality on relative online purchase intention (coef. = .057; p = .555) and online purchase risk on relative online channel loyalty (coef. = -.020; p = .824). Apart from these obvious cases, other coefficients also differ in size.

Figure 21: Coefficients of Multiple Group Analyses



* = p<.05; ** = p<.01; **bold**: firm A (n = 211); *italics*: firm B (n = 211)

The moderation analysis was conducted by estimating the structural equation model simultaneously for both subsamples using MPlus 6.0. Chi-square difference tests were used to assess whether the relationship between two variables is varies by firm type. This was achieved by constraining the respective coefficient to be equal across both firms. If the difference between the chi-square goodness-of-fit-statistic of the restrained model and the model without this restriction is significant, the coefficients differ significantly between firm A and firm B. This analysis was conducted for each

parameter at a time. Constraining one coefficient yields one additional degree of freedom to the model. Hence, the test statistic is chi-square distributed with one degree of freedom. The formal results of the moderation analyses are displayed in Table 17. The differences between the coefficients are visualized in Figure 22.

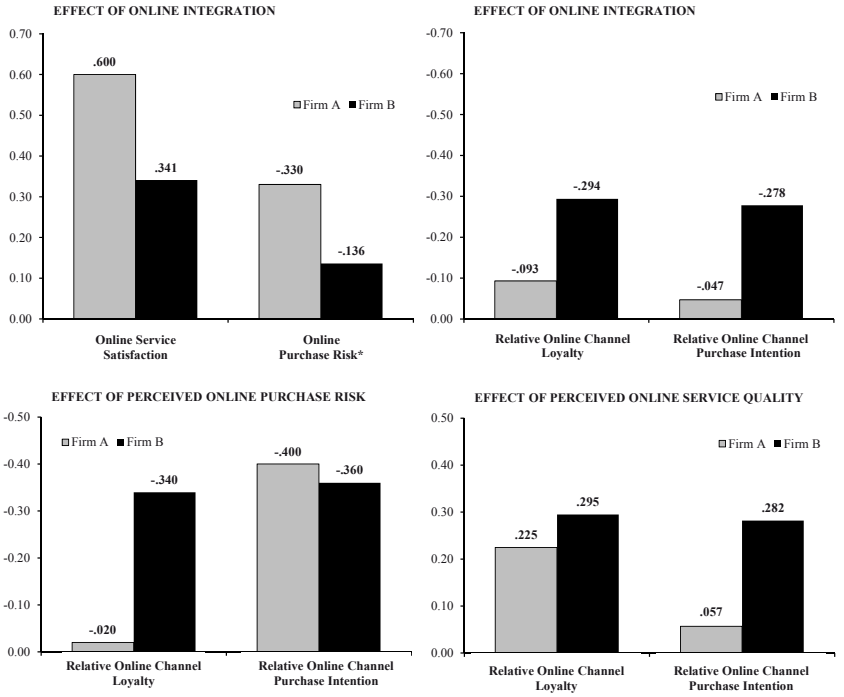
To formally test the hypothesized moderating effects of firm type on all relevant coefficients, multiple group analyses were conducted within the structural equation framework (Bollen 1989; Kline 2011). When applying multiple group analyses, the underlying criterion is the existence of different coefficient values for different levels of the grouping variable (Baumgartner and Homburg 1996; Homburg et al. 2007; Matsuno and Mentzer 2000). In the case of the hypothesized moderation relationship, the grouping variable is the firm type. Apart from testing the initially hypothesized moderation effects, additional exploratory moderation analyses were conducted with the focus on the direct relationships between perceived online integration and the dependent outcomes (online loyalty and purchase intention).

Table 17: Formal Results of Multiple Group Analyses

Hypotheses		Equality Constraint	Free Model	Chi-Square Difference	p-Value	Standard Estimate		Rel. Imp.
H_{17a}	Online Integration → Service Quality	$\chi2 = 286.854$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 8.098$ (Δd.f. = 1)	p < .01**	Firm A	.600**	-
						Firm B	.341**	-
H_{17b}	Online Integration → Purchase Risk	$\chi2 = 281.056$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 2.300$ (Δd.f. = 1)	p =.13	Firm A	-.330**	-
						Firm B	-.136	-
H_{18a}	Purchase Risk → Loyalty	$\chi2 = 285.588$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 6.832$ (Δd.f. = 1)	p < .01**	Firm A	-.020	8%
						Firm B	-.340**	54%
H_{18b}	Purchase Risk → Purchase Intention	$\chi2 = 279.066$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = .310$ (Δd.f. = 1)	p = .58	Firm A	-.400**	88%
						Firm B	-.360**	56%
Exploratory Moderation Analyses of Direct Online Integration Effects on Purchase Intention and Loyalty								
I	Online Integration → Purchase Intention	$\chi2 = 284.288$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 5.532$ (Δd.f. = 1)	p < .02*	Firm A	-.047	-
						Firm B	-.278**	-
II	Online Integration → Loyalty	$\chi2 = 281.509$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 2.753$ (Δd.f. = 1)	p < .10	Firm A	-.093	-
						Firm B	-.294**	-
III	Service Quality → Loyalty	$\chi2 = 279.838$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 1.082$ (Δd.f. = 1)	p =.30	Firm A	.225*	-
						Firm B	.295**	-
IV	Service Quality → Purchase Intention	$\chi2 = 285.331$ (d.f. = 181)	$\chi2 = 278.756$ (d.f. = 180)	$\chi2_{diff} = 6.575$ (Δd.f. = 1)	p < .02*	Firm A	.057	-
						Firm B	.282**	-

Perceived Online Service Quality and Risk: The positive effect of online service quality on relative online purchase intention is higher for customers of firm B compared to firm A ($coef._{service/purchase,A} = .057$, $coef._{service/purchase,B} = .282$, $\chi 2_{diff} = 6.575$, $p < .05$) while no significant difference resulted from the coefficients of perceived online service quality on relative loyalty towards the online shop ($coef._{service/loyalty,A} = .225$, $coef._{service/loyalty,B} = .295$, $\chi 2_{diff} = 1.082$, $p = .30$). While the result of the chi-square difference test suggests that perceived purchase risk in the online shop has an equally strong negative influence on purchase relative online purchase intention ($coef._{risk/purchase,A} = -.400$, $coef._{risk/purchase,B} = -.360$, $\chi 2_{diff} = .310$, $p = .58$), its negative influence on relative online channel loyalty is stronger for customers of firm B ($coef._{risk/loyalty,A} = .-020$, $coef._{risk/loyalty,B} = -.340$, $\chi 2_{diff} = 6.832$, $p < .01$).

Figure 22: Coefficient Differences firm A vs. firm B



* Sign of values is negative

Online integration: For customers of firm A, the integration of the online channel plays a more important role for online service quality than for the respondents of firm B ($coef._{int/service,A} = .600$, $coef._{int/service,B} = .341$, $\chi 2_{diff} = 8.10$, $p < .01$). However, even though the coefficients are relatively different from one another, no significant difference was found for the reducing effect of online integration on perceived purchase risk for the online channel for customers of firm A compared to firm B ($coef._{int/risk,A} = -.330$, $coef._{int/risk,B} = -.136$, $\chi 2_{diff} = 2.30$, $p = .13$). Furthermore, the direct negative influence of perceived online integration on relative purchase intention for the online channel ($coef._{int/purchase,A} = -.047$, $coef._{int/purchase,B} = -278$, $\chi 2_{diff} = 5.532$, $p < .05$) and relative online loyalty $coef._{int/loyal,A} = -.093$, $coef._{int/loyal,B} = -294$, $\chi 2_{diff} = 2.753$, $p < .10$) is higher for customers of firm B than for firm A. However, the chi-square difference test revealed that the difference for relative online loyalty is only significant at the .10 level.

5.1.5 Discussion

In this chapter, the effects of the online integration measures on customer purchase intention and loyalty for the online shop and the physical stores were assessed. In a first step, the results indicate that perceived online integration leads to higher online loyalty and purchase intention (H_{9a} and H_{10a} supported). In addition, both forms of online integration are effective management tools for increasing loyalty towards and purchase intention in the firms' online shops (H_{9b-c} and H_{10b-c} supported). Online service quality increases customer loyalty towards the online shop, as well as online purchase intention (H_{11a-b} supported). Perceived online purchase risk has a negative effect on loyalty towards the online shop and purchase intention (H_{12a-b} supported). Furthermore, purchase risk and service quality perceptions in the online channel moderate the effects of perceived online integration, (H_{13a-c}, H_{14a-c} supported).

The results of the structural equation analyses further support this initial evidence and show that increased online service quality also increases loyalty and purchase intention relative to the offline store (H_{15a-b} supported). Moreover, reducing online purchase risk via channel integration also increases loyalty towards the online shop and purchase intention compared to the offline store (H_{16a-b} supported). These results indicate that online integration indeed leads to a relative higher willingness to use the online shop compared to the offline stores. However, the increased differences between purchase intention and loyalty online vs. offline does not explain whether the larger spread will

support or cannibalize loyalty and purchases in the traditional physical stores. Interestingly, the direct negative effect of channel integration on relative online purchase intention - and partly loyalty (for the pooled sample) - could be interpreted as a first indication for positive cross-channel synergies from the online channel to the physical stores.

By creating a close connection between online and offline channels, research shopping becomes easier and more efficient. Linking the offline stores to the online channel, helps customers prepare their shopping trip online and reduces the barriers to visit the store. Thus, an integrated online store - especially when integration measures are designed to foster research shopping behavior - potentially increases physical store traffic. In the light of the current study, virtually all of the participants for both firms stated to search for products and information on the Internet prior to product purchase. When an integrated online shop enables the potential customers check for product availability offline and to ensure that the desired objects are actually in stock when customers visit the physical store, the services offered in the online shop create synergies for the physical stores as well. A trip to the nearest brand store or retailer might become more worthwhile when customers search at an integrated online shop or homepage.

The results of the moderation analysis indicate that online integration has a higher influence on the increase in online service quality for firm A compared to firm B. This confirms H_{17a}. Firm A had previously not implemented its own direct online shop. The customers of firm A had only been able to buy the firm's products online via third party retailers' shops. Thus, the customer base had not yet been able to develop sufficient experience with the service provision in firm A's new online offer. The customers had to rely on their past purchase experiences with the firm's channels that were mostly offline. By offering an integrated online shop, it may have been easier to associate their mostly positive impressions of the brand's physical stores with the new online shop. Thus, the positive image transfer was facilitated. For firm B, this image transfer was not as strong. A possible explanation may lie in the relatively high initial service evaluation of the already existing online shop. Firm B had already been running a successful and well established online store at the time of the study. Furthermore, firm B had been engaged in active channel management and emphasized on providing customer value and a coherent purchase experience through all of its channels. Most customers were familiar with the online shop and had previously

purchased from it. Thus, the perceived service level was not increased to the same extent as for firm A.

Surprisingly, no statistical difference could be observed in the strength of the effect of online integration and the reduction of online purchase risk. H_{17b} suggested that integration measures should work better if the customers are not familiar with the online shop. However, customers of firm A and B felt a significant reduction of the risk of purchasing from the online shops. More importantly, the manipulation of the perceived integration level of the online shop was based on the integration activity of facilitating the research shopping behavior. Other than providing easy access, this type of online integration does not improve attributes of the online channel itself. Providing customers with the possibility to switch to the physical store and thus increasing the perceived integration of the channel system reduced the risk to purchase from the online shop. This result is intriguing because the opposite result could have been possible as well: The customers may have perceived the integrated online channel as even riskier because it would have been easy to transfer to the secure physical store.

The second result of the moderation analysis did not yield support of H_{18a} which expected that purchase risk would have a stronger importance for creating loyalty towards the online store for customers of firm A compared to firm B. Even though the differences were statistically significant, the differences in the relative importance were not observed in the expected directions. For firm B, purchase risk plays a higher role for relative online loyalty. A possible explanation for these effects may lie in the nature of the two customer samples and their interpretation of loyalty. Unlike firm A's customers, the respondents of firm B largely know the online shop and have actually previously used it for shopping. Thus, customers of firm B, may perceive the online shop as more relevant for purchase then firm A's customers and also perceive online loyalty more related to purchasing at the online store while respondents of firm A relate online loyalty more to a search context. On the other hand, as hypothesized in H18b, the perceived purchase risk in the online channel was, more important for the online purchase decision for customers of firm A compared to firm B. However, the difference is not statistically significant. Thus, this result does not support for H18b. Purchase risk generally plays an important role for the online purchase decision for both firms.

The results of the structural equation models provide encouraging and reassuring initial evidence suggesting that online integration positively affects purchase intentions and loyalty online compared to the offline store. In addition, the findings point towards

possible synergistic effects from the online integration measures to loyalty and purchase intentions in the physical store. However, the important theoretical and practical question with respect to online integration and customer reactions is how the integration induced shifts in perceived channel service, risk perceptions, and potential synergies translate into an adjustment in channel selection. In other words; how does online integration change the distribution of customer channel usage and sale shares separately across online and offline channels?

This question cannot be answered with the findings from the structural equation models alone. The dependent measures for loyalty and purchase intention are difference scores that relate loyalty and purchase intention of the online channel to its physical counterpart. The current findings indicate that online integration affects customer loyalty and purchase intention in a specific distribution channel relatively to the other channel option. Strictly speaking, this relative improvement of the online channel might be either caused by an increase in online loyalty and purchase intention or a decrease of loyalty and purchase intention in the physical store. In order to draw further conclusions about the direct effects of online integration, each channel has to be assessed separately.

However, as initially stated, loyalty and purchase intention for different channel formats are not independent from one another. If online and offline related measures influence each other, the assessment of separate effects of online integration might suffer from estimation biases. Therefore, the difference scores were used in the structural equation model to rule out these endogeneity biases. The existence of positive direct effects of online integration on offline loyalty and purchase intention will be analyzed in depth in the following chapters. In order to answer the question concerning the direct effects of online integration on customer loyalty and purchase intention within each specific distribution format, two additional analyses were conducted. The specific goals of these analyses were to control for a possible endogeneity bias and thus help answer the questions (1) if the observed effects of the structural equation analyses are in fact caused by an increase or a decrease of customer loyalty and purchase intention in each channel and (2) if the effects of channel integration lead to the cannibalization of sales in the physical stores and to a shift towards the online shop. The first analysis will assess question one for the loyalty construct while the second analysis specifically focuses on answering question one and two in the light of customer purchase channel choice.

5.2 Channel Synergies - The Impact of Online Integration on Customer Loyalty Online and Offline

5.2.1 Rationale and Methodology

5.2.1.1 Mutual Dependencies of Online and Offline Customer Loyalty

The goal of the following analysis is to assess whether the online integration measures are directly increasing loyalty towards the offline stores and thus create synergies between the online and offline channels or whether the effect is mediated by online loyalty and thus indirect. From a managerial standpoint, in order to evaluate whether online integration is a suitable strategy to achieve this goal, it is important to know if the mechanism is direct or indirect in nature when deciding whether or not to integrate and choosing the appropriate integration strategy.

For example, consider a firm that would like to increase traffic and loyalty towards its offline store. If the relationship between online integration and offline loyalty is direct, then the firm's management might prefer to implement integration measures that are directly designed to drive online visitors to the offline stores. However, if the relationship is mediated by the loyalty to the online store, then the integration strategy should tend to focus on the improvement of the online channel itself. Furthermore, it is important to generally generate insights into whether synergistic or cannibalistic indirect effects exist and in what direction. Previous research has established the link from offline to online, but it has not yet been shown that the online shop also influences customer perceptions and behavior in the physical store.

Online and offline loyalty is not necessarily mutually exclusive. Multichannel customers can be loyal to a firm's online and physical stores. Furthermore, online and offline loyalty may influence each other. However, it is a priori not clear whether offline loyalty influences online loyalty, vice versa, or if the effect is reciprocal. The latter is the case when types influence each other simultaneously. It is also not clear whether this mutual relationship is positive or negative in nature. Suppose that customers who are loyal to the online store are also generally more loyal to a firm's physical channels and vice versa. In this case, both types of loyalty are parts of a broader loyalty concept and are positively correlated. By increasing one type of loyalty, such as loyalty to a firm's physical stores, the other loyalty dimension (e.g. loyalty to the firm's online shop) will be positively affected as well. The increase of online (offline) loyalty is then caused by the increase offline (online) loyalty. On the

other hand, this effect could also work in the other direction if the reciprocal influence of online and offline loyalty is negative. For example, high customer loyalty in the physical store might decrease the customers' intention to search and purchase at the online store, while customers who are loyal to the online store may feel less need to visit and be loyal to the physical retailers.

In any case, the level of online loyalty is not independent from offline loyalty and vice versa. The interdependencies between online and offline loyalty are important for the assessment of the possible direct effect of online integration on customer behavior in the physical store. If these mutual dependencies are not accounted for, the estimated direct integration coefficients may be misleading. In the case of positive dependencies, the estimated effect of online loyalty on offline loyalty would be too high while the direct effect of online integration on offline loyalty is underestimated. On the other hand, if online loyalty and offline loyalty influence each other negatively, the effect of online loyalty on offline loyalty will be negatively biased and the estimate for the direct effect of online integration on offline loyalty will be too high. In both cases, online loyalty is not an exogenous independent variable because it is itself influenced by offline loyalty.

In the previous analyses, this problem was handled by either focusing exclusively on online loyalty or the creation of a difference score by subtracting offline from online customer loyalty (i.e. relative online loyalty). The drawback of these approaches are that the direct effect of online integration on offline loyalty was either impossible to measure due to the omission of the offline loyalty variable or no direct separate coefficients could be calculated for the effect of online integration on offline and online loyalty. Thus, in order to answer the question of whether cross-channel synergies exist in terms of channel loyalty, the following analysis is designed to separate the effects and to generate further insights into potential indirect and direct influences of online integration for both loyalty types.

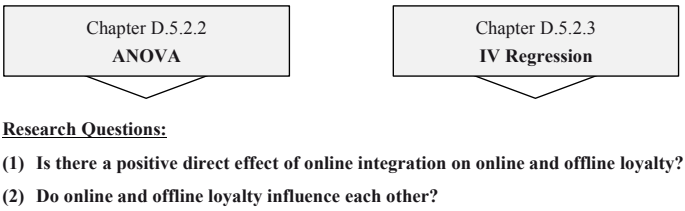
5.2.1.2 Data Analysis Strategy and Model Specification

The analysis was carried out in two steps: First, descriptive analysis and ANOVA mean comparisons were conducted to derive initial insights into the overall integration outcomes. However, in the case of mutual dependencies and feedback loops between both dependent loyalty variables, analyzing the overall effects can only serve as a

starting point to assess whether online channel integration creates channel synergies. It is not possible to differentiate whether the effect on purchase intention or loyalty results from the integrated online channel or from correlations between both dependent variables. Therefore a second set of analyses were conducted to generate further insights into the underlying mechanisms.

The focus of the second analysis was to control for mutual dependencies, i.e. endogenous effects, of online and offline loyalty and to identify direct and indirect synergetic effects of online integration. In order to control for the possible endogeneity problems arising from interdependencies between online and offline loyalty, an instrumental variable (IV) specification was applied in addition to model specifications that do not specifically control for endogeneity (OLS). By comparing the effects of alternative models that differ in the degree of interdependence between the offline and online loyalty constructs, as well as omitted variables that may cause correlated error terms, it was possible to determine whether endogeneity and reciprocal effects are present and if they should be accounted for in estimating the integration effects. Additionally, it was also possible to identify the direction of the dependencies between online and offline loyalty.

Figure 23: Study Procedure and Research Questions



5.2.2 Descriptive Analyses and Mean Comparisons

To assess the separate effects of online integration on online and offline channel loyalty, initial ANOVAs were performed for each loyalty construct. For the first analysis the pooled dataset of firm A and B's respondents was used. In this experiment, Facilitating Research Shopping was used as the only independent integration treatment variable, resulting in a one-way-ANOVA mean comparison. For the second analysis the complete dataset of firm A was used, which included the two different types of online integration (Facilitating Research Shopping and Increasing Online After Sale Service) resulting in a 2×2 factorial ANOVA.

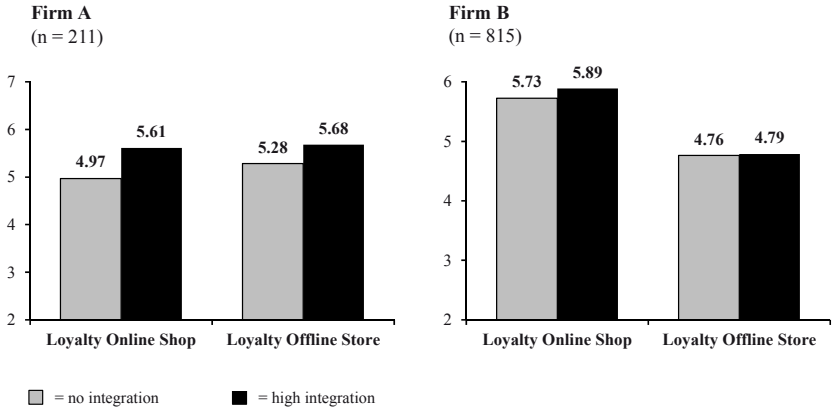
5.2.2.1 Pooled Sample Results

The results for the first analysis indicate the existence of an overall positive effect of online integration on online loyalty ($F(1, 1.024) = 17.43$; $p<.01$) while the online integration treatment did not significantly affect offline loyalty ($F(1, 1.024) = .13$, $p=.72$). In a split sample test, the same analyses were also conducted separately for the respondents of each firm. For the participants of firm B the results mirror the findings for the combined dataset: Online integration is significantly positively related to online loyalty ($F(1, 813) = 4.12$, $p<.05$); no effect resulted for offline loyalty ($F(1, 813) = .05$, $p=.82$). For the respondents for firm A, the integration effect was considerably stronger. Both online loyalty ($F(1, 209) = 14.21$, $p<.01$) and offline loyalty ($F(1, 209) = 5.22$, $p<.05$) were significantly higher in the case of the integrated online store. The results for the split sample tests for experiment one are displayed in Figure 24.

The results suggest that integrating the online channel by connecting the online shop with the physical stores in the pre-purchase phase significantly increases the respondents' intention to return to the online shop for future information search and/or purchases. Hence, offering services for customers to engage in research shopping increases their loyalty to the online channel. Whether this leads to cannibalization effects in terms of channel purchase decision will be analyzed in the next chapter. With respect to the effects on the physical stores, the results are ambiguous. Loyalty for the physical stores was increased for the respondents of firm A, providing initial support for channel synergies under certain circumstances. However, this effect was not significant for firm B's participants in experiment one. The overall insignificant

effect of online integration on offline loyalty is due to the much higher sample size of firm B's customers and thus should not be generalized.

Figure 24: Customer Channel Loyalty Ratings in the Pooled Sample

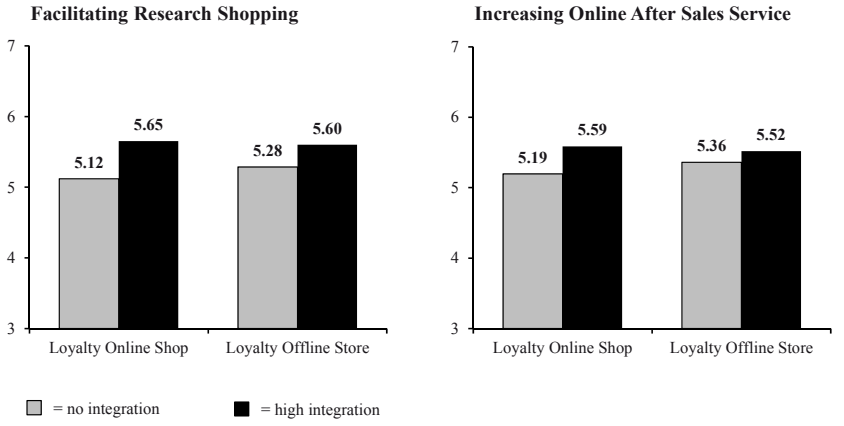


5.2.2.2 Facilitating Research Shopping vs. Increasing Online After Sales Service Results

The comparison of the two different types of online integration in experiment two yielded similar main effects for increasing the ease of research shopping, as well as offering flexible return conditions. Specifically, the possibility to check availabilities and order products to physical stores was positively and significantly related to online loyalty ($F(1, 479) = 26.84$; $p<.01$), as well as to the loyalty towards the physical stores selling firm A's products ($F(1, 479) = 8.45$; $p<.01$). The offer to return online purchases at a physical store also significantly increased the loyalty towards firm A's new online shop ($F(1, 479) = 14.03$; $p<.01$). However, the effect of flexible returns on offline loyalty was not significant ($F(1, 479) = 2.03$, $p=.15$). No significant interaction effects of the two integration types were found for online loyalty ($p=.24$) and offline loyalty ($p=.26$). Figure 25 gives an overview of the absolute loyalty values and the effects of the two integration measures.

The initial ANOVA analyses for both integration types suggest that online integration can increase customer loyalty to the online shop. Offline loyalty was only increased in the case when the online integration was designed to increase the ease of research shopping. Flexible returns did not affect loyalty levels for the physical stores. This finding is intuitive and expected. The effects are generally stronger than in the first experiment, again suggesting that the effectiveness of online integration measures differ inherently between the customers of firm A and B. However, the general conclusion of the ANOVA results is encouraging: Online integration helps increase loyalty in the online shop while - at least - not decreasing offline loyalty and - at best - creating positive channel synergies towards offline loyalty under certain circumstances. These results are in line with the findings of the structural equation model. They also help interpret the findings based on the difference score. Online integration increased loyalty to the online shop in both experiments and offline loyalty was not affected to a similar extend by online integration. Thus, the positive relationship between online integration and the loyalty difference scores is likely to result from the increase in online loyalty.

Figure 25: Customer Ratings of Different Integration Types (Sample Firm A)



5.2.3 Instrumental Variables Regression

5.2.3.1 Endogenous Effects of the Online and Offline Loyalty Constructs

As initially stated, in order to assess the influence of online integration and direct or mediation effects, it is crucial to test for endogenous effects between the loyalty constructs. When both loyalty towards the online shop and loyalty towards the physical stores influence each other reciprocally, the mediation and direct integration effects are biased. The direction of this bias depends on the sign of the correlation between online and offline loyalty. If the reciprocal relationship between online and offline loyalty is negative, the estimated effect of online loyalty on offline loyalty will be too low and the influence of online integration on coefficient will be too high if the estimation method does not account for the mutual dependencies of offline and online loyalty (e.g. OLS). However, if the reciprocal relationship is negative, the estimated effect of online loyalty on offline loyalty will be too low and the integration coefficient will be too high if the estimation method does not account for endogeneity in both loyalty constructs.

Formally, consider the following set of equations where $Yloy\_offline$ (Y_{loy_online}) is the customer loyalty towards a firm's offline channel (online store), X is a vector of specific traits, preferences and characteristics of the respondent, $Z_{offline}$ (Z_{online}) are the instrumental variables used to control for endogeneity in the online (offline) loyalty variable, I denotes the effects of the integration measures on offline and online loyalty, and $\varepsilon_{offline}$ (ε_{online}) signifies the error terms of equation one and two.

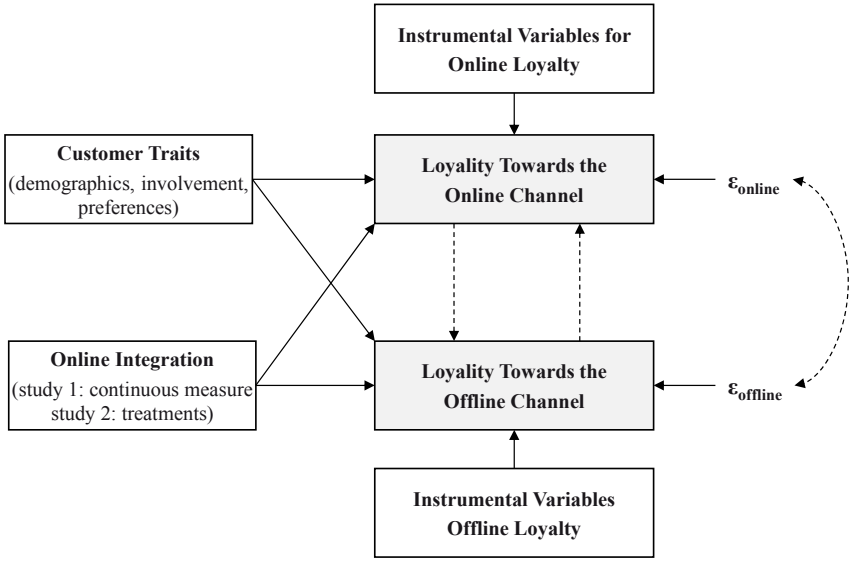
$$(1) \quad Y_{loy\_online} = \beta_{offline} Y_{loy\_offline} + \gamma_{online} X + \delta_{online} Z_{online} + \lambda_{online} I + \varepsilon_{online}$$

$$(2) \quad Y_{loy\_offline} = \beta_{online} Y_{loy\_online} + \gamma_{offline} X + \delta_{offline} Z_{offline} + \lambda_{offline} I + \varepsilon_{offline}$$

Both loyalty variables enter the opposite equation as a predictor. If both variables influence each other, the error terms of each equation will be correlated with the independent loyalty measure of the other equation. Then the loyalty measures are no exogenous independent variables to the system and their coefficients will be biased. In this case it is crucial to control for the endogeneity of the loyalty variables to obtain more realistic loyalty coefficients and inferences. Furthermore, even if there are no endogenous effects and the two loyalty measures do not influence each other, it is possible that the error terms of equation one and two are correlated e.g. due to omitted variables and unobserved effects that influence both online and offline loyalty,

simultaneously. Figure 26 shows the conceptual framework and the possible reciprocal effects between the online and offline loyalty variables that were accounted for in the models.

Figure 26: Framework Loyalty and Online Integration



Five model specifications were calculated for equation (1) and (2), as well as for both samples (pooled and firm A). By comparing the estimation results, testing for endogeneity effects and correlated error terms, it is possible to select the most suitable model to make unbiased inferences. Including total and direct effects estimation allows testing for mediating effects using Baron and Kenny's method (Baron and Kenny 1986). Furthermore, estimating the effects under different model assumptions increases the overall robustness of the findings. Table 18 gives an overview of the model specifications.

Table 18: Overview of Estimated Model Specifications

	Reduced Form Equations		Structural Form Equations			
Model specification	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Estimation method	OLS	SUR	OLS	SUR	2SLS	3SLS
Effect type	total	total	direct	direct	direct	direct
Endogeneity:						
Loyalty (offline/online)	no	no	no	no	yes	yes
Omitted variables	no	yes	no	yes	no	yes

The first two models estimate the total effects of online integration on online and offline loyalty using the reduced form of equations (1) and (2). The total effects signify the sum of direct and indirect effects, representing how much change should occur in the loyalty measures for a given shift in the independent variable (Hipp et al. 2011). Hence, the total effects estimation represents the overall influence of online integration on the two loyalty measures but does not explicitly single out the mediation effects. Rather, the indirect effects are incorporated into the coefficients of the online integration measures and the covariates. The results reflect the ANOVA estimation with the additional variance reduction obtained from the covariates. The first model tests for total effects within an ordinary least square (OLS) regression analysis that calculates equation one and two separately of one another. In the second total effects specification equations one and two are estimated simultaneously using seemingly unrelated regression analysis (SUR) allowing the equation error terms to be correlated (Zellner 1962). This framework allows for the test of higher order interdependencies that might arise from omitted variables or general customer loyalty towards the firms that simultaneously affects online as well as online loyalty. If these interdependencies exist, the SUR method provides more efficient estimates than the OLS approach.

The structural form model specifications (3) to (6) estimate the direct regression coefficients as defined in equation one and two. Now, the reciprocal effects of online and offline loyalty are explicitly estimated by introducing them as predictor variables

in the two equation system. As previously stated, endogeneity might result in biased estimates in this case. To account for this potential problem, the models differ in their assumptions concerning endogeneity of the loyalty variables and other sources of correlated error terms between both equations. As a starting point, the OLS estimation neither accounts for endogeneity nor for omitted variables. The SUR estimation in model (4) potentially improves the efficiency of OLS estimates when omitted variable effects are present. Instrumental variables were used to account for endogenous effects, in models (5) and (6). Model (5) estimates equation one and two separately by two-stage least squares (2SLS), where instrumental variables were used to account for the exogenous shared variance of the two loyalty measures that is not correlated with the equation error terms. In addition to the reciprocal loyalty effects, model (6) estimates equation one and two simultaneously in order to allow for the correlation between equation errors that might arise due to other reasons than endogenous predictors. Model (6) was estimated using the three-stage least squares (3SLS) estimator. 3SLS is a full-information estimation technique which uses information from the other equations in the system to calculate the structural parameters (Zellner and Theil 1962). Applying generalized least square (GLS) estimation to the 2SLS framework, efficiency gains are possible (Hipp et al. 2011).

5.2.3.2 Instrumental Variables Identification

In order to estimate the true effect of online and offline loyalty in the structural form equations, instrumental variables were used in model (5) and (6) to control for endogeneity. The endogeneity problem arises from the potential interdependence between the two loyalty variables. The instrumental variables for online loyalty must therefore predict online loyalty but be uncorrelated with offline loyalty. Likewise, the instruments used for offline loyalty must predict the level of loyalty towards the physical stores but have no effect on a respondent's loyalty towards the online shop. In order not to dilute potential effects of the integration treatments, within this research setting the instrumental variable have to fulfill the criterion that they are not causally linked to the online integration effects.

Instrumental variables for online loyalty: The following paragraphs introduce a series of instrumental variables for the loyalty constructs. For each instrument it is particularly argued (1) why the instruments are likely to be correlated with the loyalty

towards the online shop and (2) why this particular instrument is most likely uncorrelated with offline loyalty.

The first instrument is the previous information search on the Internet. Before the respondents were exposed to the online channel and the different integration scenarios, they were asked to answer an initial set of questions regarding their previous information channel. More specifically, they were asked to indicate in which channels, online or offline, they usually engage in information search when shopping for the specific product category used in the research contest. It is expected that customers that usually search for information on the Internet also tend to be more loyal towards a firm's online shop. Customers that are used to looking for product information on the Internet are more familiar with the online medium and particularly with online shops and firms' homepages. Hence, they are likely to engage in online product search in the future. It is also likely that these customers are more prone to use the Internet for shopping because of their higher familiarity with the online medium. Thus, product search on the Internet is likely to proxy a respondent's loyalty towards a firm's online shop in terms of future product search and purchase.

However, previous product search is unlikely to be correlated with offline channel loyalty. First, the initial questions on search behavior were not exclusive, so that a respondent was able to name physical stores as well as the Internet as search channels. Thus, customers can be equally loyal to the offline and the online store. Second, customers who engage in research shopping use the Internet for searching but will make the final purchase offline. Research shoppers will therefore display high search loyalty in the online domain while their loyalty towards a firm's physical channel will be equally high, if not even more pronounced. This is especially true when a firm's customers use channels interchangeably throughout the purchase process, which is the case for both customer bases of firm A and B used in the current study.

The second instrument for online loyalty is based on the same idea that previous online search behavior leads to higher online loyalty. Whereas the initial measure was coded as a dummy variable indicating whether customers generally use the Internet for product search, another measure was employed to rate their perceived experience in online search compared to the average population on a seven-point scale (Wallace et al. 2004). This measure mirrors the dummy variable rating of whether customers usually engage in product search on the Internet. Customers who use the Internet for product search are also likely to think of themselves as more experienced. Additionally, it serves as an alternative and more refined proxy for loyalty towards the

online shop. Previous customers of a firm who believe they are highly experienced in searching online are also likely to be more loyal towards a specific firm's online shop. However, if customers are multichannel in nature and if they use online as well as offline channels depending on the specific purchase context, online search experience does not predict offline loyalty.

The third instrumental variable that was used to predict online loyalty is whether customers usually purchase the respective product category online. Again, this measure was taken from the set of initial questions on channel usage and operationalized as categorical variable. Respondents that indicated that they usually make the purchases over the Internet are expected to display a higher level of loyalty towards a firm's online store. Especially, when they are highly involved in the brand and have previously purchased the firms' products (both of which are likely in this context given that the respondents were sampled from the firms' newsletters subscribers). Previous purchase at online stores, however, is very likely unrelated to offline loyalty. Multichannel customers use different channel formats for product purchase interchangeably. In the sample used for this study, 52% of firm A's customers and 60% of firm B's customers stated that they usually purchase online as well as offline. Especially for these respondents, loyalty towards a specific channel format is not a decision to be either loyal towards the online store or the offline store. On the other hand, customers that have previously not used the online channel to purchase might do so in the future or use it for product search. Hence, the indication if a customer usually makes the purchase online is likely to be a proxy to online loyalty but not for loyalty towards the offline store.

The fourth instrumental variable is based on a respondent's self-evaluation concerning the experience in purchasing the respective product category on the Internet compared to the average population. The item was adopted from the work of Wallace et al. (2004) and measured on a seven-point scale with the endpoints *inexperienced/experienced*. Following the same reasoning as for the dummy variables, it is likely that customers who feel highly experienced in purchasing online are also more likely to be loyal towards a firm's online store. At the same time, high experience in online purchases does not rule out high experience and loyalty toward the physical stores. This is again especially true for multichannel customers that are used to employing and purchasing across different channel formats. Even for traditional single channel customers that are not used to purchasing online there is no apparent reason for expecting higher levels of loyalty towards the online store. Rather, for these

customers, loyalty towards a firm's offline store might depend on different factors such as the helpfulness of sales personnel or a convenient location.

Instrumental variables for loyalty towards the physical store: The same basic reasoning as for online loyalty applies for the identification of instrumental variables for loyalty towards the physical stores. Previous experience in product search and purchase are likely to be correlated with offline loyalty. Customers who have previously searched for product information at physical retailers or even brand stores are more likely to do so in the future due to their experience with the offline channel. The same holds true when customers state that they usually purchase products offline. However, since offline and online experience are not mutually exclusive, customers may have used both channels for search and purchase in the past and feel equally inclined to use them for product search and purchase. Hence, previous search and purchase behavior in the offline channel is likely to proxy offline loyalty. But it does not predict loyalty towards a firm's online channel beyond the effect that is due to online loyalty, especially when a large portion of the customer base frequently shops across channels and has gained experience in both channels. Whether customers usually search for and purchase the product categories at physical stores was measured with two categorical variables. Since these queries were part of the initial set of questions concerning the previous search and purchase behavior, they were not exclusive to online search and purchase. Hence, customers could indicate that they generally use offline as well as online channels. Furthermore, the answers were given before the customers were exposed to the integration scenarios, ensuring no causal relationship between the answers and the integration effects.

Previous service quality in a firm's physical stores was used as a third instrumental variable for offline loyalty. In the questionnaire the respondents were asked to rate their past satisfaction with the firm's offline channels. Since both firms sell through independent retailers as well as their own brand stores, past customer offline quality perceptions depend on the types of physical channels a customer has visited. Therefore, the customers were asked to rate the firms' offline channels that they had previously visited. To obtain the quality measure for the relevant offline channels, the answers were combined such that the specific channel rating was used for those respondents who had only visited one physical store format. If respondents had visited both, the brand stores and the physical retailers, the average value was calculated from both ratings. The scale that was used to operationalize previous service quality in the offline store was designed to mirror the perceived online service quality scale used in

the SEM models. It was therefore measured with the same four items developed by Hiu et al. (2004) and Westbrook (1980) that were also used to measure perceived online service quality. The wording was adapted according to the offline context.[10]

Past experiences with a firm's offline channels is likely to be correlated with the intention to return to the physical store for future purchases or product inquiries. If customers have experienced high service quality in previous visits to an offline store, they are therefore likely to be more loyal to the store. Since the focus lies on quality perceptions of past service encounters and not future expectations, the offline service quality measure is also unrelated to the integration treatments (firm B: integration type A corr = .01 (n.s.); firm A: integration type A corr = .03 (n.s.), integration type B corr = .01 (n.s.)). On the other hand, past service quality ratings are not likely to be correlated with loyalty towards the online store. Even though it may seem reasonable to suppose that positive past purchase experiences will create a positive image transfer to a firm's online channel, the opposite could be true, as well. If the physical store provides high service quality, the customers could be less inclined to go online to search and purchase the products. Even though there might be customer groups for which the former or the latter mechanism holds, it is not clear that one particular direction should prevail and that past experiences with the offline store are related to online loyalty other than via the increase in offline loyalty.

5.2.3.3 Pooled Sample Results

The Discussion of the model results will focus on the most relevant effects for the online and offline loyalty equations. The complete results of the pooled sample analyses are displayed in Table 19 for online loyalty as dependent variable (equation 1) and in Table 20 for offline loyalty as the dependent variable (equation 2). In order to obtain standardized coefficients and comparable results, z-scores were used in the regression analyses for the continuous variables. Categorical variables were not recoded.

The coefficients of the reduced form equation are largely similar for all independent and instrumented variables in the online and offline loyalty equations. The Lagrange

[10] For those customers who had visited neither the brand stores nor the retailers, the missing values were imputed using attitudes of offline search and purchase, as well as the covariates. This was the case for 13 (2.7%) respondents of firm A and 144 (14%) respondents of firm B.

multiplier test suggests it is significant ($\chi2$=15.06, d.f.=1, p<.01) suggesting that the equations are indeed correlated and that the SUR specification should be preferred over the OLS regression results. The reduced form equations mirror the ANOVA results in as much as a positive significant relationship between perceived online integration and online loyalty (p<.01) and loyalty towards the physical store (p<.01) exists. When introducing the reciprocal loyalty measures as independent variables in the structural form equation, the Lagrange multiplier tests for the SUR ($\chi2 = 13.11$, d.f. = 1, $p < .01$) and 3SLS ($\chi2 = 20.13$, d.f. = 1, $p < .01$) indicate that the error terms of equation one and two are correlated beyond the presence of potential endogenous effects due to the reciprocal dependencies of online and offline loyalty. The Wu-Hausmann test of endogenous regressors is significant for the offline loyalty equation ($F(1, 973) = 6.417$, $p < .05$), indicating that online loyalty is itself influenced by offline loyalty and therefore an endogenous regressor (Hausman 1978; Wu 1974). Hence, the 3SLS specification is the relevant and most efficient estimator for the offline equation.

The Wu-Hausman endogeneity test is not significant for the online loyalty equation ($F(1, 972) = .824$, $p = .36$). The null hypothesis that offline loyalty is an exogenous independent variable for the online loyalty equation therefore cannot be rejected and the SUR estimator should be used to make inferences. However, except for the instrumented loyalty variables, the coefficients are very consistent across all models in both equations. Particularly, all model specifications yield positive and significant effects (p's < .01) of perceived online integration on loyalty towards the online shop as well as loyalty towards the physical stores. The positive effect of online integration on loyalty in both channel formats is therefore robust with respect to model specification.

In both equations, the instrumental variables pass a test of overidentifying restrictions described by Sargan (1958). The null hypothesis of the test statistic is that the instruments are valid instruments, i.e. uncorrelated with the error term, and that the excluded instruments are correctly excluded from the equation. Under the null hypothesis, test statistic is distributed as $\chi2$ with degrees of freedom representing the number of instrumented variables minus the number of instruments. Neither for the online loyalty equation ($\chi2(1.206,2) = .55$) nor for the offline loyalty equation ($\chi2(.890,3) = .63$) the null hypothesis of valid instruments cannot be rejected. These results suggest that the assumptions that the instruments are only correlated to the dependent variable via the instrumented loyalty variable in each equation could not be falsified. This is an indication that the employed instruments are indeed valid.

If the instruments are correlated only weakly with the endogenous regressors the bias of the estimated coefficients increases. In the case of very weak instruments the bias created by the instrumental variable approach might even exceed the bias due to endogeneity in an OLS regression (Hipp et al. 2011). Assessing the strength of instrumental variables is therefore an important feature of model evaluation. The strength of the instrumental variables is determined by the variance of the problematic regressor they explain beyond the full set of independent variables (the partial R^2). It is therefore important that the variance and its associated F-statistic improve significantly when the instruments are included. Staiger and Stock (1997) suggest that instruments are weak if the F-statistic for the excluded instrumental variables is less than 10. This threshold is exceeded in the online loyalty equation ($F(4,974) = 39.764$) and the offline loyalty equation ($F(3, 975) = 12.202$).[11] This indicates that the instrumental variables are strong enough and that the bias in the coefficients of the 2SLS and 3SLS approaches are considerably lower than in the OLS and 2SLS specifications.

When moving in the offline loyalty equation from the OLS and SUR specifications to the 2SLS and the 3SLS models that account for endogeneity in the online loyalty predictor, its coefficient becomes insignificant while the size of the coefficient for perceived online integration increases (e.g. from .079 in the SUR framework to .155 in the 3SLS model). This is in line with the initial expectation that a positive endogeneity effect tends to be an overestimation of the online loyalty variable while the integration coefficient is biased downwards. By not accounting for endogeneity in the offline loyalty equation, the inference of a significant effect of online loyalty on offline loyalty would be misleading. Rather, online loyalty is endogenously affected by offline loyalty, but itself does not influence offline loyalty in return. Please note that the coefficient for online loyalty is negative and rather large after controlling for endogeneity. This effect is attributable to a rather low partial R^2 of .05, even though the test of weak instruments exceeded the threshold. Hence, the coefficients of online loyalty should be interpreted with caution: The 3SLS model did not yield a significant effect of online loyalty on offline loyalty.

An important finding of the offline equation is the significant and positive effect of perceived online integration on the loyalty towards the physical stores. This effect is also robust to changes in the model specification. The results of the 3SLS estimation

[11] Please note that strictly speaking the test for weak instruments is only necessary for the offline equation since endogeneity is not a problem for the online loyalty equation.

indicate that online loyalty is not significantly related to the loyalty towards the physical store. The lack of this effect suggests that the effect of perceived online integration on offline loyalty is not mediated by the level of loyalty towards the online shop.

For the online loyalty equation the estimation results generate the same general pattern as for the offline equation. In the instrumental variable estimations the significance of the effect of offline loyalty decreases. Unlike in the offline loyalty equation, the effect does not vanish completely but stays significant at the $p < .05$ level. However, this effect is not a major concern since endogeneity is not a problem for the offline loyalty regressor and the SUR estimator was identified as producing the most reliable coefficients. The most important difference between the online and offline loyalty equation is that offline loyalty is a positive and significant predictor for online loyalty. This effect was not significant for online loyalty in the reverse equation.

The reduced form estimates for perceived online integration are smaller in size than their structural form counterparts. For example, the SUR reduced form coefficient is .173 vs. .141 of the SUR structural form coefficient. This reduction after the introduction of offline loyalty as an additional predictor variable suggests that offline loyalty partly mediates the effect of perceived online integration on loyalty towards the online shop. The overall important results of the online loyalty equation are that loyalty towards the physical store has a significant positive effect on the loyalty towards the online shop and that the perceived online integration is positive, significant, and robust with regard to the type of model used for estimation.

Table 19: Results of IV Regression: Pooled Sample, Loyalty towards Online Shop

EQUATION: ONLINE LOYALTY		REDUCED FORM		STRUCTURAL FORM			
		(I) OLS	(II) SUR	(III) OLS	(IV) SUR	(V) 2SLS	(VI) 3SLS
		Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
Y	Loyalty Offline	- -	- -	.128 ** (.029)	.223 ** (.028)	.202 * (.087)	.203 * (.087)
Z	Information Search on the Internet	.206 * (.089)	.204 * (.087)	.197 * (.088)	.187 * (.087)	.191 * (.088)	.183 * (.087)
	Previous Purchase on the Internet	.229 ** (.077)	.023 (.028)	.253 ** (.076)	.023 (.028)	.267 ** (.078)	.026 (.028)
	Experience Online Search	.022 (.028)	.106 ** (.030)	.024 (.028)	.103 ** (.030)	.025 (.028)	.110 ** (.030)
	Experience Online Purchase	.102 ** (.030)	.240 ** (.076)	.106 ** (.030)	.256 ** (.075)	.109 ** (.030)	.271 ** (.077)
X	Gender Dummy (0=male; 1=female)	-.350 ** (.064)	-.350 ** (.063)	-.359 ** (.063)	-.365 ** (.063)	-.363 ** (.063)	-.363 ** (.063)
	Age in Years (log)	.150 ** (.030)	.150 ** (.030)	.145 ** (.030)	.140 ** (.030)	.142 ** (.030)	.142 ** (.030)
	Distance to Physical Store (log)	-.026 (.028)	-.026 (.028)	-.021 (.028)	-.017 (.028)	-.019 (.028)	-.019 (.028)
	Product Involvement	-.024 (.036)	-.024 (.036)	-.026 (.036)	-.027 (.036)	-.027 (.036)	-.027 (.036)
	Brand Involvement	.286 ** (.036)	.286 ** (.036)	.260 ** (.036)	.241 ** (.036)	.244 ** (.040)	.244 ** (.040)
	Need for Touch	-.106 ** (.030)	-.105 ** (.030)	-.110 ** (.030)	-.115 ** (.030)	-.113 ** (.030)	-.113 ** (.030)
	Need for Interaction	-.053 + (.031)	-.051 + (.031)	-.077 * (.031)	-.097 ** (.031)	-.091 ** (.035)	-.090 ** (.035)
	Multichannel Self-Efficacy	.101 ** (.029)	.099 ** (.029)	.089 ** (.029)	.085 ** (.029)	.083 ** (.030)	.083 ** (.030)
I	Perceived Online Integration	.173 ** (.027)	.173 ** (.027)	.153 ** (.027)	.137 ** (.027)	.141 ** (.030)	.141 ** (.030)
	Model Fit						
	R Square	.287	.287	.301	.293	.298	.297
	Adjusted R Square	.278	-	.291	-	.297	-
	F (OLS, 2SLS) / Chi-Square (SUR, 3SLS	30.19 **	401.92 **	29.98 **	463.33 **	28.76 **	408.87 **
	d.f.	(13,974)	(13)	(14,973)	(14)	(14,973)	(14)

Independent Equations (Lagrange Multiplier Test)			
Chi-Square (d.f.)	15.06(1) **	13.11(1) **	20.13(1) **

IV Assessment	**Overidentification**		**Weak Indentification**	
	Sargan Chi-Square (d.f.)	1.206 (2)	Cragg-Donald F (d.f.)	39.764 (3, 974)
	Sargan p-Value	.547	Cragg-Donald p-Value	.000
	Endogeneity			
	Wu-Hausman F test:		.824 (1,972)	
	Wu-Hausman F test p-Value		.364	

** = p<.001; * = p<.05; + = p<.1 ; N = 988 due to 38 missing values for variable "Distance to nearest Physical Store"

Table 20: Results of IV Regression: Pooled Sample, Loyalty towards Physical Store

EQUATION: OFFLINE LOYALTY	REDUCED FORM		STRUCTURAL FORM			
	(I) OLS	(II) SUR	(III) OLS	(IV) SUR	(V) 2SLS	(VI) 3SLS
	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
Y Loyalty Online	-	-	.111 **	.223 **	-.255	-.252
	-	-	(.033)	(.032)	(.157)	(.157)
Z Information Search in Physical Stores	-.050	-.052	-.049	-.045	-.051	-.055
	(.079)	(.078)	(.079)	(.078)	(.083)	(.082)
Previous Purchase in Physical Stores	.234 *	.241 **	.248 **	.250 **	.202 *	.217 *
	(.094)	(.092)	(.093)	(.092)	(.100)	(.099)
Satisfaction with Physical Stores	.336 **	.326 **	.328 **	.320 **	.355 **	.353 **
	(.031)	(.031)	(.031)	(.031)	(.035)	(.035)
X Gender Dummy (0=male; 1=female)	.041	.042	.081	.121 +	-.050	-.049
	(.065)	(.065)	(.066)	(.065)	(.088)	(.088)
Age in Years (log)	.028	.028	.014	.000	.059	.059
	(.031)	(.031)	(.032)	(.031)	(.038)	(.038)
Distance to Physical Store (log)	-.022	-.022	-.020	-.018	-.026	-.025
	(.030)	(.030)	(.030)	(.029)	(.031)	(.031)
Product Involvement	.025	.024	.027	.030	.019	.019
	(.038)	(.037)	(.037)	(.037)	(.040)	(.040)
Brand Involvement	.146 **	.148 **	.114 **	.082 *	.220 **	.219 **
	(.038)	(.038)	(.039)	(.039)	(.060)	(.060)
Need for Touch	.024	.024	.038	.053 +	-.009	-.009
	(.032)	(.031)	(.032)	(.031)	(.039)	(.039)
Need for Interaction	.089 **	.092 **	.102 **	.115 **	.059	.059
	(.033)	(.033)	(.033)	(.033)	(.039)	(.039)
Multichannel Self-Efficacy	.023	.024	.005	-.013	.065	.064
	(.029)	(.029)	(.030)	(.029)	(.040)	(.040)
I Perceived Online Integration	.115 **	.116 **	.097 **	.079 **	.156 **	.155 **
	(.028)	(.028)	(.029)	(.028)	(.039)	(.039)
Model Fit						
R Square	.251	.251	.259	.250	.160	.165
Adjusted R Square	.241	-	.250	-	.160	-
F (OLS, 2SLS) / Chi-Square (SUR, 3SLS	27.16 **	325.85 **	26.25 **	383.19 **	22.62 **	298.39 **
d.f.	(12,975)	(12)	(13,974)	(13)	(13,974)	(13)
Independent Equations (Lagrange Multiplier Test)						
Chi-Square (d.f.)		15.06(1) **		13.11(1) **		20.13(1) **

IV Assessment	Overidentification		Weak Indentification	
	Sargan Chi-Square (d.f.)	0.890 (3)	Cragg-Donald F (d.f.)	12.202 (4, 975)
	Sargan p-Value	0.628	Cragg-Donald p-Value	.000
	Endogeneity			
	Wu-Hausman F test:	6.417 (1,973)		
	Wu-Hausman p-Value	0.011		

** = p<.001; * = p<.05; + = p<.1 ; N = 988 due to 38 missing values for variable "Distance to nearest Physical Store"

5.2.3.4 Comparison of Integration Types: Facilitating Research Shopping vs. Increasing Online After Sales Service Results

The Discussion of the model results will again focus on the most relevant effects for the online and offline loyalty equations. The complete results of the pooled sample analyses are displayed in Table 21 for online loyalty as dependent variable (equation 1) and in Table 22 for offline loyalty as the dependent variable (equation 2). In order to obtain standardized coefficients and comparable results, z-scores were used in the regression analyses for the continuous variables. Categorical variables were not recoded.

The results of the second experiment largely mirror the results from the first experiment. The coefficients of the integration treatments and the covariates are similar across the different model specifications. The Lagrange multiplier tests for the reduced form equations ($\chi2 = 48.74$, d.f. = 1, $p < .01$) and the structural form estimations (SUR: $\chi2 = 49.99$, d.f. = 1, $p < .01$; 3SLS: $\chi2 = 33.89$, d.f .= 1, $p < .01$) suggest that the error terms of both equations are correlated due to a general relation between the two online and offline loyalty measures or because of omitted variables affecting both loyalty measures. The test of endogeneity is significant for the offline loyalty equation ($F(1, 443) = 4.241$; $p < .05$), but it only closely falls short to identify endogeneity in the online loyalty equation ($F(1, 442) = 3.708$; $p = .06$). The results of the tests for independent equations and endogenous loyalty regressors technically lead to the same conclusion as drawn for the pooled sample analysis: The 3SLS estimator should be used for the offline loyalty equation and the SUR estimator produce the most reliable results for the online loyalty equation. However, even though the endogeneity tests replicate the results of the first analysis, they are not as clearly distinct from each other. Therefore, it is not unconditionally clear whether the SUR or the 3SLS estimator is favorable in the online loyalty equation. Since all coefficients of the SUR and 3SLS estimations are similar in size, significance, and sign, the inference from both estimation techniques are equal and both SUR and 3SLS estimators are acceptable for the online loyalty equation.

The instrumental variables pass the Sargan test of overidentifying restrictions in the offline loyalty equation ($\chi2 = 5.13$, d.f. = 3, $p = .16$) and the online loyalty equation ($\chi2 = .033$, d.f. = 2, $p = .98$). The null hypothesis that the instrumental variables are uncorrelated with the equation error terms cannot be rejected for both equations. This suggests that the assumptions made to identify the instruments are valid. The tests of

weak instruments suggests that the correlation of the identified instrumental variables with the potentially endogenous loyalty regressors is sufficiently large for the online loyalty equation (F = 19.45) and offline loyalty equation (F = 10.36) by surpassing the critical F-value of 10. Again, testing for the strength of instruments is only necessary for those equations for which an instrumental variable estimation technique is indicated. As in the pooled sample analysis, this is strictly speaking only the case for the offline loyalty equation of experiment two.

In the online loyalty equation the structural form estimation reveals significant and positive total effects for both integration treatments (flexible return: coef. = .194, $p < .05$; encouraging research shopping: coef. = .410; $p < .01$). The effect of the possibility to check available products and make reservations at the physical store is about twice as high as the offer to return online purchases at a physical store. The structural form SUR model yields a positive and significant effect of the offline loyalty predictor (coef. = .585, $p < .01$). The integration treatment coefficients treatments (flexible return: coef. = .166, $p < .05$; encouraging research shopping: coef. = .236; $p < .01$) remain significant but decrease in size suggesting that offline loyalty partially moderates the effect of the integration treatments on the dependent online loyalty variable.

For the offline loyalty equation, the structural form coefficients only yield positive and significant total effects for the integration variable associated with easier research shopping (coef. = .270; $p < .01$). The increased flexibility to return online purchases at physical stores is not significantly related to the loyalty towards physical stores (coef. = .034; $p = .70$). When the online loyalty variable enters the regression equation in the structural form estimation the online loyalty variable is only significant for the OLS (coef. = .248; $p < .01$) and SUR (coef = .565, $p < .01$) specifications. The significant effect disappears in the IV specifications (2SLS: coef = .16, p= .92; 3SLS: coef = .16, $p = .92$). Likewise, the effects of both integration treatments are initially smaller for the OLS and SUR models. Once endogeneity is controlled for (3SLS Increasing Online After Sales Service: coef. = .029, $p = .76$; Facilitating Research Shopping: coef. = .255, $p < .05$) the integration effects reach about the same level as the total effects derived in the reduced form estimation.

Since the online loyalty variable was identified as an endogenous regressor the OLS and SUR estimates are upward biased. This result mirrors the findings of the pooled sample where the significant effect of online loyalty also disappeared and the size of the online integration coefficient increased when the endogeneity of online loyalty was

taken into account. Therefore, the results for the complete sample of firm A also do not suggest a direct effect of online loyalty on loyalty towards the physical store. Moreover, online loyalty does not mediate the positive relation between online integration and the dependent variable offline loyalty. Furthermore, the effects of the integration treatment are quite robust towards model specification. Encouraging research shopping in the online shop positively influences offline loyalty except for the SUR model in the structural form specification where this effect is not significant. The possibility to return online purchases at a physical store, on the other hand, does not significantly affect loyalty towards the offline stores.

Table 21: Results of IV Regression: Sample Firm A, Loyalty towards Online Store

EQUATION: ONLINE LOYALTY	REDUCED FORM		STRUCTURAL FORM			
	(I) OLS	(II) SUR	(III) OLS	(IV) SUR	(V) 2SLS	(VI) 3SLS
	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
Y Loyalty Offline	-	-	.355 **	.585 **	.573 **	.581 **
	-	-	(.041)	(.039)	(.123)	(.123)
Z Information Search on the Internet	.598 **	.644 **	.657 **	.541 **	.693 **	.656 **
	(.131)	(.122)	(.121)	(.113)	(.124)	(.123)
Previous Purchase on the Internet	.209 *	.049	.181 *	.038	.164 +	.046
	(.089)	(.037)	(.083)	(.034)	(.085)	(.036)
Experience Online Search	.039	-.066	.049	-.053	.055	-.065
	(.040)	(.042)	(.037)	(.039)	(.038)	(.041)
Experience Online Purchase	-.063	.160 +	-.066	.170 *	-.067	.206 *
	(.046)	(.083)	(.042)	(.077)	(.043)	(.082)
X Gender Dummy (0=male; 1=female)	-.363 **	-.369 **	-.297 **	-.237 **	-.256 **	-.250 **
	(.097)	(.095)	(.090)	(.088)	(.094)	(.094)
Age in Years (log)	.103 *	.102 *	.083 *	.066 +	.071 +	.071 +
	(.042)	(.041)	(.039)	(.038)	(.040)	(.040)
Distance to Physical Store (log)	.071 +	.071 +	.053	.045	.043	.042
	(.040)	(.039)	(.037)	(.036)	(.038)	(.038)
Product Involvement	-.070	-.069	-.067	-.065	-.065	-.066
	(.049)	(.048)	(.045)	(.045)	(.046)	(.046)
Brand Involvement	.300 **	.298 **	.223 **	.172 **	.176 **	.176 **
	(.048)	(.047)	(.046)	(.045)	(.053)	(.053)
Need for Touch	-.032	-.036	-.074 +	-.099 *	-.100 *	-.097 *
	(.044)	(.043)	(.041)	(.040)	(.044)	(.044)
Need for Interaction	.002	-.001	-.073 +	-.128 **	-.119 *	-.119 *
	(.047)	(.046)	(.044)	(.043)	(.051)	(.051)
Multichannel Self-Efficacy	.278 **	.278 **	.196 **	.152 **	.145 **	.144 **
	(.043)	(.042)	(.041)	(.040)	(.050)	(.049)
I Online Integration Return	.194 *	.194 *	.177 *	.166 *	.166 *	.166 *
	(.089)	(.088)	(.083)	(.081)	(.084)	(.084)
Online Integration Search	.408 **	.410 **	.299 **	.236 **	.232 *	.228 *
	(.089)	(.088)	(.084)	(.082)	(.092)	(.092)
Model Fit						
R Square	.312	.312	.410	.366	.373	.370
Adjusted R Square	.291	-	.390	-	.373	-
F (OLS, 2SLS) / Chi-Square (SUR, 3SLS)	14.40 **	214.09 **	20.52 **	457.65 **	16.11 **	250.78 **
d.f.	(14,444)	(14)	(15,443)	(15)	(15,443)	(15)
Independent Equations (Lagrange Multiplier Test)						
Chi-Square (d.f.)		48.74(1) **		49.99(1) **		33.89(1) **
IV Assessment	**Overidentification**			**Weak Indentification**		
	Sargan Chi-Square (d.f.)	.033 (2)		Cragg-Donald F (d.f.)	19.450 (4, 444)	
	Sargan p-Value	.984		Cragg-Donald p-Value	.000	
	Endogeneity					
	Wu-Hausman F test:			3.708 (1,442)		
** = p<.001; * = p<.05; + = p<.1	Wu-Hausman F test p-Value			.055		

Table 22: Results of IV regression: Sample Firm A, Loyalty towards Physical Store

EQUATION: OFFLINE LOYALTY		REDUCED FORM		STRUCTURAL FORM			
		(I) OLS	(II) SUR	(III) OLS	(IV) SUR	(V) 2SLS	(VI) 3SLS
		Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
Y	Loyalty Online	-	-	.248 **	.565 **	.016	.016
		-	-	(.045)	(.041)	(.156)	(.156)
Z	Information Search in Physical Stores	.210 +	.187 +	.200 +	.188 *	.224 *	.222 *
		(.108)	(.097)	(.105)	(.092)	(.102)	(.099)
	Previous Purchase in Physical Stores	.407 *	.349 *	.362 +	.298 +	.418 *	.414 *
		(.197)	(.176)	(.191)	(.167)	(.188)	(.182)
	Satisfaction with Physical Stores	.259 **	.212 **	.227 **	.182 **	.261 **	.262 **
		(.043)	(.039)	(.042)	(.038)	(.047)	(.046)
X	Gender Dummy (0=male; 1=female)	-.194 +	-.159 +	-.128	.005	-.144	-.144
		(.100)	(.095)	(.098)	(.091)	(.104)	(.104)
	Age in Years (log)	.077 +	.041	.060	-.001	.036	.037
		(.040)	(.041)	(.039)	(.039)	(.042)	(.042)
	Distance to Physical Store (log)	.066	.064	.041	.014	.066	.066
		(.041)	(.039)	(.040)	(.038)	(.042)	(.042)
	Product Involvement	-.018	-.012	-.003	.025	-.013	-.013
		(.051)	(.048)	(.049)	(.046)	(.049)	(.049)
	Brand Involvement	.195 **	.191 **	.132 **	.035	.182 **	.182 **
		(.050)	(.048)	(.050)	(.047)	(.063)	(.063)
	Need for Touch	.069	.067	.085 +	.095 *	.058	.058
		(.046)	(.043)	(.044)	(.041)	(.045)	(.045)
	Need for Interaction	.118 *	.146 **	.129 **	.177 **	.132 **	.132 **
		(.048)	(.046)	(.046)	(.043)	(.047)	(.047)
	Multichannel Self-Efficacy	.153 **	.185 **	.074 +	.006	.171 **	.170 **
		(.043)	(.041)	(.044)	(.041)	(.062)	(.062)
I	Online Integration Return	.037	.034	-.017	-.076	.029	.029
		(.092)	(.088)	(.090)	(.084)	(.093)	(.093)
	Online Integration Search	.292 **	.270 **	.187 *	.017	.255 *	.255 *
		(.091)	(.088)	(.090)	(.085)	(.110)	(.110)
	Model Fit						
	R Square	.284	.303	.330	.330	.313	.165
	Adjusted R Square	.263	-	.309	-	.313	-
	F (OLS, 2SLS) / Chi-Square (SUR, 3SLS)	13.82 **	187.32 **	15.87 **	415.34 **	14.13 **	204.47 **
	d.f.	(13,453)	(13)	(14,452)	(14)	(14,444)	(14)
	Independent Equations (Lagrange Multiplier Test)						
	Chi-Square (d.f.)		48.74(1) **		49.99(1) **		33.89(1) **
	IV Assessment	**Overidentification**			**Weak Indentification**		
		Sargan Chi-Square (d.f.)	5.129 (3)		Cragg-Donald F (d.f.)	10.361 (3, 445)	
		Sargan p-Value	.163		Cragg-Donald p-Value	.000	
		Endogeneity					
		Wu-Hausman F test:			4.241 (1,443)		
	** = p<.001; * = p<.05; + = p<.1	Wu-Hausman F test p-Value			.040		

5.2.4 Discussion

Table 23 summarizes the findings of the IV regression analyses. The dependent variables are shown in columns for the pooled sample and the analysis for firm A that included the two different forms of channel integration activities. The first row denotes the estimators used for each experiment. The subsequent rows indicate the dependent variables. The grey shaded areas depict the effects of the integration measures for each experiment.

Table 23: Overview of Loyalty and Online Integration Effects

	Pooled Sample		**Sample Firm A**	
	$Loyalty_{offline}$	**$Loyalty_{online}$**	**$Loyalty_{offline}$**	**$Loyalty_{online}$**
Relevant estimator (structural form estimation)	3SLS	SUR	3SLS	SUR
Incependent Variables				
$Loyalty_{offline}$	-	** (positive)	-	** (positive)
$Loyalty_{online}$	n.s. (no effect)	-	n.s. (no effect)	-
Perceived Online Integration	** **(positive)**	** **(positive)**	-	-
Facilitating Research Shopping	-	-	* **(positive)**	* **(positive)**
Increasing Online After Sales Service	-	-	**n.s. (no effect)**	** **(positive)**

Offline loyalty is positively related to online loyalty, but online loyalty does not affect offline loyalty. These findings are in line with previous multichannel research that investigated the positive effect of customers' offline attitudes on online evaluations. The results of the integration effects support the expected channel synergies between perceived online integration (H_{19a}), Facilitating Research Shopping (H_{19b}), and offline loyalty. More specifically, online and offline loyalty were increased when the

customers believed that the channels were well coordinated and the online channel included features that made it easy for customers to switch from online to the physical store. Being able to check offline availabilities and make reservation at the physical store actually increased the intention of customers to visit the physical channel more often. Thus the integration activity that was designed to facilitate research shopping was actually effective and produced the intended result. This form of channel integration is likely to generate channel synergies and increase customer loyalty towards the offline store.

It is important to note that the scenario did not enable customers to actually test and use this integration feature. It is interesting that the mere offer of such a function was apparently sufficient to increase offline loyalty attitudes. Furthermore, this result is intriguing since it suggests that integrating and featuring offline stores in an online channel does not only increase service quality and trust towards the online shop, but at the same time increases loyalty offline. This is a counterargument against the fear of offline channel managers that channel integration drives customers away from the physical stores in the long run. It also indicates that channel conflicts that arise from the discussion whether to integrate offline channels into the online offer may, at least to some extent, be exaggerated and unjustified.

The second integration activity of Increasing Online After Sales Service by allowing online purchases to be returned at any physical store did not significantly affect loyalty towards the physical store. This result is contrary to the initial hypothesis H_{19c}, which postulated that this type of online integration would also lead to higher offline loyalty. This finding indicates that channel synergies from online to physical channels are more difficult to create in the after sales phase. Thus, channel online integration should focus on the customer search phase if the creation of synergies to the physical channels is an important goal. However, increasing after sales service in the firms' online shops was generally valued by customers. The higher significance levels suggest that improving online channel after sales service even outperforms the facilitation of research shopping when it comes to increasing customer loyalty towards the online shop. This result is not surprising. The explanation may lie in the fact that the improvement of after sales service directly affects the performance of the online shop itself. In addition to creating a mental connection with the physical channels and allowing for positive image transfer, it also directly improves the perceived performance of the online shop. The offer to return faulty purchases at a physical store reduces purchase risk for the customers (see SEM results in Chapter D.5.1.3.3). To

date, this option has not been implemented by many multichannel retailers and cannot be offered at all by pure play online retailers at all. Therefore, it may be an important source of strategic advantage for a multichannel firm. At the same time, due to the lack of synergies, this form of online integration may in fact cannibalize online sales. Therefore, the following chapter will analyze the effects of both integration alternatives and perceived integration on online and offline purchases. The main research questions to be answered within this context is (1) whether an integrated online channel increases the attractiveness of the online shop for purchase, and (2) whether this eventually leads to the cannibalization of the traditional physical stores.

5.3 Channel Cannibalization - The Effects of Online Integration on Channel Purchase Choice Online and Offline

5.3.1 Rationale and Methodology

5.3.1.1 Mutual Dependencies of Online and Offline Channel Choice

Even though multichannel shopping behavior is apparent and existent for most products and industries, previous research findings also suggest that customers tend to favor the channel that best fits their specific needs. People are more likely to purchase from the channel that they believe provides the most value for them in a given purchase situation. This implies that, just like online and offline loyalty, channel choice decisions are not independent of each other. The intention to purchase offline is likely to directly reduce the purchase intention in another distribution channel, and vice versa. Unlike channel specific loyalty, customers can only choose one channel for a specific purchase situation. A higher intention to go to the physical store is associated with a lower likelihood to purchase elsewhere (Verhoef et al. 2005).

Hence, like in the loyalty analysis, endogeneity plays an important role for purchase channel selection and has to be accounted for when analyzing the effects of online integration on purchase channel choice. The same problems concerning inefficient estimation and biased coefficients result in the context of online and offline purchase intention: Suppose for example that the intention to purchase a product at the physical store has a negative influence on purchasing over the Internet and vice versa. Without controlling for this endogenous effect the expected negative coefficient for offline

purchase intention, as well as a potential positive effect of online integration, would be overestimated.

5.3.1.2 Data Analysis Strategy and Model Specification

The analysis was carried out in two steps: First, using the original continuous purchase intention measures, descriptive analyses and ANOVA mean comparisons were conducted to derive initial insights into the overall integration outcomes. Since the online and offline purchase intentions are likely to influence each other, endogeneity concerns were not controlled in this initial procedure. Therefore a second set of analyses were conducted to generate further insights of whether online integration leads to the cannibalization of the physical channel. The second approach used the discrete channel purchase decisions within a multinomial logistic regression framework. In the analysis for the pooled dataset, this variable was derived from the continuous online and offline purchase intention measures (see Section D.5.3.3.1 of this chapter for the derivation method); for the analysis of the dataset of firm A, a separately collected discrete channel choice variable was used for the calculations.

This section circumvents the use of an IV approach by applying a multinomial logistic regression for two important reasons: First, suitable instruments are generally difficult to identify. It was not possible to derive feasible and theoretically sound instrumental variables for the purchase intention measures. Second, and more importantly, logistic regression has specific advantages in the context of modeling purchase decisions that make it especially suited for the underlying research questions. Customers' intentions to purchase online or offline ultimately result in a discrete channel choice. Consumers might have equally positive or negative attitudes towards the different channels of a firm. However, if they want to buy a product, they will have to decide for a specific channel in which to make the purchase. Hence, modeling discrete channel choices by multinomial logistic regression analyses also mirrors the customers' actual purchase decisions more realistically and adds to the insights of how purchase intentions are transformed into final channel choices. Each analysis will again be carried out for the pooled dataset focusing Facilitating Research Shopping and the dataset for firm A, which includes both integration types (Facilitating Research Shopping and Increasing After Sales Service Online). The analysis procedure is depicted in Figure 27.

Figure 27: Study Procedure and Research Questions

Research Questions:

(1) Is there a positive direct effect of online integration on online and offline purchase intention?

(2) Does online integration cannibalize the offline channel?

5.3.2 Descriptive Analyses and Mean Comparisons

5.3.2.1 Pooled Sample Results

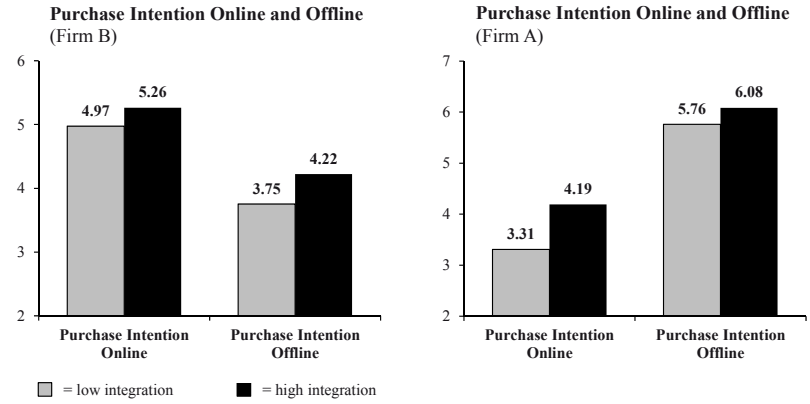
As a first indicator of whether online integration increases online purchase intention and cannibalizes or supports the offline channel, Figure 28 displays the resulting purchase intentions from experiment one for the customers who were exposed to the integrated online shop and the customers who were assigned to the scenario without online integration. It becomes clear that for both firms, online integration in terms of offering the ability to check availability on the Internet and make offline reservations via the online shop increases purchase intentions in both channel formats. To test for the significance of the differences, two ANOVAs were conducted for the pooled sample. The results suggest that Facilitating Research Shopping significantly increases purchase intention online ($F(1, 1.024) = 26.31$; $p < .01$), as well as offline ($F(1, 1.024) = 4.33$; $p < .05$).

The findings suggest that online integration not only increases the stated purchase intention for the Internet channel but can potentially create synergies between online and offline stores. It is important to emphasize that this result is specifically related to the tested type of online integration. The pooled sample analysis only tested the effect of the possibilities to check offline assortments and make reservations at a physical store via the online shop. These measures are designed to facilitate research shopping behavior. The integrated version of the online store is also positively and highly significantly related to the increased purchase intention for the online store. This finding supports the previous results where online integration was associated with

higher perceived service quality and lower purchase risk in the online shop. However, given the focus of channel integration as making it easier for customers to switch to the physical stores, this result strongly implies that online integration might entail a positive image transfer across the two channel formats.

Figure 28 also suggests that the positive (negative) mediating relationship of online service quality (online purchase risk) on relative intention to purchase online is most likely due to an increase of the intention to purchase online while the direct negative association of online integration on relative online purchase intention might be attributable to an increase in the intention to visit the physical store (see Chapter D.5.1 of this dissertation). This indicates that online integration does create channel synergies for the offline stores. However, as pointed out earlier, these effects can only be interpreted as a first indication towards channel synergies since the results might be biased due to endogenous covariates. It is not possible to clearly attribute the increase in purchase intention online and offline to the integration variable or the mutual influence of the two dependent purchase intention variables. Nevertheless, the ANOVA mean comparisons show that online integration does not lead to adverse customer behavior in one of the two channels but in fact is associated with positive effects in terms of purchase intention in both channel formats.

Figure 28: Customer Ratings of Facilitating Research Shopping (Pooled Sample)

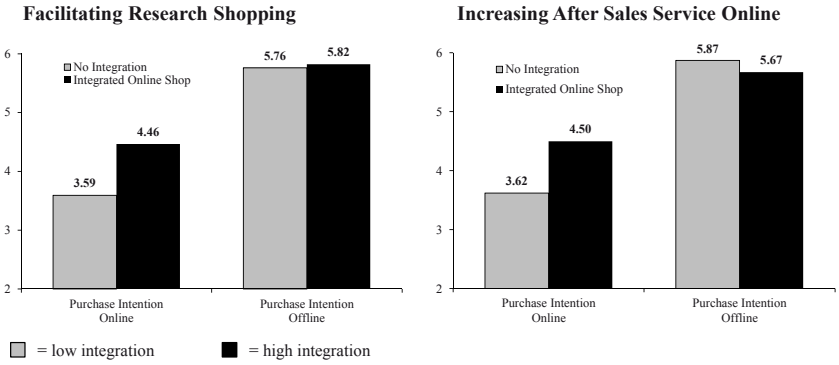


5.3.2.2 Comparison of Integration Types: Facilitating Research Shopping vs. Increasing Online After Sales Service

The ANOVA results for the second experiment are shown in Figure 29. Integration Type A (online availability check and offline reservation) clearly increases purchase intention in the online channel. Like in the first experiment, the results yield a significant and positive main effect of Facilitating Research Shopping on online purchase intention ($F(1, 477) = 14.87$; $p < .01$). The main effect for Increasing After Sales Service Online is also significant ($F(1, 477) = 13.15$; $p < .01$). The interaction effect of the two integration activities is not significant ($F(1, 477) = 1.52$; $p = .22$). These results point towards a positive relationship between online integration and online purchase intention.

Purchase intention in the traditional physical stores, however, does not change significantly for Facilitating Research Shopping. The main effect is not significantly different from zero ($F(1, 477) = 1.64$; $p = .20$). For Increased After Sales Service Online, on the other hand, the intention to purchase at the physical retailer drops from 5.87 to 5.67 (Figure 29). This slight decrease is statistically significant ($F(1, 477) = 4.47$; $p < .05$). The interaction effect yielded no statistically significant effect ($F(1, 477) = 0.76$;$p = .38$). The initial results for offline purchase intention indicate that Facilitating Research Shopping does not cannibalize the physical store, while the possibility of cannibalization is increased for Increasing After Sales Service Online.

Figure 29: Customer Ratings of Different Integration Types (Sample Firm A)



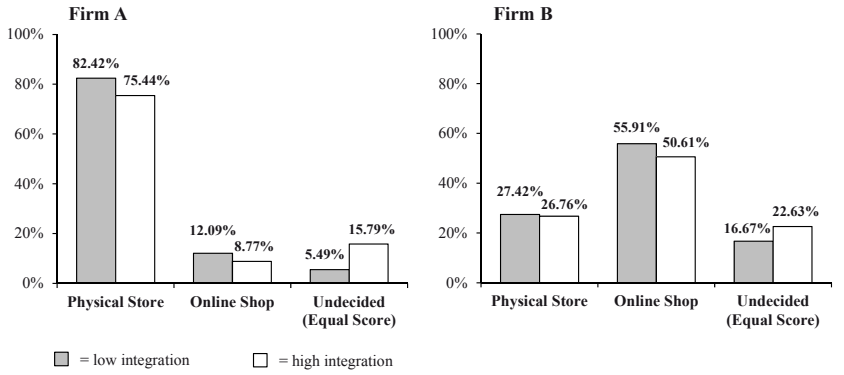
5.3.3 Multinomial Logistic Regression

5.3.3.1 Discrete Channel Choice Variable Identification

Within the data collection for firm B the respondents were asked to rate their intention to purchase at the online shop or at a traditional channel on separate seven-point scales. No discrete channel choice variable was included in the survey. It was therefore necessary to transform these continuous responses for each channel into a discrete channel choice prediction for each respondent. Rational customers choose the alternative that provides the highest value and fits their individual needs and preferences given the situational circumstances (Simon 1955). This reasoning also applies to the context of channel selection. As a result, the channels that provide the highest utility will also be the channels that score highest on the purchase intention scale. Therefore, customers are most likely to choose to purchase in the channel for which their purchase intention is highest among all other ratings.

The respondents were categorized into purchasing at the online shop or visiting a traditional store based on their maximum rating for the brand's online shop or the physical channels. A third category was created for the respondents who rated both channels with an equal score. Thus, the resulting choice variable consists of three categories: (1) purchase at the brand's online shop, (2) purchase at a brand store or other physical retailer, and (3) equal chances of purchasing online or offline, i.e. the "undecided" buyers. In addition to the firm B's respondents, the categorical variable was also calculated for the 211 participants of firm A who were combined with firm B's respondents into the pooled dataset of experiment one.

Figure 30: Calculated Channel Choices of the Pooled Sample per Firm



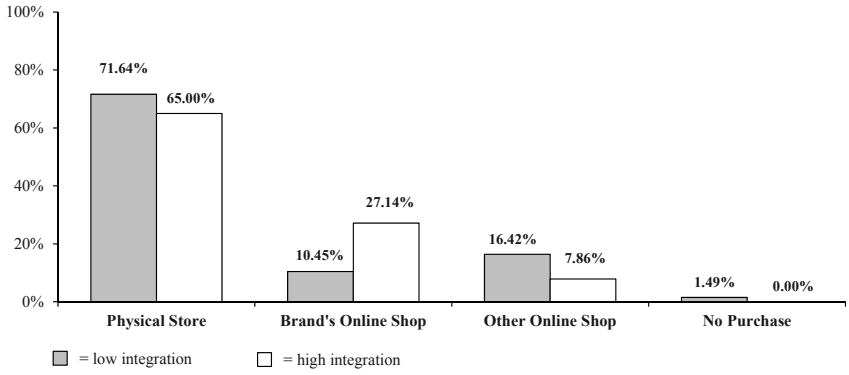
The resulting calculated discrete channel choices for each firm's respondents within experiment one are displayed in Figure 30. The grey bars show channel choices without online integration; the white bars represent channel choices when customers were exposed to the possibility to check offline availabilities and make offline reservations at the online store. The distribution of discrete channel choices for the firms in the pooled sample suggests that there are no apparent differences between the purchase decisions for the physical store when customers were exposed to an integrated online store versus an online shop without integration features. The choices for the online shop, however, are about five percentage points lower for firm A and about three percent lower for firm B when the online channel is integrated. The number of undecided respondents increases from 5.49% to 15.79% for firm A (16.67% to 22.63% firm B). In Figure 30 the channel choices are separately displayed by firm. The same pattern of lower online shop choices and higher indecision rates in case of the integrated online channel can be observed for each firm.

The main differences between respondents are the overall differences in channel preferences. Whereas around 80% of firm A's customers choose to make a trip to a physical retailer to purchase the product, only about 27% of firm B's respondents choose to visit a physical store. However, over 50% of firm B's study participants choose the online store compared to about 10% of firm A's respondents. Furthermore,

the decision to visit the online store drops considerably for both firms when the respondents were exposed to the integrated online channel.[12]

Within the data collection for firm A it was possible to include a categorical choice question at a later stage of the questionnaire. In addition to the continuous purchase intentions that were measured on a seven-point scale for the online shop and the physical channels, participants were asked to make a final decision to make the purchase either at the (1) brand's online shop, (2) a third party online shop, (3) the brand store or another physical retailer, or (4) not to purchase the jacket. This categorical choice variable was used for the comparison of the customer purchase decision of the customers who were exposed to the full integration scenario (i.e. who saw both integration types in the online channel) compared to the customers who were in the non-integrated scenario. The distribution of the channel choices according to the integration treatments are displayed in Figure 31. It is apparent that the purchase decisions for the brand's own online shop increase considerably while the choices for third party online shops are approximately twice as low in the integrated scenario. Choices to visit the physical store decreased slightly when customers were exposed to an integrated online shop.

Figure 31: Discrete Channel Choices for Firm A (Discrete Channel Choice Variable)



[12] For the 211 respondents of firm A who were used in the combined dataset, it was possible to compare the calculated categorical choice variable to their discrete channel choices. The results are shown in the appendix.

5.3.3.2 Predicted Probabilities of Channel Selection

To verify the results of the initial analyses of variance and to control for endogeneity effects, the shifts in channel choices were assessed using two separate multinomial logistic regression analyses for the pooled sample and the sample consisting exclusively of firm A. For the pooled sample, the discrete choices derived from the respondents' purchase intention ratings were used as dependent variable, whereas the directly stated choice variable was used in the second analysis with firm A's customers. A multinomial logistic regression model is a generalized logistic regression model that allows for more than two discrete outcome categories. In the case of this study these outcome categories are the channel choice alternatives.

The multinomial logistic regression model allows for the comparison of the outcome categories in relation of a base category that has to be determined in advance. The model provides a set of coefficients for each comparison between an outcome and the base category. The regression coefficients in a category depict the change in the probability of belonging to that group (more exactly, the change of the log odds of belonging to that group) relative to the base category. Within the context of this analysis the firms' online shop was used as the base category. Hence, positive regression coefficients for a specific channel can be interpreted as the drivers for customers to choose a certain channel format over firm A or B's online shop. Negative regression coefficients for an independent variable in a particular channel indicate that this variable leads customers to prefer the online shop over the compared channel.

Pooled Sample predicted probabilities: In order to validate the results of the multinomial logit predictions before interpreting the coefficients and marginal effects, the predicted outcomes were compared to the actual outcome. The resulting classification tables and measures of association are displayed in Table 24. By comparing the predicted outcomes to the actual channel choices it is possible to determine if high probabilities are actually associated with channel choices and low probabilities with no-choices. For the pooled sample 62.85% of the model predictions are correct, a relatively high improvement over the 33% expected correct prediction rate for a random selection of the three categories. The significant association measures (Kendall's Tau and Somer's D) support this result by suggesting a strong association between the predicted and actual channel choices. However, it also becomes clear that the logistic regression model tends to underestimate the undecided channel decisions. Only 1.69% of the undecided respondents were correctly classified.

Table 24: Observed and Predicted Frequencies for the Pooled Sample

	Predicted			
Observed	**Physical Store**	**Online Shop**	**Undecided**	**% correct**
Physical Store	256	113	4	68.63%
Online Shop	74	362	1	82.84%
Undecided	63	112	3	1.69%
Overall % correct				62.85%

*Kendall's Tau = .188**; Somer's D = .298***

Sample firm A predicted probabilities: The same validation was carried out for the complete sample of firm A. Table 25 compares the model implied outcomes to the actual channel choice statements of firm A's respondents within experiment two. Overall, the results mirror those of the first experiment. 74.52% of the predicted choices are in line with the actual customer responses.[13] This corresponds to a correct classification of 49.52% of all purchase choices over the 25% expected accuracy rate, which is achievable by chance alone in a situation with four choice alternatives. The significant association measures also support the satisfactory prediction capability of the second multinomial logit model. The only category that achieves a very low accuracy rate is the no purchase decision. However, this is not surprising since only three respondents chose not to purchase the product. All of these were in the no-integration scenario. Therefore, the no choice category plays only a minor overall role in model prediction quality.

[13] Note: The main difference concerning the independent choice variable between the pooled sample and the sample consisting exclusively of firm A is the fact that the former uses the calculated discrete choice variable which was derived from the difference between the stated online and offline purchase intentions. For firm A, the respondents directly indicated which channel they would finally choose for purchase. The purchase options were: 1. purchase in the firm's online shop, 2. purchase in a different online shop, 3. purchase at a physical retailer, or 4. no purchase.

Table 25: Observed and Predicted Frequencies for Firm A

	Predicted				
Observed	**Brand Online Shop**	**Other Online Shop**	**Physical Store**	**No Purchase**	**% correct**
Online Shop Brand	34	4	50	1	38.20%
Other Online Shop	8	11	30	0	22.45%
Physical Store	16	6	303	1	92.94%
No Purchase	1	0	2	0	0.00%
Overall % correct					74.52%

*Kendall's Tau = .143**; Somer's D = .307***

5.3.3.3 Multinomial Logistic Regression Results

Pooled sample analysis: The results of the first multinomial regression model that focuses on Facilitating Research Shopping are shown in Table 26. The multinomial logit results largely mirror those of the ANOVA analyses. The overall fit of the model is satisfactory. The likelihood ratio $\chi 2$ test is highly significant, suggesting that the proposed model performs better than the null model (Backhaus et al. 2006). More restrictive fit measures are the pseudo R^2 statistics. These statistics aim at summarizing the overall fit of the model in a single number (Long 1997). The most commonly used pseudo R^2 statistics are McFadden's R^2, the maximum likelihood R^2 (also known as Cox-Snell R^2), and Cragg and Uhler's R^2. The McFadden's R2 value of .20 indicates good fit of the multinomial logit model, as do Nagelkerke's (.34) and Cragg and Uhlers (.34) R^2 values (Backhaus et al. 2006).

Based on the brands' online shops as reference category, the results suggest that previous purchase experience on the Internet is a significant driver to purchase at the online store compared to the physical store (coef. = -1.01, $p < .01$). At the same time, previous purchases at the physical stores increase the likelihood that a respondent chooses an offline store over the firms' online shop (coef. = 1.00, $p < .01$). Respondents with high levels of need for touch (coef. = .32, $p < .01$) and need for

interaction (coef. = 27, $p < .01$) are also more likely to make the purchase at a physical store than on the Internet. The effect of perceived online integration is not significant for the pooled sample, suggesting that the possibility to check availabilities via the Internet and reserve products offline did not increase the chances of visiting the physical dealers in experiment one.

In comparing the category of the "undecided" customers to the online shopping category the model results indicate that previous information search on the Internet (coef. = 1.20, $p < .01$) and need for interaction (coef. = .23, $p < .01$) increase the chances that customers are uncertain whether to buy online or offline rather than opt to go to make the purchase online. Previous purchase experience on the Internet reduces the likelihood that customers are undecided between the online and offline option and increases the chances that they make the purchase at the online shop (coef = -.72, $p < .05$). High levels of perceived online integration increase the probability that customers are undecided to buy online or offline instead of deciding to make the purchase at the online shop (coef = .19, $p < .01$). Hence, consumers that were offered the version of the online shop that included the features to switch to the physical stores more easily were less certain if they should buy online or rather visit the physical store.

Robustness Check: To test the robustness of the model with respect to the definition of the calculated choice variable, an alternative multinomial logit model was calculated in which online and offline channel choice was determined by a wider distance to the opposing scale. More specifically, a respondent was classified as choosing either the online shop or the physical store if the respective purchase intention rating was two points or more above the opposite rating. The results suggest that the model is robust to the more conservative specification of the dependent variable. The fit statistics are very similar (McFadden's Pseudo $R^2 = .20$; Maximum Likelihood $R^2 = .36$, Likelihood Ration $R^2 = .36$, Log Likelihood = -853.47). Furthermore, the significant coefficients remain significant and do not change signs under the modification. Specifically, this holds also for the online integration coefficients of the categories for offline purchase (coef. = -.06; $p = .340$) and undecided choice (coef. = .19; $p < .01$). Therefore, the multinomial logistic regression was carried out using the originally specified categorical channel choice variable.

Table 26: Multinomial Logistic Regression Results for the Pooled Sample

	Offline Purchase			**Undecided**		
	Offline Purchase			Undecided		
	Coef.	S.E.	z-Value	Coef.	S.E.	z-Value
Firm Dummy (0=firm A; 1=firm B)	-1.98	0.33	-6.09 **	-0.72	0.39	-1.86
Gender Dummy (0=male; 1=female)	0.41	0.22	1.90	0.39	0.24	1.64
Age in Years (log)	0.00	0.38	0.01	0.67	0.44	1.52
Distance to nearest Physical Store (log)	-0.04	0.07	-0.53	-0.11	0.08	-1.47
Product Involvement	-0.02	0.09	-0.21	0.07	0.10	0.66
Brand Involvement	0.03	0.09	0.29	-0.09	0.09	-0.93
Information Search on the Internet	0.25	0.28	0.90	1.20	0.36	3.31 **
Inforation Search at Physical Stores	0.01	0.24	0.04	0.03	0.27	0.11
Previous Purchase on the Internet	-1.01	0.26	-3.89 **	-0.72	0.30	-2.41 *
Previous Purchase at Physical Stores	1.00	0.32	3.15 **	0.11	0.30	0.36
Need for Touch	0.32	0.06	5.72 **	0.05	0.06	0.92
Need for Interaction	0.27	0.05	4.92 **	0.23	0.06	3.89 **
Multichannel Self-Efficacy	-0.03	0.08	-0.42	-0.09	0.08	-1.09
Online Integration	0.04	0.05	0.73	0.19	0.06	3.32 **
McFadden's Pseudo R Square			0.20			
Maximum Likelihood R Square (Nagelkerke)			0.34			
Cragg & Uhler's R Square			0.34			
Likelihood Ratio Chi-Square (28)			407.03 **			
Log Likelihood			-821.38			
N			988			

** = p<.001; * = p<.05; N = 988 due to 38 missing values for variable "Distance to nearest Physical Store"

Sample firm A analysis: The analysis for the complete sample of firm A allows for the separate assessments of the effects of the two forms of online integration in terms of Facilitating Research Shopping and Increasing Online After Sales Service. Apart from testing both integration types, the main difference to the previous multinomial logistic regression model lies in the use of the stated channel choices (purchase in the online shop of firm A, other online shops, physical stores, or no purchase). Again, the firm's online shop was defined as the reference category. The sample included 467 data points. 14 cases were excluded due to missing values on the covariate "distance to nearest physical store". The overall fit indices suggest good fit of the model (likelihood ratio $\chi 2 = 205.35$, $p < .01$; McFadden's $R^2 = .26$). The general results of the multinomial logit model are shown in Table 27**Fehler! Verweisquelle konnte nicht gefunden werden.**.

The coefficients suggest that, compared to the decision to purchase at firm A's online shop, age (coef. = -.162, $p < .01$), brand involvement (coef. = -1.01, $p < .01$), and previous purchases at physical stores (coef. = -1.61, $p < .05$) decrease the probability of the respondents to purchase at other online stores, while it was increased for customers who had made previous purchases on the Internet (coef. = 1.26, $p < .05$). Of the two integration measures, only flexible returns of online purchases at physical stores yielded a significant result. Respondents who were exposed to the version of the online shop that offered this service were less likely to purchase at third party online shops compared to the firm's online store (coef. = -1.17, $p < .05$).

The chances to purchase at an offline store relative to firm A's online shop are decreased by age (coef. = -.97, $p < .05$) and not surprisingly by the distance to the nearest physical shop (coef. = -.30, $p < .05$). High levels of need for touch (coef. = .41, $p < .01$) and need for interaction (coef. = .43, $p < .01$) are associated with an increase in the likelihood for customers to purchase at an offline store. Again, no significant effect was found for the possibility to easily engage in research shopping by checking offline availabilities and making reservation via the online shop. However, the offer of flexible return conditions in the online shop is a significantly negative predictor of the likelihood to purchase at the physical store (coef. = -.68, $p < .05$).

As mentioned previously, only three respondents chose the no-purchase category. Distance to the nearest physical store is a significant predictor for those customers not to make a purchase (coef. = .51, $p<.05$). The only other significant coefficient is the possibility to return online purchases at a physical store (coef. = -16.42, $p<.05$). Hence,

this integration feature decreases the likelihood not to make a purchase compared to purchasing the item at the firm's online shop. With respect to the two integration measures, the overall results suggest that for the respondents of firm A, the possibility to check availabilities at the stores and make reservations via the Internet did not significantly affect the intentions to switch to or away from the newly offered online channel. However, the offer to return online purchases anywhere, even at a physical retailer, is a significant driver to shift demand from other online stores and the physical channels to the direct online shop.

Table 27: Multinomial Logistic Regression Results for Firm A

Base Category: Online Purchase	Other Online Stores			Offline Channel			No Purchase		
	Online Other Stores			Offline Channel			Undecided		
	Coef.	S.E.	z-Value	Coef.	S.E.	z-Value	Coef.	S.E.	z-Value
Gender Dummy (0=male; 1=female)	0.80	0.56	1.45	0.05	0.35	0.14	-2.33	2.00	-1.17
Age in Years (log)	-1.62	0.53	-3.03 **	-0.97	0.47	-2.07 *	7.32	5.36	1.37
Distance to nearest Physical Store (log)	-0.16	0.18	-0.94	-0.30	0.12	-2.55 *	0.51	0.86	0.59 *
Product Involvement	0.25	0.26	0.97	-0.10	0.17	-0.62	0.79	1.02	0.78
Brand Involvement	-1.01	0.34	-2.95 **	0.06	0.22	0.25	-2.37	1.57	-1.51
Information Search on the Internet	-0.15	1.25	-0.12	-1.16	0.66	-1.75	14.52	1191.74	0.01
Inforation Search at Physical Stores	0.12	0.48	0.25	-0.07	0.35	-0.21	1.50	1.98	0.76
Previous Purchase on the Internet	1.26	0.63	2.01 *	-0.54	0.31	-1.72	-1.12	1.99	-0.56
Previous Purchase at Physical Stores	-1.61	0.71	-2.28 *	0.14	0.71	0.20	13.82	5657.39	0.00
Need for Touch	0.18	0.14	1.34	0.41	0.10	4.03 **	0.11	0.72	0.16
Need for Interaction	0.08	0.15	0.50	0.43	0.11	3.89 **	-0.75	0.78	-0.96
Multichannel Self-Efficacy	0.26	0.26	0.98	-0.09	0.15	-0.60	1.26	1.35	0.93
Integration Return	-1.17	0.51	-2.31 *	-0.68	0.32	-2.15 *	-16.42	732.88	-0.02 *
Integration Search	-0.54	0.50	-1.08	-0.01	0.32	-0.03	2.39	2.11	1.14

McFadden's Pseudo R Square	0.26	Log Likelihood	-287.65
Likelihood Ratio Chi-Square (42)	205.35 **	N	467

** = p<.001; * = p<.05; N = 467 due to 14 missing values for variable "Distance to nearest Physical Store"

5.3.3.4 Marginal Effects

The coefficients of the multinomial logit model in Table 26 and Table 27 signify the deviation of an outcome category from the reference category. Hence, the coefficients of the independent variables only explain the difference between purchasing offline or being undecided between channels compared to purchasing at the online shop (the base category). Using these results alone, it is not possible to assess the influence of online integration measures on the overall probability to choose a certain distribution channel. In order to better understand the influence of online integration on channel choice and possible sales adjustments between channels, the average marginal effects of online integration were calculated for each outcome category based on the estimation results. The average marginal effects of online integration signify the average change in the probability that a respondent will choose a certain distribution channel for a marginal increase for a specific independent variable (Scott and Freese 2006). Hence, in this analysis, the marginal effects signify the change in purchase intention to purchase at the online shop, a physical store, or to be undecided between both options if perceived online integration increases or the respondent was assigned to the non-integrated or integrated version of the online shop.

Marginal effects in the pooled sample: For the pooled sample used in experiment one, the results of the marginal effects (M.E.) analysis for changes are displayed in Table 28. The upper half depicts the marginal effects of changes in perceived online integration; the lower half yields the results for the treatment variable (whether the respondents were exposed to the integrated or the non-integrated online channel). The results for changes in perceived online integration indicate that the probability of being indifferent between online and offline purchase channels increases with higher levels of online integration (perceived online integration: M.E. = .02, $p < .01$, integration dummy variable: M.E. = .06, $p < .05$). Furthermore, within the pooled sample and the continuous variable of perceived online integration, the likelihood to purchase at a the brands' online shops is significantly reduced (M.E. = -.02, $p < .05$). This result signifies that online integration does not cannibalize the offline store, but tends to draw demand away from online shops to the brands' online store.

The results were replicated by analyzing the effect of the online treatment variable instead of perceived online integration. Overall, the effects are in the same direction as for the psychological measure perceived online integration. However, the online integration treatment only had a significantly positive effect on the probability that customers are undecided between the online shop and the physical store (M.E. = .06,

$p < .05$). The non-significant marginal effects of the pooled sample analysis for decisions to visit the physical store support $H_{20a,b}$, which expected that perceived integration and Facilitating Research Shopping do not cannibalize the physical stores.

Table 28: Marginal Effects of the Pooled Sample

	Marginal Effects (M.E.) of **Continuous Variable: Perceived Online Integration (x_1)**			
Channel Purchase Choice (y)	**M.E. (dy/dx_1)**	**S.E.**	**z-Value**	**p-Value**
Physical Store	-0.01	0.01	-0.66	0.51
Brand's Online Shop	-0.02	0.01	-2.37	0.02 *
Undecided (Equal Score)	0.02	0.01	3.29	0.00 **
	Marginal Effects (M.E.) of **Integration Treatment Variable: Facilitating Research Shopping (x_2)**			
Channel Purchase Choice (y)	**M.E. (dy/dx_2)**	**S.E.**	**z-Value**	**p-Value**
Physical Store	-0.01	0.03	-0.32	0.75
Brand's Online Shop	-0.05	0.03	-1.78	0.08
Undecided (Equal Score)	0.06	0.02	2.33	0.02 *

Marginal effects in the sample of firm A: The marginal effects in Table 29 depict the effects of perceived online integration and combined channel integration. Combined channel integration signifies the customers who were exposed to both forms of channel integration (see also the white colored columns in Figure 31). These general results of channel integration suggest that channel integration significantly increases the customers' likelihood to purchase from the direct online store (perceived online integration: M.E. = .04, $p < .01$; treatment effects: M.E. = .09, $p < .05$). The negative effect on the probability to choose the physical stores fails to reach significance for perceived online integration (M.E. = -.02, $p = .19$) and the combined integration treatment (M.E. = -.04, $p = .34$). However, the coefficients for the decision to visit the indirect online shops are negative in both cases (perceived online integration: M.E. = -

.03, p < .01; treatment effects: M.E. = -.05, p < .05). Thus, additional sales in the direct online store are mainly drawn from the other third party online shops. These findings for the complete sample of firm A suggest that just like in the pooled sample analysis, online integration generally does not cannibalize the physical store. Beyond the pooled sample results, the stated purchase decision analysis also shows that the indirect online shops are most likely to be cannibalized by an integrated direct online store. These results again support $H_{20a,b}$.

Table 29: Marginal Effects of Firm A - Complete Online Integration

	Marginal Effects (M.E.) of **Continuous Variable: Perceived Online Integration (x_1)**			
Channel Purchase Choice (y)	**M.E. (dy/dx_1)**	**S.E.**	**z-Value**	**p-Value**
Physical Store	-0.02	0.01	-1.31	0.19
Brand's Online Shop	0.04	0.01	3.42	0.00 **
Other Online Shop	-0.03	0.01	-3.05	0.00 **
	Marginal Effects (M.E.) of **Combinded Integration Treatment Variable: Research Shopping AND After Sales Service (x_2)**			
Channel Purchase Choice (y)	**M.E. (dy/dx_2)**	**S.E.**	**z-Value**	**p-Value**
Physical Store	-0.04	0.04	-0.95	0.34
Brand's Online Shop	0.09	0.04	2.37	0.02 *
Other Online Shop	-0.05	0.03	-2.02	0.04 *

Using the sample of firm A it is also possible to differentiate between Facilitating Research Shopping and Increasing After Sales Service Online. The separate analysis of the marginal effects of the two integration measures yields additional insights into the general shifts in demand across the purchase channels. First, no significant marginal effects were found for the increased ease to engage in research shopping. This integration measure did not affect shifts in the purchase probabilities across the

online and offline channels. This finding mirrors the results of the multinomial regression coefficients and the previous analyses of marginal effects. For Increasing Online After Sales Service, the analysis of the marginal effects yielded an increase in the purchase likelihood of the new online shop (M.E. = .10, p = .01). No other significant shifts in purchase probabilities were found. As expected in H_{20c}, the effect of Increasing Online After Sales Service on the probability to purchase offline is negative, but fails to reach significance (M.E. = -.05, p = .23). Thus, H_{21} is not supported.

Even though the effects for the physical and indirect online stores are generally insignificant, the negative coefficients for the offline stores have generally lower p-values than the coefficients for the third party online stores. This may be cautiously interpreted that the hypothetical online shop for firm A tends to draw its buyers from the existing third party online stores. This reasoning might also be supported by Figure 31, as well as the results in Table 29 where the combined integration effects reach significance.

Table 30: Marginal Effects of Firm A according to Integration Type

	Marginal Effects (M.E.) of **Integration Treatment Variable: Facilitating Research Shopping (x_1)**			
Channel Purchase Choice (y)	**M.E. (dy/dx_1)**	**S.E.**	**z-Value**	**p-Value**
Physical Store	0.03	0.04	0.64	0.52
Brand's Online Shop	0.01	0.04	0.27	0.78
Other Online Shop	-0.04	0.03	-1.25	0.21

	Marginal Effects (M.E.) of **Integration Treatment Variable: Increasing After Sales Service (x_2)**			
Channel Purchase Choice (y)	**M.E. (dy/dx_2)**	**S.E.**	**z-Value**	**p-Value**
Physical Store	-0.05	0.04	-1.19	0.23
Brand's Online Shop	0.10	0.04	2.49	0.01 *
Other Online Shop	-0.05	0.03	-1.63	0.10

5.3.4 Discussion

The results of the choice models for the pooled sample suggest that neither perceived online integration nor Facilitating Research Shopping is related to significant reductions in offline channel selection. These findings confirm H_{20a} and H_{20b}. Furthermore, online integration in terms of perceived online integration and easier research shopping makes the customers of firm A and B more indifferent between the online and offline store. This can be interpreted that online integration opens the scope for customers to use the channel that best fits their current purchase situation, especially when it is designed to entice customers to engage in research shopping behavior and switch channels between the search and the purchase phases. Additionally, Facilitating Research Shopping and increasing perceived online integration even decreases the tendency to choose indirect online channel for purchase. These findings suggest that the additional sales are shifted to the integrated online store of a manufacturer from the usually non-integrated online shops of the indirect retailers.

The results for firm A and B suggest that increasing customer value online by promoting offline channels in the online shop does not seem to cannibalize a firm's physical channels. Since the pooled sample results indicate that online integration increases the number of customers who are undecided to purchase online or offline, it can be argued that an integrated online shop may even increase store-traffic and offline purchases. Like the results of the customer loyalty analysis, the fear of offline-channel cannibalization can be alleviated by these findings. Integrating online and offline channels seems to broaden the multichannel scope of a firm's customers such that they expand their relevant set of alternative channels. Thus, promoting an offline channel via the online store or the firm homepage may increase offline sales. This finding is in line with the results of Dholakia et al. (2005) who find that customers add new channels for shopping instead of replacing them with the channels they have previously bought from.

The neutral effects of perceived online integration and Facilitating Research Shopping on offline purchases were confirmed in both samples. The complete sample of firm A also tested the influence of online integration in terms of Increasing Online After Sales Service on purchase channel choice. As for the other forms of online integration, no significant influence of the possibility to return online purchases at the offline stores (increased after sales service) on offline cannibalization was found. Thus, H_{21} could not be confirmed. However, it has to be acknowledged that the increased intention to

purchase at the firm's online shop may be to some extent at the expense of sales in the offline channel. Even though, the effects are not statistically significant, the coefficients are negative, which indicates that the additional sales in the integrated online channel are generated by lower sales in the remaining channels. On the other hand, the cannibalization tendencies are always stronger for the indirect online shop. Thus, it can be expected that the majority of additional sales generated in the integrated online shop cannibalizes other online retailers rather than physical stores. The integrated online shop that offers additional after sales service may not convince customers to switch from offline to online.

On the one hand, customers who already consider purchasing online may prefer to purchase from a manufacturer's integrated online shop compared to a non-integrated indirect online retailer. Thus, online integration is a source of competitive advantage and differentiation from indirect or online pure plays. Nevertheless, firms must be cautious when using online integration to increase the attributes of the online channel. The complexities of channel integration are high. The following chapter will therefore develop a roadmap for managers who consider defining and implementing channel integration approaches.

6 Summary of Results

The empirical analyses helped clarify how online integration activities influence customer loyalty and purchase intention in the online shop and the physical stores. The results are summarized in the following table.

Table 31: Results of Hypotheses Testing

			Pool	Firm A
Online Service Quality and Purchase Risk				
H_1:	Perceived Online Service Quality < Perceived Offline Service Quality	-	-.	sup.
H_2:	Perceived Online Purchase Risk < Offline Purchase Risk	-	-.	sup.
H_{3a}:	Perceived Online Integration → Online Service Quality	pos.	sup.	sup.
H_{3b}:	Facilitating Research Shopping → Online Service Quality	pos.	sup.	sup.
H_{3c}:	Increasing After Sales Service → Online Service Quality	pos.	-.	sup.
H_{4a}:	Perceived Online Integration → Online Purchase Risk	neg.	sup.	sup.
H_{4b}:	Facilitating Research Shopping → Online Purchase Risk	neg.	sup.	sup.
H_{4c}:	Increasing After Sales Service → Online Purchase Risk	neg.	-.	sup.
Willingness to Pay (WTP) Online and Offline				
H_5:	WTP Online < WTP Offline	med.	-	sup.
H_6:	Online Integration → online WTP	pos.	-	sup.
H_{7a}:	Online Integration → Online Service Quality → Online WTP	med.	-	sup.
H_{7b}:	Online Integration → Online Purchase Risk → Online WTP	med.	-	n.s.
H_8:	Online Integration → Offline WTP	neut.	-	sup.
Loyalty and Purchase Intention in the Online Store				
H_{9a}:	Perceived Online Integration → Online Loyalty	pos.	sup.	-
H_{9b}:	Facilitating Research Shopping → Online Loyalty	pos.	-	sup.
H_{9c}:	Increasing Online After Sales Service → Online Loyalty	pos.	-	n.s.
H_{10a}:	Perceived Online Integration → Online Purchase Intention	pos.	sup.	-
H_{10b}:	Facilitating Research Shopping → Online Purchase Intention	pos.	-	sup.
H_{10c}:	Increasing Online After Sales Service → Online Purchase Intention	pos.	-	sup.
H_{11a}:	Online Service Quality → Loyalty towards Online Store	pos.	sup.	sup.
H_{11b}:	Online Service Quality → Purchase Intention in Online Store	pos.	sup.	sup.
H_{12a}:	Online Purchase Risk → Loyalty towards Online Store	neg.	sup.	sup.
H_{12b}:	Online Purchase Risk → Purchase Intention in Online Store	neg.	sup.	sup.
H_{13}:	Online Integration → Service Quality/Purchase Risk → Online Loyalty	med.	sup.	sup.
H_{14}:	Online Integration → Service Quality/Purchase Risk → Online Purchase Intent	med.	sup.	sup.

Loyalty and Purchase Intention Online Relative to the Offline Store			**Pool**	**Firm A**
H_{15a}:	Online Service Quality → Online Loyalty Relative to the Offline Store	pos.	sup.	sup.
H_{15b}:	Online Service Quality → Online Purchase Intent Relative to the Offline Store	pos.	sup.	sup.
H_{16a}:	Online Purchase Risk → Online Loyalty Relative to the Offline Store	neg.	sup.	n.s.
H_{16b}:	Online Purchase Risk → Online Purchase Intent Relative to the Offline Store	neg.	sup.	sup.
Moderating Effects of Firm Type				
H_{17a}:	Firm Type × Perceived Online Integration → Online Service Quality	mod.	sup.	-
H_{17b}:	Firm Type × Perceived Online Integration → Online Purchase Risk	mod.	n.s.	-
H_{18a}:	Firm Type × Online Purchase Risk → Online Loyalty Relative to the Offline Store	mod.	n.s.	-
H_{18b}:	Firm Type × Online Purchase Risk → Online Purchase Intention to the Offline Store	mod.	n.s.	-
Channel Synergies				
H_{19a}:	Perceived Online Integration → Loyalty towards the Physical Store	pos.	sup.	-
H_{19b}:	Facilitating Research Shopping → Loyalty towards the Physical Store.	pos.	-	sup.
H_{19c}:	Increasing Online After Sales Service → Loyalty towards the Physical Store	pos.	-	n.s.
H_{20a}:	Perceived Online Integration → Offline Purchases	neut.	sup.	sup.
H_{20b}:	Facilitating Research Shopping → Offline Purchases	neut.	sup.	sup.
H_{21}:	Increasing Online After Sales Service → Offline Purchases	neut.	-	sup.

The hypotheses are largely supported. The theoretical framework of online integration, online service quality, online purchase risk, WTP in the online shop, loyalty online, purchase intention online, as well as loyalty and purchase intention in the physical store is therefore supported by the findings. According to the sequential pattern for the online store, online integration creates customer value in the online shop by reducing purchase risk and perceived service quality, which in turn leads to higher willingness to pay, customer loyalty, and purchase intention in the online shop. Apart from the effects on the online channel, online integration also increases customer loyalty towards in the physical stores. Overall, the effects of online integration on WTP, loyalty, and WTP are stronger for the online channel than for the physical stores. Overall, customers perceive the tested online integration strategies to facilitate switching between channels during the purchase process. They also perceive the channel system as better aligned and harmonized.

Online integration increases perceived service quality and reduces purchase risk in the online channel. Furthermore, it increases online WTP, loyalty, and purchase intention. Thus, making a firm's offline stores prominent in the online shop has positive effects

for the evaluation of the online store. This finding is somewhat counterintuitive for the case of Facilitating Research Shopping. This online integration activity was specifically designed to make it easier to switch from the online shop to the offline channels for purchase.

The generally positive effects of online integration for a firm's online channel suggest that multichannel firms can obtain a strategic advantage over their online pure play counterparts. By better meeting the customer needs of a multichannel system they can create advantages in their online shops that cannot be met by single-channel online retailers. More importantly, they can reduce the pressure to match low online prices. Online integration activities generate channel synergies for the offline channel as well. By bringing the physical stores to online consumers' minds and making it easier to switch to the offline channel, it is possible to increase customer loyalty for the stationary stores.

The results also suggest an overall positive impact of online integration on the intention to visit the physical store to make the purchase. Thus, no significant offline cannibalization was found. Rather, it increases the relevant set of channel alternatives for the multichannel customers. Additional online sales are mainly generated from independent online shops. Thus, online integration may reduce the dependence on indirect distribution formats. On the contrary, online integration increases the customers' relevant set of channels. The results indicate that online integration may even support offline sales. The fear of increasing channel conflicts is not justified. However, if online integration entails better after sales service, there may be some cannibalization of the physical store. The degree of channel migration therefore depends on the type of online integration measure that is implemented. These conclusions are also supported by the finding of Dholakia et al. (Dholakia et al. 2005) that customers add a retailer's new interaction channels for shopping instead of replacing the channels they have previously used. The following section gives a detailed overview on the empirical findings and the research gaps and goals of this dissertation.

E Managerial Suggestions

1 A Roadmap for Channel Integration Decisions

The managerial suggestions on channel integration are based on the conceptual development and the empirical findings of this work. Overall, the channel integration features tested in this study helped increase customer loyalty in online and offline channels and also had a positive effect on willingness to pay, as well as purchase intention in the online channel, while the offline channel was not significantly cannibalized. Therefore, channel integration in general, and especially integrating the online channel, may be a recommendable strategy to the multichannel system, enhance the multichannel customer experience, create customer value online, increase customer share of wallet online in the short run, and eventually across all channels in the long run. Nevertheless, due to the high costs of implementation, companies are well advised to thoroughly analyze whether channel integration is meaningful and which channels should be integrated.

The primary topic of designing a multichannel strategy is the issue of "cross-channel cannibalization versus synergy" (Neslin and Shankar 2009). Even though the results of this work suggest that synergies can be attained, they depend on a multitude of contingency factors. The specific product or service category, the customer base, and the organizational premises all have to be taken into account when deciding if the channel system should be integrated and which integration services should be provided (Schögel and Pernet 2010). The costs of setting up and managing an integrated channel system are very high. For example, the participating companies for the empirical studies were not able to set up a running integrated online store to test the integration measures in real world conditions. The difficulties of breaking up the channel silos are manifold. Not only do customers have to be multichannel and value the integrated channel offer, but logistics and operational issues have to be solved, as well. Finally, channel integration usually marks a departure from distribution channels managed as business units and focuses on the overall optimization of the channel system. A truly seamless shopping experience is about changing the channel philosophy. This necessitates a fundamental change in the mindset of all channel managers and employees in the company.

J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9_5,

The most important benefit of channel integration is its potential improvement of a company's competitive position in the short or the long run. Therefore, as with all distributional decision processes, the first step of each channel integration project should be the analysis of opportunities, threats, strengths, and weaknesses that may influence channel performance (Anderson et al. 1997). The analysis of the overall market situation is therefore an integral part of determining a viable multichannel integration strategy. Especially for industries that are subject to evolving and dynamic distributional developments, the situational analyses of strengths, weaknesses, opportunities, and threats in addition to a continuous analysis of the market environment serves as an early warning system (Specht and Fritz 2005).

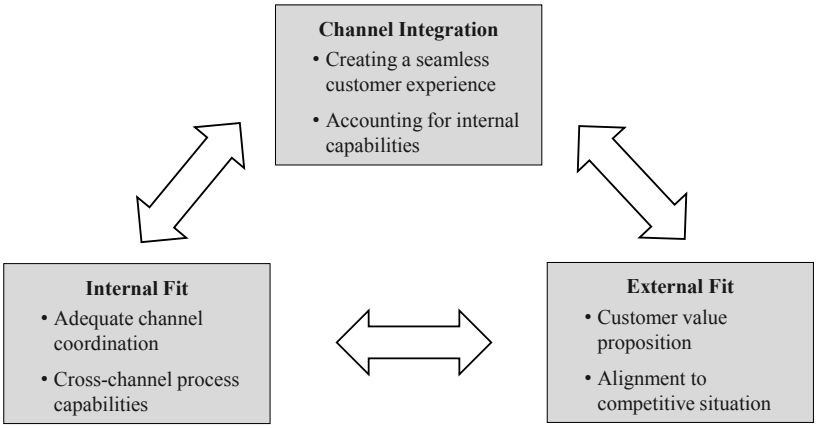
Designing a suitable channel strategy includes creating a "dual fit" - external and internal - of the multichannel system (Schögel 1997, pp. 30). External fit relates to the alignment of the channel system to the market and competitive situation. Internal fit relates to the configuration and coordination of processes among the channels within the firm. Channel integration touches both aspects of multichannel management. An integrated channel system can only be successful if the integration activities have the desired external impact in the market environment in terms of customer reactions and competitive strength. At the same time, the effective implementation of integration activities strongly depends on internal channel configuration formats and process management. In order to satisfy customer needs (i.e. create external fit) the channel system itself has to be designed to support the functioning of integration activities (i.e. the provision of internal fit). Channel integration creates better external fit by improving the channel system's value proposition for the multichannel customers.

Firms that decide to engage in channel integration activities in order to increase customer value generally adopt a customer centric view (Verhoef et al. 2010). Therefore, channel integration should be driven by improving the external fit of a firm's multichannel offer to the existing and latent customer needs. Internal fit, on the other hand, is necessary to adapt and efficiently manage the processes and the functioning of the channel back ends to meet the requirements of the integrated channel services. Therefore, integration decisions are not only driven by customer needs but also by the necessity to develop the internal capabilities to handle the underlying processes. Depending on the importance and expected impact of the channel integration strategy, the decision to integrate the channel system may also lead to the need to adapt the organizational structure, processes, and organizational culture for the company to become more centered on the customer (Shah et al. 2006). Even

though this may not be the case for all integration decisions, channel integration is generally governed by the tradeoff between desirability from the customer perspective and feasibility with respect to the internal capabilities.

Proper integration management will have to tackle the challenge of determining when external potentials are strong enough to justify costly internal adjustments. Therefore, channel integration in practice is not a sequential process but iteration between evaluating, balancing, and re-evaluating the potentials and consequences of channel integration activities. The external and internal scope of channel integration decisions are displayed in Figure 32. The following chapter will highlight the important issues associated with the creation of internal and external fit within the decision process of the implementation of an integrated channel system. A general framework for integration decisions is developed. Where applicable, the two participating companies serve as examples.

Figure 32: The Internal and External Scope of Channel Integration Decisions[14]



[14] Based on Schögel (1997).

2 Creating External Fit: Customers and Competitors

2.1 Analysis of the Competitive Position

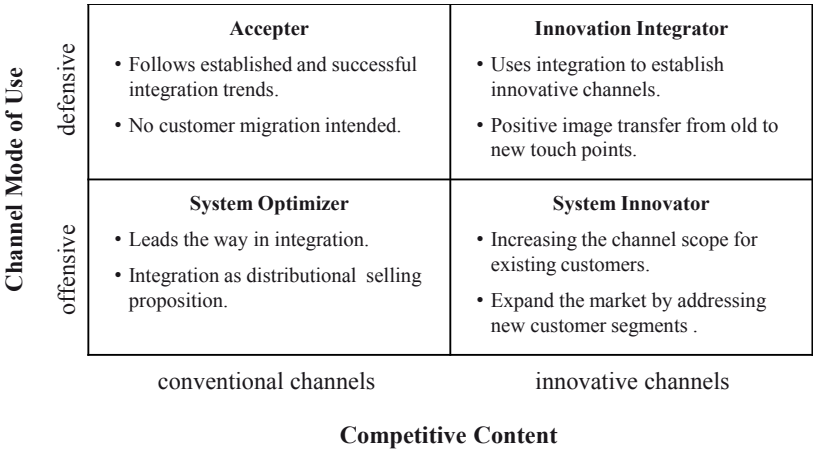
The actions of competitors impose a major influence on the definition of a firm's distribution strategy. The competitor's channel decisions, as well as the short and long-term trends of how firms in the industry go to market, affect a firm's position in the competitive environment. Therefore, manufacturers and retailers have to define their roles relative to their horizontal competitors and vertical distribution partners (Schögel 2012). If a firm fails to identify its own sales strategy based on its distributional strengths and weaknesses and does not learn how to handle the dynamics in a competitive distribution environment, it will also fail to maintain an efficient distribution system.

Haedrich et al. (2003) identify two dimensions how manufacturers and retailers can shape their competitive position with respect to their distribution channels. First, a company can decide its competitive content, i.e. the distribution channels that will be employed in its channel system. Firms can either rely on conventional and established channels or they can focus on new and innovative ways to sell their products and services. The second dimension refers to the mode of use of these channels. On the one hand, firms can use channels offensively. The goal of an offensive management of a distribution channel is to establish a pioneering role and develop the potentials of a distribution channel before the competition does. On the other hand, defensive use of a distribution channel adopts the role of a follower. New channels or new potentials are only adopted after they have been successfully implemented by the competitors.

The notion of mode of channel use can also be transferred to channel integration: Offensive and defensive integration approaches can be used to support the specific roles of each channel. Firms may use an offensive integration strategy to create additional customer value and to proactively incorporate the seamless customer shopping experience as an integral part of the channel value proposition. At the same time, the firm may apply a defensive integration approach to create a positive image transfer from one channel to another without emphasizing on specific channel switching synergies. The concept of channel integration usage mode does not necessarily apply to a whole channel system but can be adjusted with respect to selective channels. For example, firms may employ an offensive channel integration strategy to migrate their customers from an acquisition to the designated transaction

channel, while the integration features of the transaction channel itself are designed in a defensive way to focus on a positive image transfer instead of creating synergies back to the information channel. Based on these two dimensions, manufacturers and retailers have four strategic options for how they can set up their distribution channels with respect to the competitive environment (Schögel 2012; Schögel 1997). These strategic options are displayed in Figure 33 and interpreted within the specific context of channel integration decisions.

Figure 33: Options of Competitive Channel Integration Strategies[15]



Accepter: The accepter uses channel integration defensively and will only focus on realizing integration strategies for its existing and established channels. By sticking to industry standards, this strategic option implies that integration activities are implemented only after their effectiveness has been demonstrated by other firms in the market. Furthermore, the defensive use of channel integration also implies that these firms do not intend to become market leaders in providing seamless customers

[15] Based on Schögel (1997), adapted for channel integration activities.

experiences across channels and that the integration features are not a major value proposition of the channel system. However, even integration market leaders could adopt a defensive integration strategy in a target channel in order to allow positive image transfers but not emphasize and "disperse" their customers to undesired channels. Defensive channel integration in this case signifies the provision of integrated channels without making them a central value theme of the distribution offer.

Firms that decide to follow successful integration trends have the advantage of being able to learn from their competitors, avoid initial mistakes, and adopt strategies that have been proven to be successful. Thus, accepting and following integration trends - after it is clear that they are part of a long term change of the market structure - minimizes the risk of identifying the wrong strategies and investing in the wrong integration options. On the other hand, adopting the role of an integration accepter will not allow a firm to profit from acquiring new customers for whom an integrated channel system is a reason to switch providers. Additionally, the learning curves of the followers may be steeper, but they will generally lag behind the integration innovators. Lastly, accepters have to be aware that they will not set the integration agenda of the industry. The channel management approach of these companies will be reactive in nature in order to match the actions of their competitors.

Innovation Integrators: The innovation integrators combine innovative distribution channels with defensive and conventional integration methods. By focusing on channel formats that are new to the industry, the channel innovators potentially attract new and clearly defined customer segments with the goal to be the first in the market and to realize a competitive advantage. However, by using channels that are new to the industry, perceived risk and uncertainty may be relatively high for the target customers. Channel integration activities are therefore used to realize a positive image transfer from the existing channels, to reduce uncertainty in the new channels, and to increase the speed of channel adoption. The defensive use of channel integration also relates to the goal to establish the new channel as an important sales hub. It is the role of the new channel to attract new customers that will use it as a main or lead channel instead of acquiring customers for the already established channels. Therefore, active customer transition and switching is not actively encouraged.

By using channel integration as facilitator for the introduction of novel channel formats, the focus of the innovation integrators is not primarily to satisfy latent customer needs and create an innovative purchase experience based on a seamlessly

coordinated multichannel system. The role of channel integration rather lies in introducing and establishing the innovative channel, defining its role, as well as ensuring and encouraging customers to adopt it. The integration aspects themselves do not necessarily have to be novel. It may even be advisable to use old integration features in the new channel that will be more easily be recognized and accepted by the customers. Therefore, innovation integrators do not have to excel in the innovativeness of the integration activities but use existing integration methods to create the link between new and old channel formats. For example, a firm deciding to sell products via a mobile application may decide to include the conventional dealer search to create the link between the new and the conventional distribution format.

System Optimizer: The system optimizer uses channel integration to make its system of existing and conventional channels more efficient and suitable for the cross-channel needs of the modern consumers. The overall goal is to become or remain a market leader in providing superior value in the established distribution channels of the industry. Therefore, channel integration capabilities are primarily developed to maintain the competitive edge within the established channel domains. Channel integration strategies for system optimizers are associated with implementing novel and innovative integration concepts for existing channel formats and building up the capabilities to effectively manage the necessary internal adjustments of processes and channel coordination. The innovation is not the channel types, but the ways of integrating them and combining them to provide a singular customer experience that is not offered by the competitors (Schögel 1997). Therefore, the channel integration features are communicated and extensively promoted. Customers are encouraged to actively use the channel integration features and experience their additional value. Furthermore, this strategy can also be used in the information channel to steer customers into the designated purchase channel.

For the system optimizer channel integration is the most important factor to differentiate the distribution system from the competing companies in the market and to generate a competitive advantage. An important goal of integrating the channel system is to create customer value that cannot be easily copied by the competitors. Eventually, successful integration features will be picked up by the other firms in the market and customers will become used to the offers. System optimizing firms therefore need to develop the capability to continuously identify customer needs, realize the further potentials of channel integration, and create innovative integration solutions. When system optimizing firms use designated information and lead

channels, the effectiveness of their integration features between these two channel types are critical for establishing customer lock-in and increasing retention rates.

System Innovator: The system innovator uses new distribution channels and proactively links these new channels to the existing channel system. This strategy increases the scope of channel possibilities for the existing customers and attracts new customer segments. Integrating innovative channels can be used to respond to the changing needs of the existing customer base and realize a smooth transition from old to new channel formats. The advantages of system innovation is its potential to create a high amount of customer value if the new segments are large enough and the innovative channels meet new latent customer distribution needs. Possible drawbacks are the high uncertainty associated with the success of new channels that may not justify the large initial investments in channel integration. For example, only small customer segments may be addressed by the use of unconventional and novel channel formats or channel innovations may not develop into sustainable long term trends. Furthermore, the consumers have to be innovative and very multichannel-oriented in order to profit from the new ways of accessing the firm's products and services. A system innovator may also use channel integration as a showcase of distributional excellence and to signal a sense of commitment towards innovation and customer value.

Both manufacturing companies that participated in the study sell high involvement products. Apparel plays an important part of the firms' assortments. Regarding the competitive environment of the apparel industry, it is apparent that clothes are distributed by indirect retailers, as well as direct sales channels via a wide variety of channel formats (physical stores, Internet, catalogues). As with many other industries, the trend towards click-and-mortar distribution systems is also prevalent in the apparel business. The Internet has become an important information provider for available brands, product features, and assortments. Apart from its information function, the Internet has also developed into an important sales channel. In the past, many new online pure play retailers have successfully entered the market (e.g. Zalando in Germany and Switzerland, Zappos in the United States).

With respect to channel integration, numerous retailers have increased their online service offers. For example, the German online pure play outdoor equipment seller www.bergfreunde.de offers a free online expert chat that makes it possible for online shoppers to obtain quick and high quality advice on product attributes, sizes and other topics. However, also brick-and-mortar retailers have realized the potentials of

bringing their online stores and physical outlets closer together. The American outdoor equipment retailer REI sells online and via its nationwide chain of physical stores. REI has been a pioneer of innovatively using and combining its retail channels to increase customer purchase experience and convenience. The company has realized the potentials of integrating its online shop with its physical stores. Apart from an expert chat and call function, the company also offers in-store availability checks via its online store. If the items are out of stock at a certain physical location, it is possible to order them online for free in-store collection. In addition, REI has adopted an open return policy by allowing online purchases to be returned at any of its offline stores. However, not only sales intermediaries have started to intertwine their distribution channels. For example, the German fashion label Marc O'Polo has experimented with integrated channel systems by allowing online in-store availability checks for its direct channels if items were unavailable in the online store.

While REI is a prominent and admittedly unusual example, and many firms have just started to implement channel integration features, the trend towards bringing online and offline channels closer together cannot be denied for the apparel, fashion, and outdoor industries. This development is not surprising. Many customers prefer to try on, touch, and feel the products when shopping for clothes. Furthermore, apparel shopping is often considered an enjoyable activity, especially for fashion or outdoor products. This is also indicated by the high involvement scores of the respondents for these product categories. Therefore, the offline channel still plays the dominant role in the industry while it is easy to obtain an overview of current trends and new offers online. Therefore, online integration is considered an interesting channel strategy to provide additional customer value and increase customer cross-channel loyalty for the ROPO-shoppers.

However, despite the initial progress and experiments, channel integration in the outdoor and apparel industry is generally still in its infancies. The online and offline channel formats have long co-existed as separate distributional entities. The industry still lacks the knowledge of how these channels can be effectively integrated to increase customer value. Dominant online integration strategies have not yet been formed and providing integrated channels beyond online expert chat functions can still be considered an innovative approach - especially when it involves enticing customers to shop across channel formats. The insights from the managerial workshops and the discussion in the context of the empirical studies revealed that retailers and manufacturers are starting to feel the competitive pressure. Channel managers are

aware that the apparel business is changing and have an eye on the competitors' activities.

The online shops and physical stores are not new channel formats. For example, firm B has operated its own successful online store for several years and virtually all independent sports and fashion retailers operate their own Internet channels. Firms that act fast to implement an online integration approach can therefore be considered to be system optimizers. This may be an interesting strategy for independent retailers whose added value primarily lies in the provision of a wide variety of brands and product categories. Being a first mover in terms of online integration may be a way for sales intermediaries to differentiate themselves from the other retailers, generate additional sales, and strengthen their competitive position.

For the manufacturers, on the other hand, it is important not to fall behind and lose additional market share to the independent retailers and thus become more dependent from the intermediaries. Many manufacturers realize that the Internet has made it easier to directly contact and "own" the end customers. This has spurred the current trend of sales disintermediation. Strong brands increasingly open their own brand stores to provide adequate service and to sell their full assortment directly to their customers. Manufacturers may use online integration to strengthen the link between their online appearance and their direct physical distribution channels. Finally, online integration may even be used jointly by manufacturers and retailers. Retailers often cannot carry the full assortment of specific brands. By integrating a manufacturer's homepage with the physical stores of an independent retailer, customers can browse the full brand assortment and make sure that the desired items are available at a specific physical location. In this case, integrated channels increase a retailer's assortment in the eye of a customer, helps the retailer to carry the products that shoppers like, and also gives the manufacturer direct and quick feedback on the popularity and success of their products.

2.2 Customer Analysis

The goal of customer analysis is to shed light on the nature of customer purchase behavior and the underlying distribution service needs and preferences. Previous research and managerial practice have strongly suggested that today's customers have become multichannel in nature. An important overarching societal trend is the

fragmentation multi-optionality of customer behavior (Gross 2005). As described in previous chapters, this fragmentation is also observed in increasing cross-channel shopping behavior (Schögel and Schulten 2006). In fact, the very reason for the increasing importance of channel integration is the need to better match the distribution services to customer multi-optionality and multichannel usage. However, even though the number of multichannel customers tends to increase steadily, this does not automatically mean that all multichannel customers are alike. Nor do all customers always shop and search across all channels. The routes that customers can take until they conclude the transaction are manifold (e.g., DoubleClick 2004). Furthermore, as previous research has shown, there are still significant segments of single channel customers. It is crucial not to neglect those segments, especially in industries that still heavily rely on the physical sales channel as the apparel and outdoor business.

Even though the existence of multichannel customer behavior has been proven in previous studies, it has so far not been possible to identify a clear typology of the cross-channel customers (Konus et al. 2008). The unique characteristics of each channel format provide different forms of service. The multi-optionality of today's customers leads to even stronger varying channel selection according to shopping motives and situational factors. Depending on the purchase context, the same customer may purchase a product for utilitarian reason on one shopping occasion and look for an exciting shopping experience at a later shopping trip. Each channel excels at different phases of the purchase process and specific purchase situations. The retail attributes of distribution channels play an important part for customer channel preference (Bellenger et al. 1977; Darden and Ashton 1974; Verhoef et al. 2005). Customers have many different shopping motivations. Purchases can be task-related and rational or driven by hedonic reasons such as relaxation, social interaction, or adventure (Arnold and Reynolds 2003; Batra and Ahtola 1991). Hedonic and utilitarian shopping reasons are not mutually exclusive. In general, there are many reasons and needs for customers to shop other than those related to obtaining the product (Tauber 1972; Westbrook and Black 1985).

It is crucial for firms not only to know the purchase motivations and needs of their customers in terms of products and services, but also with respect to their customer touch points (Schögel and Pernet 2010). Because customers switch between channels depending on purchase phases and shopping motives, it is important to identify the most important service aspects in each channel format and categorize ideal or dominant shopping paths. Multichannel management and customer multi-optionality

does not imply that firms have to sell everything to everybody in every channel (Schögel 2009). Rather, firms need to know customers' popular ways to combine channels during the purchase process and their service attribute expectations for every channel. This customer insight can be used as a starting point for determining promising channel configuration strategies and integration activities.

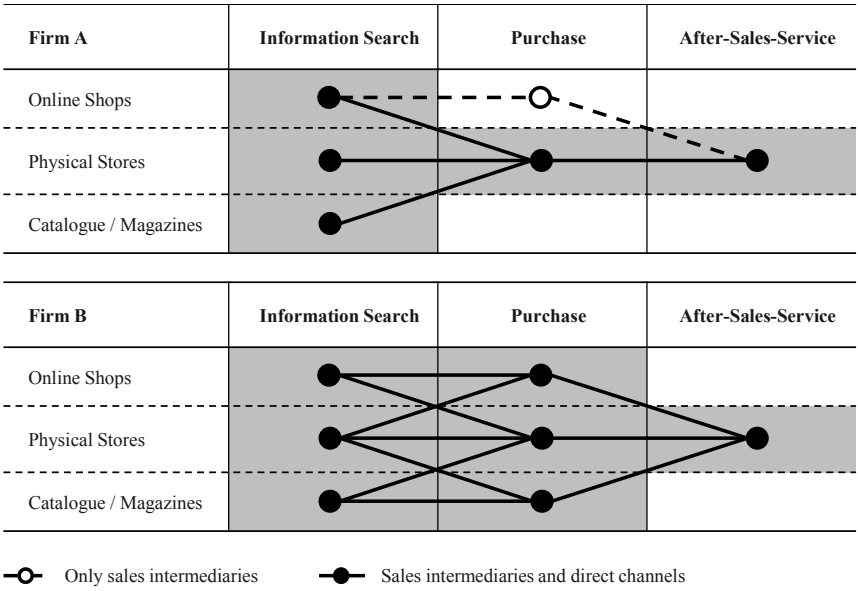
Even though it may be impossible to differentiate between multichannel and single channel customer characteristics, dominant customer journeys can be identified. The customer journeys describe the channels used during each stage of the purchase process (e.g. Schögel 2012). Customer journeys should ideally be obtained by observation, customer tracking, or surveys. If the firm has defined specific roles and functions for each channel, customer journey analyses allow channel managers to compare the performance of each channel concerning its role (e.g. information channel, purchase channel, service channel). Aggregating popular channel usage patterns also helps define starting points concerning the types of channels to be connected and the direction of the channel integration activities. For example, due to the widespread ROPO pattern, it is likely that integrating a firm's homepage or online shop in such a way that it is easier for customers to switch to the offline channel will meet existing customer needs.

In a second step, the customer journeys can be matched to existing customer segments. If the customer segmentation is based on the specific service needs and expectations for each distribution channel, the combination of customer channel journeys and segments identifies the channel usage and service preferences for each customer typology within every purchase phase. Depending on the size, importance, and relevance of the customer segments the channel functions and contents can be optimized for the channel system. This general approach is adaptable to the company-specific definitions of customer purchase cycles and segments. This means that a firm does not have to alter its existing customer segmentation scheme. The specific details can be adjusted according to the information needs and capabilities of the firm. The following example will describe the matching of customer journeys and segments for firms A and B.

Figure 34 displays the exemplary customer journeys for firm A and B. The dominant channel usage patterns are based on the customer responses from the experimental studies (see the sample description in Chapter B.4) and the discussion of the results with the channel managers concerning the channel functions. All channel formats fulfill the information function while the firm's direct and indirect physical stores are

the lead channels for transaction and after sales service. Since firm A had not utilized its own home shopping channels, the firm homepage and catalogue are solely designed to inform consumers concerning available products. Furthermore, both companies have used the Internet for promotional and instructional videos. The Internet plays only a minor role for the post purchase phase. The two companies handle sales and after sales customer service via the firms' brand stores or via their independent retailers.

Figure 34: Customer Channel Journeys



Following the customer journey identification, the customer journeys for firm A and firm B were matched to customer segments.[16] The following elaborations focus on the segmentation procedure and the matching of customer segments to channel journeys for firm A in order to avoid redundancies. A similar customer segmentation study

[16] New customer segmentation analyses were conducted for both companies in order to generate additional insights into channel service needs and integration preferences. Note that existing customer segments that are currently used by the two firms could have also been used.

using the same methodological approach including the matching of the segments to the customer channel journeys was conducted for firm B. The results for firm B are reported in the Appendix.

The segmentation for the 481 respondents of firm A is based on an exemplary and generic list of channel service outputs that were included in the survey. These were specifically personal advice, return conditions, after sales service, and price (Coughlan et al. 2006). At the end of the questionnaire, the customers were asked to distribute 100 points according to the importance of the four service outputs when purchasing firm A's products. To identify the customer segments, a four-stage clustering approach was used adopting the procedure suggested in previous literature (Bunn 1993; Cannon and Perreault Jr 1999; Ketchen Jr et al. 1993). The following steps were carried out: (1) elimination of statistical outliers, (2) identification of the optimal number of clusters, (3) assignment of observations to clusters, and (4) assigning the stability of the cluster solutions.

STATA 11.2 was used for the calculations. The outliers were identified using a single-linkage algorithm. Three of the 481 observations were classified as outliers and consequently not used for the subsequent clustering steps, for an elimination rate of .6%. In the second step, the elbow criterion and the pseudo-t^2 index (Duda and Hart 1973) was used to determine the number of clusters based on the hierarchical clustering algorithm developed by Ward (1963). The results suggest a solution of three distinct customer clusters (Figure 35). In the third step, the final assignment of observation to the clusters was obtained by applying the k-means method with the predetermined number of clusters obtained from the Ward procedure. While Ward's method is superior in determining cluster centers, the k-means algorithm produces solutions that are superior with respect to within-cluster homogeneity (Milligan and Cooper 1987).

In the fourth step, the robustness of the cluster solution was assessed by applying the approach of Cannon and Perreault (1999). The sample was randomly split into three subsamples of equal size (A with n = 160; B with n = 159; C with n = 159). The clustering was conducted twice for the combined subsamples A & B and B & C. Finally, for the observations contained in subsample B it was determined whether they were assigned to the same cluster in both segmentation runs. This was the case for 81% of the observations, suggesting stable cluster solutions.

Figure 35: Number of Clusters - the Elbow-Criterium

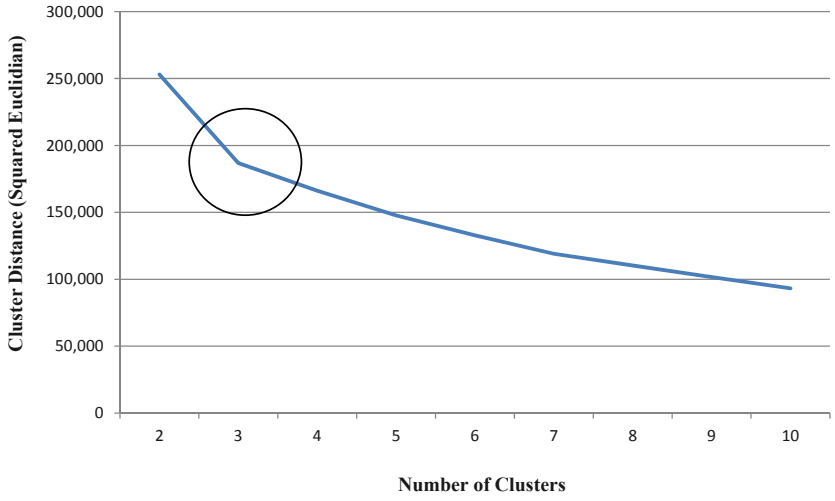


Figure 36 contains the cluster solution and the average ratings of desired channel service outputs. The largest customer segment comprising 52% of the respondents are the service-oriented customers. This customer type values high quality and personal purchase advice, as well as generous return conditions or after sales customer service. The size of the customer segment is not surprising given that the firm's products are often very technical and engineered for specific conditions. Moreover, the products are associated with high customer involvement and above average price levels, additional reasons why service expectations are rather high. The second largest customer segment is the advice-seekers. This customer group makes up 31% of all respondents and emphasizes pre-purchase advice. The advice-seekers do not expect to run into problems with the product after the purchase but seem to be insecure about which product to choose. The smallest customer segment (17% of the respondents) comprises the price sensitive customers. This customer type is willing to trade in high customer service during the search, purchase, and after sales phase for a low product price.

Figure 36: Cluster Description: Service Outputs

Service Outputs	Service-Oriented Customers	Advice-Seeking Customers	Price-Sensitive Customers
Advice	**27.34**	**52.62**	21.13
Return Conditions	**24.34**	15.72	14.90
After Sales Service	**30.61**	16.95	17.08
Price	18.27	14.71	**46.9**
Segment Size (n)	**251**	**147**	**80**

Figure 37 includes the channel usage patterns of the three customer segments. It becomes clear that all customer segments emphasize and prefer the same channels for search and purchase and that the customer journeys do not differ between the segments. Across all segments the Internet is the most important information channel while the physical stores are the channel of choice for purchase. Online purchases from indirect online shops are highest for the price sensitive segment and generally do not fall below 47% (price-sensitive customers).

The own brand stores are mainly used by the advice- and service-seeking customer groups. The results of the customer analysis for firm A suggest that all segments prefer the same kinds of channels for product search and purchase. Furthermore, online research and offline purchase is the dominant channel journey. However, online purchases are also relevant. Therefore, the introduction of a direct brand online shop via the manufacturer's homepage seems promising from the customer perspective. In terms of channel integration activities, firm A should focus on allowing for an easy transition between the information channels to the physical stores. In addition to the segmentation analysis, it can be inferred from the experimental study that increasing after sales service in a potential online channel would increase customer loyalty and purchase intention. This is most likely to be the case for the service-oriented customers. In general, Facilitating Research Shopping and Increasing Online After

Sales Service seem to be valuable and promising integration strategies if the firm decided to introduce its own online store.

Figure 37: Channel Usage Patterns of the Customer Segments

	Service-Oriented Customers	Advice-Seeking Customers	Price-Sensitive Customers
Information Search			
Internet	**0.90**	**0.87**	**0.88**
Catalogue	0.49	0.45	0.45
Physical Store	**0.79**	**0.78**	**0.80**
Previous Purchase of Product Category			
Internet	0.61	**0.43**	0.71
Catalogue	0.07	0.08	0.13
Physical Store	**0.94**	**0.97**	**0.95**
Previous Purchases of Brand A			
Internet	0.50	0.45	0.60
Catalogue	0.08	0.08	0.12
Independent Physical Dealers	**0.88**	**0.90**	**0.92**
Physical Brand Store	0.57	0.65	**0.47**

From Figure 37 it can also be observed that the catalogue does not play a noticeable role as sales channel. This is not surprising since the firm uses the catalogue as an information document and does not offer the possibility to order directly from its catalogue. However, it might be interesting to also consider further integration possibilities to link the catalogue to the physical retailers. Featuring the brand's or even independent stores in the catalogue, e.g. by including lists of retail chains that offer the brand and providing basic assortment and contact information, may help customers find the nearest stores. Furthermore, even though the differences are very small, the price sensitive customers tend to purchase firm A's products more often on the Internet and less often at the direct brand stores compared to the other segments. Therefore, it may be an option to focus the integration measures on the high price top of the line products are offered through the physical while the lower priced products may not be integrated and are more strongly promoted for purchase in the online store.

The service-oriented and especially the advice-seeking customer segments have reported the strongest offline purchase tendency. Channel integration to promote ROPO-behavior should therefore tend to emphasize the high quality advice that is provided at the physical store to entice customers to visit the firm's direct and indirect offline channels. To sum up the insights from the customer analysis, it is important to note that customer segments exist that differ in service needs and price-sensitivity. However, the channel usage patterns hardly differ across the segments. Therefore, the channel system should be designed to serve all customers in all channels. Integration should be focused on service-oriented and advice-seeking customers. The results of the segmentation study for the customers of firm B produced similar results and conclusions (see Appendix).

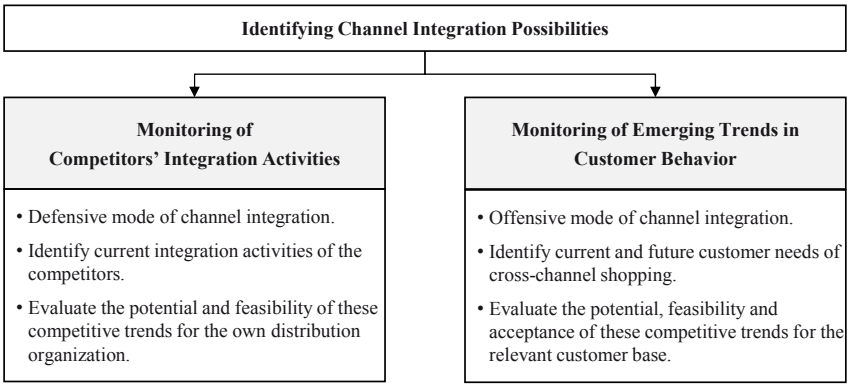
The results from the study also suggest that prices should not be differentiated between both channel formats, especially when they are integrated further. Since no discernible differences in usage patterns could be found among the firms' customer segments, the goal should be to maximize customer experience in the integrated channel format. The service and advice seeking customers are likely to honor the effort and accept higher price levels in the integrated online store - and most likely in the high-quality offline stores. The price-sensitive customers are less likely to reward integration measures and still look for lower prices elsewhere. These customers will take advantage of the seasonal sales offers or self-select into low-price channels such as physical outlet centers operated directly by the brands or indirectly by independent retailers. In order to minimize the risk of free riding in the integrated online and offline channels, the firms and their sales intermediaries should clearly define rules for rebates. For example, it may be sensible to exclude sales items from channel integration functions in order to save process costs in this product category. The price sensitive customers do not value these services, while missing integration features may prevent service- and advice-seekers to purchase products on sale in the online and offline stores. A second possibility is to define which products are on sale across all channels. Thus, the likelihood is reduced that customers that take advantage of integration features at retailer A do not take part in the sale and purchase at retailer B offering a sale.

2.3 Generating a Market-Based Long List of Integration Possibilities

After having analyzed the competitive environment and the dominant customer journeys across the industry's routes to market, firms have to identify an initial set of promising activities to integrate their distribution channels. The selection of

integration activities depends on two basic premises: Whether firms adopt a defensive or offensive channel integration mode and which direction the integration activities should take. Within the first premise, it is important whether the company acts as an integration follower or wants to set new distribution standards (see Chapter A.2.1). Firms that have chosen to adopt a defensive mode of channel integration essentially allow the competitors to define the initial set of integration measures. These firms have to develop mechanisms to monitor the competitive actions and distributional trends and evaluate the emerging options based on their own customer behavior, channel structure, and capabilities. Firms with an offensive mode of channel integration cannot rely on their competitors' actions. In addition to monitoring emerging trends in consumer behavior, they will also have to interpret these developments with respect to the underlying latent customer needs and translate them into novel distribution integration formats. These two domains are depicted in Figure 38.

Figure 38: Integration Selection Capabilities according to Channel Integration Mode



Firms that focus on a defensive mode of channel integration need to identify the competitors' actions and integration strategies. Competitor orientation includes gathering information on (1) who the key current and future competitors are, (2) what technologies and strategies they use, and (3) whether these technologies and strategies are attractive for the target customers (Narver and Slater 1990). Firms that focus on

their competitors' integration actions as their major frame of reference obtain an indication of their own strengths and weaknesses concerning their channel systems and their relative standing in the market place (Han et al. 1998). Even though firms with a competitor-oriented approach to channel management forgo the need to develop novel integration strategies that are new to the market, they face the challenge to obtain information on competitors' strategies as early as possible. There are several possibilities for firms to obtain knowledge of their competitors' actions from external or internal sources. Examples are shown in Table 32.

Table 32: Competitor Monitoring Information Sources[17]

External Sources	Internal Sources
• Industry experts • Conferences and congresses • Consulting firms • Industry publications and analysis reports • Research publications • Trend scouts and trend reports • Customer experiences with other competitors • Competitor homepages and blogs • Firm databases	• Own sales employees • Market research department reportings • Benchmarking projects • Online competitor monitoring software tools (e.g. Website Watcher, Digimind Website Agent)

Especially for companies that want to leave the beaten path of channel integration activities and focus on an offensive mode of channel integration, it is difficult to identify the hidden distributional needs of the customers. Herhausen (2011) identifies four approaches to unveil latent customer needs: (1) Customer Integration, (2) Qualitative Methods, (3) Trend Watching, and (4) Scenario Approaches. These methods also apply for the identification of possible ways of how to integrate distribution channels. Customer Integration refers to directly incorporating customers into the development and assessment of integration possibilities in order to gain a deep understanding of how customers use the firm's services (Gulati 2010). This is the most

[17] Following Pernet (2011).

concrete approach of identifying possible channel integration strategies. Qualitative methods comprise focus groups with distribution experts and customers or virtual product tests. Monitoring emerging customer trends can be used as indications of future usage patterns and shifts in the distributional landscape. Here, it is important to identify the specific potentials of these developments. Especially, it is key to distinguish between short term fads and long term trends in customer channel usage (Schögel 2007). The most abstract way to discover potential integration possibilities is to develop future retail scenarios that comprise a set of possible future channel configurations including disruptive technologic developments and the impact of unforeseeable future events (Herhausen 2011).

Second, the directions of channel integration have to be defined. As stated in Chapter A (conceptual development) of this dissertation, integration between channels can go both ways. For example, when integrating the online and offline channels, firms have to decide whether they want to implement the integration features in the online store (as in this study), want to connect the physical stores with the online presence, or both. Depending on customer channel journeys, there may be a predominant direction for channel integration that reflects the overall customer behavior and is therefore more likely to be successful. However, firm history and the existing lead and transaction channels may also play an important role in defining the direction of channel integration. Companies that started out with traditional physical distribution channels and that have acquired sound knowledge of selling offline as well as a loyal customer base in their physical stores rely on their physical distribution system as the lead channel. These firms are more likely to integrate online and offline stores by promoting their physical presence via their homepages and online shops. A prominent example is the American apparel and outdoor equipment retailer REI that was introduced in the previous chapter. The firm started out as a cooperative with physical stores. Meanwhile, REI has successfully extended its business into the Internet and has become one of the biggest players in the industry in North America. Part of its success is the close integration of its offline channels into the online presence.

On the other hand, firms that started out as online pure plays and add physical channels at a later stage may intend to keep their online presence at the center of transactional activities and use physical stores as simple showrooms without extensive selling objectives. A recent example of this strategy is the American apparel manufacturer and retailer Bonobos. The firm started out as an online pure play retailer in 2007. Its co-founder and CEO did not intend to introduce physical stores until the

company learned that about half of its prospective customers would not purchase apparel online because they wanted to feel and try on the merchandise. Bonobos has opened six so called "Guide Shops". These are small physical stores with no more than one employee that carry a reduced but representative assortment. The Guide Shops are intended to be showrooms and fitting stations where customers can touch and feel the product and find the right sizes. However, the customers do not leave the Guide Shops with merchandise. Instead, employees place an online order that is shipped to the customer the following day. Therefore, these shops do not have to carry a large inventory with all available colors and sizes for each product. Other examples of online distributors testing integrated physical presences are eBay pop-up stores that do not carry actual products but only scannable screen displays or Gap's online retail branch Piperlime (Clifford 2012).

The identification of the integration activities for the participating companies in this study made use of a mixture of approaches. The channel managers of both companies had acquired a sound understanding of the multichannel behavior of the relevant customer groups. Both companies have a physical distribution history. While firm A realized that customers are likely to value an additional direct online distribution channel, firm B had already implemented comprehensive home shopping solutions via its online store and a magazine/catalogue. For both firms, the offline stores can be considered the lead transaction channels. The results of the customer survey revealed that ROPO-behavior is a common form of customer behavior for both companies and that most customers purchase the relevant product categories online as well as offline. This finding of the survey was supported by anecdotal evidence from shops and retailers who report that many customers arrive at the store predominantly due to information gathered on the Internet. It was acknowledged that online integration features in physical stores are an interesting option, e.g. to increase offline assortment availability with on-site online panels. However, for both companies, the currently most promising integration direction is from online to offline. By linking the online shops and manufacturer homepages with the physical outlets the manufacturers intend to capture the large ROPO-shopper segments and improve the relative market positions of their online stores compared to non-integrated competitors.

Consequently, improving the online store by connecting it to the offline lead channels was identified as the most promising approach of channel integration. Further insights that were obtained by multichannel workshops, in the case of firm B, as well as discussion of the competitive market environment and customer behavior helped in

defining the channel integration activities. The empirical studies outlined in this dissertation can be interpreted as integrating the customers by conducting field experiments to determine the practical acceptance and potential success of the theoretically defined integration measures by the relevant customers. Furthermore, by incorporating channel choice decisions, it was also possible to gain insights on possible impacts of competing third party online stores before the implementation was carried out. The generation of the initial set of integration activities is described in Chapter A.2.3.4.

3 Creating Internal Fit: Organizational Structure and Cross-Channel Corporate Mindset

3.1 Organizational Structure

After firms have identified an initial set promising customer-oriented integration activities it is important to assess whether these integration measures are feasible with respect to a firm's organizational predispositions and cross-channel capabilities. As initially stated, the internal organizational structure of firms operating a portfolio of independent distribution channels that are defined as separate "departments" or business units is not suited for channel integration. Separate channels are desirable if firms deliberately decide not to integrate their touch points and use their channels to serve different customer segments with different needs. However, if a firm has decided to move away from serving particular customer segments in each channel and to adopt the multi-optional and multichannel view of its customers, it will have to adopt a channel configuration type that allows speaking with one voice to the cross-channel customers (Calder and Malthouse 2005).

The difficulty in becoming a multichannel-oriented organization is often historically rooted. Most manufacturers and retailers, especially in the distribution of physical goods, started out as single channel firms with physical stores or sales forces. When the Internet became a popular information and sales channel, many firms felt the need to be present in this niche channel and set up independent organizational entities to handle the online business (Neslin and Shankar 2009). Today, the online channel, as well as the other channel types (e.g. sales force and physical distribution), are still

considered as independent business entities. Previous research suggests that centrally led channel systems are more profitable than systems in which each channel optimizes its own business (Berger et al. 2006; Yan et al. 2010). However, the costs of channel coordination may not be justified by the benefits in terms of increased customer loyalty and sales. It is therefore necessary for firms to realize the benefits of channel integration at reasonable costs of setting up the organizational requirements. The following steps highlight the core processes that were identified for firms to match potential integration strategies with their internal organization structure to create internal fit.

Match external integration activities to multichannel strategy: The integration activities that are promising from the external point of view have to fit into the current multichannel strategy of the firm. More specifically, the organizational structure has to reflect the intensity and goals of an integrated channel system in order to allow for the effective realization of integration measures. As shown in Section A.2.3.1, there are different multichannel strategies that represent different integration intensities. Therefore, the first step is to match the identified integration activities with the desired multichannel strategy of the firm. This step is needed to identify and omit those options that do not fit into the current strategy or, alternatively, reassess the strategic goals the firm wants to achieve with its distribution system.

There are a number of organizational challenges such as separate data and logistics management, conflicts of interests between the channel members, or lack of managerial control that make it hard to implement channel integration features that are desirable from the external point of view. If the identified channel integration methods cannot be realized due to organizational restrictions, a company has two basic options. It can either decide not to implement the channel integration measures or make the necessary changes in its organizational setup. Changing the internal organization, however, is usually a strategic decision involving additional complexities. Therefore, a thorough matching of the integration measures with the firm's internal capabilities and circumstances is important to obtain an indication of externally desirable options are feasible in the short and long run, which should be dropped, or whose importance justifies a change in the distribution strategy. The evaluation procedure should involve all decision makers of the affected channels, the relevant control and function, and the authorizing management.

Define a multichannel network architecture: Not all multichannel strategies are designed to achieve full integration across all channels. Today, most multichannel

firms do not operate completely integrated multichannel environments (Shop.org and Group 2008). Rather, each multichannel company has to decide its individual degree of integration and standardization across individual channel functions (Zhang et al. 2010). It is therefore necessary to define which particular channels should be integrated and to what extent. Specifically, a clear definition of the multichannel network helps avoid the 3E trap of selling everything everywhere to everybody (McKinsey/Company 2000). This step builds on the initial analysis of customer channel journeys and comparing the necessary adaptions in the relevant channels against the existing channel network.

Defining the multichannel network architecture especially involves the definition of the concrete role of each channel, its functionality, and how the integration features will be implemented among the defined touch points. The result of this step is a clear map of the channel architecture, including channel functions. Based on this plan, it is possible to identify and estimate the necessary infrastructural changes and the resulting costs. The analysis of the gaps between the existing channel architecture and the desired future integrated system can then be used to determine the focus of the necessary adjustments in the channel organization. Depending on the final intensity of channel integration, the necessary changes of the organizational structure are fundamental and long-term in nature. It is important for firms to develop a long term objective of their ideal multichannel architecture, including the necessary infrastructure, coordination mechanisms, and technologies. The insights generated in the assessment of competitive developments and trends in customer channel needs are useful for defining a long term scope for the optimal organizational structure of the channel system. Retail scenarios and long term market forecasts should be translated into corresponding scenarios for the channel architecture. Developing forward-looking roadmaps for the company's channel structure helps shape present short-term organizational decisions and avoids mistakes that will lead to complexities in the future.

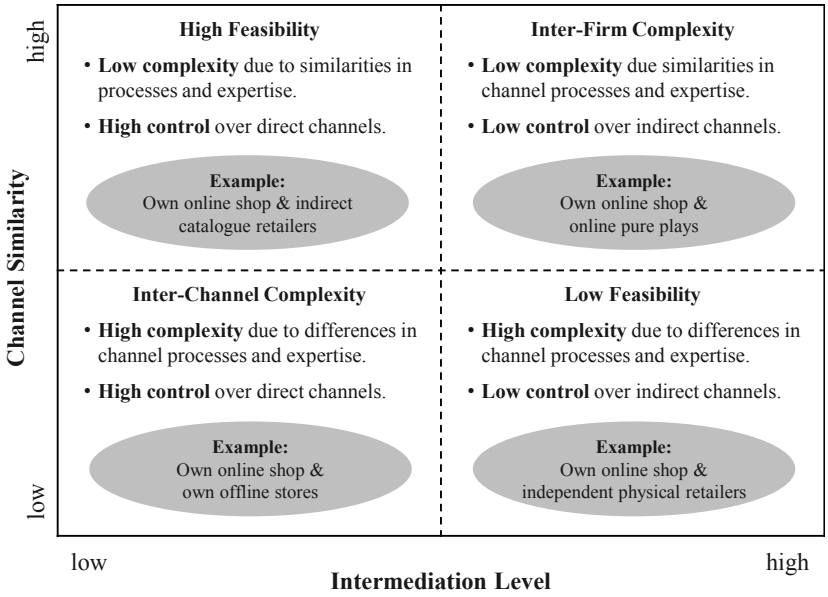
Even though the organization of the distribution system is a strategic decision, the changes within the channel organization should be carried out successively. Firms have to plan the organization of tomorrow, but develop distribution solutions for today (Hoppermann 2011). Instead of building a foundation with no visible business value, firms should concentrate on delivering initial integration solutions that meet customer needs and are feasible. The implementation of integration activities may be easier for channels that share similar characteristics and internal back ends, i.e. who share a high

degree of "channel similarity". Two such channels are online shops and catalogues. For example, the online shop and the catalogue are both home shopping channels and essentially work on the same business model and are likely to share the same IT infrastructure. Furthermore, a firm may concentrate on integrating its direct routes to market in order to avoid the additional complexity of managing wholesalers and independent retailers. Hence, the degree of "channel intermediation" serves as an additional indicator of integration feasibility.

The two dimensions "channel similarity" and "channel intermediation" imply an internal feasibility matrix for multichannel integration. This matrix is depicted in Figure 39. The creation of internal channel fit is easier to achieve for channels that a firm can directly control and which already share similar functions and organizational resources. Depending on the channel integration activities it may be useful to begin by aligning similar direct channels and gather additional knowledge and success stories along the way, before integrating more "distant" channels or even indirect channel partners. In addition to the customer oriented urgent integration activities, the integration feasibility matrix can help identify the "quick wins" of the internal channel alignment which may be implemented before having to tackle fundamental organizational restructuring.

The stepwise integration according to effectiveness and feasibility accounts for the current management structure and a firm's channel history. Finally, the proposed integration feasibility matrix also sheds light on the future focus on channel mediation versus disintermediation. For companies that are seeking to generate a highly integrated channel structure, the value of sales intermediaries may be challenged due to the increased complexity of integration operationalization. Unless no strong integration is intended, the sales partners are willing to cooperate and invest in the relationship with the manufacturer, or the intermediary is adding specific value to the customer relationship, indirect channels may prove to be an unnecessary cost and may be bypassed when the manufacturer has the capability to reach its customers directly (Chung et al. 2012; Payne and Frow 2004; Tsay and Agrawal 2004).

Figure 39: Integration Feasibility Matrix



One of the most important challenges in building an integration-ready organizational structure is the coordination of information technology (IT) and logistics across channel borders. There are two important aspects of shared information systems for creating integrated multichannel distribution frameworks: First, an integrated IT structure makes it possible to link and analyze customer data in a holistic manner (Zhang et al. 2010). Second, shared inventory and merchandise management systems are a crucial factor for offering a seamless purchase experience and the feasibility of most integration measures. The first aspect of integrated IT systems is strategic in nature while the second aspect refers to the operational dimension of channel integration.

CRM data integration: Integrated channel systems profit from integrated information technology infrastructure. It is generally acknowledged that centralized data warehousing and reporting capabilities enhance customer relationship management

quality (Shop.org and Group 2008) and are an important building block of a customer-centric organization (Shah et al. 2006; Verhoef et al. 2010). The benefit of a cross-channel CRM system lies in the ability to link and analyze customer data across channels in a holistic manner in order to track multichannel customer behavior, generate a single view of the customer behavior, and assess profitability of multichannel customer segments. Furthermore, CRM information processes help design better value propositions and increase customer satisfaction and loyalty (Jayachandran et al. 2005). Practical experience has shown that the implementation of a CRM system is difficult and not always successful (Rigby et al. 2002). Implementing CRM systems across multiple channels further adds to the complexity. Shah et al. (2006) identify structure, culture, processes, and financial metrics as barriers towards becoming customer-centric organization.

CRM and the related IT infrastructure is a central element of multichannel management (Payne and Frow 2004; Verhoef et al. 2007b). From a channel integration point of view, CRM systems that are consolidated across different channels help realize many standard issues in integrated channel systems such as the simultaneous management of prices and product information, multichannel promotion activities, and an individualized relationship.[18] Information technology can be used to evaluate alternative marketing activities. Furthermore, multichannel customer information systems help generate knowledge of the industry structure, the role of the channel participants, and customer behavior across channels. Thus, multichannel CRM may be a powerful tool for the continuous reassessment of the channel strategy and to identify trends in customer behavior. CRM is therefore especially helpful in the early stages of channel integration by identifying the possibilities to increase the external fit of the multichannel system and develop informed integration strategies.

Shared inventory and merchandise management systems: Integrated and shared back ends are the base modules to configure the product assortment in a customer-oriented and cost-effective manner (Schögel 1997). The base modules serve as the IT backbone that have to be standardized horizontally across distribution channels if companies decide to integrate their customer touch points. The modules should be aligned depending on the specific channel requirements (Schögel 1997). It is not necessary to maximize the overall standardization of these systems. However, the modules should be flexible enough to allow for future expansions to different channel types.

[18] For a comprehensive overview of the functional scope of CRM usage in integrated multichannel environments refer to Heinemann (2011).

Furthermore, the standardization of the IT and logistics processes increases with the shared functions of the channel system (Schögel 1997). For example, the individual touch points of firms that adopt a customer-oriented distribution strategy with a highly integrated channel configuration share a great number of common roles and functions. For these firms, it is beneficial and necessary to combine the support of these common functions in a shared infrastructure.

Shared inventory and merchandise management systems allow for cost reductions and the more efficient management of inventories. However, they also play a decisive role for channel integration activities. The managerial workshops and the joint development of the empirical study with the participating firms revealed that cross-channel inventory and assortment management is of greater concern to decision makers than obtaining a single view of the customer and implementing cross-channel CRM systems. This anecdotal evidence is supported by research findings that highlight the complexities of integrating marketing and logistics system (Bowersox et al. 2000; Chen et al. 2011; Fawcett and Magnan 2002; Jayaram and Tan 2010). However, coordinated inventory and information management are the prerequisite of channel integration approaches that go beyond aligning soft factors such as brand appearance and information provision. A true seamless purchase experience can only be provided by firms that are able to deliver assortment information across different channels in real time and speak with one voice to customers from a single source of truth.

For the participating firms in this study, organizational structure is consequently an important aspect of implementing the identified integration strategies as well. Both companies sell physical products via their own direct brand shops and via several intermediaries such as large department stores, specialty retailers, outlets, and home shopping firms. In addition, firm B also operates its own home shopping channel consisting of a catalogue and an online store that is integrated into the firm's homepage. Both companies are able to monitor customer behavior in each channel and also sufficiently across channels. With respect to the identified integration strategies (Facilitating Research Shopping and Increasing Online Aftersales Service) a general challenge is the alignment of operational processes to allow for cross-channel information exchange on availabilities, assortments, and store/warehouse inventory. The possibility to display inventory statuses via the web shop and track assortment availabilities in real time still needs to be implemented. Aligning the accounting systems of the different channel types was also identified as an important challenge. This mainly affects the integration activity of returning online purchases at physical

stores (or vice versa). The accounting systems have to be able to process orders that originated in different channels. However, when channels are added successively as separate departments, different accounting solutions may have been implemented in each channel that are not compatible. At the time of the study, the companies had not yet solved this problem.

Concerning the two types of online integration activities that were tested in the empirical studies, inventory management systems and logistics have been identified as the crucial aspects for successful implementation by both firms. With respect to Facilitating Research Shopping, the challenge is to provide real-time information of assortments in each physical store. Furthermore, appointment scheduling should be automated so that reservations at a given store can be made directly via the online shop. This also includes processes to assure that on-site sales personnel are informed about appointments and available for customer service. The second integration feature, Increasing After Sales Service Online, can only be implemented if the accounting and clearing systems are aligned across channels so that online purchases can be handled and refunded at any physical cash register.

Based on the feasibility matrix it becomes clear that the integration should be carried out with the direct physical brand store as a first step. The firms have greater control over their direct channels and should focus on creating the organizational requirements within their direct channels to support further channel integration activities. For firm B, which already operates an online store, this entails the focus on introducing an IT solution that provides the necessary assortment and inventory information in real time in the online shop. For firm A, which had previously not operated a direct online store, it is important to decide whether the new online store should be integrated from the start or whether the launch will be accomplished without the integration features. In either case, firm A is advised to choose an IT backbone that allows for future integration with its direct physical channels from the start in order to avoid future costs of changing processes and IT solutions.

Due to the high organizational costs and complexities of integrating the organizational processes, the firms could follow a stepwise implementation approach (Schögel 1997). The integration activities may be only introduced and evaluated in the direct channels before moving on to the most important sales intermediaries and eventually the total channel system. By focusing on the direct channels, both firms can concentrate on solving the internal challenges of organizational restructuring, changing processes, and implementing the necessary support systems. Direct channels can be controlled

directly and decisions can be realized faster. Based on the insights gained from the direct channels, the firms can approach their most important indirect sales partners to intensify cooperation and discuss possible strategies to extend the integrated online shops to the physical stores of the intermediaries.

Generally, it may be unrealistic to integrate all indirect physical channels in the direct online store. The firms are advised to prioritize their integration activities for the different indirect channel types. The high costs of integrating physical intermediaries into the online shop may not pay off for unimportant or small retailers. The smaller the sales volumes of certain physical intermediaries and thus the smaller dependency from the manufacturer, the less sensible the financial investments will be for the sales partner, as well as for the manufacturer. In order to manage future integration of indirect physical retailers, the firms should develop a business plan including incentive systems from the manufacturer side in the form of financial and operational support, as well as sales volume commitments from the retailer. This helps quickly evaluate the feasibility and establish a manageable integration roadmap of future integration projects without reinventing the wheel for each potential new retailer.

3.2 Generate a Cross-Channel Corporate Mindset

The reorganization of product-focused to customer-focused organizational sales structures includes the reduction of functional boundaries, establishment of cross-functional teams, an increased importance of key-account management, and cross-channel customer segment managers (Day 1997; Homburg et al. 2000; Montgomery and Webster 1997; Rust et al. 2010; Storbacka et al. 2009). The transition of the distribution system towards an integrated and customer-centered channel organization is a complex and evolutionary process that entails conflicts and tensions due to cultural differences, fear of losing market share, power and influence, as well as diverging goals among the channel participants (Bucklin et al. 1997; Eliashberg and Michie 1984; Schögel 1997; Webb and Lambe 2007).

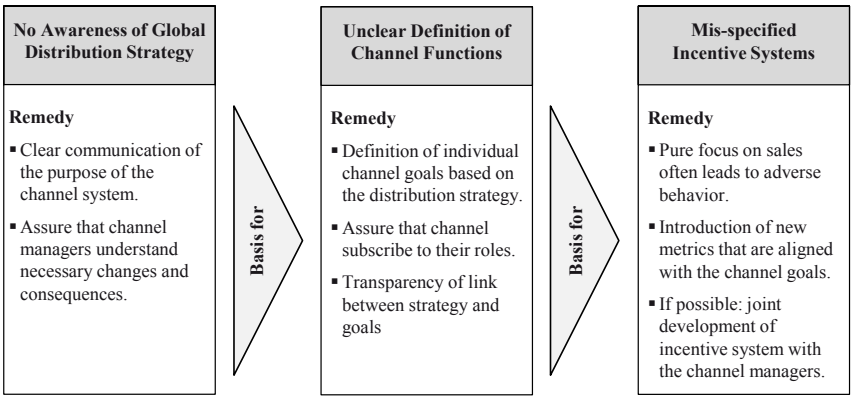
The traditional separation of distribution channels in silos and separate business entities has led to a decentralized, individual management of the different customer touch points. Managers often neglect the larger context and only consider the specific marketing function within their domain (Weinberg et al. 2007). However, channel

integration requires a holistic view on the customer experience and focusing on the needs throughout the customer life cycle. It is therefore important to generate a cross- and multichannel mindset and the awareness for the "big picture" throughout the organization. The channel functions and incentive systems have to be designed in a way that supports effective multichannel management and to avoid short-sighted optimization of single channels without considering interdependencies, or in the words of Louis Gerstner, Jr., the former CEO of IBM from 1993 to 2002: *"[...] (The) integration of "front office" functions that touch the marketplace [...] can produce significant benefits, but the integration must be executed superbly or the benefits will be decimated by the parochial interests of individual units"* (Gerstner 2002, p. 248). Creating a cross-channel mindset starts by sharing information across channels and establishing possibilities of managerial interaction at all levels e.g. by creating organizational interfaces or assigning employees as "channel representatives" for each customer touch point who form collaborative teams to ensure coordination and unification of the channel system (Weinberg et al. 2007).

The handling of channel conflicts is a critical aspect of multichannel management in general and specifically for the creation of a cross-channel mindset. If channel management is to become less myopic on the operational level, the channel functions, objectives, and ultimately the incentive schemes have to enable and support this new philosophy. Channel managers can only be as multichannel minded as the organization and evaluation systems allow them to be. For example, when physical outlets earn commissions based on sales volume, they have little or no incentives to share data across channels and transfer customers to a different channel format.

Thus, when moving towards an integrated channel organization, it is important to address possible channel conflicts and develop an action plan of how to handle and mitigate diverging interests. As shown in Figure 40, channel conflicts result from a lack of awareness of the superior distribution strategy, unclear channel functions, and misspecified incentive systems (Day 1997; Heinemann 2011). It is important that all channel managers understand what specific role they play within the channel system, why this function is important, and how they know if they are successfully fulfilling their role. An open and clear communication of the channel strategy and, where applicable, joint elaboration of the channel functions and key performance indicators helps avoid channel conflicts.

Figure 40: The Main Sources of Channel Conflicts in Channel Integration



Schögel (1997) proposes three phases of managing channel conflicts. In the first phase (called "unfreezing"), the management has to create awareness of the changes and openly communicate the desired reconfiguration of the channel system. This includes being transparent about the consequences of the integrated multichannel approach, addressing potential conflicts for the channel partners, provide reasons for the intended changes, and also offer options to deal with the new situation. In the second phase ("moving"), the changes are implemented and the conflicts have to be addressed adequately. This means that the problems arising for the channel partners have to be minimized, even though not all conflicts will be avoided. Finally, the third phase ("freezing") begins after the changes have been implemented. The manufacturer has to manage the new - and in case of channel integration usually intensified - conflict level by introducing new incentive schemes, defining clear rules and regulations of how conflicts are handled, consult external experts, and actively creating win-win situations for all channel participants (Schögel 1997). Besides open communication and win-win situations, the realignment of incentive systems and the use of adequate channel evaluation metrics rewarding cross-channel behavior are important factors for winning over the channel participants (Day 1997; McKinsey/Company 2000; Weinberg et al. 2007; Yan et al. 2010). The implications for generating a cross-channel mindset and the management of channel conflicts for the participating firms in this study are addressed by applying the three phase concept of Schögel (1997).

The discussions and managerial workshops conducted with responsible managers at firm A and firm B revealed that looming channel conflicts are indeed a major hindrance of adopting a cross-channel mindset. While the general management generally favors cross-channel approaches and the overall optimization of the channel system from a customer-centric perspective, bringing channels closer together is a delicate and political issue internally, as well as externally. Consequently, channel conflicts should be actively managed and addressed throughout all implementation phases if the companies decide to realize the integration activities.

Concerning the first phase, firm A had not yet started to communicate a potential direct online shop to the channel stakeholders. The results of the customer survey were used to obtain a general indication of the effects and desirability of such an additional channel. If the decision is in favor of the new channel, firm A should develop a clear concept and include the direct and indirect channel stakeholders early on. For firm B, on the other hand, further integrating the home shopping and physical channels is an important strategic issue that has been addressed internally by holding meetings and workshops with the responsible marketing and sales managers. Firm B had previously introduced and tested innovative channel management approaches. The first steps of openly communicating the strategy to the external and internal channel partners have been made.

Nevertheless, it is important to keep the momentum and continue the open discussion of the next steps if both firms decide to move ahead with their channel integration strategies. Currently, both firms are still in the phase of unfreezing the current channel organization. Cross-channel sounding boards should be used early on to explain the necessity of the changes, address crucial issues, and obtain feedback from the affected channel partners. The feedback can be used to anticipate pitfalls of the unfreezing phase and to identify the necessary adjustments in the channel coordination and incentive systems. It is important that the firms develop a solid, comprehensive, and ideally a commonly agreed upon argumentation explaining the necessity of the channel integration features. The result of communicating the integration strategy should be that all channel partners understand the intentions and the consequences.

During the second implementation phase (moving the conflict level) the actions of both manufacturers should generally address the problems of the affected sales channels. In this phase it is important that the firms decide whether to integrate only the direct channels or also the most important sales intermediaries. The companies generally have greater control over their direct channels. In this case, it is easier to

adopt a strict coordination approach by clearly communicating the new channel functions and goals. When indirect channel partners are involved, this strict channel coordination is not possible. In this case, the firms should adopt a more participative channel coordination style and include the sales intermediaries in the changes and emphasize the reconciliation of mutual interests (Schögel 1997).

In both cases, the firms should not decide "top-down" without acknowledging and accounting for the specific situations of the direct and indirect partners. For the direct channels, it should be clearly communicated that the changes will be made. However, the new roles and especially the new goals of the physical stores and the online shop should be jointly developed and a consensus of all channel partners has to be reached. If the indirect channels are part of the integration activities, it is important to jointly develop the integration activities themselves. The firms have to be ready to make the necessary concessions and be willing to compromise. The close cooperation with sales intermediaries may mean that it is not the project of one of the firms anymore, but a cooperation project of both manufacturer and indirect sales channel. The advantage is that both firms can profit from each other in terms of knowledge, experiences, and processes. Possible disadvantages are the loss of power and increased complexities in managing an inter-firm project.

Furthermore, the findings of the studies suggest that the type of online integration also plays a role for the intensity of channel conflicts. The goal of Facilitating Research Shopping is to increase customer traffic in the physical stores. The results show that long-term customer loyalty as well as the direct willingness to purchase at the physical stores is increased. The conflict intensity of this integration activity is therefore relatively low for the offline stores. The online channel, on the other hand, may not be willing to hand off potential customers to its physical counterparts. Increasing After Sales Service Online increases conflicts at the physical store level because customers tend to shop online more and feel less need to visit the store. Depending on whether the objective is to win the acceptance of the online channel, the offline stores, or both channel formats, the integration activities could be implemented successively or at once. This example also illustrates that organizational changes in channel responsibilities, goals, and management rules should be adapted to prevent the traditional sales-oriented optimization of individual channel silos. This will be addressed in the third phase of integration implementation.

The objective of the third phase (freezing) is to achieve a productive level of channel competition and to avoid tensions and negative conflicts among the distribution channels (Schögel 1997). Generally, this can be achieved by changing and adopting rules and regulations that are in line with the new channel functions. The joint development of the integration measures with the channel managers revealed that compensation schemes are an important challenge to convince stakeholders of the direct and indirect channels. If the individual channels are still evaluated on sales performance, provisions should be adjusted to account for the origins of the transaction. In the current example, Facilitating Research Shopping would entail that the online shop receives a defined compensation for each customer that searches at the firms' online shop and decides to purchase at the physical store. In the case of Increasing After Sales Service Online, the online shop may be subject to a recompensation fee that will be credited to the account of the physical store. Rewards for cross-channel behavior create financial win-win situations for both channel types.

Other win-win situations are also directly connected to the joint development of the integration activities and assessing the possibilities for both distribution channels. For example, the firms could stress that by focusing on increasing overall customer value across all channels, the brands are more likely to be in the relevant set of the customers and eventually loyalty online as well as offline is increased. Furthermore, integrating the offline stores into the online shops in terms of Facilitating Research Shopping does not necessarily drive customers away from the online store to purchase at the nearest physical store. It will also create a positive halo effect from the physical stores to the manufacturer's online shop and thus create a sustainable competitive advantage online. In the case of online integration in terms of the ability to return online purchases at a physical store, it is true that operating expenses may increase for the offline stores. However, the firms should emphasize that customer returns and complaints are a powerful possibility of generating valuable customer contacts. Previous research has shown that winning back customers and efficiently handling customer complaints reinforces customer loyalty and positive word-of-mouth (e.g., Homburg and Fürst 2005; Maxham and Netemeyer 2002; Smith et al. 1999). If physical dealers manage to efficiently handle complaints or returns, customers may become loyal to the store. The physical stores should perceive returns from the online shop as additional customer traffic and the possibility of realizing cross-selling potentials and generating future loyal customers. In order to foster this positive approach on channel integration, the firms could support the physical stores by providing on-site sales personnel with

special training for turning customer contacts into valuable leads for the offline channel.

The results of the studies conducted for this dissertation can be used to underline the argumentation that the tested channel integration activities significantly improve customer evaluation of the online store and also lead to higher loyalty in the online and physical channels for both firms. The market research activities were carried out by an independent institution with existing customers. The insights serve as a starting point and "common denominator" for all channel stakeholders. The results can help the firms' channel managers to establish a consensus that online integration in terms of Facilitating Online Shopping has positive effects on customer loyalty online as well as offline and does not cannibalize the physical stores. Furthermore, the fear of the physical channels that allowing for the return of online purchases at offline stores will increase inter-channel competition between the direct online store and the physical channel formats can be alleviated by the finding that this integration activity helps establish a competitive advantage online without reducing customer loyalty or purchase intention at the existing offline stores. However, the study results also suggest that some cannibalization may occur between the firms' direct online store and the independent online shops. By building its argumentation on these findings and by offering independent sales intermediaries to take an active part in the channel integration process, both firms should be able to find effective ways of reducing channel conflicts and convincing all channel stakeholders of the relevance and advantages of integrating the online and offline customer touch points.

4 Integration Activity Evaluation and Implementation Strategy

Before integration measures are selected for implementation, firms have to evaluate and compare the alternatives. This implies the identification of the most relevant and feasible integration activities from the long list of integration options that was generated by analyzing the competitive environment and customer needs (see Chapter A.2.3.1, E.2, and E.3). Since not all integration measures that are attractive from an external point of view are internally feasible and not all integration activities that a firm can easily implement are necessarily the best from the customer perspective,

companies have to weigh up the potentials of each alternative against the internal costs of process alignment and reorganization.

The basis of the evaluation of channel alternatives are the external fit (potentials) and the generation of internal fit (costs). Thus, all determinants and results identified in the internal and external fit analysis can be used to evaluate the integration alternatives. Scoring models can be used to make the trade-off between the external opportunities and the internal costs. Scoring models include a set of evaluation dimensions, weighing factors that measure their importance, and performance scores indicating how well a given integration activity fulfills each dimension. The performance score of each evaluation dimension is multiplied with its respective weighting factor. The resulting values are summed up across all evaluation dimensions to obtain the overall performance score of a specific integration alternative (Erichson 2007; Homburg and Krohmer 2009). The advantage of scoring models is their flexibility. Each firm can adopt its own scoring approach. An exemplary suggestion for the analyzed integration alternatives in the study plus two additional integration possibilities is presented in Figure 41.

The measures of the scoring model are used to obtain a common performance measure to rank the integration activities based on firm specific requirements. This yields an indication of which activities should be implemented right away, which integration measures may be implemented at a later stage, and which activities should be dropped. The minimum score for implementation, as well as the cut-off values for dropping and postponing alternatives, are again firm specific.

In the present case, negative values would indicate that the internal costs of implementation are higher than the external potential. Thus, direct implementation is not an issue and the alternative may be dropped or reevaluated at a later stage when internal capabilities and circumstances have changed. Alternatives with high positive values should be prioritized since they have a relatively high potential to increase customer value and a firm's market position compared to the internal costs.

Figure 41: Exemplary Scoring Model for Integration Activity Evaluation

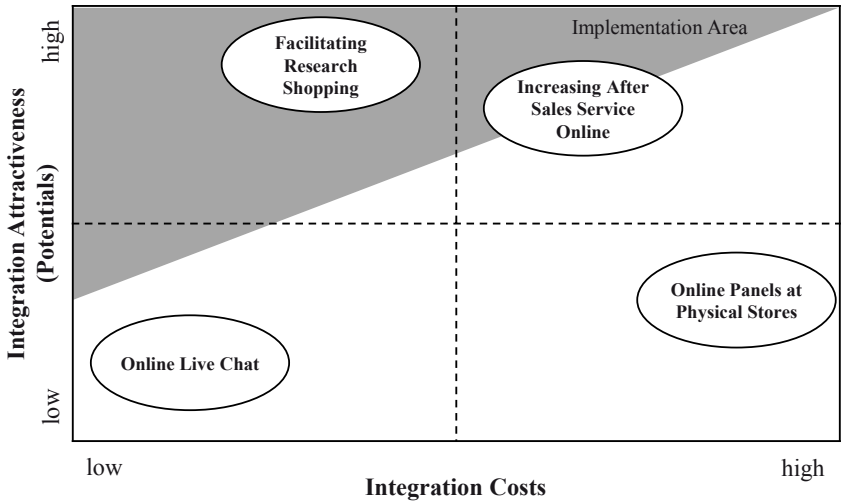
		Shortlist of Integration Activities			
Potentials (Evaluation from 1 to 10)	**Weight**	**Facilitating Research Shopping**	**After Sales Service Online**	**Online Panels at Physical Stores**	**Live Chat at Online Store**
Competitive Position	20%	10	7	5	2
Customer Analysis	80%	10	9	7	5
Score Potentials	**60%**	**10**	**8.6**	**6.6**	**4.4**
Costs (Evaluation from 1 to 10)					
Organizational Costs	50%	8	10	9	5
Cultural Complexities	50%	4	9	10	3
Score Costs	**40%**	**6**	**9.5**	**9.5**	**4**
Overall Score	**-**	**3.6**	**1.36**	**0.16**	**1.04**

Instead of summing up the potentials and costs into one performance score, firms can alternatively calculate the aggregated scores for potentials and costs separately. The two scores are then plotted in a matrix with the dimensions' market potentials and implementation costs. The four quadrants of the matrix provide a simple overview of the strategic attractiveness of each integration option depending on their market potential and implementation cost. An exemplary decision matrix is shown in Figure 42.

The decision matrix visualizes the market attractiveness, or potentials, of the identified integration activities, as well as their associated implementation costs. It may be sensible to directly use the values of the scoring results for visualization in a market potential-cost matrix. The first dimension, implementation costs, depicts the performance score concerning the internal complexity in creating internal fit of a specific integration activity. Since this score has negative valence, integration options on the left are associated with high implementation costs and options on the right are relatively easy to implement. The second dimension, market potential, represents the performance score of the external fit analysis with respect to customer needs and competitive position. The grey area represents the implementation area where the

expected potentials lie sufficiently above the expected costs. The firms have to define reasonable cut-off points for the quadrants and the slope of the implementation area. The implications resulting from the market potential-cost matrix are explained in the following.

Figure 42: Market Potential-Cost-Matrix of Integration Evaluation



Overengineered integration: Integration options that fall in this category are costly to implement and do not improve the market position of the firm. These options should not be considered for implementation and no long-term investment decision should be made to build up the necessary infrastructure and integration capabilities to realize this option in the future. A possible example of such an integration approach was the introduction of the first in-store online panels. At the time when they were introduced, customers and sales agents did not yet understand the potential benefits and preferred the on-site assortment. In addition, many panels were costly to maintain and broke down frequently.

Nice to haves: This type of integration activity is easy for firms to implement but does not significantly improve its immediate market position. If firms already have the necessary capabilities and technologies to easily create and handle such an integration feature, they may choose to bring it to the market even if it is not an immediate success. Future developments of customer needs may improve the external value of the integration feature and the firm may have a first-mover advantage. An example of such an integration activity could be a mobile app that features the same functionalities as an online store. Currently most customers are likely to prefer doing their online clothes shopping from their computers at home. However, integrated mobile shops may become popular in the future.

Expensive successes: These are integration options with high internal costs but also very high potential improvement of a firm's competitive position with respect to customer value and innovativeness. The strategic attractiveness of expensive successes depends on the longevity of the new competitive developments or the underlying evolution of customer preferences and needs. If the changes are fundamental and will persist over time, then the high investments to implement this kind of integration feature is advisable. If the underlying developments are only fads, however, the implementation costs may not pay off. Examples of expensive successes are the two types of online integration that were tested in this study. Both Facilitating Research Shopping and Increasing After Sales Service Online are costly to implement because they require new organizational processes, resources, and structures. However, the results of the study show that long term success in terms of customer loyalty can be significantly increased and that Facilitating Research Shopping is relatively less costly.

Quick wins: These are channel integration alternatives that can be quickly implemented using the existing resources and knowledge of the firm but have a comparably large impact on the company's competitive position. An example may be the introduction of an expert chat or an integrated call function in the online store allowing for direct interaction with a certified sales expert. This additional service may meet the needs of the service- and advice-oriented customer segments and further improve the service experience of these large customer segments in the online store.

F Conclusions

1 General Discussion

The introduction of this dissertation asked the general question *"Do customers perceive an integrated online shop as beneficial and what are the consequences on online and offline channel patronage?"* This question was further broken down into specific issues that had, to date, not been answered by previous research. In order to specifically answer the formulated research gaps, this section will summarize the results of the dissertation for each research goal.

Goal 1: Assessing whether online integration increase WTP online without negatively affecting customers' WTP in a firm's offline channel.

The first important insight is that customers display lower WTP and reference prices for the online channel compared to a physical store. However, the results of the first study suggest that online integration in terms of the combined use of Facilitating Research Shopping and Increasing After Sales Service Online leads to a higher WTP in a firm's online shop, while WTP at the physical stores is not negatively influenced. These results are encouraging for multichannel firms that operate both channel formats and cannot differentiate prices between their online and offline stores. By bringing their online store closer to the offline channel, they may be able to reduce price competition with their online pure play competitors and charge higher prices online.

Goal 2: Does online integration increase loyalty and purchase intention in the online shop and in the physical stores?

The results of the second study clearly show that online integration in terms of (1) perceived channel integration, (2) Facilitating Research Shopping, and (3) Increasing Online After Sales Service leads to higher customer loyalty and purchase intention in the online channel. With respect to the physical stores, customers who generally perceive the firm's online and offline channels to be well-integrated also displayed higher loyalty towards the firm's physical stores. Facilitating Research Shopping also increased offline loyalty, while the effect for Increasing After Sales Service Online was not significant. These findings suggest that online integration creates positive synergies for the physical stores in terms of customer loyalty. The SEM results suggest that channel integration in terms of perceived online integration and Increasing After Sales Service Online have a positive effect on purchase intention for the physical store

J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9_6,

when controlling for online service quality and purchase risk. Even though this finding is generally positive, it does not necessarily suggest that sales in the offline channel will increase or at least not be cannibalized by the integrated online store (see Goal 4). However, it may be inferred that online integration exerts a positive image transfer to the physical stores and does not deteriorate their customer value proposition.

Goal 3: How does online integration influence service quality and purchase risk in the online channel?

The empirical findings suggest that online integration generally increases perceived service quality of the online shop and simultaneously decreases online purchase risk. Significant results were found for (1) perceived channel integration, (2) Facilitating Research Shopping, and (3) Increasing After Sales Service Online. However, it has to be acknowledged that the effect for Increasing After Sales Service Online was only significant in the OLS regression models yet not for SEM.

Goal 4: Does online integration cannibalize the offline stores?

The direct effects of an integrated online channel on offline purchase intention and channel choice were not significant for perceived channel integration, Facilitating Research Shopping, or Increasing After Sales Service Online in a significant way. These findings indicate that online integration does not cannibalize the offline stores in terms of short term sales. Furthermore, in the light of the findings in Goal 2, the results can be interpreted such that the positive effects of online integration on offline purchase intention are strong enough that customers' decision to visit the physical stores is not significantly affected. Furthermore, the findings suggest that additional sales in the integrated online shop are generated from the non-integrated third party online retailers instead of the physical stores.

Goal 5: How does the maturity of the online channel affect the relative importance of online channel integration for online and offline channel patronage?

The findings for firms A (low maturity) and B (high maturity) suggest that an integrated online store performs better in improving online service quality for new online channels with low maturity. No difference was found in terms of reducing online purchase risk between the new and the existing online shop. Furthermore, purchase risk plays a more important role for the creation of relative online loyalty in a

mature online shop, while service quality is a stronger driver for relative online purchase intention for customers of firm B (high maturity) compared to respondents of firm A (low maturity). The direct effect of online integration on relative online loyalty and purchase intention is also higher for firm B customers.

Goal 6: How do different forms of online integration affect online service quality, purchase risk, and channel patronage?

The different effects of Facilitating Research Shopping and Increasing After Sales Service Online were already addressed in the discussion of Goals 1 to 5. Generally, the findings suggest that both forms of online integration help increase online service quality, decrease perceived purchase risk in the online shop, and increase loyalty in the online channel as well as the physical store. Both forms of online integration increase purchase intention and channel choice in the firms' online shops, while they do not significantly decrease offline channel selection. However, it has to be acknowledged that the tendency to cannibalize the offline stores in terms of sales may be higher for Increasing After Sales Service Online. This cautious result - even though it is not significant in the empirical analysis - is not surprising. Increasing After Sales Service directly improves the service level of the online shop and does not provide incentives to visit the physical stores for purchase. Facilitating Research Shopping, on the other hand, is specifically designed to make it easier for customers to switch to the offline store to conclude the transaction.

2 Theoretical Contribution

Due to their specific advantages and disadvantages, as well as the resulting potential to generate synergies, the theoretical discourse on channel integration has centered around online and offline stores. This work acknowledges the previous focus on online and offline channels and extends the existing knowledge by identifying distinct integration activities and testing their effects in terms of customer reactions in an experimental framework. The analysis focused on two different integration features - Facilitating Research Shopping and Increasing Online After Sales Service - in an online store. To the best of the author's knowledge, this work is the first study to empirically test the effects of channel integration on customer WTP, loyalty, and channel purchase selection simultaneously for the online and offline channels.

Previous research has established positive attitudinal links from offline to the online channel. These findings were replicated by the empirical results of this study. However, the importance of the ROPO-pattern for customer multichannel usage, it is at least equally important to assess potential effects of channel integration from the online to the offline store. Therefore, the online channel was chosen to test the effect of integration on customer evaluations, loyalty, and switching behavior. The present dissertation extends the existing research on multichannel management in general, and particularly online integration, by establishing the missing link from the online to the offline channel and specifically manipulating integration levels using two realistic and feasible integration activities.

Previous research has established service quality and purchase risk as important factors for customers' WTP and their decision to use the online channel for purchase transactions. This study shows that online service quality and purchase risk act as important mediators for the effects of online integration for WTP, loyalty, and purchase intention in the online shop. Lastly, this dissertation addresses the ongoing debate of the creation of cross-channel synergies and managing channel cannibalization within the provision of a seamless multichannel purchase experience. To date, these issues have only been conceptualized but not empirically tested. The results of the studies suggest that online integration creates positive cross-channel synergies for the offline stores in terms of customer loyalty and does not lead to cannibalization of the physical channels.

3 Practical Contribution

To ensure relevance and a realistic approach, the specific implementation activities were selected in mutual discussion with channel executives of the cooperating companies. Operationalizing the integration activities in close cooperation with the channel managers of two independent firms, as well as setting up the study based on the homepage and the online store of existing companies and using actual customers as survey respondents, assured the feasibility and external validity of the integration dimensions and the research framework. The results of this dissertation have important implications for managers that plan to build an integrated channel system and to create a seamless shopping experience for their multichannel customers. These implications have already been discussed in Chapter E and are summarized in the following.

The results suggest that online integration is actually valued by the customers and can be actively managed. Thus, online integration strategies meet current customer needs and create additional customer value. Integrating the online shop or the homepage is a valid possibility to differentiate from online pure play competitors, increase lock-in for the ROPO customers, increase customer share of wallet, and decrease dependence from sales intermediaries. Furthermore, the fear of cannibalization and internal channel conflicts should not be exaggerated since the results suggest largely positive cross-channel synergies and non-significant cannibalization effects. However, channel integration is costly to implement due to the necessary structural and process-related organizational changes. Therefore, the decision to integrate distribution should be carried out after thoroughly assessing the competitive environment, the customer base, and the internal consequences, in order to achieve the necessary internal and external fit.

Firstly, firms have to analyze and define their current and desired future position within the competitive environment to define their distribution strategy. Depending on whether the strategic goal is to be a distributional market leader or to follow the competitive trends in the industry, managers should align their company's distribution system to the competitive environment by adopting the roles of Accepter, System Optimizer, System Innovator, or System Integrator. Being a market follower or leader has important implications for discovering implementation activities. While market followers, such as Accepters or Innovation Integrators, have to develop capabilities of monitoring competitive distribution trends, market leaders (System Optimizers and System Innovators) additionally have to develop the capability to discover underlying customer needs and translate them into novel channel integration formats.

Secondly, channel integration activities are only successful as they create customer value and adequately support customer channel switching needs. Channel managers should be aware of the type of customer segments that prefer to search and shop in specific channels and map the most dominant multichannel purchase patterns using customer channel journeys. By matching customer segments to the identified channel journeys, the service needs and expectations can be uncovered for each customer segment. Based on the importance of the individual segments, the results of this analysis help generate an initial long list of promising channel integration alternatives which are likely to create high customer value.

Thirdly, the identified integration options have to be feasible for implementation. Therefore, channel managers should create the necessary internal preconditions that

integration measures can be implemented and maintained successfully. The channels and the order in which integration activities should take place have to be defined according to channel similarity and the level of intermediation. Similar channels sharing the same logistic backbone are generally easier to integrate than channels that are different in terms of necessary skills and internal processes. Furthermore, direct channels are usually easier to integrate than indirect channels for which the firm lacks the necessary managerial control. In addition to channel selection, the alignment of internal logistic and IT processes are a crucial factor for successful channel integration.

Fourthly, managing channel conflicts is an important aspect of channel integration. Firms should therefore focus on generating a cross-channel mindset by clearly communicating the purpose of the integration strategy, defining the roles of each channel, and aligning the channel incentive system to the integration purposes. Close cooperation of all channel stakeholders is advised. Furthermore, channel coordination should be as centrally managed as possible. In this context, direct channels are usually easier to coordinate than indirect channels. Therefore, a firm should again first integrate its direct distribution channels in order to create positive examples for the intermediaries.

Fifthly, the market potentials and the internal costs of aligning the channel system for channel integration should be compared for each integration alternative to assess the overall benefit and desirability. The results from the external potential analysis and the internal cost assessment should therefore be jointly analyzed using scoring models or by each integration alternative on a matrix according to its specific market attractiveness and integration costs. The definition of the performance scores, the weighting factors, as well as the scoring dimensions should be jointly defined and negotiated in order to achieve support for the integration decisions across all channels.

4 Limitations and Future Research

Despite these novel insights some limitations need to be addressed which are also the paths for future research. Firstly, the products used for the analysis were sports and winter jackets. These products were chosen because they are representative for the product assortments of each cooperating firm and are sold frequently. Apparel is

especially suited for an initial investigation on the effects of channel integration. Clothes, especially high-level brands as used in this study, are rather high involvement experience products that can only be fully evaluated by personal fitting and trial. Nevertheless, apparel constitutes a major part of the home shopping business. Customers stay informed about the latest trends via the Internet and many people regularly purchase even high priced clothes online. Thus, it is reasonable that this study is focused on sports and fashion apparel. However, product type is likely to moderate the effects of an integrated online channel. Future research extending the focus from experience goods to different product categories or services may produce fruitful additions to the findings of this study. Future research that extends the focus from sports and fashion apparel to different product categories or services may produce fruitful additions to the findings of this study.

Secondly, the participants of the studies consisted of existing customers with relatively high loyalty and brand involvement ratings. The increases of customer loyalty and purchase intentions in both channels have to be interpreted with respect to this customer segment. With the given customer sample it was not possible to determine how new customers react to channel integration activities. There is no apparent reason why the basic customer reactions concerning loyalty and purchase intention should be fundamentally different between existing and new customers. There is initial insight that customer acquisitions in existing channels are supported by the introduction of a new channel format (Avery et al. 2012). Thus, there is reason to expect a similar effect for bringing channels closer together by increasing cross-channel integration. Nevertheless, future studies may incorporate non-existing customers for a firm to specifically test these synergistic effects of customer acquisition in new and old channel types and to model the possibilities of overall sales increases through channel integration.

Thirdly, the results of the moderation analysis did only partly yield the expected differences between firm A and Firm B. While some relationships were non-significant, additional exploratory analyses indicate significant differences between firm A and firm B which could not be fully explained by the hypotheses developed for this study. Additionally, different types of online integration activities could only be observed for firm A but not for firm B. Thus, additional insights in the underlying mechanisms of the effects of online integration are needed. Future studies should focus on the role of contextual factors and include additional moderators to investigate the

nature and origin of different effects of online integration, e.g. between firm types, and aim to establish a general explanation of the findings.

Fourthly, this research has been focused on the relationship between classic online shops and traditional physical stores. New technological developments and new forms of using the Internet are constantly evolving. Channel integration may also be an interesting option for the next generation of online customer touch points such as applications for mobile devices, location based services, and augmented reality technologies. In this context, the second possible direction of online-offline integration, i.e. channel integration in terms of including online features in offline touch points, was not part of this research. Future studies could also focus on assessing the effects of an integrated offline store.

Lastly, within this study it was only possible to test the effects of channel integration using scenarios and hypothetical online shops. Even though close cooperation with the channel executives of the cooperating firms was performed to ensure realistic scenarios, future studies should revalidate the results with actual transaction data and observed customer behavior in a longitudinal setting.

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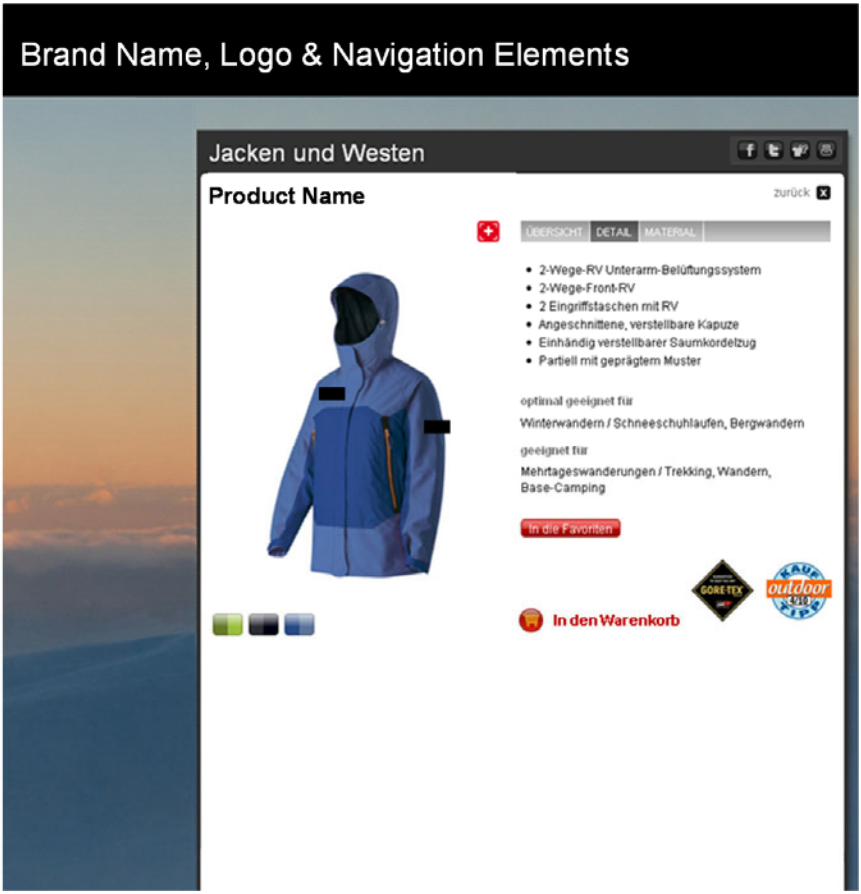
H Appendix

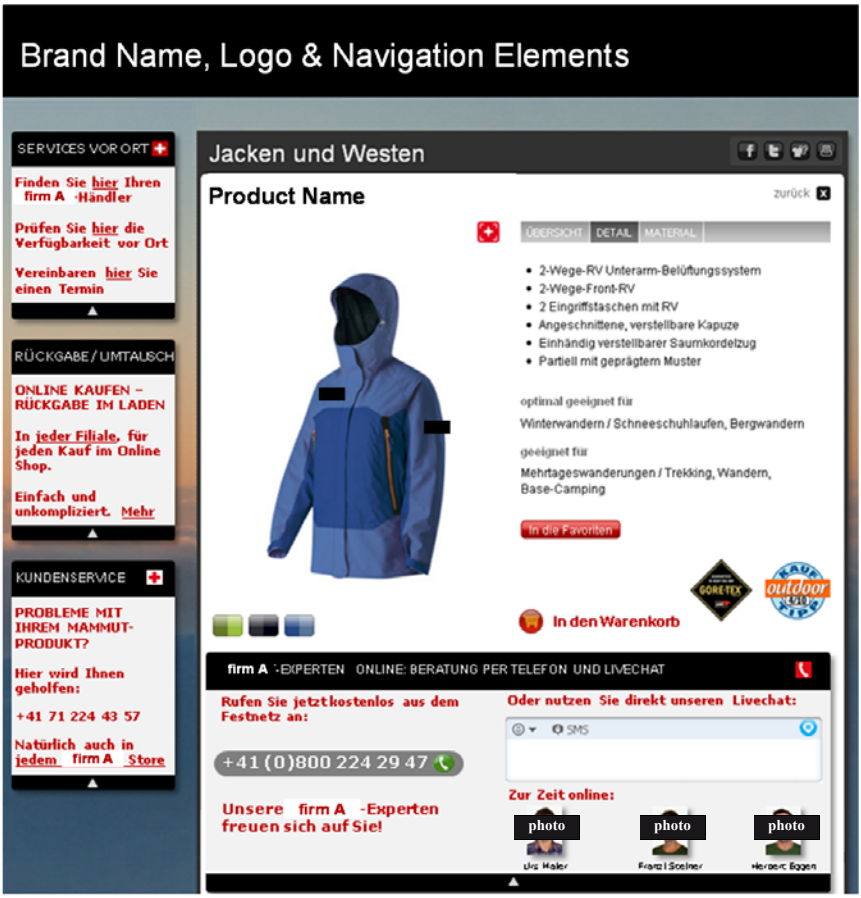
1 Exemplary Screenshots of the Online Channel Renderings Study 1

Firm A: No Integration Scenario



J. Binder, *Online Channel Integration,* DOI 10.1007/978-3-658-04573-9,

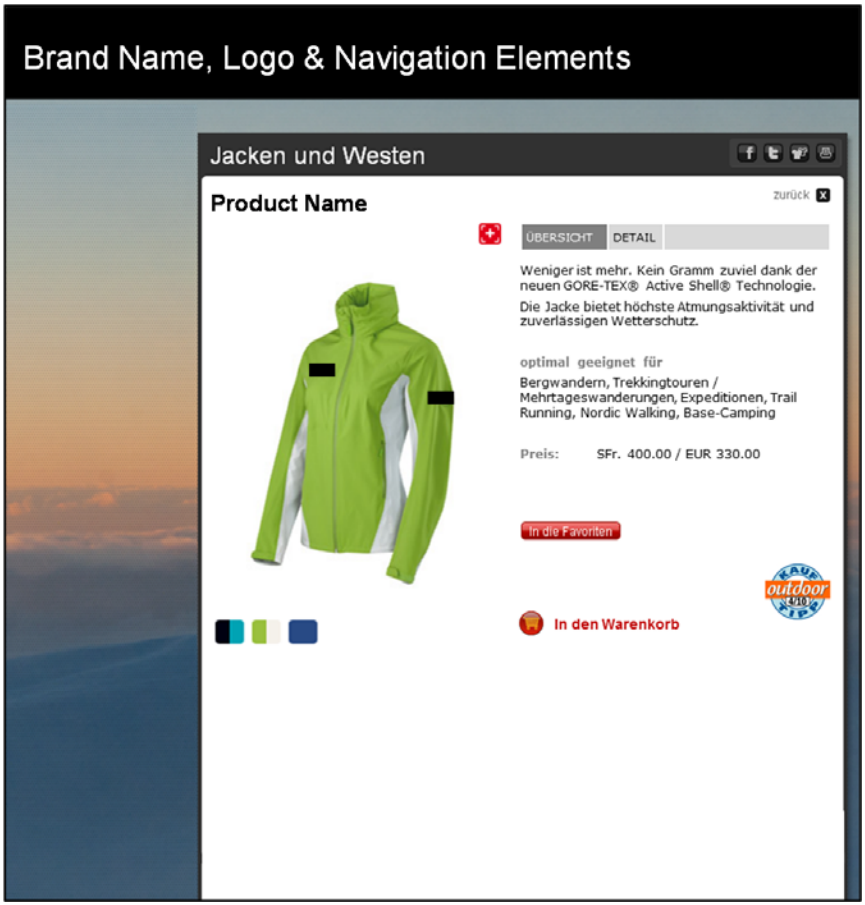
Firm A: (Full) Integration Scenario



2 Exemplary Screenshots of the Online Channel Renderings Study 2

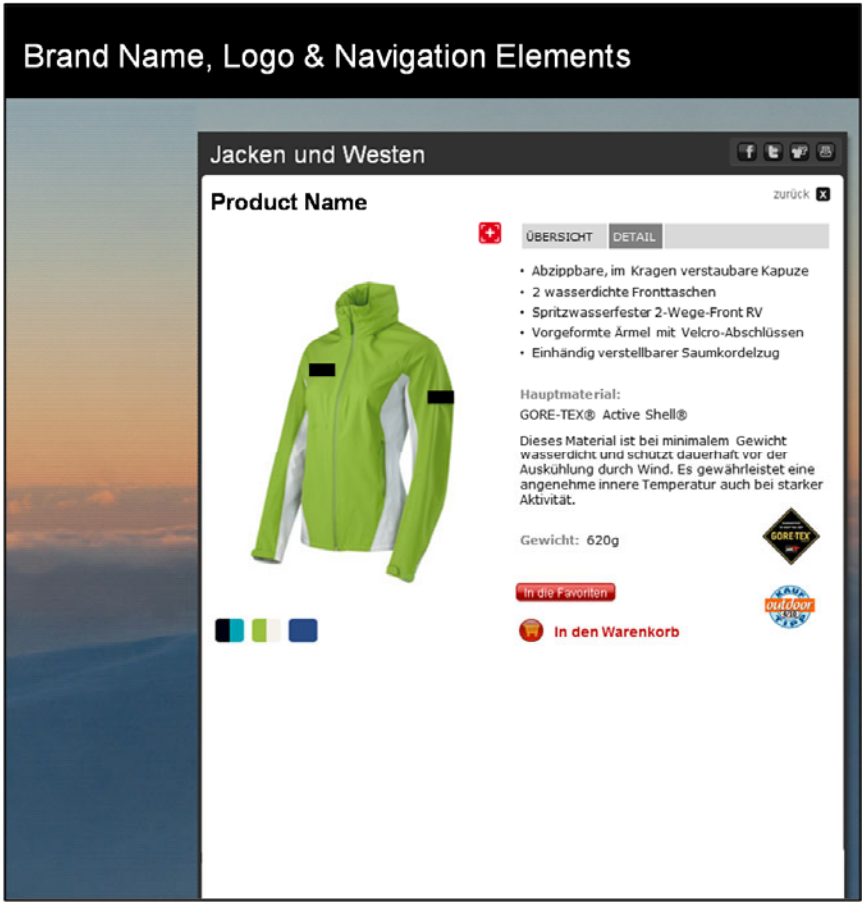
Firm A: No Integration Scenario

Overview Page



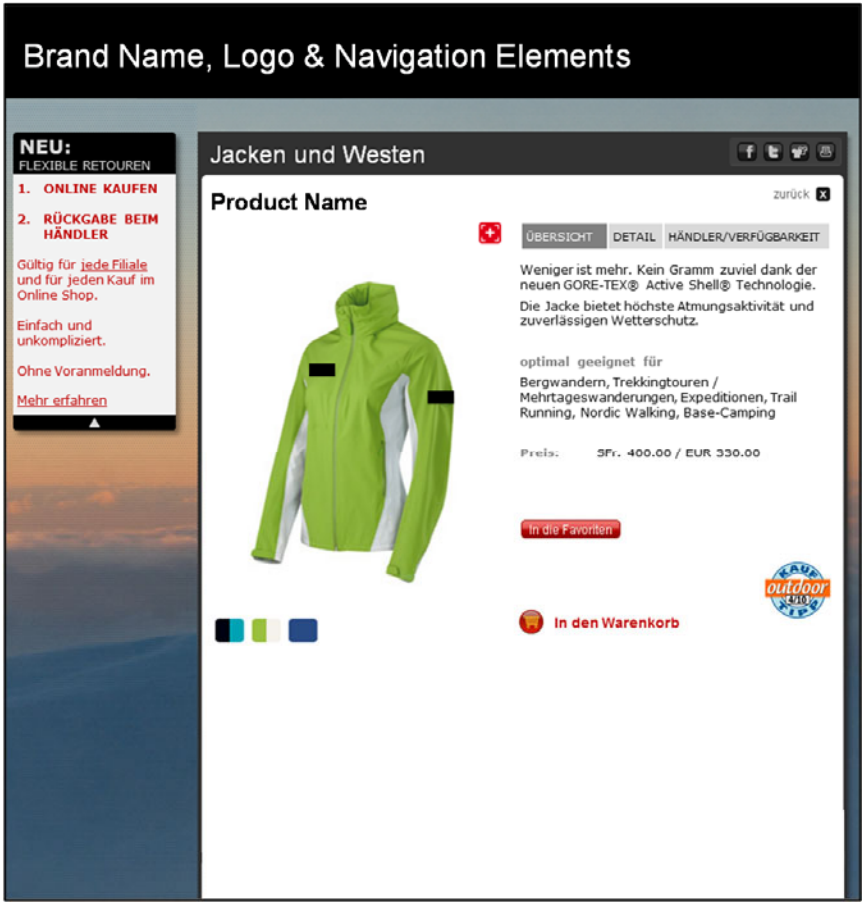
Firm A: No Integration Scenario

Detail Page



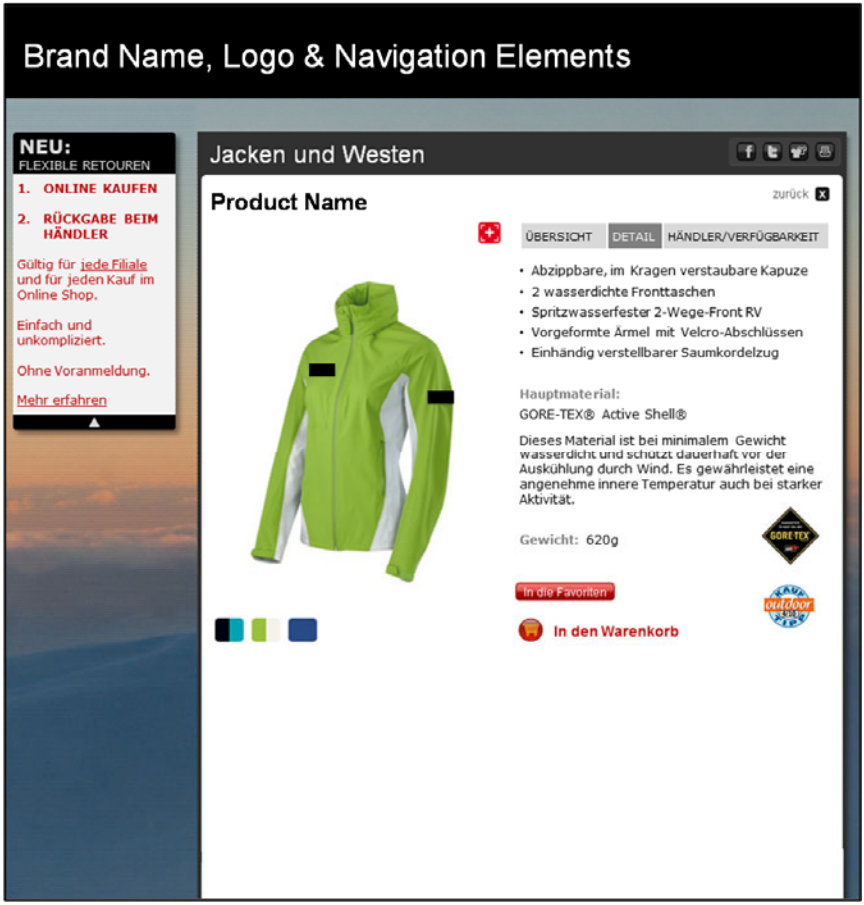
Firm A: Full Integration Scenario

Overview Page (Increasing After Sales Service Online)



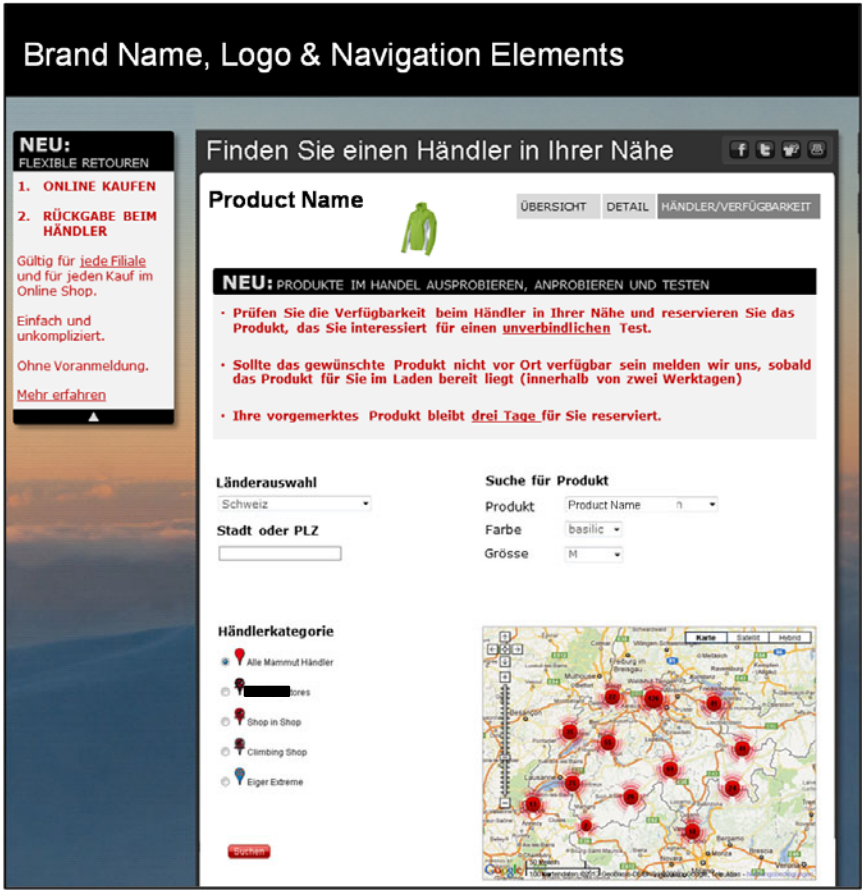
Sales Firm A: Full Integration Scenario

Detail Page (Increasing After Sales Service Online)



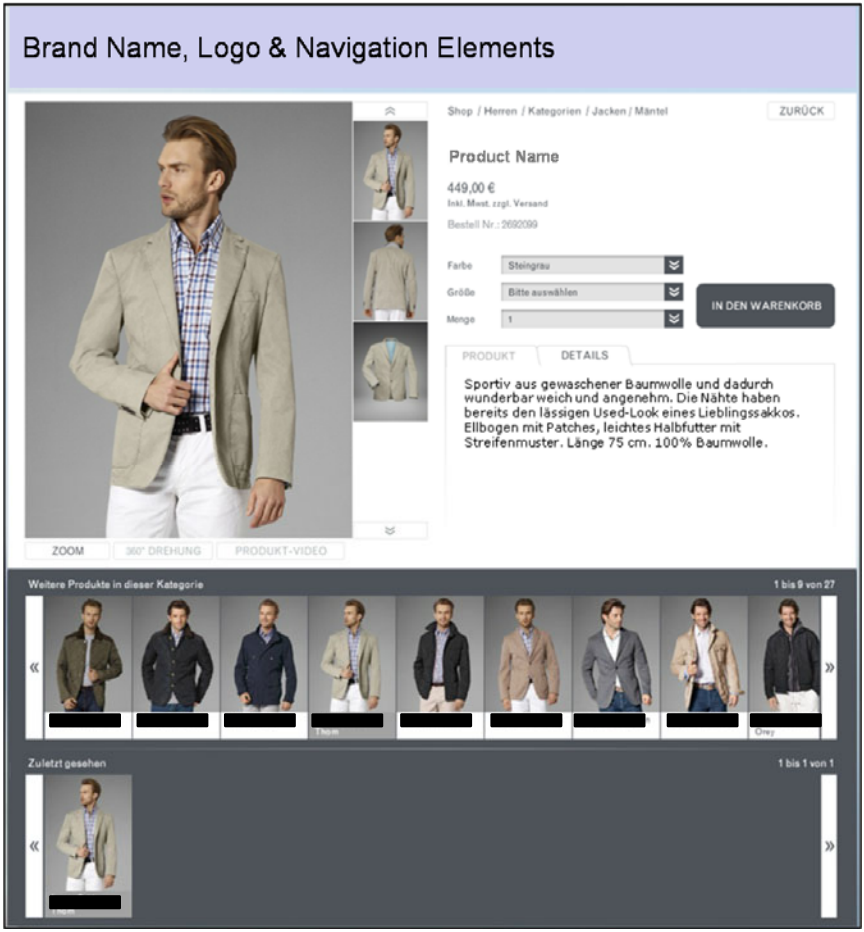
Firm A: Full Integration Scenario

Dealer Search Page (Facilitating Research Shopping)



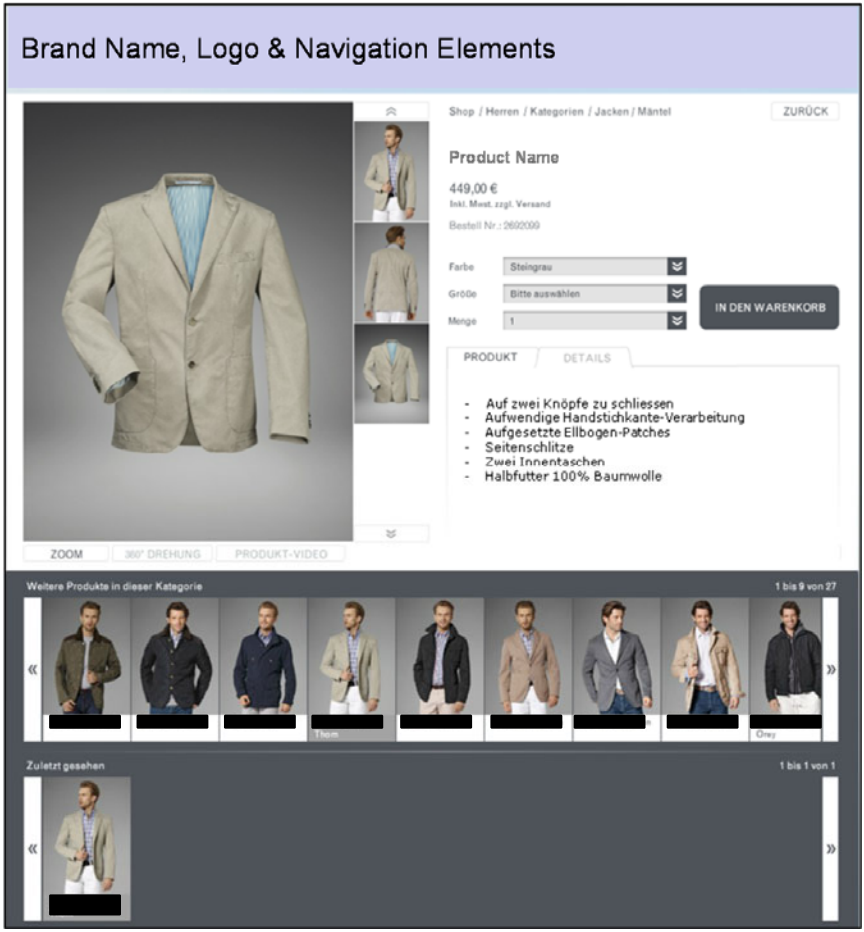
Firm B: No Integration Scenario

Product Page



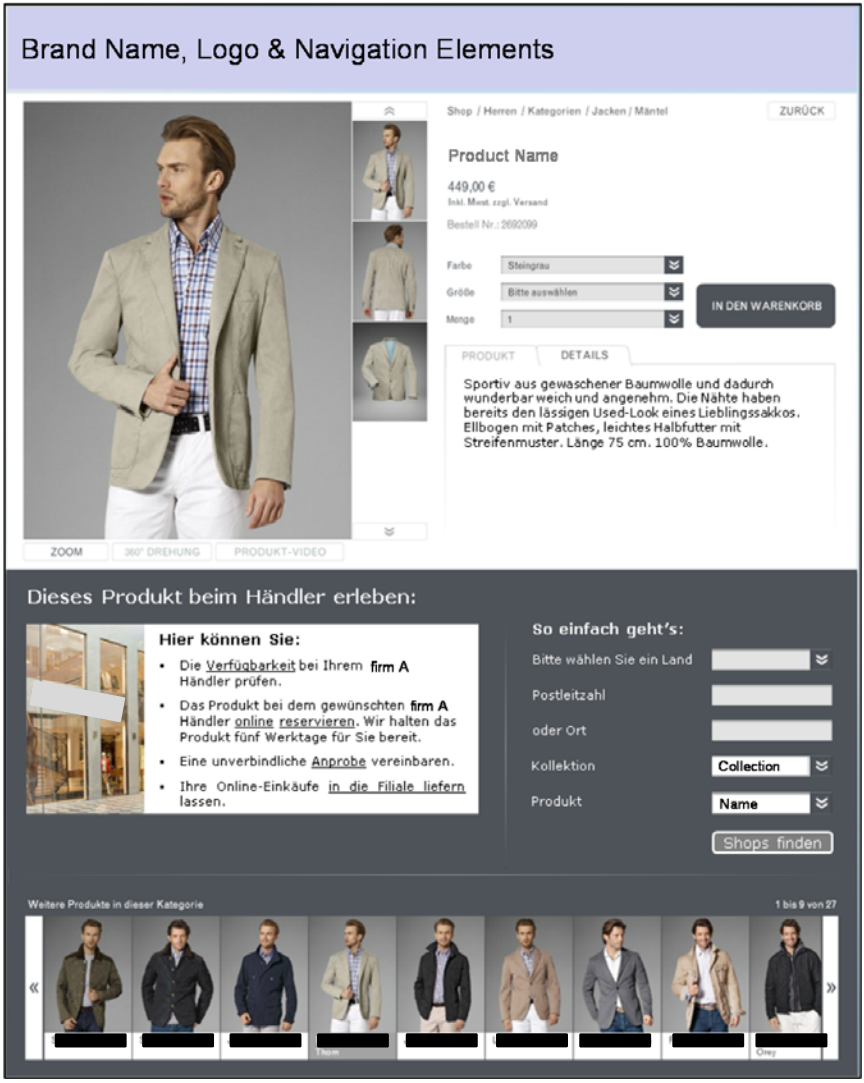
Firm B: No Integration Scenario

Details Page



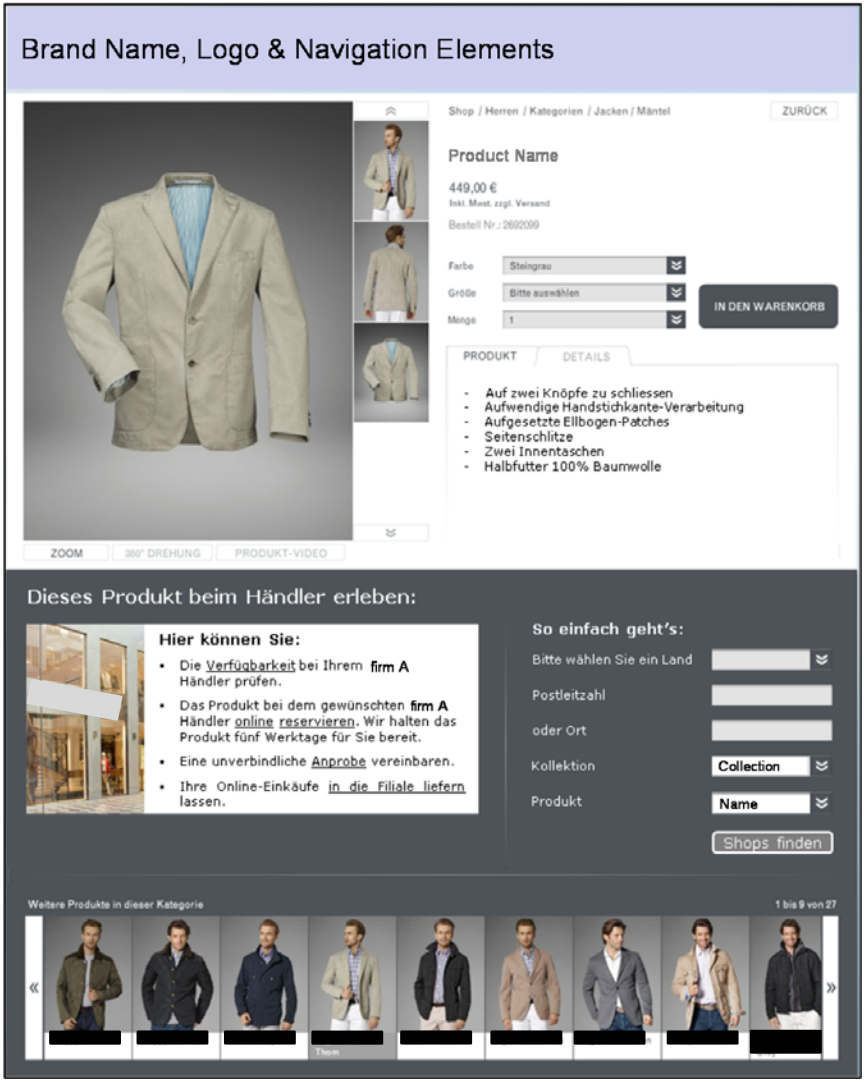
Firm B: Integration Scenario

Product Page (Facilitating Research Shopping)



Firm B: Integration Scenario

Details Page (Facilitating Research Shopping)



3 Scale Items and Psychometric Properties for Study 2

Perceived Service Quality of the Online Shop

Firm A/B: AVE = .61/.56; CR = 86/.83; α = .86/.84		A	B
so_1	I am very satisfied with the service that [brand] offers in its online shop.	.880	.863
so_2	The service provided in [brand]'s online shop fits my needs well.	.868	.824
so_3	The online shop of [brand] provides convenient services.	.803	.825
so_4	The online shop of [brand] provides helpful assistance.	.831	.795

Loyalty to the Online Store

Firm A/B: AVE = .54/.57; CR = .76/.80; α = .68/.78		A	B
lo_1	How likely will you use the [brand] online shop the next time you are looking for [product category]?	.842	.629
lo_2	How likely will you use the [brand] online shop for future purchases?	.772	.797
lo_3	How likely will you consult the [brand] online shop for future product information search and purchase?	.767	.697

Loyalty to the Physical Store

Firm A/B: AVE = .79/.86; CR = .92/.95; α = .91/.94		A	B
lp_1	How likely will you use the [brand] store or physical dealers the next time you are looking for [product category]?	.912	.955
lp_2	How likely will you use the [brand] store or physical dealers for future purchases?	.915	.957
lp_3	How likely will you consult the [brand] store or physical dealers for future product information search and purchase?	.949	.943

Perceived Integration

Firm A/B: AVE = .62/.50; CR = .83/.75; α = .82/.75		A	B
pi_1	The online shop of [brand] makes it easy for me to switch to a physical store.	.812	.839
pi_2	The services and functions in [brand]'s online shop and the stationary retailers complement each other.	.885	.798
pi_3	The physical retailers and the online shop of [brand] have coordinated and aligned their services.	.875	. 814

Perceived Purchase Risk in the Online Shop

Firm A/B: AVE = .55/.48; CR = .83/.79; α = .83/.78		A	B
pr_1	There is a good chance I will make a mistake if I purchase this [product name] in the online shop.	.841	.835
pr_2	There is a good chance that the [product name] will not meet my expectations if I make the purchase in the online shop.	.804	.787
pr_3	The purchase of this [product name] in the online shop is risky.	.801	.721
pr_4	The insecurity concerning the product characteristics (e.g. size and color) is high when I purchase it in the online shop.	.801	.768

Purchase Enjoyment Online

Firm A/B: AVE = .86/.75; CR = .95/.90; α = .95/.90		A	B
pe_1	It is fun to buy [product name] in the online shop of firm A/B.	.947	.906
pe_2	I like shopping on Internet sites such as firm A/B' online store.	.959	.911
pe_3	I enjoy shopping on homepages such as the online shop that I have just seen.	.950	.925

Need for Touch

Firm A/B: AVE = .74/.73; CR = .92/.92; α = .92/.92		A	B
nt_1	The only way to make sure a product is worth buying is to actually touch it.	.870	.880
nt_2	I feel more confident purchasing a product after physically examining it.	.901	.906
nt_3	There are many products that I would only buy if I could handle them before purchase.	.908	.881
nt_4	I place more trust in products that can be touched before purchase.	.903	.910

Product Involvement

Firm A/B: AVE = .84/.60; CR = .94/.82; α = .94/.81		A	B
pi_1	I am very interested in [product category].	.935	.865
pi_2	[Product category] is very important to me.	.962	.854
pi_3	Overall, I am very involved when I am purchasing [product category] for personal use.	.936	.846

Brand Involvement

$r_{firmA} = .89$; $r_{firmB} = .86$; $r_{combined} = 0.86$;		A	B
bi_1	I attach great importance to [brand name].	n.a.	n.a.
bi_2	[Band name] interests me a lot.	n.a.	n.a.

Internet Experience

$r_{firmA} = .32$; $r_{firmB} = .43$; $r_{combined} = 0.40$;

Compared to the general population, how would you rate your experience at searching and purchasing on the internet

ie_1	Searching	ie_2	Purchasing	r = .44	r = .32

Multichannel Self Efficacy

Firm A/B: AVE = .51/.54; CR = .76/.77; α = .75/.73		A	B
se_1	It is easy for me to successfully use and combine different distribution channels.	.827	.841
se_2	When shopping for [product category] I conduct look for information in different channels and information sources before making purchase.	.765	.794
se_3	I am confident of my ability to use different channels.	.851	.811

Brand Awareness

Have you known the [brand] before taking part in this study? [1] yes, [2] no

Channel Usage

Where do you usually look for information on [product category]?

[1] Internet, [2] Physical retailers (e.g. specialty and brand stores) [3] Other

Where do you usually purchase [product category]?

[1] Internet, [2] Physical retailers (e.g. specialty and brand stores) [3] Other

In which distribution channels have you already purchased products of [brand]?

[1] Internet, [2] Physical retailers (e.g. specialty and brand stores)

[3] The official brand store [4] Other

Channel Choice Continuous

How likely are you to purchase the [product] in the online shop of [brand]?

How likely are you to purchase the [product] in another online shop?

How likely will you go to a brand store or physical retailer before you purchase the [product]?

Channel Choice Discrete (only firm A)

Where would you purchase the [product]? Please choose one alternative.

[1] The online shop of [brand] you have just encountered

[2] A different online shop

[3] A physical retailer (either the official brand store or a specialty store)

[4] I would not buy the [product]

Distance to Physical Store

How far is the distance to the nearest [brand] store (either independent retailer or official brand store) in kilometers? (Please estimate)

Age

What is your age (in years)?

Gender

What is your gender

[1] Female [2] Male

Monthly Net Income

[1] 0-1.000 EUR, [2] 1.000-1.500 EUR, [3] 1.500-3.000 EUR, [4] 3.000-4.000 EUR, [5] 4.000-6.000 EUR, [6] 6.000-8.000 EUR, [7] >8.000 EUR, [8] no answer

Scenario Credibility

How credible was the described purchase situation in your opinion?

Scenario Comprehensibility

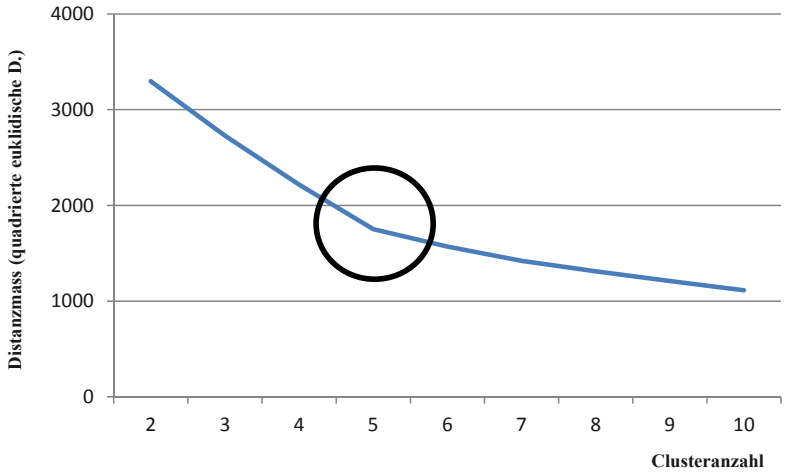
How difficult to understand was the described purchase situation in your opinion?

4 Customer Segmentation Results Firm B

For the segmentation of firm B's customers, the same methodology was applied as for firm A: (1) identification and elimination of outliers, (2) determination of cluster numbers using the Ward-Algorithm, and (3) assigning cluster membership using the K-Means-Algorithm.

The only difference between the customer segmentation approach for firm B compared to firm lies in the specification of the channel service output categories as segmentation variables. While general channel service outputs were used for firm A, firm B's channel service output variables were particularly specified for the online shop. These were in detail: (1) Personal real-time advice in the online store, (2) flexible return conditions for online purchases, (3) the possibility to check offline availabilities and assortments via the online shop, and (4) customer ratings and comments in the online shop. These service outputs were also measured using a constant sum scale. Overall, 12 outliers were detected and not used for the subsequent cluster analysis. The elbow-criterion clearly identified a five cluster solution.

Determination of Cluster Numbers: Elbow-Criterion Segmentation Firm B



The mean values of the constant sum scales for the five customer segments are displayed in the following table. The segments differ clearly in their service output preferences concerning the online channel. The biggest segment is the ROPO customers. For these customers, the ability to check offline assortments via the online shop (i.e. Facilitating Research Shopping) is the most important online service feature. The second largest customer segment is the after sales oriented customers. For this customer type, the possibility to return online purchases at physical retailers (i.e. Increasing After Sales Service) is the most desired online channel service feature. Only a small segment has similar ratings for personal advice, flexible return conditions, and checking offline availabilities online. All in all, these results also support the high relevance of the initially identified Online Integration activities which were tested empirically in this dissertation.

Customer Segments Firm B according to Segmentation Criteria

Online Service Outputs	**Advice-Seeking Customers**	**After Sales Oriented Customers**	**ROPO Customers**	**Review-Seeking Customers**	**Service-Oriented Customers**
Personal Advice	**63.17**	13.60	19.45	19.42	**23.89**
Return Conditions	12.08	**51.47**	18.43	8.13	**32.05**
Checking Offline Availabilities Online	12.65	24.87	**44.66**	14.18	**26.64**
Customer Ratings and Comments	12.10	10.06	17.56	**58.27**	17.41
Segment Size	**147 (18%)**	**186 (23%)**	**335 (42%)**	**119 (15%)**	**16 (2%)**

The matching of the customer segments to channel usage concerning product search and purchase does not reveal cluster-specific patterns. These results are similar to firm A. Thus, the same conclusion can be drawn for firm B: No specific segment-oriented strategy should be used when defining the functions of the individual channels.

Channel Purchase Behavior Patterns per Customer Segment for Firm B

	Advice Seekers	After Sales Oriented	ROPO Customers	Review-Oriented	Service-Oriented
Information Search					
Information Search Internet	**0.86**	**0.76**	**0.83**	**0.90**	**0.81**
Information Search Catalogue	0.55	0.48	0.51	0.48	0.44
Information Search Physical Retailer	0.68	0.75	0.71	0.64	0.69
General Channel Purchase Selection					
Purchase of Product Category in Internet	**0.81**	**0.76**	**0.80**	**0.90**	**0.81**
Purchase of Product Category in Catalogue	0.40	0.29	0.31	0.30	0.44
Purchase of Product Category in Physical Retail	**0.77**	**0.85**	**0.78**	**0.74**	**0.81**
Channel Purchase Selection for Products of Firm B					
Purchase in Internet	**0.95**	**0.92**	**0.94**	**0.98**	**0.94**
Purchase at Catalogue	0.44	0.29	0.31	0.31	0.19
Purchase at Indirect Physical Retailers	0.58	0.65	0.62	0.62	0.50
Purchase at Direct Physical Brand Stores	0.61	0.69	0.57	**0.47**	0.75