Omni-channel customer management processes in retail: An exploratory study on fulfillment-related options

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ABSTRACT

Omni-channel retailers systematically connect their sales and communication channels to create a seamless shopping experience. Influencing customers in their channel choices can result in reduced costs to serve customers and increased revenue. To achieve this, comprehensive omni-channel customer management is necessary that also includes fulfillment processes during the customer journey. Operations plays a key role in omni-channel retailing as it is in direct contact with customers and does not end at the store like for bricks-and-mortar retailing. Omni-channel retailing and in particular customer management with fulfillment options is a new topic in practice and constitutes a new research area. The contribution of this paper lies in building a bridge between sales and operations between online and physical store retailing. We develop propositions that demonstrate how customers can be guided through the channels.

We use an exploratory study where data are collected mainly from face-to-face interviews with 25 omni-channel retailers. The objectives of the research include identifying fulfillment-related customer management opportunities via multiple channels used by retailers, assessing the relationships and interdependencies of the customer management methods, and developing propositions for omni-channel customer management. The management options are related to questions such as how customers can collect availability information across channels, how purchase and payment processes are designed, how delivery speed and costs are defined, and which return options are possible. Findings include, among others, that retailers use product availability checks for guiding customers into the store, prioritize certain operational actions, and prevent product returns. If executed in the right way, omni-channel customer management will not only result in differentiation and cross-selling potential for retailers, but also in additional benefit for customers.

KEYWORDS: Omni-Channel Retailing · Customer Management · Exploratory Study · Retail

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1. INTRODUCTION

The expanding range of online offerings is significantly changing traditional retail structures. Retailers need to create business models that cope with both online and bricks-and-mortar requirements in a seamless channel strategy. A retail business with multiple channels goes through different stages in its level of interconnection and process integration for the different channels (see also Kotzab and Madlberger [2001] and Hübner et al. [2016b]). Retailers usually expand their sales channels from one primary single channel to a configuration with multiple channels [Verhoef et al., 2015]. Various expressions are used for this development. Terms encountered in practice include "multi-channel", "cross-channel", "omni-channel" or "seamless commerce", which are often used interchangeably and without clear differentiation [Beck and Rygl, 2015; Galipoglu et al., 2018]. In a single-channel (SC) context, retailers only operate one individual sales channel. This category includes exclusively bricks-and-mortar players and pure online players. In a basic multi-channel (MC) approach, retailers operate multiple channels but with segregated units and standalone marketing, operations and information technology systems for each channel [Hübner et al.,

2016b]. Customers obtain products either in store or via direct customer deliveries. Processes are not integrated from a customer perspective [Beck and Rygl, 2015] and there is no operational interface between the two channels [Verhoef et al., 2015]. An example would be an original bricks-and-mortar retailer that opened a web shop with no operational coordination or exchange of goods between the entities. With an advanced omni-channel (OC) approach, neither the customer nor the retailer distinguishes between channels anymore [Brynjolfsson et al., 2009; Gallino and Moreno, 2014; Verhoef et al., 2015 ; Bell et al., 2017]. There is only one common interface to the customer and orders can also be processed through the stores and via home delivery regardless of whether they have been placed in store or via the direct-to-customer channel [Banker and Cooke, 2013; Beck and Rygl, 2015; Hübner et al., 2015]. This requires channel integration in marketing and service aspects (see e.g., Herhausen et al. [2015] and Verhoef et al. [2015]), IT domains (see e.g., Oh et al. [2012]) and operational areas (see e.g., Gallino and Moreno [2014], Hübner et al. [2016b] and Wollenburg et al. [2018a]). Information exchange, joint operations and inventories across channels enable conflation of the customer and fulfillment processes [Hübner et al., 2016b].

As customers spend more money and provide more revenue if they shop via multiple channels [Kumar and Venkatesan, 2005], retailers strive to develop SC customers into OC customers. Furthermore, the latter are more loyal than SC customers [Danaher et al., 2003; Shankar et al., 2003; Wallace et al., 2004]. On top of this, pure online customers migrate more easily to competitors due to the direct possibility of comparing prices and the fact that other retailers are only "one click away" [Wollenburg et al., 2018a]. It is therefore interesting how customer management for OC retailers can lead to customers using more than one channel in their buying process and, if well executed, lead to greater firm performance while maintaining customer satisfaction. This requires to identify and analyze specific configurations of channel offerings that can be applied for an effective customer management.

The channel choice of a customer is ultimately unpredictable as it is not under direct control of the retailer. Customer control is therefore seen as something critical (see Thomas and Sullivan [2005]), despite the fact that increasing the bandwidth of options for customer services can presumably lead towards mutual benefit. Myers et al. [2004] show that influencing customers' channel choice can result in reduced costs to serve customers by as much as 10 to 15% and 15 to 20% greater revenue per customer. However, this discussion shows why retailers now increasingly need to investigate in cross-channel customer management opportunities. This requires dealing with questions relating to how customers can be managed across channels, and how customers might be influenced in their choice of a specific channel, or towards the use of multiple channels during a transaction.

Current research on retailing with multiple channels is mainly driven by the rapid development of online sales and inherently changing customer behavior. This is the reason why today's research in OC retailing in most cases focuses on channel-specific requirements – mainly online retailing or customer behavior [Kozlenkova et al., 2015]. In this area, selected phenomena are analyzed partially from marketing (e.g., Verhoef et al. [2007], Ansari et al. [2008], Neslin and Shankar [2009]), service management (e.g., Neslin et al. [2006], Eisingerich and Bell [2008], Banerjee [2014]), and operations management perspectives (e.g., Agatz et al. [2008], Hübner et al. [2015], Hübner et al. [2016b], Wollenburg et al. [2018a]), but without a comprehensive perspective on customer management from different functional areas in a true OC setting [Gallino and Moreno, 2014; Kozlenkova et al., 2015; Bell et al., 2017]. Myers et al. [2004] postulate that companies must begin to constrain the channel options of customers by guiding them subtly. OC retailers already use multiple approaches to guide their customers through the channels. Examples of these options, just to name a few, are OC advertising during the search for information on a product, options for OC product search, and couponing. These advertising and marketing-related areas are already well researched (see e.g., Verhoef et al. [2015], Kozlenkova et al. [2015], or Galipoglu et al. [2018]). For example, Herhausen et al. [2012] examine the role of personal relationships, learning investments and attitudes towards a firm when customers are steered into the online channel, but guidance of customers towards store offers is not discussed. Melacini et al. [2018] found out that despite the growing interest in OC retailing, key topics related to marketing-operations interfaces, "logistics role played by the stores in the delivery process and the interplay between different logistics aspects" are not yet sufficiently investigated.

Operations plays a key role in omni-channel retailing as it is in direct contact with customers. We will focus our research on product-related OC processes that allow steering across seamless channels. Product-related processes are a major challenge for OC retailers from a cost and management perspective, as they require a physical connection across channels and efficient operations models for fulfillment [Agatz et al., 2008; Hübner et al., 2016a]. Product-related processes include the configuration of availability checks, order and purchasing processes, as well as delivery and return options [Agatz et al., 2008; Wollenburg et al., 2018a]. Wollenburg et al. [2018a] discuss fulfillment-related options for customer steering in fashion retailing. They analyze the advantages and disadvantages of customer steering opportunities in inventory management and logistics design. They focus on the logistics-related areas but they neither comprehensively look at the customer journey nor develop propositions. Moreover, their findings are restricted to one particular industry. Our research focuses on the product-related customer

journey in OC retailing in more detail to analyze how and why customers can be managed in all channel directions. We therefore postulate the following research questions:

RQ1: How can omni-channel retailers manage customers across channels via product-related purchasing processes?

RQ2: Which customer management options are beneficial in omni-channel retailing, and what are the reasons?

As our research is grounded in distinct areas of OC customer management, it has interdisciplinary implications for marketing, operations and information technology. Occupying a crossfunctional perspective in management research is explicitly called for in literature [Boyer and Swink, 2006; Kozlenkova et al., 2015; Saghiri et al., 2018], especially focusing on the product-related customer journey in retailing [Lemon and Verhoef, 2016].

The remainder of this paper is organized as follows. First, the methodology of our exploratory study is described in Section 2. We then present our findings and discuss them in the light of literature from adjacent fields of research to derive propositions in Section 3. Finally, we draw conclusions, present limitations of our study and future areas of research in Section 4.

2. METHODOLOGY

As customer management in an OC retail environment is still a new research field, a qualitative, exploratory and empirically grounded approach is appropriate for data collection [Gioia et al., 2013; Trautrims et al., 2012]. We employ multiple sources of data for our qualitative research in order to provide multiple perspectives on an issue, supply more information on emerging concepts, and allow for cross-checking and triangulation [Barratt et al., 2011]. At the heart of our study lies the semi-structured interview with OC retailers [Eisenhardt, 1989; Glaser and Strauss, 1967].

2.1. Data collection

We conducted semi-structured interviews with 25 managers from 18 German companies that operate internationally. The German retail market was chosen because it is a central and large market in Europe, it is one of the most developed countries in terms of non-food online retail (e.g., Germany is Amazon's second largest market with over 14 bn Euros in revenue), all top 100 retailers in Germany are nowadays multi- or omni-channel retailers (i.e., operating on- and offline) and finally the accessibility to senior retail leaders of a large set of organizations was given.

We used theoretical sampling for our interviews, starting with six interviews and then gradually developing the sample size until preliminary saturation of the data was reached [Eisenhardt, 1989; Glaser and Strauss, 1967]. The data collection took place over a period of twelve months. The criteria for the retailer selection included a minimum sales volume of EUR 300m p.a., as this means a relatively large network of store outlets is available. Thus, all retailers needed to have their own outlets throughout the country, as well as responsibility for logistics and warehousing. Furthermore, actual OC retailing activities had to exist, i.e., a minimum of two years in online retailing, presuming that active cross-channel customer management is not a priority at the outset (see Hübner et al. [2016b] and Saghiri et al. [2017]). On top of this, we did not want to mix up food and non-food business, and pursued interviews only with non-food retailers. This is because (1) OC food retailing is not as far developed in terms of integration efforts as non-food retailing, so that influencing customers and orders across channels is not the first priority, and "(2) food is very different from other product categories. It requires processes across various temperature zones, short cycle times and rapid delivery [Wollenburg et al., 2018b]. The target group of the study were therefore primarily the top OC retailers, in terms of sales per year, from the fashion, do-it-yourself (DIY), and consumer electronics sector, because these three categories are among the top-selling product ranges in online retailing. These retailers operate large store networks and are experienced in OC retailing. Hence, the retailers are relatively homogeneous in terms of sales, number of outlets and development stage, but are heterogeneous in terms of industries, product requirements and competition intensity across sectors. Managing directors and section heads were interviewed in order to get the broadest possible perspective and most detailed insights. Table 1 and 2 provide overviews of participating companies and interviewees.

Please note that a subset of the data (i.e., 12 interviews) was applied in a preceding study. It was used to analyse specific steering opportunities in the context of fashion retailing (see Wollenburg et al. [2018a]). During our theoretical sampling we found that a cross-industry comparison becomes beneficial for the subject of customer management. Hence, this paper identifies and evaluates customer management in general as it is based on findings across multiple non-food retailers. The interview questions pointed to the major areas in the product-related process in omni-channel retailing during the customer journey, i.e., availability check, purchase and order processing, delivery and return. The questions are related to our RQs and focused on the "how" and "why" of omni-channel customer management during the different process steps. The advantages and disadvantages of different customer management opportunities in an OC environment were discussed, leading to an understanding of the different steering directions. The main discussion points are summarized in the following questions:

	Fashion	Consumer electronics	Do-it-yourself	Other	Total
Number of companies	7	3	3	5	18
Annual sales in [Euro]					
-]1 bn; infinite[	1	3	3	5	12
-]500 m; 1 bn[	1	0	0	0	1
-[300 m; 500m]	5	0	0	0	5
Presence in OC business:					
-]10 years; infinite[	4	0	0	3	7
-]3 years; 10 years]	3	1	3	1	8
-[2 years; 3 years]	0	2	0	1	3
Number of outlets:					
-]300 outlets; infinite[	1	1	2	2	6
-]100 outlets; 300 outlets]	2	2	0	1	5
-]0 outlets; 100 outlets]	4	0	1	2	7

Table 1: Overview of participating retailers

	Supply Chain Management	E-commerce	Cross-channel	Total
Managing Director	9	2	0	11
Section Head	5	7	2	14
Total	14	9	2	25

Table 2: Overview of interviewees

- What is the potential in customer management in the omni-channel product process (in terms of availability check, purchase, delivery and return), and in channel integration?
- Why should specific measures be implemented? What are the advantages and disadvantages?

What are the effects on certain KPIs?

- How is an availability objective defined, and why is cross-channel availability information important?
- What impact do shipping costs and speed have on the choice of the delivery channel and why?
- What are influencing factors on return rates, and why are return rates high/low in certain product categories?
- How is customer value measured and why in this way?

The interview guide was adaptable and was subject to minor changes after six interviews [Gioia et al., 2013]. Open questions allowed a natural flow of conversation. When interviewees reported insightful incidents or experiences we allowed for a narrative flow and did not strictly adhere to the schedule. The interviews took 75 minutes on average, with no interview lasting less than 60 minutes. They were always conducted by two interviewers to allow objective analysis afterwards. Field notes were written immediately after interview completion where a recording was not possible and subsequently transcribed for further analysis.

Recording was only possible in very few interviews due to confidentiality concerns.

External data have been used from two sources. The first consisted of data from 750 nonfood Dutch, German, French, Norwegian, Swedish, Australian, and US online shops [van Essen and de Leeuw, 2013] from which we used information of OC retailers. The second data source contained the Top 25 non-food retailers from France, the UK and the US [Locafox, 2015]. On top of this, we conducted our own web search where we looked into the Top 100 retailers in Germany and eliminated food retailers as well as pure bricks-and-mortar and pure online players leaving 48 OC non-food retailers in total. Reports from consultancies on OC customer management completed the data collection with external data points (e.g., McKinsey [2013], BCG [2014], EY [2015]). These data were used to underpin or refute our empirical findings from the retailer interviews and is incorporated in the following findings and discussion sections.

2.2. Data analysis

We applied an inductive analysis that does not follow a strict grounded theory approach (see Flint et al. [2012]; Manuj and Pohlen [2012]) and that is not driven by a deductive logic. This is necessary as "data is inextricably fused with theory" [Alvesson and Kärreman, 2007]. Two distinct researchers coded the data independently of each other to increase the repeatability of our findings [Lincoln and Guba, 1985]

in order to provide external validity of our findings. This was followed by a comparison of codes in the researcher group to reach an objective hermeneutics approach (i.e., an intersubjective development of interpretive patterns). At regular meetings all authors discussed the codes, categories and findings to set aside subjective impressions from only one author and come to an objective meaning of interviewee perceptions [Gioia et al., 2013]. Each code was linked to a phrase from the interview notes or the transcript from recordings. This enabled complete traceability from an individual code to the revised source. During the analysis the notes were rephrased, reflected and compared to create meaningful categories [Eisenhardt, 1989; Trautrims et al., 2012]. Data were coded and categorized until preliminary theoretical saturation was reached [Eisenhardt, 1989], i.e., repeatability was high and a certain pattern was showing across the interviews from various industries and contexts. In our study this was the case after interviewing 25 managers.

Transcripts of interviews were always subsequently coded and categorized with the help of the software MAXQDA 11. Codes were assigned to illustrate a description by an interviewee. If a description or view did not fit a code already assigned, a new code was assigned to this item. Each code was linked to a phrase from the interview transcript or recording. This enabled complete traceability from an individual code to the original source. For example when an interviewee shared with us a newly introduced process for pricing home delivery and thereby reducing fill-up orders, we assigned the code "Customer Management through pricing" and "Delivery" but also "Return", as the return rate was expected to drop due to the introduction of this new pricing model for a delivery fee. We organized the data into first- and second-order categories to facilitate their later assembly into a more structured form [Gioia et al., 2013; Van Maanen, 1979]. We coded first-order "in vivo" data, searching for relevant words, phrases and descriptions. Distinct passages were assigned to codes and code sets and grouped into first-order categories that are still close to what participants said during the interviews. The categories are linked to the product-related process of availability check, purchase and order processing, delivery and return. Second-order themes derived from theoretically informed interpretations of the data. They were merged to two overarching dimensions, namely "OC operations structures" and "Steering and customer control mechanisms".

Internal validity was achieved via triangulation with the additional data sources and member checks with participants of the interviews. We showed informants our evolving analyses to get feedback in the format of a preliminary report, two presentations at academic conferences, and an intermediate presentation at one OC retailer. The feedback has also been incorporated into our findings. In the following section, research transitions from inductive to a form of abductive reasoning where data and existing theory are considered together in an interplay between theory and empirics [Alvesson and Kärreman, 2007; Van Maanen et al., 2007]. Quotes from interviews are used to underline the emerging theory. Propositions are provided using conceptual categories and their properties [Glaser and Strauss, 1967].

3. FINDINGS AND DISCUSSION

In this section we first summarize the empirical findings in each major process step and then discuss them in the context of related literature to derive propositions on OC customer management options. We align our structure to the customer journey in the product-related processes, i.e., coming from a product availability check (Section 3.1) via purchase and order processing (Section 3.2) to final delivery and return (Section 3.3). Customer management potentials arise in all those areas.

3.1. Product Availability

One option to influence customers' channel choice is using OC product availability checks and additional recommendations. In the webshop availability is either displayed only for online items or for both online and store items. Instore availability can be checked for store inventory or also for online inventory in a similar manner. Retailers can guide customers into the store by offering an availability check in the webshop for online and store inventory.

> *By providing the customer with the possibility to check for store availability of a product online, we make sure that he does not visit the store for nothing. [Managing Director, DIY]*
> *This [online check for store inventory] provides the opportunity to make a store's assortment range transparent to customers. [Head of Sales, Fashion]*

From literature we know that a strong positive synergy exists between searching in one channel and purchasing in the other [Verhoef et al., 2007]. The most common form of this kind is a preliminary online search and a store purchase afterwards [Neslin et al., 2006]. For its execution, prior research has argued that inventory scarcity perceptions have an effect on purchases [Gao and Su, 2017]. Verhallen and Robben [1994] found a greater preference for books when they were perceived as scarce. Scarce products are less likely of being returned [Rao et al., 2014]. Availability performance in physical distribution service quality of OC retailers exceeds that of SC retailers due to synergies in inventory management, reflected in shorter sourcing and shipping times [Rabinovich and Bailey, 2004].

We find that an online availability check for store inventory facilitates online research on products (e.g., searching precisely where to buy what from home so that it is not necessary to go to different stores) and therefore has customer management opportunities. Several retailers are of the opinion that *"the online availability check should suggest one hundred percent availability in store. If an article is not in stock in a specific store, it is not listed on the store's web page"* [Managing Director, DIY]. On the contrary, customer management via the display of scarcity is perceived as dangerous by the interviewees because of the risk of higher return rates and because customers might misconceive the intention of the retailer. Availability information, e.g., signalled with a yellow traffic light, may also be unclear for customers and therefore OC retailers need to provide actual inventory transparency across their channels.

> *We started with traffic light availability information for the store, but switched to real value information because the customer was ultimately unsure what "yellow" meant. [Managing Director, Consumer Electronics]*

The guidance is preferably made by displaying the exact quantities that are left in the store to give the customer the most transparent information possible. While this general recommendation holds in the electronics and DIY sector, it is mostly not adequate in fashion retailing due to specific challenges: Fashion retailers normally only have a very limited number of a specific product of one size and color in their stores, which increases the risk that an item is sold out until a customer comes into the store. Further on, fashion retailers in most cases cannot guarantee, if, e.g., only one item of a specific product is available in the store, that this product is detectable on the shelf for the next customer as prior customers might have left the item in the changing room. Thus, displaying exact numbers of items in the web shop of fashion retailers contains a high risk for customers' dissatisfaction with the retailers availability check online for store quantities and ultimately dissatisfaction with the retailer itself. Click & collect reduces the out-of-stock risk customers face when deciding to physically visit a store.

> *When shopping online for pick-up in store customers do not need to worry whether a product is available in a store or not. [Head of eCommerce, Fashion]*

However, online interactions decrease the interaction frequency with sales personnel. The associated reduction in personal services leads to lower loyalty. This can be negatively associated with long-term purchase patterns. Thus, guiding customers into the store can help to prevent migration as well. Therefore we formulate the following proposition on information about store inventory in the web shop:

P1 Omni-channel customers should be guided into the store by displaying exact availability information of a product in the web shop, if possible for the retail format, without using scarcity as a lever.

Herhausen et al. [2012] find that if learning investments in the online channel are high for customers, all options for influencing customer behavior are ineffective. If retailers want to get customers into the online channel they should reduce the learning costs of the customer going online. Former store customers must be retrained to learn about, accept and use a new method of shopping [Boyer and Hult, 2006]. Customer education initiatives affect the impact of perceived service quality on trust. This leads to greater loyalty and less mistrust or fear about cross-channel efforts [Eisingerich and Bell, 2008; Fernández-Sabiote and Román, 2012; Dennis et al., 2017].

This is in line with our findings. Low online learning costs call for synergies between channels while customer management strategies appear less appropriate when channel learning costs are high. Participants in our study shared the experience that most customers do not yet know the online portfolio and service options. This is why retailers work on solutions to educate customers about their omni-channel offers. A typical example is the use of online videos: *"[...] online videos explain the advantages of an integrated online and offline channel experience in ten seconds"* [Managing Director, DIY].

Furthermore, customers sometimes mistrust retailers' abilities to master technology. If something does not work immediately, this can lead to an increase in customers' mistrust levels, which results in a decrease of order frequency and size. For example, if a product is displayed with "only one more available", then customers will not attempt to go to the store as they expect that this information might be inaccurate, or that the item will be sold out upon arrival. At this point customer education is necessary. Customers' knowledge strengthens their trust in an organization. Therefore, our second proposition reads as follows:

P2 Customers in depth knowledge of omni-channel retailers' service offers, like product availability checks, are a prerequisite for managing customers across channel, e.g. guiding into the physical store.

3.2. Purchase and Processing

Retailers appreciate payment in the form of direct cash flow (i.e., PayPal, a transfer, cash payment, credit card) over an indirect payment such as purchase on account. For example, *"a scoring on credit assessment by external service providers is used for the selection of payment methods: first, the purchase on account disappears, then, depending on the product, credit card is removed"* [Head of Logistics, Department

Store]. Customer segmentation also leads to specific restrictions for certain customer groups. *"Depending on their credit history, customers are segmented into groups. For some groups, payment on invoice is not possible" [Managing Director, DIY]*. But retailers have to be careful not to restrict easy payment methods too drastically. Secure payments such as PayPal, and the option to pay by invoice are sometimes especially strong reasons for buying online from a particular retailer. Nevertheless, retailers report good experiences with a pre-selection of certain payment options. For example, fashion retailers with high return rates observe fewer returns when customers who have low credit worthiness are no longer allowed to purchase on account. In addition to this, retailers set up small fees on unwanted payment methods such as purchase on account which lead to significantly lower use of these payment methods with the same conversion, and thus to a lower return quota.

We introduced a fee of EUR 1.50 for payment by invoice. After the introduction there was no significant conversion loss but the proportion of invoice purchases declined from 83 percent to 50 percent. [Head of E-Commerce, Fashion]
We have a lower return quota for PayPal, advance payment and credit card in contrast to purchases on account. [Head of E-Commerce, Fashion]
We consolidate frequency of returns and revenue of a customer into a key performance indicator and withdraw the privilege of purchasing on account for the lowest 10% of customers. [Head of E-Commerce, Fashion]

This is in line with Gelbrich et al. [2017] who find that incentives for certain payment and return options reduce return rates. The third proposition therefore results in the following:

P3 The omni-channel retailer can guide the customer to a payment method with direct cash flow without losing customer orders and with lower return rates by introducing a fee for purchase on account.

Besides payment methods, couponing is also used in OC customer management to increase customer frequency in the respective sales channels. OC couponing and small presents that can be received in the other sales channel are perceived as particularly adequate levers by retailers:

We print an online coupon on the receipt of a store purchase, and a store coupon for an online purchase. [Head of Logistics, Consumer Electronics]
We give out coupons for shopping at the store after a click & collect purchase and vice versa. [Head of Logistics, Consumer Electronics]

On occasion customers receive a small present on purchasing online that can be collected at the store. [Head of Ecommerce, Fashion]

Furthermore, customers should then be segmented and their order processing prioritized based on their purchasing behavior. Homburg et al. [2008] find that customer prioritization leads to higher average customer profitability and a higher return on sales because it impacts relationships with top-tier customers positively but does not affect relationships with bottom-tier customers and reduces marketing and sales costs. Hübner et al. [2015] and Wollenburg et al. [2018a] report several ways in which prioritizations can be executed operationally in the OC warehouses. In line with these analyses we find that higher average customer profitability is a rationale for OC customer guidance through prioritization in processing the order. From a product-related process perspective options for implementing segmented services exist as well. To prioritize a certain channel or customer order retailers reserve dedicated time slots in job sequencing for prioritized orders.

Buffer capacities for professional customers exist so that they can order later and their order can be handled in a reserved time slot for immediate shipping afterwards. This means that professional customers are prioritized before "regular" customers in the back-end.[Managing Director, DIY] [...] loyalty card customers are prioritized [...] at sales peaks at the beginning of the week, thus potentially overtaking other customers where sequential order picking is concerned. [Head of Cross-Channel, Special Retailer]

Smaller batches are scheduled at short intervals instead of larger batches at long intervals to allow for fast processing of prioritized orders. However, the prioritization of certain jobs in warehouse processing results in additional costs for picking (i.e., costs to serve) because of lower batch sizes and additional picking routes (see also Saghiri et al. [2018]). These depend also on the typical order sizes and order compilation in the respective retail sector. For example, consumer electronics have usually small order sizes and often contain only related items (e.g., further equipment) that are stored next to each other. Items of such orders are anyhow picked together and batching opportunities are limited. In such cases, a prioritization results in only limited additional picking costs. Accordingly, our proposition reads as follows:

P4 In the omni-channel warehouse, smaller batches for picking of orders lead to customer prioritization possibilities that may, however, result in higher processing costs.

Online purchases can be prioritized over store orders due to the need for greater delivery speed for online purchases, and because the article has already been sold.

[...] order picking prioritizes online before stores as the article is already sold. [Managing Director, Fashion]
Because store orders are used for replenishment of stock instead of online orders which are already sold, we try to deprioritize them in picking. [Head of eCommerce, Fashion]

OC retailers therefore reserve certain time slots for online order picking just before the cutoff time for pickup of online orders at the warehouse by logistics service providers. Relevance of fulfillment speed depends on customer segments (e.g., prime customers) and mainly on the general customer requirements and competition intensity of the retail sector. Fashion customers usually except a longer lead time, whereas DIY and consumer electronics orders more often require rapid delivery.

For our product line offering instant delivery after an online order is worth considering, as customers in the physical store buy in over 40% of the cases for same day assembly. [Managing Director, DIY]

The reservation of dedicated time slots also creates stability for the daily picking and capacity plans. As sales volumes peak in both channels at the weekends, an accumulation of processing jobs occurs at the beginning of the week. Capacity can be balanced via prioritization of orders. We present the following propositions:

P5 The reservation of time slots for omni-channel order processing enables customer order prioritization via faster delivery.

P6 Prioritizing/deprioritizing certain customer orders across channels leads to balancing of capacity requirements throughout the planning period.

3.3. Delivery and Return

It is necessary for OC retailers to offer a cost-efficient option for customers to obtain their product, regardless of the channel where it is bought. If altering service and handling fees is not feasible, retailers can limit transportation costs by designing policies that incorporate transportation aggregation and indirect transportation via the consolidation of shipments by using intermediate facilities for the delivery of products, such as stores [Rabinovich et al., 2008]. Especially click & collect sales are particularly predicted to increase by 8% in Europe over the next years [EY, 2015]. Click & collect results in higher store sales and higher store

traffic [Gallino and Moreno, 2014; Wollenburg et al., 2018a].

This is in line with our findings. Click & collect is seen as a service option with mutual benefits for retailers and customers. Customers are offered a free delivery option, while retailers have them in their stores for additional sales conversation and cross-selling opportunities. Hence, OC retailers may use the option to offer home delivery of products at a cost but free pickup in store, whereby *"customers are steered towards cost-free click & collect and the cross-selling potential in stores increases as a result" [Head of Cross-Channel, Consumer Electronics].* Similar statements are reported by several interviewees from different sectors. Thus, our next proposition centers on delivery options in combination with customers' price awareness:

P7 A fee for home delivery but free pickup instore guides omni-channel customers into the store, leading to higher store sales potential.

Customers who shop for non-food categories across multiple transaction channels provide higher revenues [Myers et al., 2004; Kumar and Venkatesan, 2005]. Kushwaha and Shankar [2013] show that this is particularly true for hedonistic product categories, but is not be necessarily true for utilitarian product categories. Hedonistic purchases (e.g., apparel) are more likely to be unplanned and spontaneous purchases whereas utilitarian purchases (e.g., office supplies, furniture) usually have a specific goal fulfillment, and are thus more likely to be planned. Lindsley et al. [1991] confirms the importance of speed as a critical strategic dimension of delivery. Retailers need to deliver on order fulfillment promises since a failure to live up to these promises can be detrimental [Rao et al., 2011; Hübner et al., 2016a]. Hedonistic purchases therefore run a higher risk of return as customers may already regret their purchases on the receipt of goods [Gelbrich et al., 2017]. Fast delivery is therefore key to hedonistic purchases not being returned [Hübner et al., 2016a]. The likelihood of orders being returned depends on the consistency between a retailer's promise of timeliness in the delivery of orders, i.e., orders need to be delivered ahead of promised delivery times and the actual delivery performance of the orders [Rao et al., 2014]. Customers have higher expectations regarding fulfillment of specialty goods than convenience goods and their satisfaction levels with delivery speed vary accordingly [Thirumalai and Sinha, 2005; Wollenburg et al., 2018a]. This is also in line with the findings of Heim and Field [2007] who find that retailers who offer hedonistic product categories perform significantly worse in quality ratings than other segments. Industry-specific order fulfillment strategies based on product characteristics should be implemented [Thirumalai and Sinha, 2005] to prevent all deliveries having to be delivered next day which results in high picking and

delivery costs for retailers (see also Agatz et al. [2008]; Hübner et al. [2016a]; Ulmer [2017]; Wollenburg et al. [2018a]). Participants in our study also reflected on this. As this was put in multiple interviews:

Certain products are not required to be delivered next day. [Managing Director, DIY]
For the customer, delivery reliability, information about the delivery and further individual arrangements are more important than pure time in certain product categories. [Managing Director, Consumer Electronics]

Additionally we find that customers are steered away from unnecessary returns for hedonistic products. The following propositions result from combining the knowledge from literature on hedonistic and utilitarian product categories with our empirical findings on delivery periods and product prioritization:

P8 A hedonistic product category should be prioritized in omni-channel order processing before a utilitarian product category.

P9 If an omni-channel customer purchases from a hedonistic product category, then the item should be delivered as fast as possible to increase customer satisfaction and reduce the risk of return.

P10 If an omni-channel customer purchases from a utilitarian product category, the agreed upon delivery period may be extended without decreasing customer satisfaction and increasing return probability.

While returns are a relevant topic for fashion retailers, DIY and electronics retailers use few prevention methods and are very obliging as the return quota is usually under 5%. Meaningful descriptions and pictures of items, benchmark items and measurement charts are the only methods those retailers apply for prevention. Retailers also try to enhance their post-buy service in order to prevent returns.

[...] we accept every returned article, even if the article was clearly not bought at our company. [Managing Director, DIY]
In general, companies should avoid trying to reduce their return quota by using obstacles but should instead establish better service. [Head of Logistics, Fashion]

When returns are as high as 20% of all orders, retailers begin to let customers print out return labels on their own or even *"reward customers throughout the loyalty program for no-return" [Managing Director, Fashion].* When returns occur more frequently than in 20% of the cases, retailers *"prevent checkout of too many different sizes of the same article" [Managing*

Director, Fashion]. Some retailer even go further and use *"stickers on apparel that have to be undamaged for the return process, so that returning after wearing the item once is prevented" [Managing Director, Fashion].*

We set a delivery fee of EUR 1.95 for all orders instead of EUR 3.95 for all orders under EUR 50 and free delivery for all orders above EUR 50. The result was that we did not have any fill-up orders anymore, meaning that the return rate dropped by 2 percentage points while conversion remained the same. [Head of eCommerce, Fashion]

Fill-up orders (i.e., items ordered to exceed the minimum for free delivery) are a reason for frequent returns as well. Fill-up orders can be eliminated and thus return of those items as well by charging a small delivery fee for all orders instead of only fees for orders below a certain amount of purchase. Hence our next proposition reads as follows:

P11 To avoid fill-up order s a fee for all deliveries should be introduced which reduces the return rate.

Complementary to our findings, Griffis et al. [2012] present ways for retailers to use returns to their advantage. The authors present evidence that customers with a higher relationship value should be given priority over customers with less value in the returns process. As a good return management process can significantly and positively influence repurchase behavior high-value customers get preprinted return labels with their delivery to drive additional purchases while others have to, for example, register their return. Furthermore, Asdecker [2015] analyze the relationship between the rate of returns and the associated costs and show options for preventive returns management measures. This requires customer understanding. Therefore, our next proposition reads as follows:

P12 The relationship value should determine individual priority for return handling of customer orders in order to guide omni-channel customers towards repurchases.

Nevertheless, customers are increasingly exposed to the risk of selecting products that do not match their needs which will result in more returns [Rabinovich et al., 2011]. It can be noted that in an area where OC retailer's physical store exists, the online return quota is lower [Bell et al., 2017]. Returns of online orders in stores instead of via mail have various advantages. It is possible to directly add the article into the store inventory and therefore shorten the cycle time during which the product is not in stock [Hübner et al., 2015]. This also reduces return handling costs [Agatz et al., 2008], however, retailers are still busy and focused on integrating their store and DC inventories [Ishfaq et al., 2016]. The desire for services like direct exchange

of products draws customers away from the online channel, which will ultimately result in higher store sales [Kollmann et al., 2012; Cummins et al., 2016]. We find that retailers appreciate customers visiting their stores for a return, because of increased cross-selling potential.

Of course we want customers to return their products in store. This gives us direct cross-selling potential. [Head of eCommerce, Fashion]

This is in line with findings from Neslin and Shankar [2009] who report that store sales at a retailer increased by 20% when they started to accept instore returns of articles bought online. Sharma and Krishnan [2002] find that a number of retailers are using the Internet to attract customers to their stores for returns. The next proposition outlines one rationale for guiding customers into the store for a return of a product derived from these findings:

P13 Guiding omni-channel customers into the store to return products increases store sales.

Additionally, we find that retailers promote instore returns because a return instore in combination with sales talk enables replacement of an item instead of a money-back return.

A return instore is preferred over mail return as one can immediately recommend an alternative product. [Head of Sales, Fashion]

Return instore is usually free of charge for customers. The potential costs of reprocessing and shipments to the warehouse are covered by the retailer. When customers have to pay for returns via mail they can be guided into the store for a higher rate of real exchanges instead of "money-back returns". The following proposition targets this relationship:

P14 Omni-channel customers are guided into the store to return an item because this leads to a higher rate of exchanges instead of pure "money-back returns".

3.4. Framework of propositions for omni-channel customer management

The propositions on customer management related to operations and logistics areas are summarized in Figure 1. They depict interrelations between channels and different operations areas. There are interdependencies in OC retailing between the four areas of product-related processes and between online and in-store. The way how OC *Product Availability Information* is known by customers and how it can be shared across channels (from online to store and vice versa) impacts the steering options across channels, and ultimately the sales potential in physical and online stores. It

may also be used to steer customers from the online store into the physical store (see connections between Propositions 1 and 2 through Product Availability). The area of *Purchase and Prioritization* is addressed with Propositions 3 to 6. All of these impact the demand flow to the online channel. This is shown by the arrow pointing onto the online channel. Payment options, batching rules, time slots and prioritizing options may be applied for guiding customers across channels. The configuration of *Delivery Modes and Costs* can be used to guide customers through the channels by, e.g., pricing distinct delivery options differently (see Proposition 7 for guiding into the physical store), or prioritizing hedonistic product categories (see Proposition 8 for the interrelation of Delivery and Purchase and Prioritization). Whereas a hedonistic product category should be delivered as fast as possible to reduce returns, a utilitarian product category can be delivered within an agreed delivery period without jeopardizing high satisfaction rates. A way to measure satisfaction with the product delivered are return rates. Interdependencies of delivery of hedonistic and utilitarian product categories with return rates are summarized in Propositions 9 and 10 and linked here accordingly. Furthermore, the design of the *Return Options* themselves can lead to lower return rates and increased net sales through a higher conversion rate. When returns are followed up instore they trigger new store sales and reduce the number of pure "money-back returns" (see Propositions 13 and 14). However, if a customer really wants to return a product, return handling should be prioritized based on a customer's relationship value to trigger repurchases afterwards thus linking the areas of Return and Purchase and Prioritization (see Proposition 12).

Our empirical findings show that guiding customers through the channels via the different areas may become beneficial for both retailers and for customers. Managerial implications for retailers include that guiding OC customers through channels stimulates OC buying behavior and thus, purchases that are initiated and closed within more than one retail channel. As we know that OC customers provide more revenue than SC customers (in line with the findings of Kumar and Venkatesan [2005]), making all channels accessible for customers is beneficial for the retailer. Furthermore, prioritization leads to top customers buying more but low valued customers not buying less (in line with the findings of Homburg et al. [2008]). Hence prioritization based on customer value as a management method is favorable. As order volumes increase in both channels on weekends, an accumulation of processing jobs occurs at the beginning of the week (in line with the findings of Hübner et al. [2015]). Steering of customer orders through prioritization and deprioritization helps to even out demand peaks and postpone picking and delivery tasks of certain orders (e.g., online before store orders) to smooth capacity utilization. Additionally,
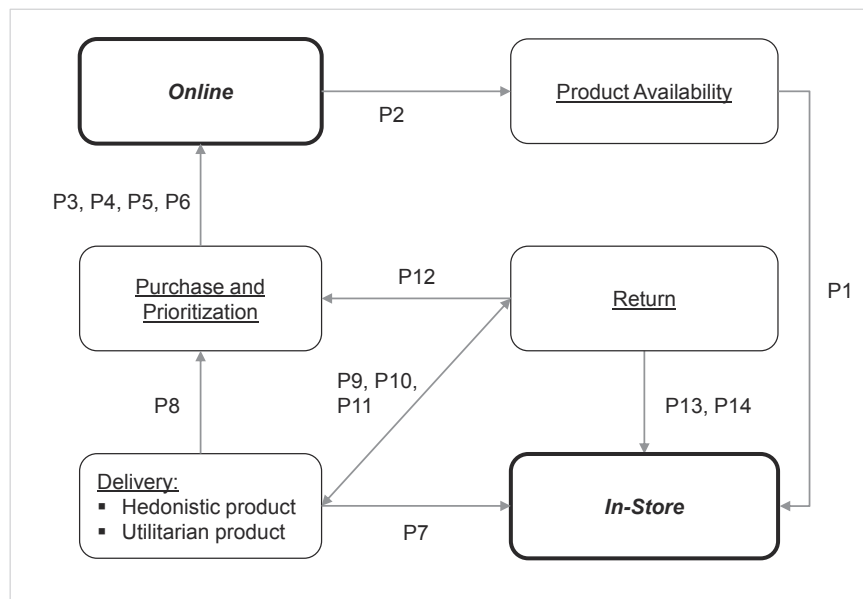
Figure 1: A framework for propositions about omni-channel customer management

guiding customers into the store by various methods that were elaborated on before (e.g., availability check online for store inventory or pick-up at no cost while home delivery is at a cost) yields advantages for OC retailers. They have the opportunity of easier cross-selling of products through a sales conversation, providing direct help in the event of non-availability, and raising the rate of exchanges instead of money-back returns.

For customers it is easier to navigate through channels and locate their desired product with full OC transparency. It saves travel expenses if customers want to buy instore. Moreover, the pick-up option at no expense saves delivery costs for the customer if the store is located conveniently. In addition, customers like to pick-up a product instore as it provides a better shopping experience. Besides, customers like the prioritization that comes with customer guidance efforts. Some customer segments feel appreciated and value customized offers. Implicitly, the knowledge of customers by the retailer, i.e., through integrated IT and CRM systems, leads to tailored solutions for customers and they benefit from those individualized offers as well.

4. CONCLUSION

OC retailers systematically connect their sales, communications and logistics channels. As our research questions focus on the *how* and *why* of customer and order management, this paper explores customer management and guiding opportunities for retailers in an OC setting and presents their benefits. It differs from the still small body of empirical literature

that considers customer management mechanisms in OC retailing (i.e., Myers et al. [2004], Herhausen et al. [2012], Wollenburg et al. [2018a]) by taking a broad, exploratory view on guiding and customer management opportunities during the entire product-related purchase process instead of focusing on individual aspects. The findings are summarized and discussed in the light of contributions in adjacent fields of study in order to derive propositions for future directions of research. The paper is of particular interest for researchers focusing on retail marketing and operations as well as practitioners in search of guidance on how to take advantage of integrated channels. More precisely, it will help theorists to understand the interdependencies between the setup of OC structures and channel-related customer management efforts and their mutual benefits, as well as managers from OC retail companies to effectively guide customers through channels.

Our findings suggest that OC retailers direct customers particularly to their store outlets. One explanation is that this is the only objective distinguishing OC and pure online retailers. The convenience of a physical store is highlighted towards the customer (e.g., free "delivery" in the form of pick-up). Propositions that are summarized in Figure 1 point in this direction. Whereas customer steering is usually tainted with negative emotions, our results indicate that it can be beneficial for retailer and customer. In contrast to other studies (e.g., Myers et al. [2004], Herhausen et al. [2012]) steering approaches not only offer differentiation and cross-selling potential for retailers but also additional value for customers (e.g., pick-up at no cost, prioritization). Furthermore, this paper offers guidance for OC executives of retailers who want to effectively guide customers through

their channels. The suggestions can easily be adjusted towards channel preferences. First availability checks for store inventory online should be provided to offer online customers a way into the store. Second, options for prioritizing should be used for hedonistic purchases as those items require faster delivery and accuracy. Third, the reservation of time slots for certain orders should be provided to allow for prioritization. Fourth, free click & collect solutions guide online customers into stores. Fifth, in the returns domain customers will increasingly exchange products instead of claiming their money back if instore returns are offered.

The propositions we have developed as well as the findings underlying them should be viewed in light of our study's limitations. First, the empirical research was carried out in Germany with international retailers. Although we expect it to be transferrable to other regions since the participants are retailers who operate internationally, a similar study of retailers from diverse continents and cultural contexts is still outstanding and could be part of future research (see also Galipoglu et al. [2018]). Second, the sample consists exclusively of large enterprises resulting in an obvious selection bias. Due to the high density of store outlets throughout the country the use of decentralized structures, i.e., the store outlets, as comfortable pick-up locations makes sense to those OC retailers. Future research could try to repeat our results in a test with a truly random sample to see whether guiding customers into physical stores is generally beneficial. Third, quantification of the implementation of customer management methods is still to be performed. The costs of establishing and using customer management methods as well as the costs of lost customers and the actual benefit for the retailers should be calculated and evaluated. Fourth, customer management options have partially negative customer associations. The drivers of e-service quality have been identified in prior research (e.g., Heim and Field [2007]). Managers have to consider whether or not to apply a certain approach depending on customer composition and their channel preferences. Fifth, we disregarded the information search for products before the actual purchasing process starts. Future research could focus on customer management opportunities during the information search or even on individual aspects of the product process. Moreover, further research is required to understand the external influence of channel switching behavior or demand drivers in e-commerce (see e.g., Gallino and Moreno [2014], Herhausen et al. [2015], Steinker et al. [2017], Gawor and Hoberg [2019]) in the context of OC customer management. Another form of empirically based follow-up research is the actual testing of our propositions. Especially the propositions regarding guiding customers into the store via different configurations for home delivery at a cost but free pick-up instore, as well as a corresponding increase in store sales due to a guided cross-selling conversation could be quantified with an appropriate set of data. Finally, in our research we tried to provide a complete picture over different levers rather than providing only insights into one specific area. This groundwork provides a coherent overview about omni-channel customer management processes in retail regarding the fulfillment-related options. This serves as starting point for further studies that can focus on selected areas.

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