Cannibalization or synergy? Consumers' channel selection in online–offline multichannel systems

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ABSTRACT

This paper develops and empirically validates customer shopping motives taking account of customer channel selection in multichannel systems. As each channel is associated with certain advantages and disadvantages from a customer's perspective, we develop – based on behavioral considerations – a customer typology to classify different segments of customers. This enables us to empirically analyze the interrelationship between distinct shopping motives prior marketing research has suggested and cannibalization and synergetic effects in online–offline multichannel systems. Our results show that a higher degree of customers' convenience orientation in contrast to the degree of risk aversion and service orientation encourages the selection of the online channel over the offline channel. In addition, we develop and empirically analyze a typology of customers to classify distinct segments of consumers, highlighting the associated interrelationship of individual shopping motives and cannibalization and synergetic effects. Our results indicate that the desire for service, rather than risk aversion, could potentially cannibalize customers away from the online channel.

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1. Introduction

The importance of web-based channels to commercial transactions is growing rapidly (King et al., 2004). According to a recent OECD report, about 85% of the Internet users in the European Union employ the Internet to search for information regarding goods and services, while about 45% actually purchase goods online; comparable figures were reported for the United States as well (OECD, 2007). At the same time, Forrester Research predicts that online sales are growing steadily and will account for 8% of the total retail sales in the US in the near future (Reuters, 2010). From a customer's perspective, online shopping provides advantages in terms of time and effort savings as well as the option to search for and compare information (Rohm and Swaminathan, 2004). Then again, the use of traditional offline channels goes along with the option of expert advice, touch-and-feel shopping, and shorter delivery times.

Against the background of the increasing importance of online channels to retailing, many companies have implemented electronic business activities (Kollmann et al., 2009) and introduced a multichannel strategy. The provision of alternative distribution channels, i.e., online (web-based) and offline (station-based)

channels, can generate a competitive advantage as the customers' choice of an information or sales channel can result in an increased customer base and improved customer loyalty (Boehm, 2008). However, the integration of electronic channels by traditional enterprises goes along with substantial costs and increased risks, given that the failure rate in terms of acceptance of innovative information systems remains high (Davis and Venkatesh, 2004). More importantly, retailers adding an online channel to their more traditional distribution system face potential channel conflicts that might result in one channel cannibalizing sales from the other (Montoya-Weiss et al., 2003; Steinfield, 2004). Companies relying on a multichannel strategy are thus forced to pay attention to the drivers of customers' actual channel selection in the different stages of the purchasing process. This goes along with the desire to meet customer requirements and, consequently, to survive in today's competitive environment. In contrast to the negative potential cannibalization effects, a growing body of research focuses on synergies arising in a multichannel environment (Montoya-Weiss et al., 2003; Steinfield, 2004; Ward, 2001). These synergies imply, for instance, reaching new customers through the provision of online services; moreover, advantages might arise from spillover effects each channel can have resulting in increased purchases and cost reductions (Ward, 2001). To narrow the focus, cross-channel synergies are particularly important when customers choose from different channel types belonging to the same firm (Montoya-Weiss et al.,

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2003; Schröder and Zaharia, 2008). Specifically, it is critically important for both academics and practitioners to understand the causes of channel cannibalization in contrast to achieving synergies and the underlying consumer motives. Building on this, we examine the different attitudinal motives (i.e. convenience orientation, risk aversion, and service orientation) between consumers preferring online and offline shopping. If shopping motives differ between offline and online channels, channel design and marketing activities should be custom-tailored to match the respective customer. Moreover, our examination leads us to the identification of a consumer typology accounting for eight different types of consumers in a multichannel environment. This typology classifies consumers according to the employed channel and their channel switching propensity in the purchasing process. Nevertheless, little is known about the factors that influence channel cannibalization and about what makes consumers actually consider switching to a competing channel. On the contrary, previous research has been quite brief on how firms can take advantage of customer channel switching behavior in order to realize channel synergies. Our research presents an important step to fill these gaps. Overall, we aim at analyzing customer behavior in multichannel retail systems. More specifically, we elaborate on the question what customer attitudes drive actual channel selection in online–offline channel systems and how these attitudes relate to synergic and cannibalistic effects.

To address these research questions we undertake the following steps. First, we discuss the study's theoretical background in the subsequent section. Second, we present research design and results from an empirical study conducted in cooperation with one of Germany's largest mobile networks operators (MNO). We analyze 1238 actual consumer decisions in this MNO's multichannel system by means of logistic and multinomial regression. Third, implications for both research and practice are discussed. The paper closes by highlighting some promising avenues for future research.

2. Theoretical background

Research concerning the different purchasing stages is multifarious and offers different conceptualizations of the underlying process. While some authors propose a three-stage model (e.g., Steinfield et al., 2002), consisting of a pre-purchase stage, a purchase stage, and a post-purchase stage, Choudhury and Karahanna (2008) suggest a model comprising four stages by splitting the pre-purchase stage into requirements determination and vendor selection. Schröder and Zaharia (2008) propose a two-stage model for analyzing channel selection decisions, focusing on information gathering pervious to a purchase and the actual purchase itself. Since we aim at understanding consumers' channel selection concerning the information about services or products and the actual conclusion of a contract, it becomes apparent that we can limit our analysis to the first two steps of the transaction process. The first dimension is the information dimension, emphasizing the general satisfaction of customers with respect to their information requirements. The second dimension represents the concrete transaction. Although it is an interesting part of the transaction process, we intentionally exclude the post-purchase dimension, given that it is not central to this research, because it affects the channel selection decision neither for information search nor for the actual conclusion of a contract.

2.1. Information seeking and channel selection in online–offline multichannel systems

As a matter of course, information search and the actual purchase in a multichannel system do not necessarily have to be conducted using the same channel for both tasks. Accordingly, we analyze the underlying shopping motives that determine customers' channel selection behavior in this section. Generally, customers weigh up benefits (for example, perceived convenient browsing) and costs (for example, perceived search effort) against each other in the process of information search and purchase (Keeney, 1999; Shih, 2004). Important motivational factors that account for these perceived costs and benefits are in research commonly associated with convenience, risk, and service preferences (Chiang et al., 2006; Montoya-Weiss et al., 2003).

Station-based information and distribution channels are subjected to restrictions such as opening hours and distances. Many authors (Bhatnagar et al., 2000; Li et al., 1999; Rohm and Swaminathan, 2004) consider convenience orientation associated with these time restrictions and efforts going along with traditional distribution channels. Regarding the information stage, online channels reduce the effort going along with the search (Gupta et al., 2004a, 2004b). A customer can conveniently browse the Internet to search for a suitable product. Price and product information can be compared more easily through online channels while information searches through offline channels require the actual exploration of different stores. When it comes to the actual placement of an order, convenience oriented customers may want to complete the transaction online because it saves the time and effort associated with actually visiting a store of the multichannel retailer. Thus, the higher the customers' convenience orientation, the higher will be their propensity to seek information through the online channel first and the higher will be their propensity to place an order via the online channel.

The notion of risk perceptions affecting consumers' decision making is well grounded in research (Bauer, 1960; Taylor, 1974). With the introduction of online channels, the occurring risks, however, changed. Customers who perceive online channels as too risky might refrain from using them (Bhatnagar et al., 2000); however, the degree of risk aversion, rather than the actual perception of risks, is crucial, given that online distribution channels as part of a multichannel strategy are increasingly common (Horrigan and Rainie, 2002). Customers accumulate experience with every completed online shopping transaction and consequently, familiarity with and knowledge of online channels increases (Ha and Perks, 2005; Wu and Chang, 2007). Therefore, customers might actually perceive risks incurring from online channels (Gupta et al., 2004a, 2004b); however, the decision to take these risks becomes increasingly subconscious as the importance and distribution of online sales channels rises. On the other hand, the degree of risk aversion represents in our view a rather conscious attitude. This view extents the perspective of Featherman and Fuller (2003), who merely focus on perceived risk. Thus, our attention is on the customers' tendency to avoid risks, for example concerning secure payments and possible differences of the actual product from the product presented on the Internet. Both, information search and final transaction are therefore affected by customers' risk aversion. Thus, the higher the customers' risk aversion, the lower will be their propensity to seek information through the online channel first and the lower will be their propensity to place an order via the online channel.

Concerning service, offline channels feature the option of expert advice about offered products. Undecided or uncertain customers may want to council customer service before making a purchase decision. Although research has shown that in online channels the utilization of avatars, i.e. an animated graphic representation of a sales agent, positively impacts on consumers' attitude towards the product and their intention to purchase this product (Holzwarth et al., 2006), the online channel still falls behind the offline channel in terms of service possibilities and

emotional competence of real sales agent. Implementing avatars might result in competitive advantages over other online competitors, but still has to be considered only a weak substitute for real-life experience. Moreover, the possibility to actually touch and try out products before buying them is unique to offline channels—at least for physical items (Gupta et al., 2004a, 2004b). Consequently, the use of online channels may lead to uncertainties for service oriented customers since both information search and order placement are impeded in terms of physical product evaluation and face-to-face advice. Thus, the higher the customers' service orientation, the lower will be their propensity to seek information through the online channel first and the lower will be their propensity to place an order via the online channel.

2.2. Cannibalization and synergic effects in online–offline multichannel systems

The presented motivational factors affect a consumer's channel selection decision on the stages of the purchasing process. Channel conflicts in multichannel systems can occur in case alternative means of reaching customers compete with or bypass existing channels (Balasubramanian, 1998; Steinfield, 2004), which potentially leads to the cannibalization of sales from one channel by another. Limited cooperation across channels, competition and conflict, uncoordinated channels, and possibly confused customers can cause harmful effects (Deleersnyder et al., 2002; Steinfield, 2004; Ward, 2001). Contrastingly in multichannel systems consisting of traditional and electronic channels, synergies in terms of sharing, for example, a common infrastructure, common operations, common marketing, and common customers can be achieved (Steinfield, 2004). Likewise, complementary offers can enable a traditional firm to take advantage of e-commerce, in addition to its established retail channel (Steinfield, 2004; Sharma and Gassenheimer, 2009). Accordingly, a variety of benefits can be realized, such as potential cost savings, differentiation through value-added services, improved customer trust and loyalty, as well as market extensions (Steinfield, 2004). Building on the previous statements of this research, the

consideration of the distinctive shopping motives provides an explanatory approach accounting for customer channel selection behavior. To narrow the focus, we suggest a customer typology to classify different segments of customers, which will enable us to empirically analyze the interrelationship between individual shopping motives and cannibalization and synergic effects in online–offline multichannel systems. The construction of consumer typologies aims at dividing the totality of all individuals into groups that are mostly homogenous regarding their examined features (minimal internal variance) and as heterogeneous as possible between the identified groups (maximum external variance) (Hair et al., 1995). Generally, these groups divide individuals according to specific patterns of behavior and thus contribute to a clearer understanding of a complex phenomenon (Barnes et al., 2007). Consequently, the development of a typology can be considered a structured totality (Hoyer and MacInnis, 2004). However, this distinction into groups is not an end in itself; it requires a clear structure as well as a causal connection of the examined features (Barnes et al., 2007). Previous consumer typologies in the field of shopping motives identified possible characteristics for constructing such typologies (e.g. Bellenger and Korgaonkar, 1980; Rohm and Swaminathan, 2004; Tauber, 1972; Westbrook and Black, 1985). However, these approaches focus on shopping motives in general, but do not specifically consider the link between shopping motives and channel selection in online–offline multichannel systems. As described in the paragraphs above, the different motivations may lead to channel divisions on each stage of the purchasing process, and are thus the foundation of channel selection. Therefore, we extend previous research on consumer typologies by adding the channel type (online or offline) in each stage of the purchasing process to the investigation, thus classifying consumers according to their channel switching propensity.

Consequently in a particular online–offline multichannel system, eight different types of customers can be observed (cf. Fig. 1). The three classification dimensions resulting in these eight types are first information, channel, and channel switching propensity. Accordingly, customers are classified according to whether they
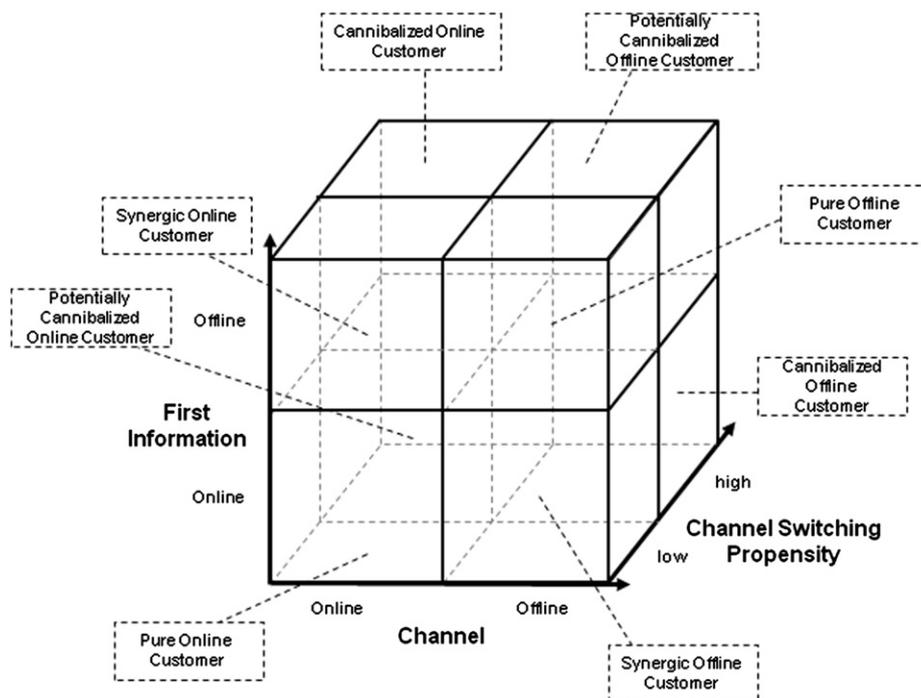

Fig. 1. Customer types in online–offline multichannel systems.

gathered the first information online or not, to whether they used the online or offline channel for their purchase, as well as according to their propensity to switch the channel in the purchasing process. First, online channels are attractive to customers due to their availability and accessibility. Analogously, pure online customers (customer type I) are not predominantly individuals, who are looking for the cheapest offer, but are more importantly characterized by striving for convenient shopping (Reichheld and Schefter, 2000). Contrastingly, a pure offline customer with a given system (customer type II) focuses on face-to-face contact with a sales representative and the immediate possession of a product (Rohm and Swaminathan, 2004). In recent research, channel cannibalization is considered a hazard for companies that they face when adding an online channel to their established offline channels (Deleersnyder et al., 2002). The effects of introducing an online channel in addition to an established offline channel are manifold. Alba et al. (1997) state that customers may choose the online channel over the offline channel in case the online channel provides more appealing features such as enhanced information search. Against this background, cannibalized online customers (customer type III), i.e. customers who were cannibalized by the online channel although they originally wanted to complete the purchase offline, were affected by the benefits the online channel offers them compared to the offline channel. Contrastingly, a cannibalized offline customer (customer type IV) was cannibalized by the offline channel although the customer originally planned to conclude the transaction via the online channel.

The first four customer types are completed by four additional types that help narrow the focus. A potentially cannibalized offline customer (customer type V) has the propensity to complete the transaction offline, but can also imagine completing the transaction in the competing online channel. Analogously, a potentially cannibalized online customer (customer type VI) would also be willing to complete the purchase in the competing offline channel. Conversely, customers may want to benefit from a multichannel environment since alternative channels may actually complement an offer, rather than replacing it (Montoya-Weiss et al., 2003). Thus, a customer might deliberately choose to gather information online to save time strolling around without having in mind to conclude the actual purchase through the online channel, because the customer is, for example, not willing to take the risk sometimes associated with online payment. These synergic offline customers (customer type VII) inform themselves in the competing online channel without imagining to complete the transaction online. Although such customers deliberately choose to employ the online channel for the purpose of information search, cannibalization does not occur since customers maintained their propensity to buy offline. Contrastingly, a customer might, for example, want to rely on expert advice before searching for the cheapest offer online to purchase a product. This synergic online customer (customer type VIII) grounds the purchase decision on expert advice gathered in the offline channel but concludes the actual purchase online. Fig. 1 illustrates this customer typology.

Taken together, this review of the literature illustrates that research has achieved a comprehensive understanding of the extreme ends of the continuum, i.e. pure online and pure offline customers. However, knowledge about the varying consumer behavior between the extreme ends is small, but nonetheless desirable. Naturally, beyond catering successfully to pure online and offline customers, firms establishing online–offline multichannel systems will want to reduce cannibalization effects within this system as much as possible and, at the same time, will want to benefit from synergy between the channels as much as possible. The suggested typology will thus serve as the basis of

an explorative investigation into the differing motives of the eight customer types. It thus adds to previous research that focused on buying motivations to classify customers. As presented, our approach goes a step ahead by providing a classification according to the effect of these motivations given by the channel selection decision in the two stages of the purchasing process.

3. Research methodology

3.1. Data collection

To explore synergic and cannibalistic effects within online–offline multichannel systems we cooperated with a large German MNO. This MNO ranks among the top three German telecommunications companies in terms of market share and operates sufficiently enough stores to achieve nation-wide presence and awareness. In addition to this, the company established an online presence including a web shop, which essentially offers the same products and services that are available offline, i.e. a wide selection of mobile devices and plans. Just as its competitors, the mobile network operator serves the market under various brands targeting different segments.

For the purposes of this study we collected data both in the online and the offline channels by surveying new customers. In the online channel, new customers who had successfully completed a transaction and proceeded to the order confirmation page were shown the first page of the online questionnaire in a new window. In the offline channel, we distributed a paper-and-pencil version of the questionnaire in 19 different stores—sales agents were requested to collect responses from their new customers immediately after successfully completing a transaction. To rule out interviewer effects as much as possible, sales agents were ordered to merely hand out the questionnaires and to collect them after completion by the customers. Through this procedure we were able to gather 163 responses from offline customers and 1.075 responses from online customers adding up to 1.238 cases. Given this approach to data collection it is not possible to report a response rate for the offline channel—in the online channel, however, approximately 12% of all new customers completed the survey, which seems to be an adequate response rate for this type of consumer survey given that no incentives for participation were offered (Bourque and Fielder, 2004).

In terms of potential biases we have no reason to believe that the data is affected by this method of data collection. First, research has shown that different modes of data collection result primarily in unwanted differences between telephone interviews and self-administered surveys, as surveys administered by interviewers come along with a higher tendency towards extreme answers and towards acquiescence (Weijters et al., 2008). However, as long as surveys are self-administered (as is the case with this particular study), differences among different modes of data collection can be considered real differences with respect to the topic of the survey. Second, we have no reason to believe that the data is affected by a potential common method bias (Podsakoff et al., 2003) as the main dependent variable of most of our models (actual channel selection) is an observation and not information provided by the respondents themselves. Moreover, Harman's one factor test (1976) calculated with all our single-items did not result in a dominant first factor. Third, as missing values were few (less than 5% in the most extreme case) and did not show a pattern that led to the conclusion that these values were not missing completely at random (Little and Rubin, 2002), it seems safe to assume that missing values do not affect the quality of the data. Missing values were thus imputed utilizing the

expectation-maximization algorithm in order not to lose any information provided by the respondents.

3.2. Measures

3.2.1. Independent variables

All independent variables are measured with three items each on five-point Likert scales ranging from "completely disagree" to "completely agree". Based on our literature review, we place specific emphasis on exploring the role of convenience orientation, risk aversion, and service orientation in the given multichannel system. All measures are thus based on established theoretical concepts (e.g. Montoya-Weiss et al., 2003; Chiang et al., 2006). Convenience orientation (CONVOR) is measured by the items: "I do not want to cover long distances to do a deal", "It is important for me to be able to shop around-the-clock" and "I consider it convenient to be able to shop at home". Cronbach's alpha of the combined CONVOR measures is .735. Second, risk aversion (RISKAV) is measured by the items: "When placing an order online the risk is great that I will need to wait for delivery for quite a long time", "Communicating credit card or account information through the Internet is far too insecure" and "When placing an order online the risk is great that the product will not match with the illustration or the description". Cronbach's alpha of the combined RISKAV measures is .727. Third, service orientation (SERVOR) is measured utilizing the items: "I consider it important to be able to touch and try out products before purchase", "I am willing to pay more for better service and advice" and "When dealing with a mobile network operator, guidance is important". Cronbach's alpha of the combined SERVOR measures is .735.

3.2.2. Dependent variables

In our models, we employ three different dependent variables that are largely based on actual observations. Channel selection (CHANNEL) is a binary variable measuring the observation whether consumers decided for the offline or the online channel to complete their transaction. FIRSTINFO is a self-reported binary variable indicating where consumers informed themselves first, i.e. either online or elsewhere. The type of customer (CUSTYPE) is a nominal variable resulting from a combination of FIRSTINFO, CHANNEL and a response to the question whether customers could imagine completing their transaction in the competing channel (channel switching propensity (CSWIPROP)). The resulting eight categories of this variable are pure online customer, pure offline customer, cannibalized online customer, cannibalized offline customer, potentially cannibalized online customer, potentially cannibalized offline customer, synergic online customer, and synergic offline customer.

3.2.3. Control variables

First, we aim to rule out potential effects of age (AGE) and gender (GEN) by including these variables in all models. Moreover, as the cooperating telecommunications company in this study operates under various different brands in the German market, we control for the channels' branding as well. Two of these brands were part of the data collection, BRAND is thus a binary variable indicating for what brand consumers actually decided. PRODUCT, on the other hand, is a binary variable that controls for the nature of the purchased product (tangible vs. intangible, e.g. a mobile device vs. merely a plan) that might have affected the actual channel decision. Furthermore, even though data were collected in cooperation with a MNO running a considerable number of stores nation-wide, we still deem it sensible to control for store availability (STORAVAIL) as no available store would naturally affect consumers' preference for the online channel. STORAVAIL is a single-item measure employing a five-point scale ranging from "poor" to "excellent". Last, FIRSTINFO that is a dependent variable in our first model is included in all subsequent models as a control variable.

4. Results

Several variations of regression models for categorical and nominal outcomes (Long, 1997) were utilized during the statistical analysis. First, binary logistic regressions models were estimated to explore the role of attitudinal antecedents. Second, to explore the impact of the attitudinal independent variables on our proposed consumer typology, we calculated an explorative multinomial logistic regression model. Multicollinearity is not an issue with the data at hand, as the variance inflation factors of the data show on average a value of 1.13 and are all well below the usually recommended (Neter et al., 1996) threshold-value of 10. Table 1 contains the descriptive results of the study's variables and provides an overview of the correlations among them.

The descriptive analysis reveals that the respondents in the sample are comparatively young as they are on average only slightly over 30 and male respondents somewhat outweigh female respondents. Approximately two-thirds of the respondents turned to the online channel first for information about their desired product or service, although the availability of stores is still perceived good (STORAVAIL mean 3.47 on a 5-point scale). More than half of the customers can imagine placing future orders in the competing channel. With respect to attitudinal variables, the average customer in the online–offline channel system under investigation turns out to be very convenience-oriented (CONVOR mean 4.04) and slightly avers to risk (RISKAV mean 3.43). Service

Table 1
Descriptive statistics and correlations.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. FIRSTINFO (0=offline/1=online)	.69	.46	–/–										
2. CHANNEL (0=offline/1=online)	.87	.34	.41	–/–									
3. CONVOR	4.04	.90	.22	.33	–/–								
4. RISKAV	3.43	.94	−.13	−.20	.02	–/–							
5. SERVOR	3.38	.96	−.26	−.33	−.09	.51	–/–						
6. AGE	32.38	10.72	−.03	−.04	.00	.01	−.02	–/–					
7. GEN (0=male/1=female)	.43	.50	−.04	−.06	−.01	.05	.02	−.06	–/–				
8. BRAND (0=brand1/1=brand2)	.26	.44	−.06	−.08	−.05	−.11	−.04	.05	−.01	–/–			
9. PRODUCT (0=tangible/1=intangible)	.55	.50	.08	.16	.02	−.09	−.12	.07	.05	−.11	–/–		
10. STORAVAIL	3.47	1.37	−.20	−.27	−.10	.16	.29	−.04	.06	.01	−.06	–/–	
11. CSWIPROP (0=no/1=yes)	.59	.96	.08	.21	.07	−.06	.03	−.09	.09	−.09	.02	.09	–/–

$n=1238$. Correlations larger than .06 are significant at the level of $p < .05$, correlations larger than .08 are significant at the level of $p < .01$, and correlations larger than .09 are significant at $p < .001$.

Table 2
Binary logistic regression models for first information online (FIRSTINFO) and actual channel selection (CHANNEL).

	FIRSTINFO				CHANNEL			
	Control model		Full model		Control model		Full model	
	Coef. (SE)	Odds ratio (95% CI)	Coef. (SE)	Odds ratio (95% CI)	Coef. (SE)	Odds ratio (95% CI)	Coef. (SE)	Odds ratio (95% CI)
CONSTANT	2.26*** (.29)		1.80*** (.48)		3.99*** (.57)		3.48*** (.84)	
Control variables								
AGE	−.01 (.01)	.99 (.98/1.00)	−.01 (.01)	.99 (.98/1.00)	−.014 (.01)	.99 (.97/1.00)	.003 (.01)	1.00 (.98/1.02)
GEN	−.14 (.13)	.87 (.68/1.11)	−.13 (.13)	.87 (.67/1.14)	−.23 (.20)	.79 (.54/1.17)	−.26 (.22)	.77 (.50/1.20)
BRAND	−.24 (.14)	.79 (.59/1.04)	−.26 (.15)	.77 (.58/1.04)	−.26 (.22)	.77 (.51/1.18)	−.17 (.25)	.84 (.51/1.37)
PRODUCT	.31* (.13)	1.36 (1.06/1.75)	.21 (.13)	1.23 (.95/1.61)	.89*** (.21)	2.43*** (1.62/3.63)	.77*** (.23)	2.17 (1.38/3.40)
STORAVAIL	−.33*** (.05)	.71 (.64/78)	−.22*** (.05)	.80 (.72/.89)	−.74*** (.11)	.48*** (.39/.59)	−.56*** (.12)	.57 (.45/.72)
FIRSTINFO					2.28*** (.22)	9.79*** (6.41/14.96)	1.84*** (.24)	6.34 (3.98/10.09)
Independent variables								
CONVOR			.48*** (.07)	1.61 (1.39/1.86)			1.07*** (.13)	2.91 (2.25/3.75)
RISKAV			−.03 (.08)	.97 (.82/1.14)			−.37*** (.14)	.69 (.53/.91)
SERVOR			−.50*** (.09)	.61 (.51/.72)			−.85*** (.16)	.42 (.31/.58)
Model fit								
Chi-square	63.81***		160.26***		285.78***		413.84***	
Log-likelihood	−736.31		−688.08		−337.47		−273.44	
McFadden's R^2	.04		.10		.30		.43	

$n=1238$.
** $p \leq .01$.
*** $p \leq .001$.
* $p \leq .05$.

is valued but not essential as indicated by an average SERVOR score of 3.4.

Table 2 presents four binary logistic regression models for the two dependent variables FIRSTINFO and CHANNEL. The analysis for both dependent variables is presented in a hierarchical way, first the influence of the control variables is assessed and afterwards the attitudinal antecedents are introduced. As we find significant coefficients for CONVOR and SERVOR, but not for RISKAV, the full model explaining the probability of consumers to inform themselves online first suggests that the consumers' attitude towards risk is irrelevant with respect to information seeking.

Turning to the models explaining actual channel selection, it becomes clear that this decision is heavily affected by the fact whether consumers approached one or the other channel for information purposes first. However, entering the attitudinal variables into the equation still enhances the models explanatory power, CONVOR positively impacts on the probability to decide for the online channel, while higher levels of RISKAV and SERVOR seem to draw customers away from this channel.

Building on this initial analysis, we explore the same model utilizing a different dependent variable, namely the type of customer. Table 3 contains the results of a multinomial regression comparing pure online customers as base outcome to the remaining customer types. These exploratory results support the initial analysis and are absolutely in keeping with the binary logistic regression models in terms of the overall mechanisms. They reveal, however, some interesting variations in the way the control variables exert influence and the degree to which the independent variables determine customer behavior.

Naturally, pure offline customers as the antipodes of pure online customers differ the most from the base outcome. Both synergic customer types are characterized by a lesser influence of CONVOR compared to pure online customers (−.29* for synergic online customers and −1.64*** for synergic offline customers). In addition, both cannibalized customer types reveal a lesser influence of CONVOR (−.39*** for cannibalized online customers and

−1.24*** for cannibalized offline customers) and a stronger influence of SERVOR (.68*** for cannibalized online customers and .88** for cannibalized offline customers). Moreover, cannibalization effects seem to be explainable to some degree by the availability of a store as well. The coefficient for STORAVAIL is −.37*** for the cannibalized online customer and .65** for cannibalized offline customers, thus suggesting that if stores are perceived as being too far away the online channel cannibalizes the offline channel. On the contrary, when store availability is quite good the offline channel cannibalizes the online channel unnecessarily. Online customers that could be potentially cannibalized have a higher influence of SERVOR (.32***) and a lower influence of RISKAV (−.19*) than the base outcome, suggesting that these customers are not potentially driven away from the online channel because they perceive risk, but because of the service offered in the stores. Quite the opposite, offline customers that could be potentially cannibalized by the online channel could be driven away because of the perceived convenience of the online channel (CONVOR −.88***).

5. Discussion

This study examined customer shopping motives along with channel selection behavior in a multichannel context. We focused on the question what customer attitudes drive channel selection in online–offline multichannel systems and how these attitudes relate to synergic and cannibalistic effects. Moreover, we developed and empirically analyzed a typology of customers to classify distinct segments of consumers along with the associated relationship of individual shopping motives and cannibalization and synergic effects.

5.1. Channel decision and synergy vs. cannibalization

The findings of this research support our theoretical reasoning that customers' convenience orientation positively affects the

Table 3
Multinomial logistic regression model—types of customers (CUSTYPE).

	Pure offline customer (59.26% of all offline customers) Coef. (SE)	Synergic online customer (8.09% of all online customers) Coef. (SE)	Synergic offline customer (8.64% of all offline customers) Coef. (SE)	Potentially cannibalized online customer (46.75% of all online customers) Coef. (SE)	Potentially cannibalized offline customer (20.37% of all offline customers) Coef. (SE)	Cannibalized online customer (15.79% of all online customers) Coef. (SE)	Cannibalized offline customer (11.73% of all offline customers) Coef. (SE)
CONSTANT	−5.55*** (1.15)	−1.37 (.887)	−4.24* (2.10)	.06 (.56)	−7.35*** (1.74)	−1.53* (.74)	−2.43 (1.83)
Control variables							
AGE	−.00 (.01)	.01 (01)	−.02 (.03)	−.01 (.01)	.02 (.02)	−.01 (.01)	−.06* (.03)
GEN	.85** (.29)	−.27 (.27)	.41 (.58)	.48*** (.15)	.78* (.39)	.59** (.20)	.12 (.50)
BRAND	.55 (.21)	.36 (.27)	−.10 (.65)	−.22 (.17)	−.36 (.47)	−.18 (.24)	−.17 (.60)
PRODUCT	−1.33*** (.31)	−.06 (.25)	−2.26** (.79)	−.25 (.15)	−.60 (.40)	−.27 (.20)	−.07 (.50)
STORAVAIL	.75*** (.15)	.02 (.09)	.53 (.27)	.17*** (.05)	1.12*** (.26)	−.37*** (.08)	.65** (.24)
Independent variables							
CONVOR	−1.53*** (.17)	−.29* (.14)	−1.64*** (.32)	−.05 (.09)	−.88*** (.22)	−.39*** (.12)	−1.24*** (.28)
RISKAV	.38* (.19)	.05 (.16)	.72 (.43)	−.19* (.09)	−.43 (.22)	−.21 (.13)	.24 (.33)
SERVOR	1.57*** (.22)	.28 (.16)	1.04* (.43)	.32*** (.09)	1.42*** (.28)	.68*** (.13)	.88* (.35)
Model fit							
Chi-square	520.86***						
Log-likelihood	−1699.836						
McFadden's R^2	.13						

$n=1238$.
Baseoutcome: pure online customer (29.37% of all online customers).

    *** $p \leq .001$.
    ** $p \leq .01$.
    * $p \leq .05$.

propensity both to search for information online and to complete transactions via the electronic channel. Moreover, our research disclosed that risk aversion is not significant when it comes to information search. Since the mere information search does usually not involve the disclosure of personal data such as payment information or private addresses, customers do not show significant risk aversion in this regard, because information search and browsing does not imply a greater risk than Internet use in general. Contrastingly, customer risk aversion is significant when it comes to the propensity to place an order via an online channel. Though not insurmountable, previous research found that the risk arising from online payment and security issues surrounding the handling of payment data can constitute an obstacle to purchasing goods via the online channel (Shih, 2004).

Furthermore, our research highlights the motivational causes of competing and synergic effects in a multichannel environment. Building on the previous discussion, our results indicate that the desire for service, rather than risk aversion could potentially cannibalize customers away from the online channel. This finding is an indication that the online channel or electronic commerce in general successfully overcame negative customer perceptions that were associated to it especially in the late 1990s and the early 21st century. Though customers have been found to be concerned with security issues regarding online shopping, empirical results have shown before that web security did not generally terminate customers' willingness to shop online (Shih, 2004). Therefore, an increased online service offer could obviate potential channel cannibalization and boost the synergic effects of online and offline channels. Moreover, previous research found that consumers simply abandoned the online search, because they were frustrated (Gupta et al., 2004a, 2004b). Information overload and badly structured web-sites, along with complex web-site navigation are possible explanations for this. This adds to our argument of improving the online service offer, for both the information search regarding products as well as for the actual purchase. Our findings also allow us to explore the determinants

of cross-channel synergies in online–offline multichannel systems. Since the importance of convenience orientation is somewhat smaller for a synergic online and offline customer, an important obstacle to using an alternative channel for information purposes and purchasing, respectively, is omitted. Furthermore, our results indicate that different service levels across provided channels throughout the information and purchasing stages can further channel synergies. Though both the online and offline channel have distinctive advantages for different customer types during the purchasing process, each channel may present a unique offer to meet customer requirements and thus contribute to customer satisfaction and to the generation of a comparative advantage in a multichannel environment.

5.2. Implications

Our findings have several implications for research as well as practice. From a theoretical perspective, this paper extends research in the context of online–offline channel selection. A higher convenience orientation and a lower service orientation were found significant shopping motives to search for information through the online channel. Moreover, a higher convenience orientation, a lower risk aversion, and a lower service orientation were statistically significant shopping motives to purchase a product through the online channel. By presenting a customer typology and linking the classified customer types to distinctive shopping motives, we present a typology salient to the online–offline multichannel context involving the information search and purchase stages of a buying process. To narrow the focus, this typology is an explanatory approach to take account of customer channel selection behavior. This study also contributes to marketing research by providing a starting point for the introduction of customer-tailored marketing measures to prevent channel cannibalization in favor of realizing synergic effects.

From a managerial perspective, the importance of unique service offers is stressed. The availability of sufficient information,

conveying product characteristics, expert advices, and the possibility of evaluating product alternatives are attributes that, if unique to one channel, can potentially increase the perceived value of the combination of the online and offline channels in both the information and the buying stage of a purchasing process. Moreover, our results have shown that reliable and secure shopping environments can contribute to customers' propensity to use the online channel for actual purchasing. The approach should be to develop synergic online–offline channel alternatives to avoid channel cannibalization. The recognition of customer channel preferences may help to evade cannibalization and to extend synergies, and thus to develop channel relationships with customers. Given this context, benefits of an integrated channel approach can be realized, such as lower costs, differentiation through value-added services, improved customer trust, as well as market extensions (Steinfield, 2004).

5.3. Limitations and future research

Quantitative empirical research is naturally limited, one reason being the necessity to transform complex phenomena into rather abstract, measurable concepts. In this specific case, cooperating with a large MNO leads, for instance, to the requirement to scale down the questionnaire for the offline data collection as required by the MNO's marketing department so that researchers were not able to incorporate every potentially interesting question related to the phenomenon under investigation into the questionnaire. However, the positive effect of this cooperation was that it allowed us to investigate real consumer decisions rather than intentions to purchase, as it is unfortunately the case far too often in the literature. Second, our results are limited to a single product category, namely the products and service that are offered by a MNO. As previous research suggests that factors affecting customers' channel choice differ across product categories (Chiang et al., 2006), any attempt to generalize these findings beyond the ICT industry should be conducted very carefully.

Considering future research, researchers could explore many interesting next steps. First, considering the firm level analysis, we deem it promising to shed additional light on measures to balance channels and business units in order to achieve a superior competitive positioning. Through effective relationships of business units, firms can realize synergies between tangible and intangible assets and thus generate a competitive advantage (Porter, 1985). Based on our typology of customers along with the degree of underlying shopping motivations, future research could elaborate on the question how these differences can be exploited further to generate a comparative advantage and thus to strategically advance over competitors. Along with this, the goal setting across channels and the strategic alignment of companies' multichannel systems needs to be focused on. Second, on the individual customer level, our research is a starting point for the creation of efficient marketing measures targeting each of our proposed customer profiles. For instance, while our customer typology combines three behavioral variables, i.e. where customers sought information first, where they actually purchased and whether they switched channels during the course of the purchase or have the propensity to do so, it would be interesting to investigate the relationship of general customer motivations and the behavioral variables separately. Furthermore, research and practice with respect to the management of online–offline multichannel systems is likely to benefit from introducing consumer trust (Jayawardhena et al., 2009; Kautonen and Karjaluoto, 2008) as an additional independent or moderating variable dependent on the specific research context.

6. Conclusion

Academics and practitioners stress the importance of the Internet as an additional distribution channel along with the emergence of a new retail format (Gupta et al., 2004a, 2004b). However, the threat of cannibalization of online channels over traditional channels and vice versa is on the spot. Our research identifies relevant shopping motives in multichannel environments and presents a customer typology for which we empirically disclose varying degrees of shopping motives. The empirical analysis suggests that the degree of customers' convenience orientation in contrast to the degree of risk aversion and service orientation encourages the selection of the online channel over the offline channel. To avoid cannibalization, we found empirical evidence that the desire for service, rather than risk aversion could potentially cannibalize customers away from the online channel. Likewise, results indicate that different service levels across provided channels throughout the information and purchasing stages can further channel synergies. Our research contributes to a deeper understanding of the attitudinal differences of consumers in relation to their preference search for product-related information and to purchase online and offline.

Acknowledgments

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