

Chapter 2

Offline, Online and Multichannel Commerce

2.1 Introduction

To understand multichannel commerce, it is first necessary to understand how online and offline channels differ from each other. If they would not differ from each other, an integration of both channel types would be meaningless. Therefore, the first part of this chapter gives a broad overview on the differences between online and offline commerce. Making the differences between online and offline commerce explicit enables us to identify reasons for deviations in consumer behavior and implications for the management of these channels. The second part of this chapter focuses on consumers reactions to these differences with regards to their channel choice within or between purchases. Due to the plentitude of studies in this area, a state of the art structured literature review is conducted. Three different perspectives on channel choice can be differentiated: choice of the purchase channel for one particular transaction, choice of purchase channels across transactions and the choice of different channels between the different stages of one purchase. The last part of this chapter structures different aspects of multichannel integration into a common framework and differentiates multichannel integration services from other types of multichannel integration activities. This part also discusses previous attempts to study multichannel integration services and highlights the need for the empirical studies in the subsequent chapters.

2.2 Differences Between Online and Offline Commerce

In the 1980s, Malone et al. (1987) stated that the innovations in information technology will lead to a shift from hierarchies towards markets. In markets, prices are no longer determined by managerial decisions but rather by market forces.

Table 2.1 Major differences between online and offline channels

		Offline	Online
Information transparency	Price information	High effort to compare prices	Lower prices Lower price dispersion Competitors prices are visible
	Product information	Easy evaluation of non-sensory attributes	Larger choice set Easy evaluation of sensory attributes
	Vendor information	Rely on personal inspection or acquaintances	Detailed feedback is available via specialized platforms
	Consumer information	Anonymous transactions possible	Personal data has to be provided Consumers are easily identifiable
Interactions	Relationship	Personal: personal relationship can be established	Anonymous: higher need and difficulty to mitigate transaction-specific and system-dependent uncertainties
	Communication	1:1, 1:n	1:1, n:m
	Intermediaries	Direct interactions	Increased need for intermediaries (trust, logistics)
	Location	Limited market and competition	Larger market with nationwide or transnational competitors
Cost structures	Operational costs	Higher personnel and infrastructure cost	Lower entry barriers
	Shipping costs	–	Have to be incorporated and can be used strategically
	Menu costs	Price changes costly and slow	Price changes cheap, fast and individualized

They indicate that these changes in the environment, that have accelerated even more within the last 20 years, have a huge influence on the way how goods are traded. Transacting on the internet has indeed some structural differences to traditional, offline trading that are classified into three major groups: information transparency, interactions and cost structures. These differences and its implications for electronic and physical channels are discussed in the following. An overview of the major differences is given in Table 2.1.

2.2.1 Information Transparency

Information is irrevocably connected to search. To receive any piece of information, a search has to be triggered. The classic search process is described in literature as a sequential process where costs occur for every new piece of information. Searching

in traditional retailing can be performed in different ways such as reading magazines and newspaper advertisements, consultations with friends and sales personnel, and directly sampling stores and store prices (Salop 1977). The total search costs are comprised of three components: costs for identifying the right product, the sellers, and their prices (Stigler 1961). These costs are mainly driven by the amount of time the individual buyer spends on searching. The level of these costs depends on the individual buyer's time valuation, mainly on income, and therefore on the opportunity cost of spending time with search. Furthermore, other factors such as phone or travel costs can add to the expense of searching. Stigler (1961) describes an economic cost-benefit model, where the quantity of searching is determined by a trade-off between the expected marginal return of search and the individual search costs. That means that each step of search is only undertaken if the expected savings are higher than the corresponding cost of searching. In the case of purchasing a product, these savings can be financial (price search), utilitarian (product search) or related to psychological or performance risk (vendor search).

Two major changes occur online. First, the search cost for each piece of information is reduced fundamentally by the introduction of information systems. Therefore customers have an incentive to search for more information. Second, electronic media offer more than one search pattern, search no longer has to be sequential (Su 2008). Instead, sequential search, parallel search or combinations of both can be applied (Iyer and Pazgal 2003). Thus, one search can be undertaken to find several pieces of information at once. Examples for information aggregators, among many others, are pricegrabber.com for prices, epinions.com for products and yelp.com for vendors. These two developments combined lead to information transparency, which can be defined as "the degree of visibility and accessibility of information" (Zhu 2004, p. 670).

Price transparency is supposed to reduce the range of prices in a market because search costs are lower, consumers have an incentive to search more and price discrimination is more difficult. However, as long as search costs occur, there will never be only one price in a market (Salop and Stiglitz 1977; Varian 1980). Since price search still incorporates some mental effort, one can assume that this is the case for the online channel. Earlier studies found that customers are surprisingly often unaware of the price of a product that they are buying in a supermarket, even though the price tag is just in front of them (Dickson and Sawyer 1990). If such inattentiveness is present in very price transparent situations in physical stores, one can expect to also find uninformed customers in transparent electronic markets. A series of studies have investigated the price levels of online and offline channels empirically. Overall, these studies suggest that online prices are lower than offline prices across product groups and industries (Ancarani and Shankar 2004; Brown and Goolsbee 2002; Brynjolfsson and Smith 2000; Morton et al. 2001). Brynjolfsson and Smith (2000) investigate the market for CDs and books as examples for homogenous products. They find that prices are on average 9–16 % lower in electronic channels. Ancarani and Shankar (2004) confirm their results but add that these results are conditional on the exclusion of shipping costs.

Besides the price levels, price dispersion is an indicator of “ignorance in the market” (Stigler 1961, p. 214) that can be used to study differences between online and offline channel. Dispersion can be measured either in terms of the range of prices (highest minus lowest) or by their standard deviation. Surprisingly, studies investigating the price dispersion range find very high price ranges with an average of 25 % for CDs and 33 % for books. Compared to offline channels, this is an increased price dispersion for books and approximately equal dispersion for CDs (Brynjolfsson and Smith 2000). Other studies confirm the higher online price dispersion ranges for other products and markets (e.g., Clay et al. 2002; Lee and Gosain 2002). The differences in prices can also not be fully explained by the maturity of the electronic channel (Baye et al. 2004; Bock et al. 2007; Scholten and Smith 2002), different service levels (Pan et al. 2002a), or shipping costs (Ancarani and Shankar 2004). However, Ancarani and Shankar (2004) find that, although retailers in electronic channels have higher price ranges (+4 %), the price variability in terms of standard deviation (−10 %) is lower. This finding suggests that most shops have similar prices with few outliers. This is in line with Ghose and Yao (2011) who investigate transaction prices and find much lower price dispersion than earlier studies that investigated posted prices. To conclude, although price dispersion and price levels are mostly lower online, price dispersion is found to be persistent in electronic channels (Chellappa et al. 2010; Walter et al. 2006). Therefore, price transparency leads to higher competition, but does not make online commerce frictionless (Brynjolfsson and Smith 2000).

Online prices are not only visible to the consumers but can also play an important role for competition. Competitors prices can be recorded much more cheaply (Levy et al. 1997). Price transparency can therefore enable vendors to react to competitors’ price strategies more dynamically and finally facilitate a firm’s ability to collude (Campbell et al. 2005). Consumers’ reduced search costs make it more attractive for firms to collude or to react to a competitors’ stock-out with a price increase (Dewan et al. 2007). Such an agreement on tacit collusion can lead to higher prices and can hardly be inferred (Campbell et al. 2005).

While price is a one-dimensional piece of information, product information is more difficult to analyze. Three different types of qualities can be distinguished: search, experience, and credence qualities (Darby and Karni 1973; Nelson 1970). Search qualities can be ascertained prior to purchase, one example is price information, as discussed before, or technical facts about a product such as weight, measures, or color. In contrast, experience qualities cannot, or only by the means of huge effort, be evaluated in advance. A typical example is the taste of food, e.g., a can of sauerkraut. While it would be possible to have an idea about the taste by reading consumer reports, the effort for this endeavor is often disproportionate. The third group of qualities can never be verified by average consumers (Darby and Karni 1973). Quality of education is a typical example for a credence quality. Conditional on which qualities are dominant, goods are often classified as being either search, experience or credence goods, although this classification is rarely distinct and most goods combine several types of qualities with different intensities.

In general, consumers experience a “fit”-cost equivalent to their loss of utility when they obtain a product that is not a perfect match to their requirements (Bakos 1997). The easier the evaluation of the product, the lower the effort to avoid this cost component. The internet enables consumers to evaluate certain product characteristics more easily. The use of aggregators or agents makes it easy to obtain and to compare non-sensory search qualities in electronic channels. Furthermore, the distinction between search and experience qualities begins to blur in electronic channels (Kiang et al. 2011). The availability of consumer reviews enables customers to evaluate the quality of a product by learning from other consumers’ experiences (Trenz and Berger 2013). Nevertheless, sensory attributes such as the feel of a product are more difficult to assess online (Degeratu et al. 2000), although modern technologies such as virtual showrooms have slightly reduced the intensity of this drawback.

The increased product transparency also reduces opportunities for fraud with experience and credence goods. Accordingly, price premium due to lack of transparency might be eroding. Such premiums are paid for inferior brands in situations where customers try to reduce their risk of buying (Sinha 2000). Therefore, the influence of brands for products with lots of non-sensory attributes is decreased (Degeratu et al. 2000), because these attributes can be summarized and compared easily. Since products with sensory attributes are more difficult to analyze in an automatic manner, brands are still a valuable proxy for missing information for these products (Smith 2002). Nevertheless, product transparency overall facilitates rational shopping (Sinha 2000), since search attributes are easily obtainable and therefore play a more prominent role in the decision process (Häubl and Murray 2003).

In the same way as product information is more accessible online, consumers can also inform themselves about the vendors in a more convenient way. Before the online channel was available, consumers depended on their acquaintances, who may or may not have experience with the seller, to ascertain the qualities of a certain physical store. On the internet however, specialized platforms such as shopzilla.com or resellerratings.com provide a feedback channel for consumers and aggregate consumer reviews on the quality of previous interactions and transactions with a vendor. The most prominent feedback mechanism is used by ebay.com, where sellers are evaluated after each transaction. The online reputation has been shown to have significant impact on consumer decisions and transaction prices in this context (Melnik and Alm 2002; Resnick et al. 2006).

Surprisingly, online consumers do not search as much for product, price and vendor information as one might expect (Su 2008). A possible explanation could be the distinction between physical and cognitive search costs (Johnson et al. 2003). Physical search costs are characterized by the time needed to find information. In contrast, cognitive search costs are the costs for evaluating information and information sources. While the internet largely reduces physical search costs, the large amounts of information available increase cognitive search costs, possibly leading to an information overload (Nachmias and Gilad 2002). Therefore, consumers might not fully exploit their search opportunities although the online channel theoretically allows them to gather much more information about prices, products and vendors.

Information transparency on the internet is not a one-way phenomenon. In contrast, the use of electronic transactions brings along a loss of privacy. Although loyalty programs and bonus cards motivate many consumers to trade-in their privacy in physical stores as well, transactions in stores could be anonymous. Every online transaction however urges the consumer to transmit at least name, shipping address and some payment information like credit card details. But consumer transparency on the internet goes much further. Information about search terms, visited product pages and previous purchases is tracked and stored. Besides, consumers can easily be identified and their browsing and purchase history can be processed automatically. This data provides deep insights into consumers' preferences, behavior and their willingness to pay. Learning from customer behavior facilitates price discrimination. Thereby, targeting individuals is more beneficial than targeting some more or less homogeneous consumer groups by geographic or demographic data (Odlyzko 2003). The electronic channel enables sellers not only to identify buyers, but also to display different prices to different customers. The changes regarding price setting therefore are not limited to dynamic pricing over time (e.g., seasonal pricing in a store), but furthermore facilitate individual price discrimination (Bailey 1998). In the extreme case, this can lead to automated individual offers and prices as tested by Amazon in 2000. The attempt to charge different prices for DVDs to different consumers led to a huge consumer outcry (Kannan and Kopalle 2001) and Amazon had to promise never to employ this technique again. Since consumers can react very dramatically if they discover price discrimination that they perceive to be unfair (Feinberg et al. 2002), such approaches need to be carefully evaluated. Nevertheless, price discrimination today is not limited to individualized vouchers and discounts but is also applied based on browsing history, time and device of the consumer. For instance, different prices are displayed to consumers arriving from a price search engine or using Apple products (Mattioli 2012; The Economist 2012).

2.2.2 Interactions

The interactions in physical and electronic channel differ in terms of the relationships between buyers and sellers, the communication model, the role of intermediaries and their spatial limitations. The relationship is altered by the physical distance between buyer and seller and the technological capabilities of digital communication. The lack of personal contact makes it more difficult to establish trust, defined as the confidence, that another person or organization will act in one's best interest (Gefen 2000). Trust is necessary to mitigate either transaction-specific or system-dependent online uncertainties (Grabner-Kräuter and Kaluscha 2003). Transaction-specific uncertainties can occur in every type of transaction when consumers perceive uncertainty about the successful completion of the transaction. However, they are more pronounced for online transactions for two major reasons: first, as discussed in the previous section, the quality of physical goods can be hard

to discern. Second, there is a temporal and physical separation between transaction (and often the payment) and gratification, compared to the instant gratification of the purchase in a store. System-dependent uncertainties refer to the use of the technology for transmitting private and sensitive information (e.g., payment information, address). These uncertainties of online transactions mainly comprise of the fear of security gaps and errors in the shop system (Grabner-Kräuter and Kaluscha 2003). Overcoming these uncertainties and building trust is an important challenge for retailers, since trust increases purchase intentions (Bhattacharjee 2002; Kim et al. 2008; Yoon 2002), perceived value of an offer (Brynjolfsson and Smith 2000; Grewal et al. 2003) and loyalty (Shankar et al. 2002). Thereby, it has the potential to increase sales, willingness to pay and the long term success of a retailer. In summary, trust plays a more important role in online transactions than in offline transactions but it is also, as described in the following, more difficult to establish in electronic channels.

Trust consists of the ability, benevolence and the integrity of the other party (Mayer et al. 1995). Kim et al. (2008) summarize previous literature on the factors influencing online trust into four clusters: experience based (familiarity), cognition based (information quality, perceived privacy protection, perceived security protection), affect-based (positive reputation) and personally-oriented (consumer disposition to trust). Trust in the retailing context can either refer to the salesperson or to the vendor (e.g., Doney and Cannon 1997). Due to the absence of personal contact, trust in the organization and technology rather than a specific salesperson dominates internet selling (Shankar et al. 2002). Seller evaluations are generally established based on delivery performance and experience after several purchases (Doney and Cannon 1997). Without prior experiences, intermediaries and other mechanisms such as signals may also allow trust building (Ba and Pavlou 2002). Signals can be classified as being either first-party information (provided by the firm), second-party information (provided by other customers) or third-party information (provided by independent firms) (Özpolat et al. 2013). Regarding the technological aspects, the assurance of the appropriate technical measures such as encryption for transactions, firewalls and authentication mechanisms for privacy can help reducing system-dependent uncertainties (Pavlou 2003). With regards to the relationship, a broad set of intermediaries has emerged to help building a trust-based connection to the customer (Özpolat et al. 2013). One often suggested signal provided by an intermediary are trust seals that approve the quality of the seller (third-party information). These seals have been found to increase the proportion of visits that lead to a purchase (conversion rate) from 2.90 to 5.33 % (Özpolat et al. 2013). Surprisingly, their effect on trust was not empirically confirmed (Kim et al. 2008; Lee and Turban 2001). Other intermediaries such as review platforms can increase trust by monitoring the sellers' behavior and decrease opportunities for opportunistic behavior by providing a transparent feedback channel (second-party information) (Chen and Xie 2008). Another type of intermediary is payment providers that ensure secure payment transactions (Bakos 1998). Further ways to build trust online are brands, especially in high involvement situations (Bart et al. 2005) or money back guarantees (Lee et al. 2005). Overall, the importance

of trust is increased in electronic transactions due to the intensified uncertainty which has to be mastered by new approaches to build trust without interpersonal relationships.

Besides the altered relationship between buyer and seller, the communication model is fundamentally changed online. While communication was traditionally organized in a one-to-many model, where the firm communicated to a large number of customers, electronic communication takes place in a more sophisticated asynchronous many-to-many communication model, where customers interactively share information with others (Hoffman and Novak 1996). The information transparency resulting from platforms for product information (e.g. Epinions.com) and seller reviews (e.g. Resellerratings.com) as well as specialized platforms such as Amazon (books), Tripadvisor (travel) or Bizrate.com (consumer electronics) has been discussed before. The interaction in communities and social networks enables consumers to transform their private knowledge into publicly available information and thereby influence others' purchase decisions (Forman et al. 2008; Tirunillai and Tellis 2012). Thus, interactions in electronic channels differ widely from physical channels because the generation and distribution of information is shifted from the control of companies to a network of consumers and its diffusion is accelerated tremendously. The freedom to publish freely within these communities without further control mechanisms creates a risk of review manipulations and produces a series of biases (Trenz and Berger 2013) that are described briefly in the following.

Biases in electronic word-of-mouth that have been empirically identified include the underreporting-, purchase-, customer-type-, or price-bias. The underreporting bias is a self-selection bias that describes the lack of average reviews since customers who think that the product is of extraordinary high or very low quality are more likely to share these experiences with others (Hu et al. 2009; Koh et al. 2010). The purchase-bias describes the imbalance between positive and negative reviews, since consumers are unlikely to criticize their own purchase decisions and people with an a priori negative product evaluation are unlikely to purchase the product in the first place (Hu et al. 2009). The customer-type bias explains the declining review ratings during a product lifecycle (Duan et al. 2008; Hu et al. 2011; Li and Hitt 2008; Zhu and Zhang 2010). Li and Hitt (2008) describe the structural differences in the preferences of early adopters and later purchasers which can lead to an overly positive rating after the release of a new product. Lastly, prices change over time and influence the average review rating since the rating is formed by a comparison between expectations and price. However, the price that a purchaser paid at the time the review was composed is normally hidden from the reader (Li and Hitt 2010).

Firms also need to incorporate the risk of review manipulations. Due to the large effects of online reviews on sales (Chevalier and Mayzlin 2006), it seems obvious that they are subject to manipulation (Dellarocas 2006). This manipulation is enabled by the easy and cheap change of identities online (Friedman and Resnick 2001). Mayzlin et al. (2014) show that the number of manipulated

reviews on platforms that do not require a purchase or booking verification depends on the competitive situation of the hotels and thereby highlight the extent to which manipulated reviews are common today. Accordingly, both bias and manipulation of review information are important new factors that need to be incorporated into firms' online strategies. A possible way to accomplish this are targeted incentives for customers to share their experiences, reducing negative biases and the impact of manipulated reviews.

Besides this customer-to-customer communication in communities, direct interaction between seller and buyer is facilitated by information technology (Bakos and Brynjolfsson 1993). As described before, customers can be addressed individually (Bailey 1998) to increase the seller's profits in many situations (Khan and Jain 2005; Varian 1989). Such individual targeting enables retailers to test reactions to price changes (Baker et al. 2001) at low cost and small scale and therefore allows online vendors to understand their customers better and make more informed pricing decisions. Besides price discriminating techniques, individual interaction can also be used to increase revenues by suggesting better fitting products, letting consumers individualize their (otherwise mass produced) products, such as t-shirts or even muesli or gathering ideas about new products, e.g., Dell IdeaStorm. The diffusion of niche products (Brynjolfsson et al. 2006) fitting the individual customers preferences leads to the long tail effect (Anderson 2008), where more and more different products are sold in smaller units. Thereby, the individual interactions on the internet transform customers to participants in the development and production process (Anderson 2008). Overall, the online channel increases possibilities for producers to directly connect with their customers without intermediate agents (Quelch and Klein 1996). Due to this shift, the channel length, defined as the number of firms through which products move from producer to customer, can be reduced in electronic channels (Sarkar et al. 1998) while a number of other intermediaries such as payment providers and information brokers become more important (Bakos 1998; Sarkar et al. 1998).

Lastly, online interactions and transactions are detached from the location of buyers and sellers. Accordingly, the placement of the product and the physical availability at certain locations are less relevant. Therefore, the scope of competition expands from a local level, to a national or even international level. The international scope depends on international trade restrictions. If possible without massive legal restrictions, international trade imposes a threat on international price discrimination that is common place today. One example are books that are sold for much lower prices in developing countries. When they can be bought from abroad via internet, the national prices will no longer be enforceable (Bailey 1998). The location independent interaction makes every product available to everybody participating in the electronic marketplace (Anderson 2008) and is thereby leading to a larger consideration set. Overall, the location independent interactions make markets more competitive (Bakos 1998; Brown and Goolsbee 2002) and thereby put pressure on prices and product offerings.

2.2.3 Cost Structures

Besides information transparency and changed ways of interaction, physical and electronic channels also imply different cost structures that influence transactions in these channels. The major differences occur in the areas of operation costs, shipping costs, and price setting costs.

Operating costs refer to the costs of maintaining a physical store, including rent and personnel costs. Both costs are lower online (Bakos 1998; Brown and Goolsbee 2002), leading to different pricing opportunities and giving a possible explanation for the lower prices on the internet described before (e.g., Ancarani and Shankar 2004; Brynjolfsson and Smith 2000; Lee and Gosain 2002). Because of the lower investment in the storefront, these lower costs also reduce entrance barriers (Brynjolfsson and Smith 2000) and thereby possibly increase competition online.

These lower costs for infrastructure and personnel on the seller side lead to an additional cost for online transactions that is added to the total price of the products: shipping costs. The structuration of these costs is a difficult decision since shipping costs, as part of the price, play an important role in purchase decisions (Smith and Brynjolfsson 2001). Shipping costs can be used to influence consumer decisions, e.g., by motivating additional purchases with lower shipping costs for every additional good or with free shipping above a certain threshold such as \$30 at Amazon.com. Higher shipping costs can be used as a cross-subsidy for offering lower product prices, while lower shipping costs can be exploited as a mean to attract customers. Shipping flat rates such as Amazon Prime (Amazon 2005) can furthermore be used as a method to tie consumers to a certain seller and eliminate this purchase barrier by convincing consumers to make a yearly investment for shipping. Overall, this cost is an important structural difference that needs to be incorporated when making channel decisions, especially because handling and shipping fees often nullify the advantages of lower online prices (Ancarani and Shankar 2004).

Prices in physical stores are set by changing a price tag at a certain time at a certain place. Changing a price triggers a processing cost named menu cost. These costs have been estimated to be \$0.52 per price change, adding up to 0.7 % of the stores' revenues and 35.2 % of the net margins (Levy et al. 1997). Obviously that can lead to a reluctant changing policy and some kind of price stickiness, if the gain for a firm from a specific price change is smaller than the occurring menu costs (e.g., Ball and Romer 1990). Thereby, sellers are unable to react on small changes in demand and supply. In contrast, online prices can be changed at very low marginal costs. They can even be triggered automatically based on certain threshold values in stock, demand, the competitive situation or based on customer characteristics. In fact, prices are changed more often on the internet (Bailey 1998) and the mean price changes are smaller (Brynjolfsson and Smith 2000). These frequent adjustments have consequences for buyers and for competition. While they increase the complexity of evaluations and decisions (Oh and Lucas 2006), the ability to react on price changes also enforces competition and, in combination with information transparency, price coordination.

In summary, this section has described the fundamental differences between online and offline channels. The classification of these differences into information transparency, interactions and cost structures facilitates the understanding of the phenomena described in the following.

2.3 Choices Between Online and Offline Commerce

To gain a full overview of previously generated insights on consumer behavior between online and offline channels, a structured literature review was conducted. Details on the methodology of the literature review are given in Appendix A. The results are used to analyze the causes, motivations and consequences of consumers' channel choice, multichannel shoppers and channel switching behavior.

2.3.1 *Channel Choice*

The structured literature review revealed 25 studies that have investigated determinants of the trade-off between electronic and physical channels. Channel choice has been studied in surveys (e.g., Gupta et al. 2004a; Konuş et al. 2008; Verhagen and van Dolen 2009), using secondary data (Avery et al. 2012; Chintagunta et al. 2012; Forman et al. 2009; Janakiraman and Niraj 2011; Yang et al. 2013) or using experiments (Keen et al. 2004). To structure the knowledge about consumers' channel choice, the plentitude of factors is classified into four groups that emerged from the analysis: channel determinants, purchase specifics, external influences and individual differences.

While earlier research covered questions of online channel adoption (e.g., Datta 2011; Pavlou and Fygenon 2006), the research scope widened to identify factors to explain and predict the choice between mature channels (e.g., Gensler et al. 2012; Verhoef et al. 2007). Due to the complexity of consumer channel decisions (Balasubramanian et al. 2005), most papers identify influence or contingency factors of channel choice instead of being able to develop an all-encompassing model that explains preferences for certain channels. Balasubramanian et al. (2005) analyze the issue on a higher level and differentiate between product utility and process utility as major drivers of the channel evaluation process. Their influential conceptual model describes the comparison between the utility of different channels that finally leads to a channel decision. However, the economic value of the transaction is only one of several factors that can drive the channel utility.

A wide range of factors has been identified as channel determinants. Channel determinants describe variables that are based on characteristics or the configuration of the channels. Similar to choices between vendors, prices (e.g., Goolsbee 2001) and perceived service quality (e.g., Montoya-Weiss et al. 2003) are found to be important drivers of decisions to purchase online or offline. Unfortunately,

evidence is ambiguous with other studies not finding any impact of service on channel choice (Verhagen and van Dolen 2009). Further studies focused on general positive or negative channel characteristics that influence the choice. For instance, ease of use, purchase effort, and convenience determine channel choice mostly towards online channels (e.g., Chiang et al. 2006; Frambach et al. 2007), while risk, privacy, and security considerations are potential inhibitors of online channel usage (e.g., Pavlou and Fygenson 2006). Assortment can play an important role when people develop expectations of which products that can or cannot be found in offline or online channels (e.g., Verhagen and van Dolen 2009). The ways how products can be evaluated in different channels has been discussed in the previous section. Empirical studies support the thesis that product diagnosticity largely influences channel choices (e.g., Levin et al. 2005; Lim et al. 2012). Beyond that, single studies investigated the impact of payment options (Chiang et al. 2006), possibilities to negotiate (Verhoef et al. 2007), the enjoyment of the transactions (Verhoef et al. 2007), and the importance of personal contact (Chiang et al. 2006). In the context of this study, two channel determinants shall be emphasized: speed of purchase and post-purchase services. First, three studies find that the speed of the purchase is a major driver towards offline channels (Chiang et al. 2006; Noble et al. 2005; Verhoef et al. 2007). This negative characteristic of online channels may potentially be influenced by an immediate pickup multichannel integration service that is studied later. Second, the availability of post-purchase services is generally determined by the channel choice. Differences in these potentially demanded service offerings are influential for the channel preference (Chiang et al. 2006; Verhoef et al. 2007). Multichannel integration services such as “purchase online with service in store” can loosen this tie to one channel after the purchase phase and thereby influence the characteristics of the transaction channel.

Purchase specifics refer to differences between purchase situations. This includes types of purchases and the product characteristics. With regards to the first category, Chintagunta et al. (2012) find that the online transaction costs are relatively lower when the basket of purchased products is large and vice versa, saying the online channel is preferred for certain types of purchases. Regarding product categories, some papers simply test differences between different product types (Chiang et al. 2006; Levin et al. 2005) while others choose a level of abstraction such as high or low touch requirements (Levin et al. 2003) or size and perishability of the product (Chintagunta et al. 2012).

External influences can either stem from the marketing communication of the firm or from peers of the consumer. Three studies find an influence on marketing communication on channel choice and thereby confirm that channel choice is also prone to the effects of marketing (Ansari et al. 2008; Chintagunta et al. 2012; Valentini et al. 2011). The social influence was studied in terms of the three processes of attitude changes (compliance, identification or internalization) (Datta 2011), social contagion effects due to geographical proximity (Janakiraman and Niraj 2011) or social norms (Johnson 2008; Keen et al. 2004; Verhoef et al. 2007).

Individual differences incorporate demographics, geographic differences, and experiences and skills of the consumer. It is surprising that very little support has been found for the influence of demographics on channel choice. Single studies point towards the fact that males (Bendoly et al. 2005) and younger people (Ansari et al. 2008) might have a preference for online channels. In contrast, other studies explicitly state that demographics are irrelevant for the channel choice decision (Konus et al. 2008). Several studies find an influence of the geographic proximity to a store to drive offline channel choice (Chintagunta et al. 2012; Forman et al. 2009; Janakiraman and Niraj 2011). Lastly, it is unquestioned that previous experiences with certain channels (Ansari et al. 2008; Valentini et al. 2011) as well as internet or IT skills (e.g., Frambach et al. 2007) make a difference for channel outcomes.

It is interesting that most of these studies focus on empirical insights without building upon specific theories to explain these effects (few exceptions are brand extension theory and expectation-confirmation theory (Yang et al. 2013) and theory of planned behavior (Pavlou and Fygenson 2006)) or use a mixture of many different theoretical perspectives (Lim et al. 2012). Accordingly, there seems to be a lack of theoretical lenses to understand consumers' channel choice. While different many factors have been empirically validated, the explanations for these findings are barely grounded on previously established coherences and theories. A full overview on the determinants of customer's purchase channel choice is given in Table 2.2.

2.3.2 Multichannel Shoppers

Moving away from single purchase decisions, a second research stream investigates channel decisions on an aggregate level. Thereby, these papers examine a specific type of consumer: multichannel shoppers, i.e., consumers that use different channels for different purchases. Two major research questions have been addressed with regards to multichannel shoppers: who are the consumers that use different types of channels and how do they differ in terms of their shopping behavior apart from channel choice.

Several attempts have been made to classify shopper types. Keen et al. (2004) find one group of purchasers that have a very strong preference for a specific channel, while other types of buyers are driven by product, price, or experience and thereby would move between channels. Dholakia et al. (2005) study a multichannel retailer and find that the channel of entry influences multichannel shopping behavior since most multichannel shoppers were acquired via the online channel. Konuş et al. (2008) identify that customers who are enthusiastic multichannel shoppers are characterized by innovativeness, shopping enjoyment, and price consciousness. Unfortunately, they do not find stable clusters; instead the characteristics differ widely between product categories (Konus et al. 2008). Due to the many influence factors that have been identified for channel choice, it is not surprising that there is no simple classification for multichannel shoppers either.

Table 2.2 General determinants of customer's purchase channel choice

	Variables	References
Channel determinants	Price	Chiang et al. (2006), Forman et al. (2009), Goolsbee (2001), Keen et al. (2004), Verhoef et al. (2007)
	Service quality	Chiang et al. (2006), Kollmann et al. (2012), Montoya-Weiss et al. (2003), Verhoef et al. (2007), Yang et al. (2013)
	Ease of use, purchase effort, convenience	Chiang et al. (2006), Frambach et al. (2007), Gensler et al. (2012), Gupta et al. (2004a), Keen et al. (2004), Kollmann et al. (2012), Montoya-Weiss et al. (2003), Pavlou and Fygenson (2006), Verhoef et al. (2007)
	Product diagnosticity	Chiang et al. (2006), Gupta et al. (2004a), Levin et al. (2005), Lim et al. (2012), Pavlou and Fygenson (2006)
	Assortment	Chiang et al. (2006), Verhagen and van Dolen (2009), Verhoef et al. (2007)
	Enjoyment	Verhoef et al. (2007)
	Risk/privacy/security	Gensler et al. (2012), Gupta et al. (2004a), Kollmann et al. (2012), Lim et al. (2012) Montoya-Weiss et al. (2003), Pavlou and Fygenson (2006), Verhoef et al. (2007)
	Payment options	Chiang et al. (2006)
	Speed of transaction	Chiang et al. (2006), Noble et al. (2005), Verhoef et al. (2007)
	Negotiation	Verhoef et al. (2007)
	Social experience	Chiang et al. (2006)
	Post-purchase services	Chiang et al. (2006), Verhoef et al. (2007)
Purchase specifics	Product categories	Chiang et al. (2006), Chintagunta et al. (2012), Levin et al. (2003, 2005)
	Purchase size	Chintagunta et al. (2012)
External influences	Social influence/subjective norm	Datta (2011), Janakiraman and Niraj (2011), Johnson (2008), Keen et al. (2004), Verhoef et al. (2007)
	Marketing communication	Ansari et al. (2008), Chintagunta et al. (2012), Valentini et al. (2011)
Individual differences	Demographics	Ansari et al. (2008), Bendoly et al. (2005)
	Geographics	Chintagunta et al. (2012), Forman et al. (2009), Janakiraman and Niraj (2011)
	IT and Internet use/skills	Frambach et al. (2007), Johnson (2008), Levin et al. (2005), Montoya-Weiss et al. (2003), Pavlou and Fygenson (2006)
	Previous experience	Ansari et al. (2008), Valentini et al. (2011)

With regards to the value of multichannel shoppers, early empirical studies suggest that multichannel shoppers are generally more valuable than consumers that stick to one channel in terms of revenue (Kumar and Venkatesan 2005; Venkatesan et al. 2007) and retention (Venkatesan et al. 2007). A recent study by Kushwaha and Shankar (2013) challenges this general belief and shows that multichannel shoppers are the most valuable customer segment only for products with hedonic properties while consumer segments that are focused on only one channel create more revenue in all other cases.

2.3.3 Channel Switching

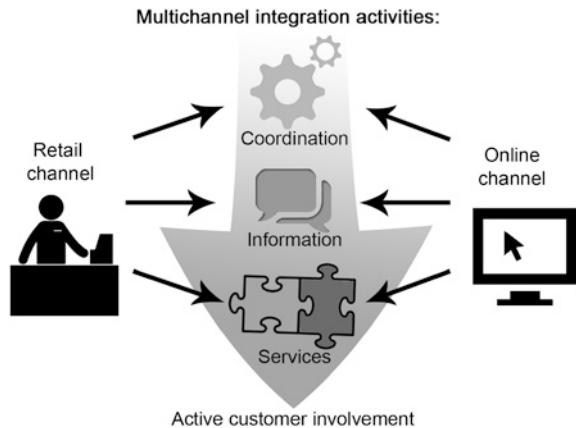
While the studies on multichannel shoppers investigate the switching between channels for different purchases, customers can also use different channels within one purchase. Often information is searched in one channel while another one is used for the actual purchase, a behavioral pattern referred to as the research shopper phenomenon (Verhoef et al. 2007). Customers that use several channels of one vendor during the purchase are characterized by higher satisfaction and higher loyalty (Wallace et al. 2004). This view is supported by Pauwels et al. (2011) who find that online information can increase purchases in the physical store of the same vendor. However, the switch between channels often also includes a switch of the vendor. This behavior is called cross-channel free riding (Chiu et al. 2011). It has severe consequences for the firm that provides the information since consumers use their services but generate no revenues. Chiu et al. (2011) identify multichannel efficacy and the within-firm lock-in as major drivers and inhibitors of this behavior. Therefore, customers that are used to moving between channels may exhibit this behavior to a greater extent. Verhoef et al. (2007) identify three mechanisms that drive research shopping: attribute-based decision making, cross-channel synergies and lack of channel lock-in. The attribute based decision making refers to channel attributes that lead to advantages of one or the other channel (cp. Sect. 2.3.1 for attributes wrt. channel choice). Since consumers' requirements and preferences differ widely between the information and the purchase stage, it is not unlikely that different channels' attributes are preferred for different steps of the purchase (Frambach et al. 2007). Cross-channel synergies occur if searching in one channel improves the purchase in the other channel. For instance, an effective search in one channel may enable better decisions in the other. Lock-in refers to issues that occur with a channel switch. For instance, a product that was found online might be difficult to locate in a store, thereby inhibiting the channel switch (Verhoef et al. 2007). Without calling it lock-in, other studies provide support for these spillover effects between the different stages of the purchase (Gensler et al. 2012; Pavlou and Fygenonson 2006). Whether a channel switch occurs is also conditional on the type of information retrieved online. Finding more price information online decreases the probability of a channel switch while the retrieval of product information increases the probability of switching to an offline vendor (Kuruzovich et al. 2008).

To conclude, there is a multitude of factors that have been found to be influential for within and between purchase channel choices. As anticipated by Balasubramanian et al. (2005), it is difficult or impossible to develop an integrated model of all the different influence factors of these complex decisions. However, the structured analysis of previous knowledge about consumer behavior between online and offline channels offers an important overview that will be used over the course of this study.

2.4 Multichannel Integration

The transformation of classical retailers into multichannel retailers involves a lot of opportunities and challenges in integrating the different channels. Three types of multichannel integration can be distinguished: coordination, information and services. As elucidated in the following, these activities build upon each other. The first group of activities includes organizational and supply chain issues with regards to coordination. These integration activities focus on dealing with the increased complexity of managing several channels, trying to increase the efficiency of the operations and to exploit synergies between the two channels. While this type of multichannel integration efforts is invisible to the customer, the other two classes of integration efforts are visible to the customer or directly affect the customer’s interaction with the firm. The second group of activities enables or coordinates the flow of information between the different channels, the firm and the consumers. The third group enhances the purchase experience of the customer by adding benefits of the offline channel to an online transaction and vice versa. Accordingly, the experience of one channel is integrated with the features of another channel. The three types of multichannel integration activities are depicted in Fig. 2.1 and described in detail in the subsequent paragraphs. As mentioned before, the type of integration with the highest active customer involvement, multichannel integration services, is of primary interest for this study.

Fig. 2.1 A classification of multichannel integration activities



While a certain level of coordination is necessary to realize information and service integration, these coordination efforts are hidden from the consumer. Major issues in this area relate to inventory systems, warehousing, marketing and pricing. Keeping track of the inventory is a major challenge even for single channel retailers, where inventory inaccuracy is a ubiquitous phenomenon (DeHoratius and Raman 2008). However, when different channels try to make use of the same warehouse or even rely on the inventories of the other channel (for instance for pickup services), the complexity and importance of these activities increases even further. Stock-outs in retail stores have been shown to produce serious costs (Anderson et al. 2006; Fitzsimons 2000), but must not occur in an uncontrolled way when multichannel information or services are offered. While the coordination between a manufacturer's direct online presence and the traditional retail channel have been investigated by a series of studies (Lee et al. 2013; Yan and Pei 2011), this issue has not been addressed for multichannel retailers. Accordingly, a reliable estimation of the cost of these integration activities is missing.

More research has been done with regards to multichannel marketing and customer management, where a series of approaches were developed to address these issues (Kumar 2010; Thomas and Sullivan 2005; Venkatesan and Kumar 2004). All of these approaches require firms to integrate their customer data to be able to analyze it jointly and address the right customers through the right communication channel. Very little research has been done on multichannel pricing. While early studies indicate that multichannel retailers are pricing uniformly between channels (Ancarani and Shankar 2004; Pan et al. 2002a; Tang and Xing 2001), a more recent study by Wolk and Ebling (2010) finds that some multichannel retailers apply price differentiation. This indicates that retailers are experimenting with price discrimination opportunities between channels, but the question whether prices should be different or need to be identical between channels has not been resolved yet.

When trying to estimate the burden of these additional efforts, one has to consider that integration of the channels on a coordination level can also help to generate synergies in terms of labor, for instance through centralized administration or inventory (Steinfeld et al. 2002), and more effective communication with the customer (Thomas and Sullivan 2005). However, the main advantages of multichannel integration should lie in the opportunity to offer an advanced experience to the customer.

A series of studies has addressed the information flow between channels, that can either be controlled by the company or not. One research stream investigates spillover effects that occur when multiple channels are maintained simultaneously. The transfer of information and perceptions from the offline to the online channel has been studied for trust (Badrinarayanan et al. 2012; Bock et al. 2012; Doong et al. 2011), satisfaction (van Birgelen et al. 2006) and brand image (Kwon and Lennon 2009; Verhagen and van Dolen 2009). There is strong evidence that trust is transferred from the offline to the online channel, especially when product uncertainty is high (Bock et al. 2012). Others assert that this only holds for certain cultural settings (Badrinarayanan et al. 2012). Doong et al. (2011) add that offline

brand loyalty also influences online trust. Opposite effects have been identified by Falk et al. (2007) in the banking industry who show that high satisfaction with the offline channel can also lead to dissynergies with the online channel in terms of reduced usefulness and increased risk perceptions. Moving away from unidirectional influences, van Birgelen et al. (2006) identify interaction effects between the performance satisfaction levels of traditional and technology-enabled channels. Bidirectional effects have also been identified for the brand image, where previous brand image of one channel shapes the brand image of the other (Kwon and Lennon 2009). While it is important to be aware how perceptions of one channel can shape attitudes towards the other, these information flows can hardly be influenced by the multichannel retailers.

Other researchers have addressed the flow of information between channels that is enabled by the firm (Bendoly et al. 2005). This information-based integration includes the sharing of promotion, product, price and transaction information between channels (Oh and Teo 2010). For instance, the local stores can advertise their websites and have employees that are knowledgeable about the online offering. On the other hand, online stores can advertise the physical stores, offer non-product information such as driving directions and opening hours, make lists of products offered at specific stores available or provide information on in-store product availability on their websites. Information integration was shown to be helpful in cases of stockouts, because it significantly reduces the likelihood of switching to an alternative firm (Bendoly et al. 2005). Information integration was the first step of multichannel integration and very popular in early stages of this trend (Steinfeld et al. 2005).

Besides the information integration, Bendoly et al. (2005) also discuss types of multichannel integration services. These can either be online services that enhance transactions initiated in store or offline services for online transactions. Stores can be enhanced by web kiosks where interested consumers can make online purchases. This integrated service is again especially interesting in the case of stockouts to prevent the loss of a customer (Bendoly et al. 2005). Manifold options exist to offer offline services for online transactions. These services include the service offerings in store (Oh and Teo 2010) as well as pickup and return in store (Bendoly et al. 2005).

Many researchers have emphasized the importance of such integrated services. Prasarnphanich and Gillen (2003) provide a long list of opportunities that may maximize the value for businesses and customers through an integration of online and offline capabilities. Sousa and Voss (2006) argue that a re-conceptualization of service quality is necessary when studying multichannel retailing. Thereby, they differentiate between virtual, physical, and integration quality. They emphasize the importance of integration quality which includes the possibility to choose between alternative channels to accomplish certain tasks and the consistency of content and processes across channels. Others conceptualize that multichannel integration services may add value for customers (Saeed et al. 2003), however, determining actual valuations of these services is a major challenge (Berry et al. 2010).

Few researchers have studied outcomes of multichannel integration services (Table 2.3). Three studies have investigated several integrated services at once

Table 2.3 Previous studies investigating outcomes of multichannel integration services

Authors	Type and implementation of MC integration services	Findings with regards to multichannel integration services
Bendoly et al. (2005)	Perceptions of possibilities of returns and pickup in store	Awareness of integration has no influence on within-retailer channel choice
Oh and Teo (2010)	Perceptions of integrated order fulfillment and integrated customer service	Perception of integration increases general service convenience and eventually the value of purchasing at this firm
Oh et al. (2012)	Retail channel integration capabilities index	Integration capabilities are related to higher exploitative and explorative competencies and eventually firm performance
Swaide and Wigand (2012)	Pickup in store	Integrated pickup is an important determinant of overall service quality

(Bendoly et al. 2005; Oh et al. 2012; Oh and Teo 2010), while one study focuses on pickup in store (Swaide and Wigand 2012). Bendoly et al. (2005) were the first to empirically address outcomes of multichannel integration services. In their study, they ask customers of three multichannel retailers about their perceptions of the level of integration that is offered by the retailer. Using this measure of awareness of channel integration, they try to explain previous channel choices of these customers. Unfortunately, all customers are evaluating the same service offering. Therefore, the variance in the evaluation must be attributed to the interest or the informedness of the customers about the service integration offering and not the service integration levels itself. Consequently, the study cannot assess whether the customers used, valued or even recognized the multichannel integration services during their past purchase. This major limitation could be overcome by an experimental or quasi experimental study. Their empirical setting furthermore did not allow the authors to differentiate between specific service options. Instead, they employ generic measures of information integration and physical integration. The paper makes an important contribution in its differentiation of types of multichannel integration. However, the limitations described above make it difficult to attribute the insignificant relationship between the perceptions of multichannel integration service and previous channel choice to the service offerings.

Oh and Teo (2010) investigate the impact of four types of information integration and two types of service integration. They find that those integration activities either influence information quality or service convenience, which finally lead to a higher value of purchasing at the firm. Similar to the study of Bendoly et al. (2005), they measure perceived integration and thereby face the same limitations that have been outlined before. Furthermore, the study does not differentiate between the directions of the integration. Instead, formative constructs that do not refer to specific services or channels are constructed. For instance, the integration concept of “integrated order fulfillment” is measured by the questions “The gift coupons issued by the store can be redeemed either on-line or off-line.” (Oh and Teo 2010, p. 47) and “The physical store allows me to self-collect my on-line purchase” (Oh and Teo 2010, p. 47). This mixture of outcomes makes it

difficult to attribute any effects to specific integration activities. Lastly, information quality, service convenience or purchase value do not refer to any specific channel. This imprecision in the conceptualization and measurement of both, the integration services and the outcome variables, makes it challenging to derive meaning from the empirical results of the study.

In another study, Oh et al. (2012) use a survey among companies to study the impact of multichannel integration on explorative and exploitative competencies and eventually firm performance. An adjusted version of the six formative constructs (Oh and Teo 2010) is combined to an overall index of retail channel integration capabilities. Therefore, the authors do not attempt to study the influence of individual integration services, but instead investigate the outcomes of the overall integration capabilities on a firm level. Their finding that an integration of the online and the offline channel increases firm performance should motivate other researchers to dig deeper into the behavioral consequences of individual integration services.

Finally, Swaid and Wigand (2012) extend the service quality model (Parasuraman et al. 1988) by the dimension of in-store pickups and find that a pickup option can be an important component of service quality.

Summing up, research on the outcomes of multichannel integration services is in its early stages. Five major limitations or gaps stand out and should be addressed to gain a more sophisticated understanding of the issue: First, previous studies measure perceived integration instead of actual differences between channel setups. These measures make it difficult (or impossible) to attribute effects to the actual integration services. Second, the conceptualization of multichannel integration services in the empirical studies varies widely from their actual design. Different types of service integration have been studied on an aggregated level without being specific about their properties, their differences or even their reference frame. Third, the understanding of the impact of integration services on important outcome variables such as choices or willingness to pay is underdeveloped, since no study investigates the causal relationship between integration services and these variables. Fourth, no explanation for the impact of different types of service integration has been given. However, such an understanding of the reasons why customers value certain types of integrated services is crucial for advancing the integration of online and offline channels. Fifth, previous research gives no indication about either individual or purchase specific influences on the appeal of multichannel integration services. However, the identification of such covariates is important to be able to channel efforts and investments.

To enhance the theoretical insights with today's best practices, the largest multichannel retailers in the US and in Germany were investigated with regards to their current multichannel service integration offerings. While early studies suggest, that multichannel service integration was rather limited (Steinfeld et al. 2005), there is a broad diversity of multichannel integration service implementations among these retailers. An overview on these service offerings is given in Table 2.4.

Although the increased implementation of multichannel integration services emphasizes the pressure that multichannel retailer feel to differentiate themselves and make use of their infrastructure, the inconsistent implementation indicates

Table 2.4 Multichannel integration services offered by the largest multichannel retailers in the United States and in Germany

Retailer	Country	Internet retailing company share 2013	Immediate pickup	Delayed pickup	Service in store	Returns in store
Walmart	US	2.6	X ^a			X
BestBuy	US	1.7		X	X	X
Macy's	US	1.6		X		X
Target	US	1.3	X ^a			(X) ^{b, c}
Sears	US	1.0	X ^a		(X) ^f	X
Otto	DE	7.5				(X) ^d
Notebooksbilliger	DE	2.0		X	X	(X) ^d
Conrad	DE	1.9	X ^a		X	X
Cyberport	DE	1.9		X	X	X
Weltbild	DE	1.5		(X) ^c		
Bonprix	DE	1.5				(X) ^d
C&A	DE	1.1		X		(X) ^d
Mediamarkt	DE	1.0	X ^a		X	X

Source Own research as of August 2014; revenues from the Passport Internet Retailing reports (Euromonitor International 2014a, b)

Note Selection criteria: Internet retailing share of at least 1 %. Direct channels of manufacturers have been excluded (e.g., Apple, Dell, Tchibo)

^aFor selected products available in store

^bSelected items

^cFree shipping to store

^dStore ships return

^eOnline registration of the return necessary

^fService via phone, then service appointment (same as for in-store purchases)

that the effectiveness of the different types of multichannel integration services is not fully understood by today's major multichannel retailers. Thus, the practical lack of established insights corresponds to the very limited body of knowledge on this topic that exists in academic research. Based on this analysis of theory and practice, the subsequent studies focus on the analysis of the integration of offline capabilities with online transactions, since these services aim at facilitating the competition with pure online retailers. More specifically, the investigated integration services include immediate and delayed pickup, service in store, and returns in store as derived from the practical and theoretical review.

2.5 Summary

This chapter provided a comprehensive overview of previous literature on offline, online and multichannel commerce. Three major outcomes shall be highlighted. First, offline and online channel differ structurally for a large amount of reasons

that can be classified into the categories information transparency, interactions and cost structures. Second, these differences led to series of studies on cross-channel consumer behavior. These studies result in a huge amount of influence factors that have been identified to drive the preference for one or the other channel and that shape multichannel behavior. Third, previous studies have focused on studying multichannel issues as two competing alternatives instead of investigating the possible interplay between the two. Major limitations of previous studies on multichannel integration services have been identified that call for further investigations.

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