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The future of omnichannel retail: A four-stage Delphi study

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ABSTRACT

Omnichannel retail refers to the integration of retail channels like stores, online, and mobile into a single, seamless customer experience. The emergence of new online channels has had a major impact on the retail industry over the past decade, and it is expected that the need to integrate different channels will transform the retail industry over the next decade. We conducted a four-stage Delphi study with eighteen retail experts to identify the key trends, major challenges, important technologies, and main customer touchpoints that will emerge in omnichannel retail in the next ten years. Using both qualitative and quantitative data analysis techniques, we first elicited open-ended predictions from experts, then transformed and consolidated these predictions into close-ended statements, to finally obtain expert ratings of these statements and analyze changes of expert ratings between two consecutive stages. Based on this approach we derived four broad themes of core insights: future competition in the retail industry will be based on holistic customer experiences; omnichannel retail requires the development of human capabilities and changes in the organizational mindset; physical stores will become key destinations for unique sensory shopping experiences; and omnichannel retail will improve operational productivity.

1. Introduction

The retail industry, an important element of the global economy, has had US$ 22.6 trillion revenues in 2015 and accounts for 31% of the global gross domestic product (Research and Markets, 2016). The top 250 global retailers alone generated almost $4.5 trillion in revenue in 2014 (Kalish et al., 2016)—more than the GDP of most countries. The retail industry is also in constant flux, undergoing significant transformations that require retailers to adapt continually if they want to survive in the market. Hence, efforts to understand the retail industry and its transformations warrant the attention of both researchers and practitioners.

Over the last two decades, the transformation of the retail industry was largely driven by the internet and emergence of new online channels (Verhoef et al., 2015). The internet led to the emergence of purely online retailers like Amazon and eBay and transformed traditionally storefront-based (i.e., bricks-and-mortar) into multi-channel retailers (Min and Wolfinbarger, 2005; Pentina et al., 2009; Zhang et al., 2010). Online channels also brought changes to consumers' purchasing behaviors and loyalty (Zhang et al., 2010) as consumers started to browse products in stores and then purchase them online elsewhere, intensifying competition in the industry (Balakrishnan et al., 2014) and forcing many retailers to add online channels to their mix (Bernstein et al., 2008). By 2008, > 80% of US retailers were serving more than one channel (Kilcourse and Rowen, 2008), and driven by continual advances in digital technologies, the number of new channels keeps growing (Rigby, 2011). As a result, while a simplistic distinction between online and offline channels was sufficient in the early 2000s, today a more nuanced view of online channels must distinguish among web stores, mobile apps, and social media (Verhoef et al., 2015).

While the emergence of new channels has transformed the retail industry over the last decades, over the next decade the retail industry's ongoing transformation will be driven by the integration of these and other channels into a single, seamless customer experience: omnichannel retail. Consumers already interact with a single retailer via multiple channels (Sorescu et al., 2011) and increasingly expect these channels to “talk to” one another, to be integrated in a seamless shopping experience (Hansen and Sia, 2015) that allows them, for example, to use different channels for product search, purchase, and after-sales service (Neslin et al., 2006). Integration of these channels into a seamless experience is likely to increase customers' purchase intentions (Herhausen et al., 2015), but retailers continue to operate separate channels separately (Neslin et al., 2006; Piotrowicz and Cuthbertson, 2014). This traditional approach imposes transformational challenges for retailers who want to integrate previously disintegrated channels and implement services that bridge multiple channels (Verhoef et al., 2015). Omnichannel retail is largely driven by technological advances like the increasing pervasiveness of mobile computing and the rise of augmented reality technologies, which enable retailers to blur the boundaries between channels (Brynjolfsson et al., 2013). However, they

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also lead to an exponentially increasing number of touchpoints between retailers and their customers that must be managed (Verhoef et al., 2015). As a result of changing customer expectations and an increasing number of channels that require integration, many retailers struggle in their efforts to move from multi-channel to omnichannel retail (Business Insider, 2017; Forrester Consulting, 2014; Williams and Cameron, 2015; Wurmser, 2014).

While the retail industry's transition toward omnichannel retail is gaining importance, research that could provide guidance to retailers remains in its infancy (Beck and Rygl, 2015; Piotrowicz and Cuthbertson, 2014; Verhoef et al., 2015). Hence, this article sets out to establish a foundation for future research on omnichannel retail and to provide practical guidance for retailers. Specifically, this article reports findings from a four-stage Delphi study with eighteen international retail experts who opinionated on the following research questions: *What will be key trends, major challenges, important technologies, and main customer touchpoints in omnichannel retail over the next ten years*? In answering these questions, this article derives four broad themes of core insights that contribute to literature and can provide guidance to retailers: future competition in the retail industry will be based on holistic customer experiences; omnichannel retail requires the development of human capabilities and changes in the organizational mindset; physical stores will become key destinations for unique sensory shopping experiences; and omnichannel retail will improve operational productivity.

We proceed as follows. First, we review the literature on multi and omnichannel retail. Next, we describe the Delphi methodology and detail the specific procedure adopted by us. Then, we introduce the results of our study. We end by discussing the core insights, their implications, and the limitations of our study.

2. Background

Different retail channels such as bricks-and-mortar stores, catalogues, and telephones exist since a long time. However, largely driven by the advent of the internet (Verhoef et al., 2015), many traditional single channel retailers started to diversify their channel mix and have become multichannel retailers over the last two decades (Min and Wolfinbarger, 2005; Pentina et al., 2009; Zhang et al., 2010). Most of these multichannel retailers operate their different channels separately and have traditionally grown siloed organizational structures (Gallino and Moreno, 2014; Piotrowicz and Cuthbertson, 2014; Rigby, 2011). Accordingly, research on multichannel retail typically compares individual channels (Min and Wolfinbarger, 2005; Polo and Sese, 2016) or analyzes how adding or eliminating individual channels from retailers' channel mix (Avery et al., 2012; Melis et al., 2015; Pauwels and Neslin, 2015) influences various aspects of retailing from customer behavior (Melis et al., 2015; Polo and Sese, 2016) to retail performance (Avery et al., 2012; Min and Wolfinbarger, 2005; Pauwels and Neslin, 2015).

Today, an increasing number of retailers try to integrate their separate channels into a single, seamless customer experience, called omnichannel retail. Empirical studies on omnichannel retail are relative scarce but their number is growing constantly. Findings of these studies suggest various benefits to both retailers and customers including increased sales across channels (Cao and Li, 2015; Gallino and Moreno, 2014), enhanced operational efficiency (Oh et al., 2012), as well as improved customer experiences (Herhausen et al., 2015), loyalty (Van Baal, 2014), and trust (Cao and Li, 2015). However, the integration of different channels also increases operational complexity (Gallino and Moreno, 2014), presents "far greater obstacles to retailers […] than the literature suggests" (Lewis et al., 2014, p. 60), and many retailers struggle with their integration efforts (Business Insider, 2017; Forrester Consulting, 2014; Williams and Cameron, 2015; Wurmser, 2014).

Empirical research on both multi and omnichannel retail focuses traditionally on physical bricks-and-mortar and online stores as the two primary channels (e.g., Cao and Li, 2015; Gallino and Moreno, 2014; Herhausen et al., 2015; Pauwels and Neslin, 2015), with an increasing number of studies paying closer attention to mobile as a dedicated online channel (e.g., Rapp et al., 2015; Wang et al., 2015). Online channels have grown significantly over the last few years, with consumers increasingly using them to buy goods from clothes (Luo et al., 2016) to groceries (Wang et al., 2015). Physical bricks-and-mortar stores in turn have become destinations where customers examine products to afterwards purchase them online, called "showrooming" (Rapp et al., 2015). This confronts both retailers and practitioners with challenging questions such as how physical bricks-and-mortar stores can be integrated into a seamless omnichannel experience (Herhausen et al., 2015), how retailers can benefit from showrooming (Verhoef et al., 2015), which role store employees will play (Grewal et al., 2017), and how store employees will interact with customers (Rafaeli et al., 2017).

Digital technologies are a major force driving the retail industry's transformation toward omnichannel retail (Luo et al., 2016; Piotrowicz and Cuthbertson, 2014; Rigby, 2011). Empirical research on multi and omnichannel retail typically treats technologies either as dedicated channels and examines the addition or integration of one specific technology such as online shops or mobile devices (e.g., Cao and Li, 2015; Gallino and Moreno, 2014; Wang et al., 2015), or treats technologies broadly as infrastructure and examines how certain infrastructure characteristics influence retail performance (e.g., Luo et al., 2016; Oh et al., 2012). However, digital technologies are evolving at a rapid pace, leaving retailers often overwhelmed and puzzled about which technologies they should invest in (Inman and Nikolova, 2017). For example, some retailers have started to experiment with virtual reality technologies (Bain, 2016), others with check-out less stores (Garun, 2016), and again others with mobile apps (Perez, 2016). As a result, digital technologies contribute to an increasing number of touchpoints between customers and retailers (Lewis et al., 2014), calling for a more fine grained understanding of retail that goes beyond channels and takes individual customer touchpoints into account (Baxendale et al., 2015; Beck and Rygl, 2015; Verhoef et al., 2015). Appendix A provides an overview of technology "megatrends" that are expected to transform society, and thus also the retail industry, over the next 10–20 years.

Because omnichannel is gaining increasing attention of both practitioners and researchers, but many retailers struggle with their transition toward omnichannel retail (Business Insider, 2017; Williams and Cameron, 2015) and research is still in its infancy (Beck and Rygl, 2015; Piotrowicz and Cuthbertson, 2014; Verhoef et al., 2015), this study sets out to clarify the nature of omnichannel retail and its future.

3. Method

3.1. Overview

Our study is based on the Delphi method which has proven useful for forecasting purposes in many fields, including international business (Griffith et al., 2008), innovation management (Munier and Munier, 2001), and information systems (Paré et al., 2013). Given that omnichannel research is in its early stages, we chose the classic Delphi method with its open-ended questions because it allowed our forecasts to emerge naturally and did not constrain them to aspects had been covered in the extant literature. The classic Delphi method employs a facilitated, iterative group-communication process to solicit feedback from participants—usually subject matter experts—on a particular subject (Linstone and Turoff, 1975). The facilitator collects feedback from participants via individually administered questionnaires, consolidates the feedback, and returns the consolidated feedback to the participants individually, whereupon they can revise their feedback in the light of other participants' feedback until a group opinion (i.e., the forecast) is derived. Individual participants remain anonymous during

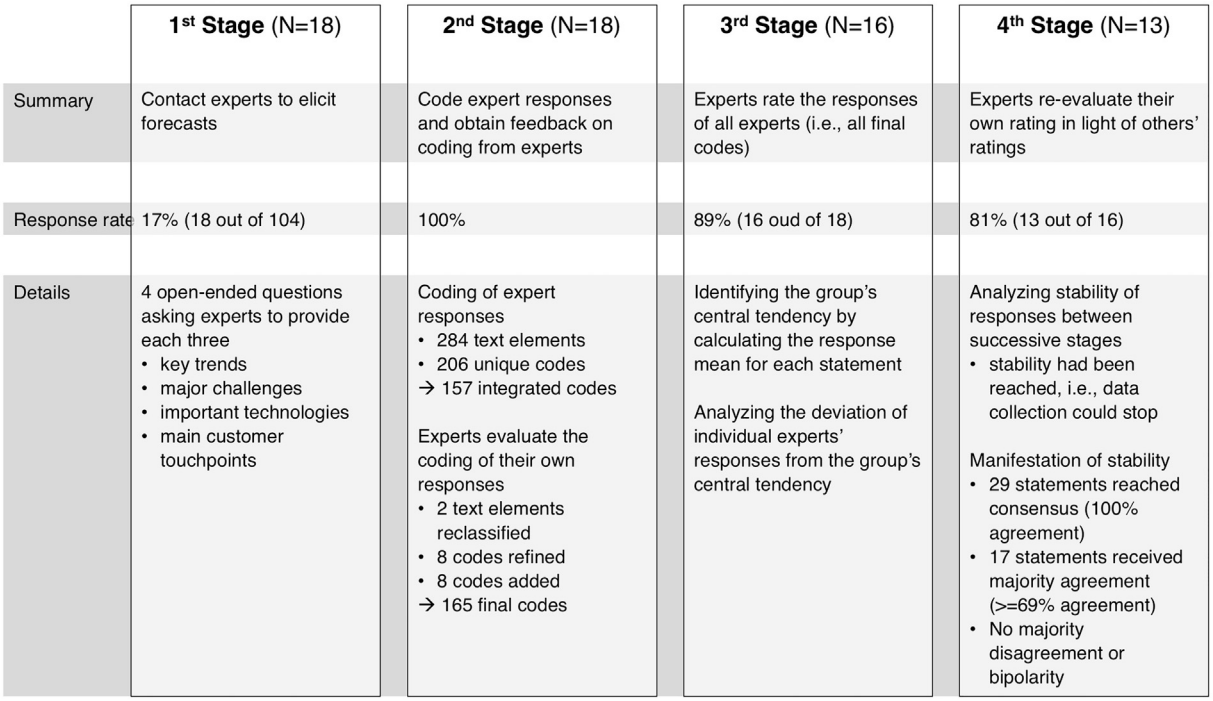

Fig. 1. Summary of the four stage Delphi procedure of this study.

this process in order to avoid issues that are associated with traditional group communication processes, such as groupthink ("*the psychological drive for consensus at any cost that suppresses dissent and appraisal of alternatives*" (Janis, 1972, p. 8) and domination of the discussion by one or a few individuals (Dalkey, 1969). The iterative Delphi process is typically repeated until stability of responses has been achieved such that participants' responses no longer change significantly between successive rounds of feedback (von der Gracht, 2012).

3.2. Procedures

In the following we describe the four stage Delphi procedure of this study in detail, which is summarized in Fig. 1.

3.2.1. First stage: expert selection and brainstorming

In the first stage of our study we identified potential participants globally who were internationally recognized as experts in the retail industry. We took a number of criteria into account to determine whether somebody could be considered as an expert or not, including their length of experience in the retail industry, publications in international academic or practitioner oriented retail outlets, presentations at international retail conferences or congresses (Okoli and Pawlowski, 2004), honors by professional societies, and holding positions in professional societies (Martino, 1972). However, to avoid biasing our results toward particular retailers' omnichannel efforts due to self-interest (Hussler et al., 2011), we excluded experts who were affiliated exclusively with a single retailer. Our selection criteria resulted in a list of 104 experts with diverse backgrounds, among whom 18 agreed to participate. This corresponds to a response rate of 17%, which is relative low but in accordance with other Delphi studies (e.g., Keller and von der Gracht, 2014; Møldrup and Morgall, 2001). One reason for the relative low response rate may be the time burden that a multi-stage Delphi study imposes for participants (Martino, 1972);13 additional experts responded but declined participation because they could not ensure their availability during the entire study. Of the 18 experts who agreed to participate, two third were men (12) and one third women (6). The majority of participants came from the United States (12), followed by the United Kingdom (4), Canada (1), and New Zealand (1). Participants' experience in the retail industry ranged from 10 years to > 40 years, with an average experience of 23 years. The professional backgrounds of participants included retail consultants (9), senior editors of retail outlets (4), professors of retailing (2), and retail reporters (1). Hence, our final sample of participating experts can be considered as heterogeneous, which has been shown to foster divergent opinions (Spickermann et al., 2014) and to improve forecasting accuracy (Yaniv, 2011). Table 1 provides details for individual participants including information about the stages each of them participated in.

Data collection took place from November 2015 to March 2016, during which time we conducted four stages, each taking an average of about one month, so researchers and participants each had about two weeks per stage to respond to the other's input.

In the first stage of our study, we sent participants four open-ended questions, asking them to identify their forecasts for key trends, major challenges, important technologies, and main customer touchpoints in

Table 1
Information about individual participants and the stages they participated in.

Job role	Exp	Gender	Country	Stg 1	Stg 2	Stg 3	Stg 4
Consultant 1	15	M	UK	X	X	X	X
Consultant 2	20+	M	US	X	X	X	X
Consultant 3	35	M	US	X	X	X	X
Consultant 4	20+	W	US	X	X	X	X
Consultant 5	20+	M	US	X	X	X	X
Consultant 6	25+	W	UK	X	X		
Consultant 7	35+	M	US	X	X	X	X
Consultant 8	30+	M	US	X	X	X	
Consultant 9	10	W	US	X	X	X	
Professor 1	40+	M	UK	X	X	X	X
Professor 2	15+	M	NZ	X	X	X	
Senior Editor 1	15	M	US	X	X	X	X
Senior Editor 2	15+	M	US	X	X		
Senior Editor 3	20	M	UK	X	X	X	X
Senior Editor 4	15+	M	US	X	X	X	X
Reporter	30	W	Canada	X	X	X	X
Analyst 1	35+	W	US	X	X	X	X
Analyst 2	15	W	US	X	X	X	X

Exp = Industry experience in years; Stg = Stage of participation.

omnichannel retail over the next ten years. Participants were encouraged to list up to three statements for each of these categories and to briefly explain their choices. The open-ended questions were administered via a web-based questionnaire, which allowed participants to submit responses in their own time. We ensured the rigor of our open-ended questions by following common guidelines for questionnaire design (Podsakoff et al., 2003). This included ensuring that each question only focused on a single issue to avoid ambiguity, keeping questions succinct to avoid complexity and potentially resulting confusion, and avoiding positive and negative item wordings to avoid any influence on respondents. Moreover, we pretested our questions with three practitioners and two academics who had similar backgrounds and knowledge than our invited experts (cf. Keller and von der Gracht, 2014). Appendix B shows the questions that were presented to the participants.

3.2.2. Second stage: coding and feedback on coding

After we received the participants' responses to the open-ended questions, we coded the responses in order to carve out core statements and consolidate responses with similar meaning. We adopted an inductive grounded theory coding approach in which codes emerged from the data. The open-coding step used in vivo codes (i.e., terms and phrases the participants used) whenever possible and analyzed each response line-by-line in order to identify suitable codes. To ensure intercoder reliability, we followed Sarker et al. (2001) in having three colocated researchers conduct coding simultaneously. The three researchers first coded each response individually and then discussed discrepancies until all researchers agreed on all codes. During their discussions, the researchers revisited their coding to determine whether the identified core statements would change when previously independently coded lines were considered as interrelated text elements and whether codes with similar meanings could be merged. As a result, new codes emerged and existing codes were refined until all researchers agreed on all codes and no further merges were possible. Importantly, we accepted multiple codes for the same text element, as one text element can hold multiple types of information, and used sub-codes to balance parsimony with specifity. This process resulted in 284 coded text elements with 206 unique codes, which were further integrated via axial coding (i.e., linking sub-categories to categories) into 157 more comprehensive codes. We followed the same guidelines as for the design of our open-ended questions to ensure the rigor of our codes (i.e., Podsakoff et al., 2003). Table 2 uses examples from our data to illustrate the use of (multiple) sub-codes based on text elements that are related to the overarching “physical stores” code. In addition, Appendix C provides an analysis of the argument and syntax types provided by participants.

In order to ensure that our coding accurately reflected the participants' responses, we sent our coding to the participants for verification. Each participant received his or her responses along with our codes in order to rate his or her overall satisfaction with our coding and comment on individual codes. The coding-satisfaction scale ranged from 1 to 10, with 10 indicating the highest possible satisfaction. The median satisfaction rating with our coding related to the participants' responses regarding key trends, major challenges, and main customer touchpoints was 9, and the median satisfaction rating for our coding related to important technologies was 8, so our coding reflected the participants' responses well. We received comments on the coding of thirty-six text elements that included both support for and clarification of individual codes. In the rare event that a respondent was not satisfied with a code, we first proposed another potentially more suitable code from our existing coding book, and if the participant still was not satisfied, we worked with the participant to define a new code. The verification process led to the refinement of eight existing codes, reclassification of two text elements with existing codes, and the addition of eight new codes. At the end of the second stage, we had a list of 165 codes, representing 54 key trends, 44 major challenges, 38 important technologies, and 29 main customer touchpoints.

3.2.3. Third stage: first ranking

In the next step, we sent participants the list of key trends, major challenges, important technologies, and main customer touchpoints that emerged from the second stage and asked them to indicate their degree of agreement with each statement on an ordinal 5-point Likert-type response scale, ranging from strongly disagree (1) to strongly agree (5). We also gained additional feedback by allowing participants to comment on any of the statements. Importantly, for the first time participants could see, evaluate, and comment not only on their own statements but also on those of the other participants. Appendix D details how the questions were presented to the participants. This stage engendered responses from sixteen participants, including seven comments from four of the participants who reaffirmed our coding's accuracy and usefulness. The two participants who discontinued participation in the third stage did so because of time constraints and thus, attrition was not related to potentially unresolved dissent (cf. Linstone and Turoff, 1975). We controlled for a potential non-response bias by following Armstrong and Overton (1977) and dividing the participants into early and late respondents. Assuming that late respondents are similar to non-respondents, we conducted a Mann–Whitney test to compare the responses of both groups. The results were not significant, which is why we conclude that non-response bias was not present. Subsequently, we identified the group's overall point of view by calculating the mean of the sixteen responses for each statement and analyzed the deviation of individual responses from the group's central tendency.

3.2.4. Fourth stage: second ranking

For the next stage, we reported to all participants the group's overall point of view and the level of individual responses' deviation from the group norm. Participants were invited to reconsider their responses in light of the majority response and to clarify any of their statements. This stage resulted in responses from thirteen participants, while three participants discontinued participation without providing any justification. We subsequently compared responses of discontinuing participants from the third stage to the mean of continuing participants' responses in the same stage to see whether dissent might have been the reason for discontinuance (Greatorex and Dexter, 2000). The comparison revealed that two of the discontinuing participants' responses were closely aligned with the continuing participants, but that one discontinuing participant's responses deviated substantially on sixteen items, thereby indicating the latter participant's dissent (Greatorex and

Table 2
Illustration of coding.

Text element	Sample code 1	Sample code 2
Fixed stores will remain a major, probably the major, consumer touchpoint for purchasing.	Physical stores: For immediate purchasing	
The traditional in-store experience will always be the back-up.	Physical stores: As key destinations for unique shopping experiences	
Brick and mortar retail is not going away. Too many people see it as a form of immediacy and entertainment	Physical stores: For immediate purchasing	Physical stores: As key destinations for unique shopping experiences

Dexter, 2000). Hence, one participant might have discontinued participation because of cognitive dissonance (Bardecki, 1984). Of the continuing thirteen participants, seven modified their assessments and three of them provided us with in total ten comments to clarify their modifications. Following the same approach as in the third stage, we controlled for non-response bias but could not find any indication for its presence.

Following Dajani et al. (1979), we adopted a hierarchical stopping procedure, with stability of responses between the successive stages as the first criterion.[1] The level of stability indicates the degree to which participants' responses are changing or not changing. Experts who predict distant future events often do not revise their initial assessments because the quality of alternatives can hardly be assessed (Ecken and Pibernik, 2016). Thus, we considered stability as a more suitable stopping criteria than other commonly used alternatives such as a predefined fixed number of rounds (e.g., De Vet et al., 2005; Prokesch et al., 2015; Ribeiro and Quintanilla, 2015) or consensus (Jiang et al., 2017; e.g., MacCarthy, 2003; Paré et al., 2013). Since we were comparing two dependent samples (i.e., responses from the same group of participants before and after) that were based on ordinal data, we used a Wilcoxon matched-pairs signed-ranks test to assess the stability of the responses between stages (Argyrous, 2011). The Wilcoxon test has been recommended for use under these conditions (von der Gracht, 2012) and used in a number of Delphi studies (e.g., De Vet et al., 2005; Prokesch et al., 2015; Seagle and Iverson, 2002) and with similar sample sizes (e.g., Barnes and Mattsson, 2016; Kalaian and Kasim, 2012). The importance ratings for the individual statements did not change significantly between the third and fourth stages (see Tables 3–6 for exact values), so stability was reached and data collection could stop. We further analyzed the average convergence rate (i.e., percent change in standard deviation) between the third and fourth stage (Förster and Von Der Gracht, 2014). This analysis indicated that participants had not adjusted their responses for key trends (0%) and important technologies (0%), but that responses for major challenges (−7%) and main customer touchpoints (−1%) had slightly converged. Considering that competent experts tend to adjust their responses less than non-competent individuals because they are usually more accurate from the beginning on (Rowe and Wright, 1996) and less influenced by the opinions of others (Munier and Munier, 2001), we consider this to be a positive indicator of our group composition.

Next, following Dajani et al. (1979), we analyzed responses for their manifestation of stability as a second criterion, particularly checking for consensus, majority agreement, majority disagreement, and bipolarity. We identified statements that had achieved consensus—that is, statements that 100% of participants had rated 4 or 5 (agree or strongly agree, respectively). This approach resulted in 29 statements: 14 key trends, 6 major challenges, 3 important technologies, and 6 main customer touchpoints.

Next, we identified statements that received majority agreement. According to Dajani et al. (1979), majority agreement is indicated by agreement of > 50% of participants. However, Barnes and Mattsson (2016) suggested excluding statements with < 70% agreement. As our goal was to maximize the accuracy of the forecast, we focused on statements that at least 69% of the participants rated 5. This approach identified 17 additional statements: 4 key trends, 2 major challenges, 4 important technologies, and 7 main customer touchpoints.

We followed the same approach as for majority agreement to identify statements that received majority disagreement and found none. This indicates that participants had reached similar conceptualizations of the state of omnichannel retail in ten years (Salancik et al., 1971).

We analyzed the remaining statements—those that did not fulfill the consensus or majority agreement criteria—for bipolarity (Dajani et al., 1979), which is present when participants provide two conflicting forecasts, indicating two alternative future states (Scheibe et al., 1975). We calculated interquartile ranges (IQRs) as a measure of dispersion for the statements that did not receive majority agreement (von der Gracht, 2012) and considered the 10 statements with an IQR above 1 as potentially bipolar (Rayens and Hahn, 2000). We analyzed the histograms of these 10 statements to determine whether they were actually bipolar (Warth et al., 2013), but since none of the histograms had more than one peak, none was actually bipolar (i.e., opposing); they simply showed a large spread across the 5-point response scale.

4. Results

This section reports the findings of our study. We present quotations from our participants' responses and the final lists of statements that have either achieved consensus or strong agreement among the majority of participants. In rare occasions, we add information from supporting statements if they closely failed to meet the consensus criteria (i.e., only one participant did not agree) but significantly contribute to understanding the participants' points of view.

Tables 3–6 report statistical results related to stability, our first criterion, derived from the Wilcoxon matched-pairs signed-ranks test, which we used to assess whether responses changed significantly between the third and fourth stage. As the tables show, there was no significant change (N/C) in the responses for any of the statements at $p < .05$ between stage three and stage four.

Tables 3–6 also report the absolute frequencies of individual ratings in stage four—that is, how many participants assigned a particular rating (e.g., agree, strongly agree) to a statement. Consensus is indicated by 100% ratings of agree or strongly agree and majority agreement by 69% ratings of strongly agree.

4.1. Key trends in omnichannel retail

Participants agreed that omnichannel will become the new normal over the next ten years and that "*the line between* [*channels*] *will blur to the point where no distinction is made*" (Consultant 1). Therefore, retailers must adapt if they want to compete in the market, and their competitiveness will be more heavily based on the ability to provide a holistic consumer experience than on selling the right products. As one participant put it, "*Omnichannel is all about customer convenience* […]. *Every detail of the purchase will become competitive*" (Consultant 2). As a consequence of this change, retailers will shift their focus from channels to points of contact. That is, they will stop considering themselves as trading through channels to market and start to consider each point of contact with consumers as an important location of activity.

Further, personalization of consumer experiences across channels will be a key trend in omnichannel retail:

> *If you are shopping in bricks-and-mortar stores, those experiences and preferences will follow you home and on social media. Likewise, online shopping preferences and lists will follow you to the store to explore more, and purchase there if desired. It will no longer be a question of either/or, but all channels creating a holistic experience.* (Consultant 3).

Digital mobile devices like smartphones and wearables will play a major role in creating seamless consumer experiences across channels. Retailers will use these devices for better access to consumer data and personalized location-based marketing. While these uses might sound trivial at first, retailers currently have few ways to identify individual customers in physical stores and thus, to tailor their in-store offerings. Further, product customization as a service will be a key trend that contributes to the overall personalization of the consumer experience.

Retailers will have to balance the integration of digital commerce with brick-and-mortar retail, with physical stores becoming a key destination for unique shopping experiences. As one participant put it,

[1] A discussion of this stopping procedure in light of other potential approaches can be found in von der Gracht (2012).

Table 3
Key trends in omnichannel retail over the coming decade.

Statement	Stability			Ratings					5	4 & 5
	Z	p	Result	1	2	3	4	5	(%)	(%)
Omnichannel will be the new normal	.000	1.000	N/C	0	0	1	3	9	69	92
Omnichannel will be the new normal: Also for perishable goods	.678	.534	N/C	0	0	1	7	5	38	92
Omnichannel will be the new normal: Necessity to adapt	−.262	.968	N/C	0	0	1	3	9	69	92
Shift from focusing on channels to points-of-contact	.000	1.000	N/C	0	0	0	9	4	31	100
Balanced integration of digital commerce with brick-and-mortar retail	.000	1.000	N/C	0	0	0	6	7	54	100
Physical stores: As key destinations for unique shopping experiences	.000	1.000	N/C	0	0	0	6	7	54	100
Physical stores: Reinvent with digital technologies to enable omnichannel fulfillment	−.175	1.000	N/C	0	0	0	7	6	46	100
Physical stores: Reinvent with digital technologies to improve consumer experience	−.175	1.000	N/C	0	0	0	6	7	54	100
Role of store associates will change	−.175	1.000	N/C	0	0	0	6	7	54	100
Role of store associates will change. Store associates will be empowered through digital devices	−.227	.971	N/C	0	0	1	7	5	38	92
Digital mobile devices: Creating seamless consumer experiences	.000	1.000	N/C	0	0	0	6	7	54	100
Digital mobile devices: Location based marketing	.000	1.000	N/C	0	1	0	3	9	69	92
Digital mobile devices: Better access to consumer data	.000	1.000	N/C	0	1	0	3	9	69	92
Payment methods: Increasing use of digital personal devices at POS	.000	1.000	N/C	0	0	0	6	7	54	100
Cross-channel integration: Increasing operational productivity	.000	1.000	N/C	0	0	0	7	6	46	100
Cross-channel integration: Enabling integrated (multi) brand management	.000	1.000	N/C	0	0	0	11	2	15	100
Cross-channel integration: Personalizing consumer experience	.000	1.000	N/C	0	0	0	5	8	62	100
Cross-channel integration: Enabling real-time inventory management	.000	1.000	N/C	0	0	0	6	7	54	100
Faster fulfillment	.000	1.000	N/C	0	0	0	5	8	62	100
Product customization as a service	−.255	.888	N/C	0	0	0	10	3	23	100

Z = Standard score; N/C = No significant change; Ratings = 5 point Likert scale, ranging from (1) strongly disagree to (5) strongly agree; 5 and 4&5 = Relative frequencies of individual ratings.

Table 4
Major challenges in omnichannel retail over the coming decade.

Statement	Stability			Ratings					5	4 & 5
	Z	p	Result	1	2	3	4	5	(%)	(%)
Achieving functional integration	−.462	.772	N/C	0	0	0	7	6	46	100
Balancing digital commerce with brick-and-mortar retail: Re-purposing surplus retail space	.000	1.000	N/C	0	0	1	9	3	23	92
Cross-channel integration: Real-time inventory management	.000	1.000	N/C	0	0	0	8	5	38	100
Cross-channel integration: Personalizing consumer experience	.000	1.000	N/C	0	0	1	7	5	38	92
Cross-channel integration: In-store customer profiling	.000	1.000	N/C	0	1	0	8	4	31	92
Cross-channel integration: Conversion rate optimization	.000	1.000	N/C	0	0	1	9	3	23	92
Developing omnichannel capabilities: Adjusting the organizational mindset	.000	1.000	N/C	0	0	0	7	6	46	100
Developing omnichannel capabilities: Adjusting C-level skills	.000	1.000	N/C	0	0	1	6	6	46	92
Developing omnichannel capabilities: Adjusting store associate skills	.000	1.000	N/C	0	0	1	7	5	38	92
Ensuring information and data privacy	.000	1.000	N/C	0	0	0	6	7	54	100
Ensuring information and data security	.000	1.000	N/C	0	0	0	6	7	54	100
Ensuring information and data security: Managing across-channels despite channel specific issues	−.367	.902	N/C	0	0	1	7	5	38	92
Increasing assortment breadth: Managing product variety	.000	1.000	N/C	0	0	0	11	2	15	100

Z = Standard score; N/C = No significant change; Ratings = 5 point Likert scale, ranging from (1) strongly disagree to (5) strongly agree; 5 and 4&5 = Relative frequencies of individual ratings.

Table 5
Important technologies in omnichannel retail over the coming decade.

Statement	Stability			Ratings					5	4 & 5
	Z	p	Result	1	2	3	4	5	(%)	(%)
Digital mobile devices: Enabling new services	.000	1.000	N/C	0	0	0	6	7	54	100
Digital mobile devices: Mobile apps to improve in-store consumer experience	.000	1.000	N/C	0	0	1	3	9	69	92
Technologies improving in-store consumer experience	.000	1.000	N/C	0	0	2	2	9	69	85
Wireless technologies to enable in-store message transmission	.000	1.000	N/C	0	0	1	7	5	38	92
Payment technologies to improve the checkout	.000	1.000	N/C	0	0	1	3	9	69	92
Technologies improving online purchase convenience	−.367	.902	N/C	0	0	1	3	9	69	92
Technologies enabling cross-channel integration: Real-time inventory management	.000	1.000	N/C	0	0	0	6	7	54	100
Technologies enabling cross-channel integration: Real-time analytics	.000	1.000	N/C	0	0	1	5	7	54	92
Technologies enabling cross-channel integration: Real-time information dissemination	.000	1.000	N/C	0	0	0	5	8	62	100

Z = Standard score; N/C = No significant change; Ratings = 5 point Likert scale, ranging from (1) strongly disagree to (5) strongly agree; 5 and 4&5 = Relative frequencies of individual ratings.

Table 6
Main customer touchpoint in omnichannel retail over the coming decade.

Statement	Stability			Ratings					5	4 & 5
	Z	p	Result	1	2	3	4	5	(%)	(%)
All points of service	−.434	1.000	N/C	0	0	0	3	10	77	100
Digital mobile devices	−.396	.911	N/C	0	0	1	2	10	77	92
Digital mobile devices: As showrooming tool	.000	1.000	N/C	0	0	2	2	9	69	85
Digital mobile devices: Mobile apps	.000	1.000	N/C	0	0	3	1	9	69	77
Digital mobile devices: Mobile phones	.000	1.000	N/C	0	0	1	3	9	69	92
Digitally empowered store associates	−.404	1.000	N/C	0	0	0	4	9	69	100
Physical stores	−.404	1.000	N/C	0	0	0	4	9	69	100
Physical stores: As key destinations for unique shopping experiences	.000	1.000	N/C	0	0	0	4	9	69	100
Physical stores: As showrooming destination	−.367	.902	N/C	0	0	1	3	9	69	92
Physical stores: For immediate purchasing	.000	1.000	N/C	0	0	1	3	9	69	92
Web: Advanced web sites	.000	1.000	N/C	0	0	0	8	5	38	100
Web: Mobile web sites	−.488	1.000	N/C	0	0	0	2	11	85	100

Z = Standard score; N/C = No significant change; Ratings = 5 point Likert scale, ranging from (1) strongly disagree to (5) strongly agree; 5 and 4&5 = Relative frequencies of individual ratings.

"*There is an increasing recognition that clicks-only is not necessarily the way forward. In many cases, customers still require a physical presence, and finding the right balance is the Holy Grail*" (Consultant 6). As a result of this transformation and the increasing need for personalization, retailers will have to reinvent physical stores with digital technologies that improve consumers' experience and enable omnichannel fulfillment. As a result of this transformation, the role of store associates will change, as they will be empowered through digital devices that help them to provide personalized services.

Finally, omnichannel retail will increase retailers' operational productivity. The seamless integration of channels will facilitate real-time inventory management, accelerate fulfillment, and integrate brand management across channels and (potentially) brands.

4.2. Major challenges in omnichannel retail

Participants identified some of the key trends as major challenges for omnichannel retail. Among these challenges are the need to balance digital commerce with bricks-and-mortar retail, to repurpose the resulting surplus retail space, to personalize the consumer experience across channels (which requires in-store customer profiling and optimization of cross-channel conversion rates), and to implement real-time inventory management across channels.

In addition, a major challenge in developing omnichannel capabilities will be adjusting the organizational mindset and developing human omnichannel skills, focusing not only on store associates but also on the C-level. As one participant framed it,

> *The very biggest obstacle to omnichannel is the C-suite. Today's executives simply don't have the experience to truly execute omnichannel as the seamless solution in demand by consumers. Omnichannel requires out-of-the-box thinking and strategic risk. The senior managers of traditional retailers are ill equipped, inexperienced, and not willing to take major risks for the investments required.* (Consultant 3).

Along the same lines, a major challenge for omnichannel lies in integrating all organizational functions through cross-departmental collaboration.

Another major challenge will be to ensure information and data privacy and security. Ensuring privacy requires retailers to honor consumers' privacy preferences and to, as one participant said, "*walk a fine line when sending personal messages to customers*" (Senior Editor 1), whereas security requires retailers to protect consumer data from third parties. A participant explained why ensuring information and data security across channels will be particularly challenging, as "*any lapse could affect all channels, and the security issues will be different for the different channels*" (Professor 1).

Finally, managing the constantly increasing breadth and exponential growth of product varieties will be a major challenge, driven in part by the increasing demand for product customizations.

4.3. Important technologies in omnichannel retail

Participants' forecasts for important technologies focused on the functionalities that technologies must provide, rather than naming specific technologies, as new technologies often replace existing technologies quickly.[2] Technology forecasts can be assigned to three broad types of technologies: those that improve the in-store consumer experience, those that improve the online purchasing convenience, and those that improve cross-channel integration from an operational perspective.

Technologies that improve the in-store consumer experience will play a major role in the future of omnichannel. In particular, technologies that, as a participant expressed it, "*remove the gap between digital promise and customer experience*" (Senior Editor 3)—such as wireless technologies that enable retailers to send messages to consumers when they are in-store and mobile apps that allow consumers to pay and email receipts on the spot, rather than at a check-out counter—will be important. As one participant described it, "*The ultimate result of consumer centricity is to let them be their own 'checkout' and eliminate the need for retail cashiers*" (Consultant 3).

Similarly, technologies that make online purchasing more effortless and convenient will be increasingly essential. Examples are Amazon's Echo, a digital device that enables customers to place online orders via voice commands; technologies that send consumers messages when an item they have browsed online is available at the nearest physical store; and technologies that allow consumers to see online and physical store inventories in real time. As a participant observed, "*In order for consumers to purchase anytime, anywhere, they have to have visibility to both online and store inventory in real time*" (Consultant 3).

Finally, technologies that enable cross-channel integration from an operational perspective will become important. For example, one participant suggested that "*channel-aware planning systems will support reduction of cross-channel fulfillment as much as possible*" (Analyst 1). In particular, technologies that enable real-time inventory management and information dissemination across the organization will be important. According to participants, these technologies must enable retailers to treat inventory as a shared asset in the organization and to bring disparate consumer data from various channels together into one place, "*where it can be reviewed, analyzed, and disseminated to those who need it when they need it*" (Consultant 4).

[2] Accurate forecasting of specific technologies is barely possible for a ten-year time window, while forecasting of functionalities is.

4.4. Main customer touchpoints in omnichannel retail

All participants agreed that moving from individual channels to integrated touchpoints will make each individual point of contact important. One participant described this future in terms of "*main touchpoints will be all and every place where a customer is in the mood to interact with the retailer.* […] *The customer will dictate and the retailers follow*" (Consultant 1).

Participants also agreed on the importance of several specific customer touchpoints. First, physical stores will continue to be an important if not fundamental customer touchpoint, as they will be key destinations for unique sensory shopping experiences and immediate purchasing gratification. A participant summed up this forecast, saying that "*brick-and-mortar retail is not going away. Too many people see it as a form of immediacy and entertainment*" (Consultant 5), and another observed that digitally empowered store associates will play an increasingly important role in physical stores "*as long as they're empowered with digital and mobile devices that provide access to all-channel inventory, customer data, order status, etc.*" (Senior Editor 2). Physical stores will also gain importance as showrooming destinations, locations that consumers visit to examine products before purchasing them online afterwards. To make this transformation happen, a participant opined, "*The physical store must design an experience that is compelling enough to compete with showrooming and/or integrate it into the new normal of customer experience … e.g., provide an app that enables consumers to go on that store's web site to shop while in store*" (Consultant 3).

Digital mobile devices will become a critical portal for showrooming, enabling consumers to compare prices and shop online while standing in the store aisle. A participant expressed the view that "*retailers need to expect that customers will be on their mobile devices any time and everywhere,*" (Consultant 3) while another suggested that digital mobile devices of the future "*may not be phones but* [*all*] *devices that allow people to have mobile computing at their fingertips*" (Consultant 4).

Finally, the web will be a major touchpoint in the future in the form of both advanced desktop and mobile websites. "*The retail web site will be the key touchpoint,*" said one participant, but "*it needs to evolve significantly to be more customer friendly and easy to use and understand. Customer service on web sites needs to improve, to help shoppers navigate the system and keep them in the loop, that is, updated on the order and new developments at the retailer*" (Reporter). Some participants emphasized that, despite the current trend toward mobile apps, mobile websites with responsive designs that adapt from desktops to the smallest mobile screen will be the future, as they can provide consumers with a consistent experience.

5. Discussion and conclusions

After decades of adding new channels to the retail mix, the retail industry will move in the next decade toward integrating these channels into a seamless omnichannel experience. Eighteen internationally recognized retail experts forecasted the key trends, major challenges, important technologies, and main customer touchpoints in omnichannel retail that will emerge over the next ten years.

5.1. Core insights

The findings of this study can be arranged under four broad themes of core insights: consumer experience, human capability, store digitization, and business operations.

The first core insight gained from this study is that future competition in the retail industry will be based on the holistic consumer experience, rather than individual products. This change bears a number of important implications for the retail industry, among them the need to achieve and sustain a consistently high quality of interactions at all customer touchpoints in order to create a holistic consumer experience. Achieving and sustaining such quality across all touchpoints will be challenging, as the number of touchpoints is increasing to the point at which touchpoints will be ubiquitous. For example, Amazon has distributed 15 millions of its "Echo" smart home devices to customer households between late 2014 and 2017 alone, and other vendors such as Google, Apple, and Microsoft are pushing similar Internet-of Things (IoT) devices into the market too (Darrow, 2017). To complicate this situation, it will increasingly be consumers who determine when and how they want to interact with retailers, not the other way around, which means that retailers will have to be ready to fulfill consumer expectations anytime and anywhere if they want to survive in the market. Amazon is an example of a retailer that is actively preparing for "anytime anywhere" expectations. For instance, Amazon is working toward building capabilities that enable the retailer to deliver goods to customers within 30 minutes, regardless of where the customer is. For this purpose, Amazon has developed and patented a technology that allows drones to use location data from customers' smartphones to deliver to customers wherever they may be (Golson, 2015; Marsh, 2015). Self-driving cars that can make autonomous deliveries are another technology megatrend that bears potential for retailers to fulfill consumer expectations anytime and anywhere. Consumers will also expect to have personalized experiences across all touchpoints, which will require retailers to find ways to identify consumers at individual touchpoints and to synchronize information across touchpoints in real time. Mobile devices, artificial intelligence, and real-time big data analytics are all technology megatrends that can be expected to play an important role in retailers' personalization efforts. Omnichannel researchers have already started to empirically investigate integrated consumer experiences across a limited number of channels and relatively coarse-grained touchpoints (Baxendale et al., 2015; Cao and Li, 2015; Herhausen et al., 2015). The results of our study contribute to this stream of research. Importantly, our study highlights that understanding of omnichannel retail requires both practitioners and researchers to broaden their focus to include all customer touchpoints on a fine-grained level.

The second core insight gained from this study is that successful omnichannel retail will require the development of human capabilities and a change in the organizational mindset. Senior management will have to recognize and accept the changing nature of retail and rethink their traditional view of consumers and services in order to develop the seamless omnichannel strategies that customers will demand. Senior management will have to lead the way, acting on these strategies in order to ensure that the rest of the company follows. For example, implementation of seamless omnichannel strategies requires establishment of new incentive structures for sales associates that contribute to establishing an any-channel sales mindset, as consumers will increasingly engage in showrooming (i.e., look at products in the store and purchase them online afterwards). For example, in 2015, about half of all adults in the US used their mobile phones to compare prices while in a store (Sruoginis, 2015). Store associates will become primary customer touchpoints, so they must be empowered if a compelling omnichannel shopping experience that will make consumers return is to be created. Store associates will have to sell the enterprise instead of the store as an individual channel, so they will have to have ad-hoc access to enterprise information, such as omnichannel inventory, customer data, and order status. Surprisingly, despite their fundamental importance in enabling omnichannel retail, the role of senior management and store employees has received limited attention of researchers and practitioners alike. Our study thus makes an important contribution to the literature on store employees (Rafaeli et al., 2017; Rapp et al., 2015) and points toward strategic human resource management as an important but largely neglected area of investigation in omnichannel research (with the notable exception of Oh et al., 2012).

The third core insight gained from this study is that retailers will have to reinvent stores using digital technologies such that physical stores will become key destinations for unique sensory shopping experiences. Augmented reality (AR) is one technology megatrend that

can be expected to play an important role in retailers' efforts to enhance consumers' in-store experiences. Consumers will also demand personalized shopping experiences, but many consumers currently remain anonymous when they are in a store. Hence, retailers must outfit stores with digital technologies like Beacons and digital displays that enable identification of and adaptation to individual consumers in order to create personalized in-store shopping experiences. Being able to identify consumers and their purchase histories and preferences in-store will build the foundation for establishing a holistic view of customers that will enable retailers to tailor in-store offerings and seamlessly integrate stores into the omnichannel experience. Mobile devices, from smartphones to wearables, and real-time big data analytics will play a major role in this kind of reinvention of physical stores. In the future, mobile devices will be key in providing location-based information, blurring the boundaries between offline and online channels, identifying individual consumers in-store, reinventing the checkout process, and empowering store associates. Hence, our findings contribute to the understanding of the future role of physical bricks-and-mortar stores and how retailers can integrate them into a holistic omnichannel experience (Grewal et al., 2017; Herhausen et al., 2015; Verhoef et al., 2015).

The fourth core insight gained from this study is that omnichannel retail will change business operations. Integration of channels will facilitate seamless omnichannel experiences for customers while also increasing the retailers' productivity. After all, integration of channels and customer touchpoints requires retailers to break down organizational silos and to consolidate and distribute information across their enterprises. This tight organizational integration will prove a major challenge for retailers but will enable them to treat inventory as a shared asset, and will facilitate integrated offers across channels and brands, thereby reducing the inefficiencies of traditional channel-based management approaches. For example, the global retail industry loses $472 billion per year because of overstock and $634 billion because of out-of-stock situations (IHL Group, 2015), both of which can be mitigated by a holistic omnichannel view. This tight organizational integration will also require new risk mitigation strategies to deal with the increased risk of big data breaches to ensure data privacy and security across channels. For example, 110 million customer records including credit card information and contact information were stolen from Target in 2013 (Armending, 2017). Consequently, by shedding light on how and why omnichannel retail will influence business operations, our study contributes to the literature on operational efficiency in the retail sector (Oh et al., 2012; Zhang et al., 2010).

5.2. Implications for research

Our results have several implications for future research. First, research on multi-channel retail has traditionally focused on the influence of one or several additional channels on retailers' performance (Verhoef et al., 2015). Because competition in omnichannel retail will be based on customers' experience across channels (Baxendale et al., 2015; Cao and Li, 2015; Herhausen et al., 2015), rather than the number of channels served, future research should find ways to quantify the holistic customer experience as a proximate measure of retailers' competitiveness. Moreover, research needs to move beyond the channel cannibalization—synergy dichotomy and provide a more fine-grained understanding of how individual touchpoints interact across-channels.

Second, to our knowledge, this study is one of the first to point out the importance of strategic human resource management for omnichannel retail (with the notable exception of Oh et al., 2012). Omnichannel retail implies a fundamental shift of thinking and acting—from selling through independent channels to selling the entire enterprise channel independently. Hence, strategic human resource management will play an important role in adjusting the organizational mindset toward omnichannel retail and developing human omnichannel capabilities. Future research should identify human resource practices that contribute to adjusting the organizational mindset and developing human omnichannel capabilities, and thus act as antecedents of organizational omnichannel capabilities. For example, research along this vein could investigate the influence of incentive structures, job rotation, or trainings on organizational omnichannel capabilities.

Third, retailers will increasingly leverage digital technologies to reinvent physical stores to introduce checkout-less stores, empower store associates, establish endless aisles, and personalize in-store offers, among other possibilities. For example, augmented reality and 3D printing are two technology megatrends that can enable retailers to personalize the in-store shopping experience for individual customers. However, little is known about the impact of introducing specific digital in-store technologies (Piotrowicz and Cuthbertson, 2014; Verhoef et al., 2015). Hence, future research should explore how specific digital in-store technologies influence consumers' behaviors and experiences and retailers' performance. Research along this vein could for example conduct laboratory or field experiments to study and determine the influence of specific digital in-store technologies.

Fourth, the transition to omnichannel retail will change significantly how traditional retail businesses operate. However, little is known about the types of innovative business models and competitive strategies that will be enabled by omnichannel retail operations. Because it is important to understand both the antecedents and the consequences of innovative business models (Sorescu et al., 2011), future research should explore the types of business models and strategies that are enabled by omnichannel retail and identify their consequences. For example, research along this vein could use configurational approaches (e.g., Meyer et al., 1993) to analyze and compare empirical evidence from different retailers about how their business models and the underlying touchpoints evolve over time.

Fifth, from a methodological perspective, while stability should be used as stopping criterion not all Delphi studies use it (Linstone and Turoff, 2011). Our Delphi study goes beyond and, to the best of our knowledge, provides the first detailed account of how Dajani et al. (1979) stopping criteria can be applied to further analyze the specific manifestation of stability. Specifically, we controlled for consensus, majority agreement, majority disagreement, and bipolarity to ensure the validity of our findings. A notable exception is the study of Poba-Nzaou et al. (2016) who also applied Dajani's stopping criteria but did not provide details of its application. Hence, our study provides valuable insights and an orientation for other researchers who might want to apply Dajani et al. stopping criteria to improve the methodological rigor of their own studies.

5.3. Limitations

As is the case with any study, ours is not without limitations. As is the case with any Delphi study, the findings are largely dependent on the group of participants. We recruited retail experts with diverse backgrounds to avoid distorted results, but consultation with a different group of participants might lead to different forecasts. Specifically, our sample of experts was dominated by participants from Western countries and lacked participants from Eastern countries. Considering that Eastern countries include some of the world's largest economies and that customer behaviors in these countries might differ, future research on omnichannel could investigate whether the consultation of experts from different geographical areas results in different predictions.

Another limitation is the relative small sample size of our study, which limits the generalizability of our findings and our ability to draw any definite conclusions. However, this concern does not compromise the validity of our results since the Delphi method depends rather on the selection of suitable experts than on statistical power (Loo, 2002; Okoli and Pawlowski, 2004). Moreover, the primary goal of Delphi forecasts is not to derive results that are generalizable to larger populations of experts but to obtain agreement among a group of experts on a forecast, which is why sample sizes similar to ours are commonly

recommended for the Delphi method (Hsu and Sandford, 2007; Loo, 2002; Okoli and Pawlowski, 2004).

Further, in total five participants discontinued their participation over all four rounds of our study. Since dissent was not the reason for discontinuation of four of the five participants, we are confident that no artificial consensus was generated (Linstone and Turoff, 1975) and that our results are representative of all the experts (Greatorex and Dexter, 2000). However, the fifth participant may have discontinued participation because of dissent and it would have been interesting to explore the reasons of this dissent in more detail. Unfortunately, we could not reach the participant for any statement, which means that potential insights resulting from this minority view are lost.

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Appendix A. Technology megatrends that are expected to transform society over the next 10–20 years

Technology	Study				
	OECD (2016)	World Economic Forum (Espinel et al., 2015)	Frost and Sullivan (2017)	Oracle (2017)	PWC (2016)
Artificial Intelligence (AI)	X	X	X	X	X
3D Printing	X	X		X	X
Drones	X			X	X
Driverless cars	X	X		X	
Big data	X	X	X		
Cloud computing	X	X	X		
Blockchain	X	X			X
Augmented Reality (AR)		X	X		X
Virtual Reality (VR)			X	X	X
Internet of Things (IoT)	X	X	X		X
Mobile devices and Wearables		X	X	X	
Implantable technologies	X	X			
Robotics	X	X	X		X

Appendix B. Stage 1 – open-ended questions

In the following, we use the term *omnichannel retail* to refer to the integration of channels like stores, online, and mobile into a single, seamless customer experience.

1. What do you think will be key trends in omnichannel retail over the next ten years? (Please list up to three and briefly explain why.)
2. What do you think will be major challenges in omnichannel retail over the next ten years? (Please list up to three and briefly explain why.)
3. What do you think will be important technologies in omnichannel retail over the next ten years? (Please list up to three and briefly explain why.)
4. What do you think will be main customer touchpoints in omnichannel retail over the next ten years? (Please list up to three and briefly explain why.)

Appendix C. Analysis of argument types

One of the researchers conducted an argument and syntax type analysis of all responses received in the first stage of our study to provide a better understanding of participants' answering behavior and the study's overall data quality. Following Förster and Von Der Gracht (2014) we coded all responses using twelve argument types and three syntax types (see Table C1) that are commonly used in Delphi studies as our coding scheme. In accordance with our overall coding approach, we first coded each response line-by-line and afterwards determined whether codes would change when previously independently coded lines were considered as interrelated text elements. We accepted multiple argument type codes but only one syntax type code for each response line. This process resulted in 338 coded response lines with each line having 16.2 words on average. Table C2 shows the results of our analysis for each of the four Delphi study questions.

Table C1
Examples of argument and syntax types.

	Example from responses
Argument type	
Particular case	Amazon and eBay track your shopping and visits from multiple sources, and they follow you with personalized offers back on Facebook and Social Media.
Figure	A large majority of the 90% of sales consummated in-stores are anonymous, which is problematic for retailers seeking a holistic view of the customer.
Trend	The most important trend is the broadening of assortments available through e-commerce and m-commerce, beyond what stores with physical footprints can carry in their brick-and-mortar locations.
Analogy	NA
Cause–effect relationship	New ways of working out cost-sharing across channels will make omnichannel more attractive and result in increased operational productivities.
Development	Retailers will increase their leverage of consumer-held mobile devices (smart phones) through applications and geolocation, earning them data that improves the 1:1 customer experience.
Belief	I do not believe that the term omnichannel will be used anymore.
Experience	Retailers with a store heritage are still ill equipped for integrated planning of online with stores.
Differentiation	As long as [store associates] are empowered with digital and mobile devices that provide access to all-channel inventory, customer, order status, etc. (and as long as they're trained on how to use it), the store associate will play an increasingly important role as an omnichannel touch point.
Lack of information	NA
Misunderstanding	NA
Syntax type	
Whole sentence	The stores that remain in five to 10 years will be more like flagships, drawing people with special effects and the best sampling of goods.
Phrase	Experience rather than product
Catchword	On demand inventory

Table C2
Argument and syntax types of the responses to the four Delphi study questions.

	Key trends	Major challenges	Important technologies	Main customer touchpoints
Argument type				
Particular case	2.5% (3)	2.4% (2)	7.4% (5)	3.0% (2)
Figure	0.0% (0)	1.2% (1)	1.5% (1)	0.0% (0)
Trend	5.0% (6)	0.0% (0)	1.5% (1)	1.5% (1)
Analogy	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Cause–effect relationship	53.3% (64)	54.2% (45)	48.5% (33)	44.8% (30)
Development	84.2% (101)	66.3% (55)	92.6% (63)	80.6% (54)
Belief	5.8% (7)	4.8% (4)	2.9% (2)	4.5% (3)
Experience	9.2% (11)	34.9% (29)	8.8% (6)	9.0% (6)
Differentiation	3.3% (4)	3.6% (3)	0.0% (0)	9.0% (6)
Lack of information	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Misunderstanding	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Syntax				
Whole sentence	79.2% (95)	86.7% (72)	85.3% (58)	89.6% (60)
Phrase	16.7% (20)	13.3% (11)	13.2% (9)	9.0% (6)
Catchword	4.2% (5)	0.0% (0)	1.5% (1)	1.5% (1)

Percentage shares (total numbers) relate to the individual questions.

Appendix D. Stage 3 – ranking

Below you find a list of all key trends that were identified in the first stage of our study. Please indicate your degree of agreement with each of the following statements by selecting an appropriate response from the options on the right. You will also find a space at the end of this page to leave comments should you want to give us additional feedback or comment on any particular statement.

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