

MASTER

Supply chain capabilities in an omnichannel strategy enabling customer fulfillment services for Brick-and-Click fashion retailers

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**Supply chain capabilities in an
omnichannel strategy:
Enabling customer fulfillment services for
Brick-and-Click fashion retailers**

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in Innovation Management**

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Abstract

Omnichannel retailing, where the boundaries between different channels of the multi-channel approach are blurring and are getting integrated, is seen as the new standard and retailers are struggling with implementation of this new model. One of the areas of this struggle is the impact of omnichannel retailing on the supply chain in order to enable customer fulfillment services like 'same day delivery', 'reserve in-store', and 'weekend delivery'. This research sheds light on this topic by discussing four parts of this topic in relation to Brick-and-Click fashion retailers: 1) the components and implications of an omnichannel strategy, 2) the current state of customer fulfillment services offered by retailers, ranging from the moment of ordering until possible return, 3) the desired preferences of consumers regarding customer fulfillment services, and 4) the supply chain capabilities needed to enable the services consumers desire. Main findings include that omnichannel retailing is not a strategy that is constraint to the firm, but could be extended towards network retailing, where wholesale channels, franchise channels, and retailer's own channels are integrated. In addition, retailers that originally sell through wholesale channels only should build direct-to-consumer interaction to get closer to the consumer from a selling and fulfillment point of view. Also a more agile supply chain is an important strategic pillar for omnichannel. Regarding services, it is found that dynamic fulfillment, where consumers can see or reserve in inventory of other channels, can significantly reduce out-of-stock no-sales and this reduction is further established with seamless fulfillment, where the retailer can fulfill from anywhere. These services show the importance of the capability of inventory visibility. In addition, delivery and return shows different preferences for the standard option and added value services, where a standard delivery or return option should pursue a cost-leadership approach and premium added value services are offered on top of this. To enable this, a hybrid model of efficient and flexible warehousing and logistics is proposed. To obtain these results, an industry benchmark is used in addition to multiple company management interviews and a conjoint based consumer survey.

Management Summary

From multichannel to omnichannel: the need for research

Seen as a marketplace disruption, omnichannel retailing is starting to become the new norm. Consumers are getting more demanding and the boundaries of retail channels are blurring. These increased demands call for action among retailers if they want to win, or even survive, in a dynamic and competitive marketplace. However, the concept of omnichannel is still hard to grasp for those same retailers and the need for research is definitely there.

This research offers an initial, exploratory research in one of the areas of omnichannel retailing: customer fulfillment. When the consumer has decided to purchase a certain product, the customer fulfillment starts and it ends as soon as the consumer is either happy with the product, or has returned the product to the retailer. Strategic components of omnichannel fulfillment are investigated, the current state of fulfillment services are mapped, the desired customer services are researched, and necessary capabilities to implement these services are examined. The research is performed in light of Brick-and-Click fashion retailers with sales options in the Netherlands and consists of an industry benchmark, management interviews, and a consumer survey.

The omnichannel strategy

Interviews with 8 fashion retail managers show that there are six pillars that identify the omnichannel strategy:

- Creating a seamless experience, where the consumer can order from anywhere, and let the product be fulfilled from anywhere, unrestricted by the location the consumer is or bought the product
- Channel integration, where the retailer enables full interaction between the different channels to be able to enable the seamless experience
- An agile supply chain that enables more flexibility to fulfill cross-channel in a convenient, fast, and flexible manner.
- Downstream verticalization, where fashion companies extend their wholesale channel distribution model towards direct-to-consumer retailing in addition to their wholesale model.
- Single customer view, where data from the consumers is captured at all contact points to be able to create a total view of preferences of this consumer
- Increased buying intent, where retailers try to convert an interaction into actual buying intent

Pursuing these pillars helps as initial guidance for omnichannel retailing

Current state of offerings

Currently, customer fulfillment is performed in varying ways by different retailers (Figure 1). An industry benchmark of 57 retailers indicates that the services can be split in four categories: ordering and payment, availability, delivery, and return. It shows that a lot of services are currently offered, but there is only a little amount of consensus among retailers. This indicates heavy segmentation or the fact that there is no solid view on preferences of consumers. In addition, there seems to be a little actual implementation of omnichannel services as in-store delivery (35%), return channel integration (33%), or store-inventory visibility (14%) currently in the marketplace.

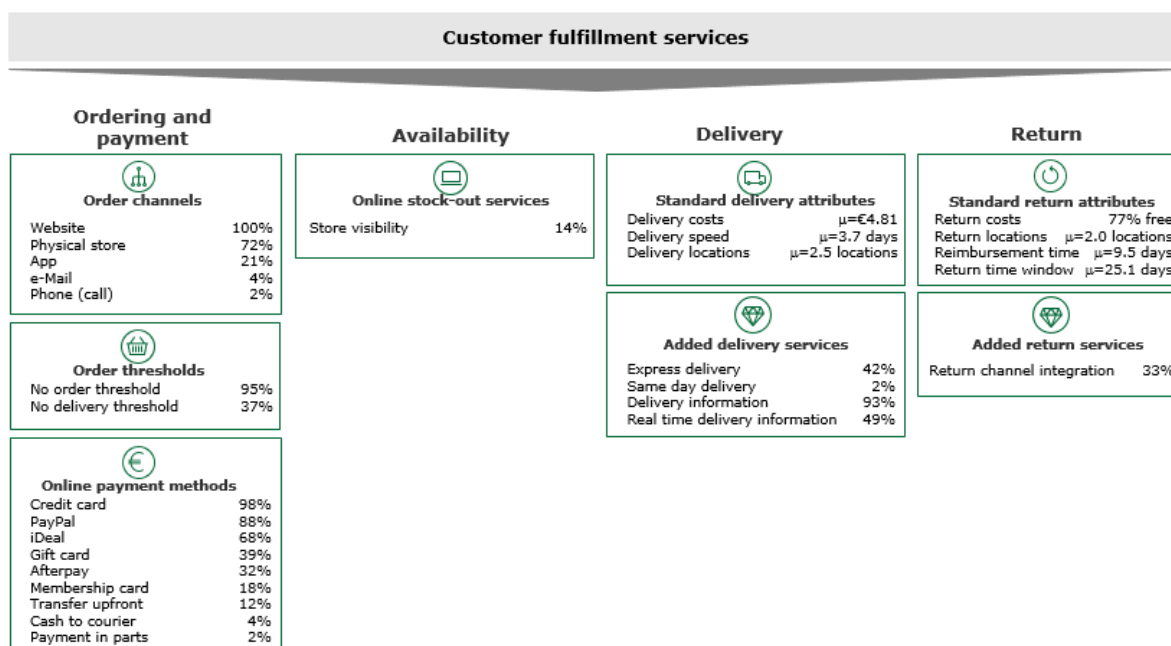


Figure 1: Summary industry benchmark

Desired state of offerings

A consumer survey among 608 respondents, representative for the Dutch population shows the desired state in the four customer fulfillment service areas (Figure 2). The main conclusions of the consumer survey consist of:

- Brick-and-Click is the most desired purchasing model for consumers
- Mobile purchasing channels (mobile site and app) depend highly on target group: more progressive users will be more likely to use them than conservative users.
- Payment after purchase is highly valued, but not much offered
- Dynamic fulfillment can increase sales in stock-out scenarios with 45% for online and 23% for offline purchases
- Standard delivery and return is mostly preferred with low costs, which is between 3 and 12 times more important than other attributes (e.g. delivery speed)
- Added value delivery services offered as extra options for an additional fee are desired by consumers
- Return as a sales option is accepted mediocre, so only using it as an option instead of a standard action is advised
- Standard delivery and return is barely affected by segmentation patterns, while added value delivery and return options are much more affected.

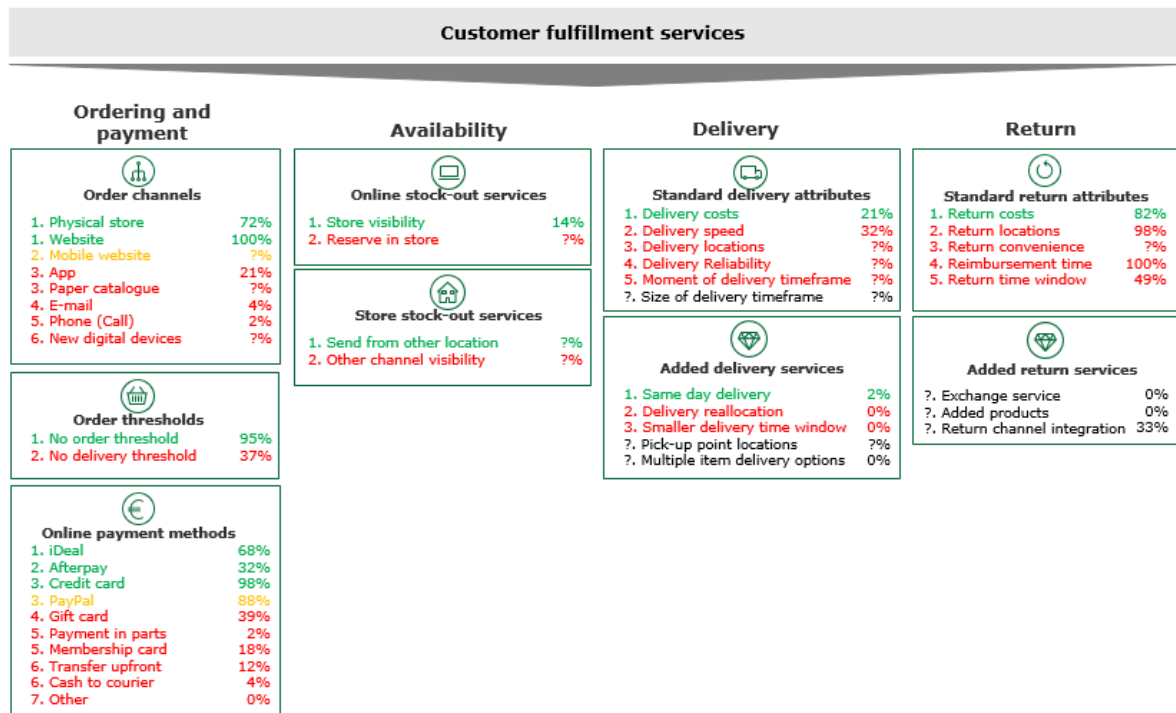


Figure 2: Summary consumer survey

Capabilities to enable

To enable the services desired, capabilities need to be in place (Figure 3). Capabilities need to be addressed across the entire supply chain to be able to enable the customer fulfillment services. However, the most interesting findings are:

- Capabilities are not stand alone functions and interact with each other. Therefore, careful thought for positioning of capabilities in the organizational structure is important
- Supply chain capabilities mainly enable customer fulfillment services, but there is spillage where supply chain capabilities support non-customer fulfillment services and non-supply chain capabilities support customer fulfillment services
- End-to-end inventory visibility is the foundation of the fulfillment, where the retailer knows of all stock where it is. It enables dynamic fulfillment directly and improves the execution of a lot of other capabilities like logistics and store management
- For flexible delivery services, decentralized warehousing and flexible and responsive logistics and distribution is proposed. So to combine standard cost leadership delivery with added value services, a hybrid centralized and decentralized model is proposed.
- Fast reverse logistics enables return convenience on the one hand, while it decreases markdown costs on the other
- Translating the operational capabilities to consumer value propositions means that store management is more important. Utilizing sales associates to improve the seamless fulfillment experience will be necessary
- To obtain maximum benefits for omnichannel fulfillment, partnership management, where firm's individual retailing is extended to network retailing in combination with wholesale and franchise partners, is proposed beneficial
- Finance is a cross-functional capability that is proposed to support many others: tax optimization affects logistics routes while cost and revenue allocation (payments) support partnership and store management

- Implementing customer fulfillment services increases customer satisfaction, resulting in increased revenue, brand image, and loyalty
- Implementing supply chain capabilities in the right way generates cost reduction by reduced logistics costs, economies of scale, and reduced inventory
- Implementing supply chain capabilities is challenging, since incumbent complexity hampers implementation. In addition, newness of omnichannel, stakeholder resistance, and necessary investments could challenge the implementation

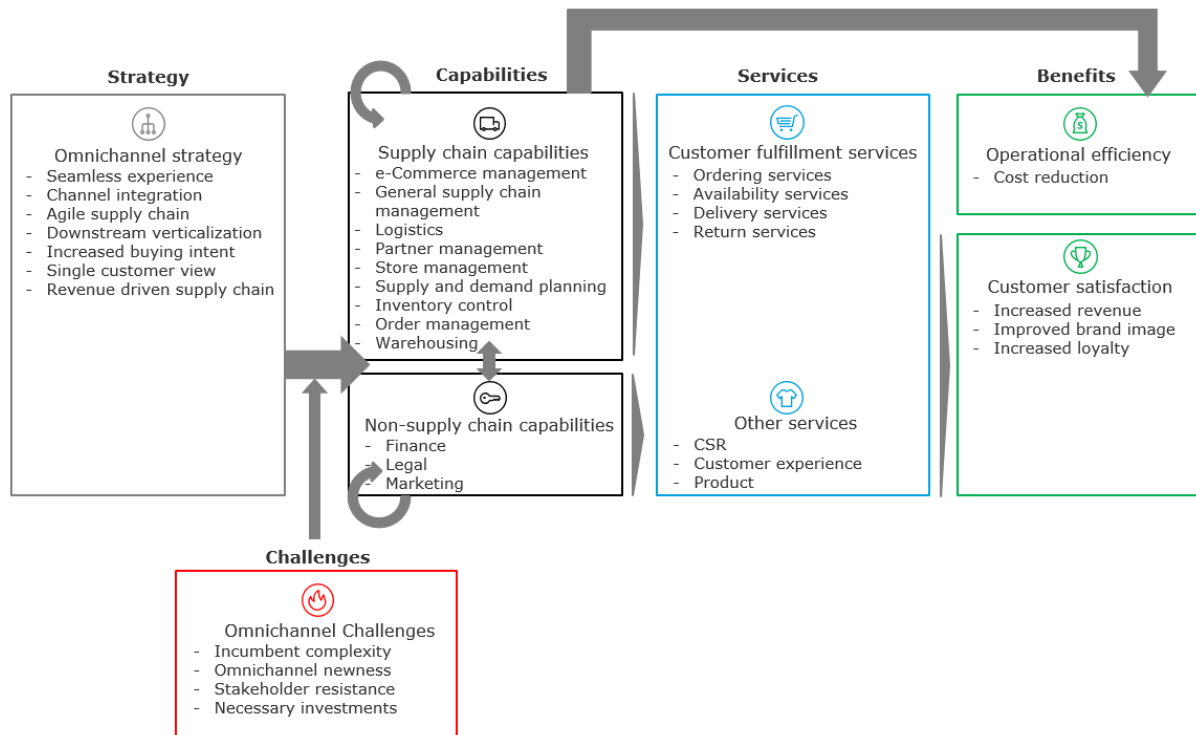


Figure 3: Capability model

Design

The above results show a need for certain capabilities to enable customer fulfillment quality. Based on the survey and interview results, it is proposed that there are four levels of customer fulfillment quality maturity (Figure 4).

1. Minimum fulfillment quality, designed for adhering to the minimal consumer preferences to maintain their interest but is not yet geared towards creating additional traffic. It involves having website and store for purchasing, standard payment methods, and cost leadership delivery and return.
2. Evolving fulfillment quality, designed to increase sales based on additional traffic or saved sales instead of directly adhering to consumer needs. It involves dynamic fulfillment to save lost sales in stock-out scenarios and in-store delivery and return.
3. Mature fulfillment quality, designed to adhere to consumer preferences and to be able to provide a seamless experience that matches the expectations of consumers. It involves additional mobile purchasing channels, payment after purchase, seamless fulfillment, premium delivery services for an additional fee, utilizing return as a sales option, and maximized ease of return

- Disruptive fulfillment quality, designed to disrupt the current state by exceeding consumer expectations. It involves enabling all possible purchasing and payment methods and provide cost leadership standard delivery with a premium quality (e.g. free same day delivery)

To adhere to consumer desires (mature fulfillment quality), a capability framework is proposed based on interview results that creates the building blocks for omnichannel customer fulfillment (Figure 5). The framework contains a foundation that is necessary to enable the capabilities above. It contains end-to-end inventory visibility, finance and legal policies, and customer data analytics. On top of the foundation, a two-tier operational block is proposed. These contain the operations that are seen most beneficial to enable the services described above. The first tier is associated with an efficient centralized warehousing system with bulk volume and efficiency based inventory deployment. This tier will enable cost leadership standards with a low burden for the retailer. The second tier contains de-centralized warehousing, flexible logistics, and portfolio segmentation on top of the first tier to be able to simultaneously fulfill added-value services. These two tiers will give the opportunity to adhere to both modes of delivery (cost leadership standard and added-value premiums). On top of the operational building block, a commercial roof is proposed to translate the operational and foundational capabilities to consumer value. It consists of network retailing and leveraged store potential.

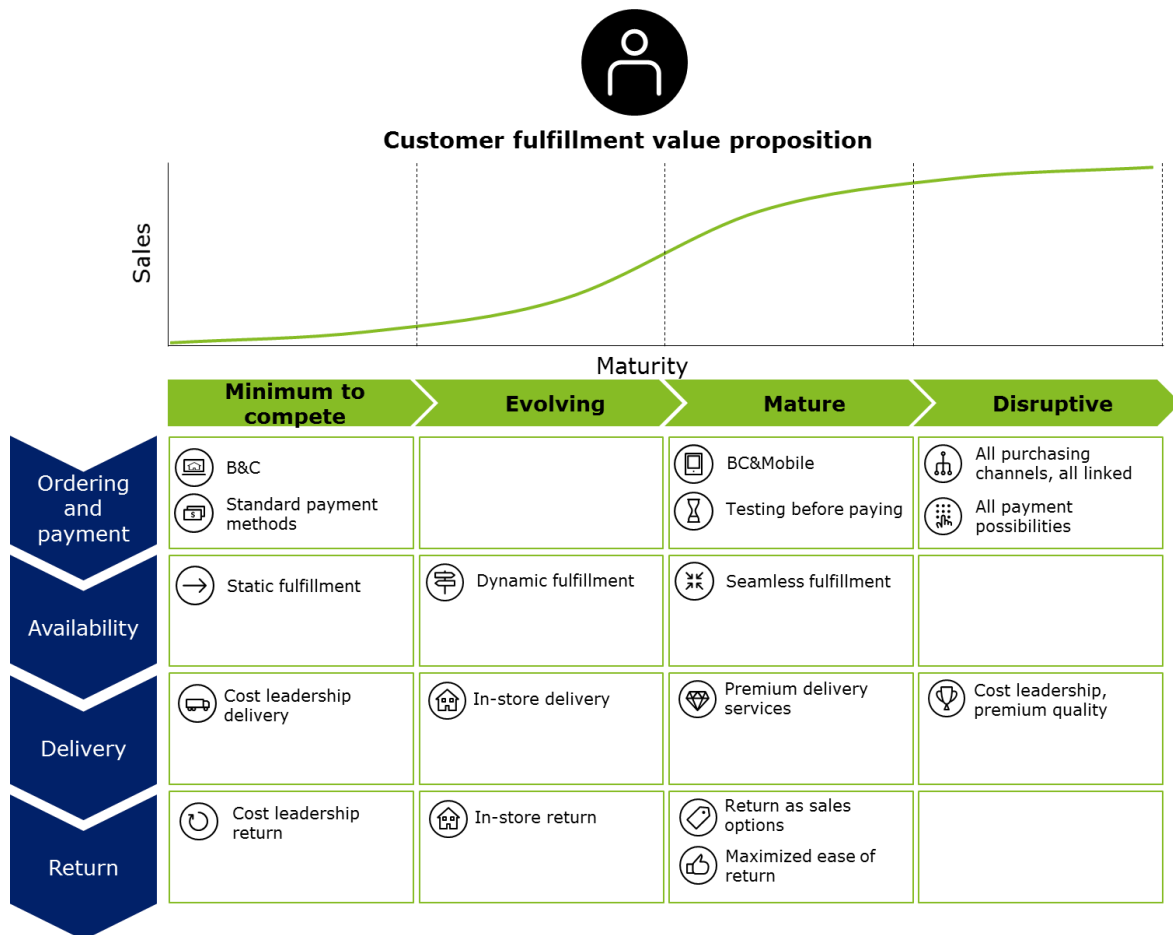


Figure 4: Customer fulfillment value proposition

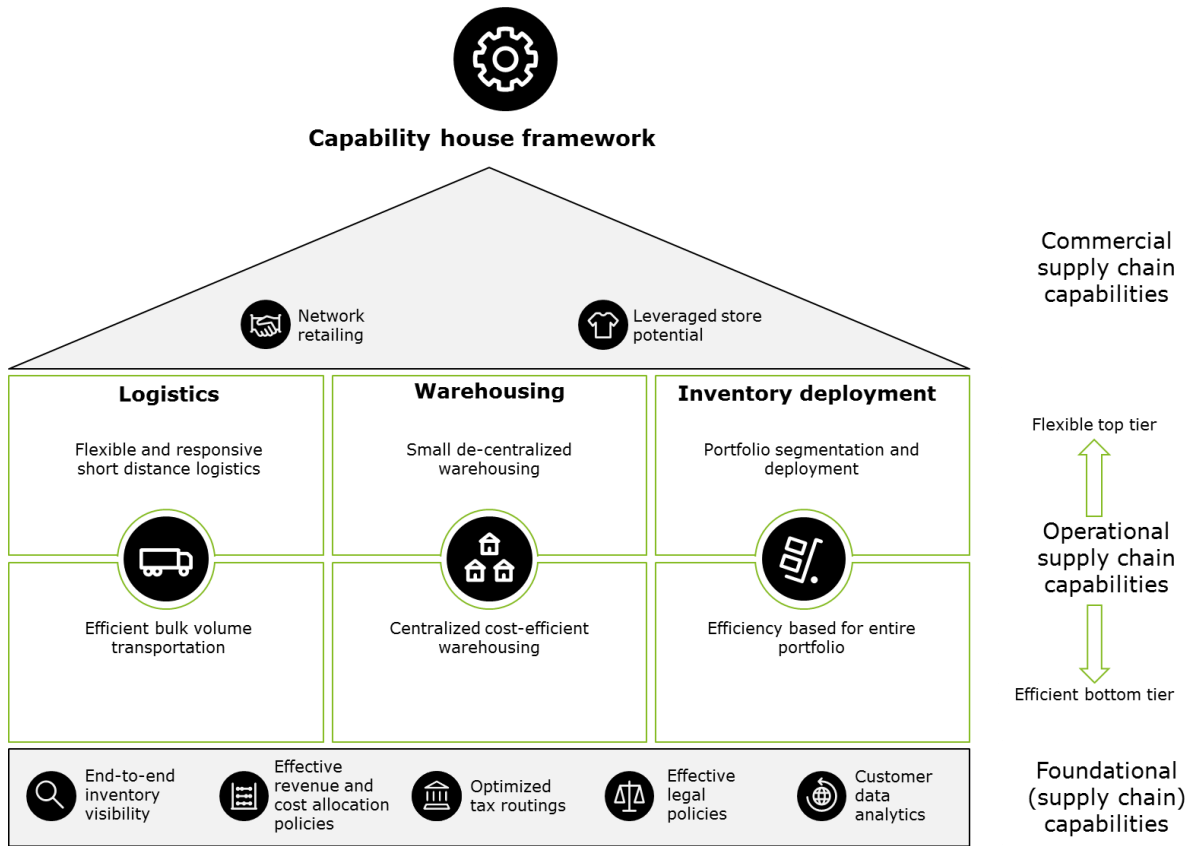


Figure 5: Capability house framework

Conclusion

In conclusion, customer fulfillment for omnichannel is a new model that requires fundamental changes in an organization. Starting to think and act cross-channel enables important services like dynamic or seamless fulfillment, same day delivery, and return in-store. However, careful thought has to be given to the value proposition for services, since cost leadership remains most important for standard delivery and return options. Implementing capabilities that enable standard cost leadership, added-value options, and drive extra revenue generation (e.g. traffic to store by in-store delivery and return) are proposed as basis for omnichannel fulfillment.

Preface

This master thesis is the final examination of my master Innovation Management at the TU/e, master program of the Industrial Engineering and Innovation Sciences faculty. I have the privilege to be able to perform this thesis in cooperation with Deloitte Supply Chain Strategy and being able to use their knowledge and network for this research. I have been able to work at the forefront of market disruption and to work with theory and practice simultaneously and knowing that this work is already being used by Deloitte and it makes the study worthwhile from my personal point of view.

This thesis would have never come to be without the help of my university supervisors Myriam and Arjan. I would like to thank Myriam for her close cooperation during the entire project and her flexibility that allowed me to change my subject in a total different direction in one of the final phases of my thesis preparation. I can imagine that a change in this direction was not the easiest one, but I can only praise the way you were able to handle this and the dedication you put into the process. Also I want to thank you for continuously answering my questions, being honest at all points, and believing I could make my ambitions come true. Arjan I would like to thank for his critical notes and I can only thank you for expecting the best of me from the start of the project, since I believe the results of these actions attributed in a positive way. I really value the way how our cooperation evolved during the project and that you were able to push me to my limits and being enthusiastic about the project on simultaneously. Thank you both for helping me achieve the results I present to you in this thesis.

I am glad I had the possibility to work within Deloitte Supply Chain Strategy. From the first moment onwards, I felt part of the team and the dedication and enthusiasm of all team members across all levels helped a lot. In particular, I would like to thank Laurens for his supervision, his input, his critical notes on my way of thinking, and of course, how he was able to cope with me being “*stubborn*”. Furthermore, I would like to thank Sander and Maureen for trusting me in my judgement to outsource the survey that has been of great value for my thesis. Also, I would like to thank Bram, Morris, Lonneke, Niels, Martijn, and again Laurens and Maureen for the help in chasing interviewees. Without you, the value of results would not have been like they are today. Furthermore I want to thank all other colleagues within Supply Chain Strategy and other service lines to contributing to my project in all ways possible: helping me with think-cell, just brainstorming, or giving me all knowledge they had available. The fact that in addition to my service line, people from Tax, Strategy, Digital and Technology helped me with all their effort, from business analyst to partner, made me feel valuable and taken seriously. Also it made the results as they are now.

In addition I would like to thank the interviewees for providing valuable information on the topic of omnichannel retailing. I felt like you all opened up to me in an enthusiastic way and I can only hope my results are as much of a value to you as your input was for me.

Furthermore, I want to thank my family for their unconditional support. Even when things did not always go as planned, they always backed me up, let me make my own decisions (and corresponding mistakes), and follow my own path. Whether it was a serious chat about my future, picking me up from the train station whenever it was necessary, or just letting me know you thought of me, it will always be appreciated.

My friends that had to cope with me in my time at E.S.C I would also like to thanks. I learned more in that time than I could ever imagine. In particular, I would like to thank the 53th Senate, my fellow board members of Foundation ESI, my friends at Discom '86, and of course, my lifelong pals at Meteor. I love thinking about the great and crazy stories we were able to live during the last years. I think this is the moment I can say I spend enough time with you guys as a student, but I promise I will not stop bothering you.

Finally, there is one person that gave me full support during the project, heard me out whenever needed, had to live with me in the most dynamic time of both our lives and that was, and still is, the reason I am able to push forward. Thank you Cleo for your support and your contribution to this project.

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List of abbreviations

3PL	Third Party Logistics
B&C	Brick-and-Click
B&M	Brick-and-Mortar
BC&Mobile	Brick-Click-and-Mobile
DC	Distribution Center
RBV	Resource Based View
RLH	Root Likelihood
S&O	Strategy and Operations
SCM	Supply Chain Management
SCOR	Supply Chain Operations Reference
SCS	Supply Chain Strategy

List of definitions

Brick-and-Click Store	A store model where customers can buy products at an online channel (e.g. a website) and an offline channel (e.g. retailer's store)
Brick-and-Mortar Store	A store model where customers can buy products at an offline channel (e.g. retailer's store), but not at an online channel (e.g. a website)
Capabilities	A set of processes or bundles of skills and accumulated knowledge that a firm can use to combine efficiently a number of resources (input) and convert them towards objectives desired (output) (Black & Boal, 1994; Amit & Schoemaker, 1993; Day, 1990; Dutta <i>et al.</i> , 2005; Stalk <i>et al.</i> , 1991)
Channels	A customer contact point or a medium through which the company and the customer interact (Neslin, et al., 2006, p. 96)
Customer fulfillment	All activities from the point of a customer's purchase decision until the product is delivered to the customer and he or she is fully satisfied with its quality and functionality (Pyke <i>et al.</i> , 2001, p.27)
Digital pure player	A store model where customers can buy products at an online channel (e.g. a website), but not at an offline channel (e.g. retailer's store)
Dynamic fulfillment	A form of customer fulfillment where the consumer is offered the possibility to obtain the product desired from another channel than the original purchasing channel in case of stock-outs (e.g. reserve in store) (Snoeren, 2016)
Multi-channel retailing	Concerns a growing number of online and/or offline channels in retailing to comply with customer needs (Stone <i>et al.</i> , 2002) and it aims at separate management of the different channels (Verhoef <i>et al.</i> , 2007)
Omnichannel retailing	The set of activities involved in selling merchandise or services through all widespread channels, whereby the customer can trigger full channel interaction and/or the retailer controls full channel integration (Beck & Rygl, 2015, p.175)
Order fulfillment	All the activities involved in successful delivery of products to meet retail customer requirements (Davis-Sramek <i>et al.</i> , 2008, p. 782)
Performance	Refers simultaneously to the action, the results of the action and to the success of the result compared to some benchmark (Lebas & Euske, 2002)
Seamless fulfillment	A form of customer fulfillment where the retailer uses all available distribution channels available to fulfill an order, independent of the channel the consumer purchased the product from (Snoeren, 2016)
Service Quality	The difference between customer's expectation for service performance prior to the service encounter and their perception of the service received (Asubonteng <i>et al.</i> , 1996, p.64)
Supply Chain	All the activities associated with moving goods from the raw-materials stage to the end user. This includes sourcing, procurement, production scheduling, order processing, inventory management, transportation, warehousing, and customer service. Importantly, it also embodies the information systems necessary to monitor all of those activities (Quinn F. J., 1997)
Supply Chain Capabilities	A set of processes or bundles of skills and accumulated knowledge that firms can use to combine efficiently a number of resources (input) and convert them towards objectives desired (output) that relates to moving goods, services, and information from the raw-materials stage through to the end user, including the corresponding supportive activities (Black & Boal, 1994; Amit & Schoemaker, 1993; Day, 1990; Dutta <i>et al.</i> , 2005; Stalk <i>et al.</i> , 1991; Quinn, 1997; Lambert <i>et al.</i> , 1998).
Supply Chain Management	The integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders (Lambert <i>et al.</i> , 1998, p.287)

1. Introduction

The introduction will provide an overview of the background and reasoning behind the study in order to show the need for and direction of the study. First, the motives for the study are discussed. Next, the research is discussed in terms of goal, research question, scope, and design. Finally, a short outline of the thesis will be provided.

1.1. Motive of the study

Last week, I walked in the store looking for a suit. After figuring out what I wanted, I went home and ordered it online at another store. I knew I was not going to be home so I wanted the suit to be delivered at the store the next day. I picked it up, but since I did not like it as much as I hoped, I returned it by delivering it at a postal office. This all free of charge of course. I would rate this transaction as a pleasant experience. However, for the retailer, it was not as easy as it was for me. A lot of different channels had to be aligned to give me that pleasant experience. A couple of years ago, using more than one channel barely happened, so using multiple channels for a single transaction would be seen as impossible. However, now it is expected from a retailer. This puts pressure on these retailers, their business models, and their supply chains. However, they do not have much of a choice if they want to survive. Consumers have increasing demands and expectations and this results in a world where the consumer is central and where orders come from anywhere and need to be fulfilled from anywhere: the omnichannel world (Figure 6).

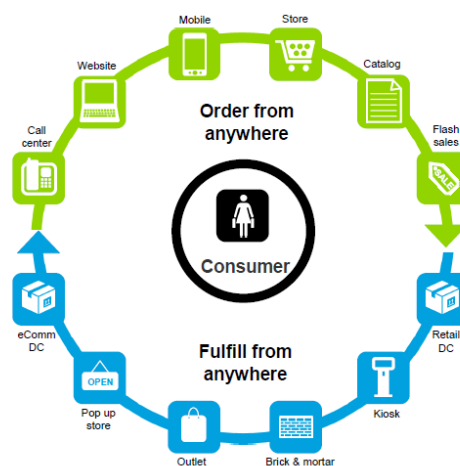


Figure 6: Omnichannel in a nutshell (Grootenboer & Nolet, 2015)

The change towards an omnichannel environment is largely because of the continuous changes in the digital landscape:

- New devices like smartphones and tablets make consumers more connected;
- increasing social media use and communities keep consumers connected and informed all day long;
- the explosion in media consumption keeps consumers up-to-date of the latest trends;
- the surge in internet traffic increases the availability of information for these customers;
- new business models like amazon and rapid fulfillment models with increasing personalization options increases the expectations of customers; and
- big data and advanced analytics enhance the possibilities for retailers to exploit new business opportunities.

This all results in a world where the customer journey and experience are central and retailers that do not catch up could lose their market share (Figure 7).

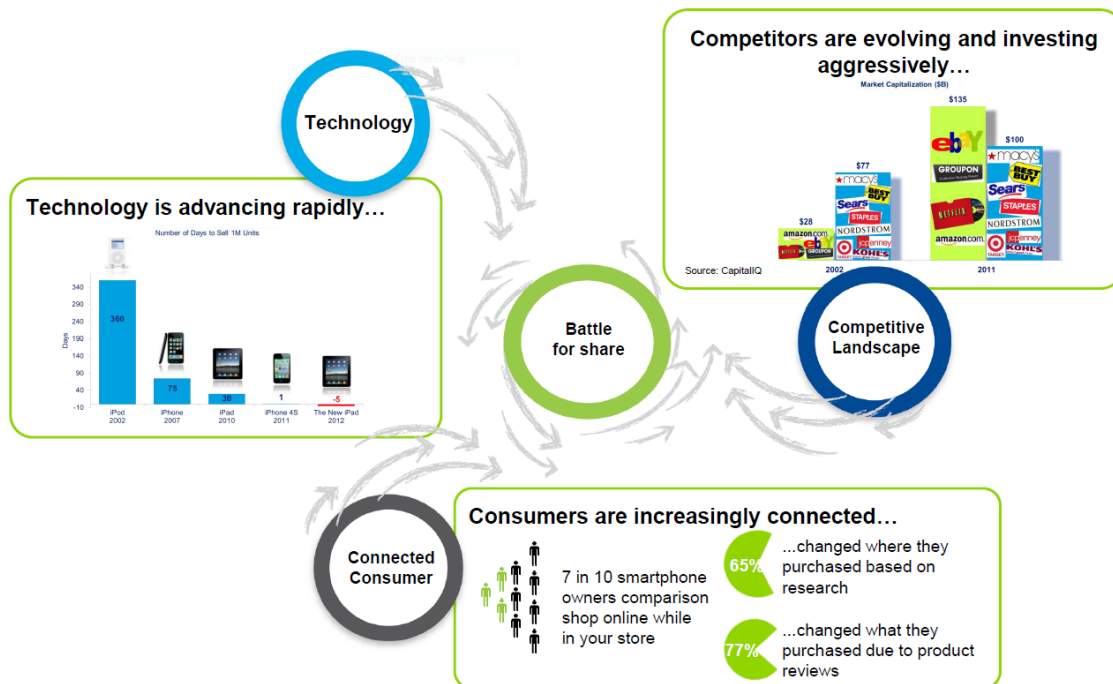


Figure 7: Changes in retail landscape create a battle for share (Grootenboer & Nolet, 2015)

In line with these changes, e-commerce has enjoyed 10-15% year on year growth in retail market sales in the Netherlands. As a result, it accounted for 7% of all retail sales in 2014 and it is forecasted to continue growing even faster than traditional retail (Grootenboer & Nolet, 2015). Furthermore, as Figure 8 shows, within these online retail sales, Brick-and-Click (B&C) stores (i.e. retailers with online and offline presence) capture 62% of the sales and pure players (e.g. Bol.com and Wehkamp) capture 38%. So on the one hand, physical stores still account for the majority of sales and are therefore, apparently, still attractive to consumers. On the other hand, e-commerce sales are growing so there are potentials in online channels as well.

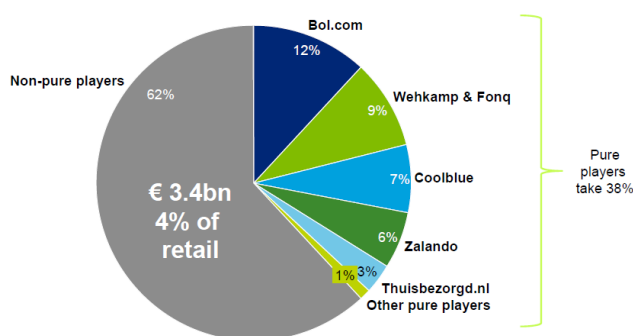


Figure 8: Distribution of Dutch online sales between different players (Grootenboer & Nolet, 2015)

In order to compete with the pure players in this growing area of retailing, to stay ahead of Brick-and-Mortar (B&M) stores (i.e. only physical presence), and to outperform their direct competitors, developing supply chain solutions to address the challenges presented by digital transformation can be of help for the B&C retailers. However, this requires a strategy that is flexible and evolves with these changing challenges: an omnichannel strategy. Corresponding to this strategy, capabilities like 'Single view on inventory' and services like 'Same-Day Delivery' or 'Return free-of-charge' are often defined as Need-to-Have in order to win in the marketplace. However, it is not clear whether all these capabilities and services are actually necessary for every business and industry.

Furthermore, it is not clear whether benefits always outweigh the costs, whether consumers are willing to pay for the value-added services and whether consumers want these services at all.

Deloitte Supply Chain Strategy (SCS, a more detailed description can be found in Appendix A) wants to help retailers that struggle with this issue in making decisions regarding their supply chain strategy and corresponding supply chain capabilities. However, it is not clear what supply chain capabilities could be beneficial for B&C retailers in order to win in the omnichannel marketplace. Therefore, Deloitte SCS would like to know what capabilities are important to survive, attract customers or generate profit for B&C retailers. Furthermore, Deloitte SCS is especially interested in the capabilities beneficial for B&C retailers in the fashion industry. The initial problem statement is therefore:

It is not clear which supply chain capabilities could be necessary or beneficial for Brick-and-Click fashion retailers in order to survive and thrive in the omnichannel world.

After internal and external orientation, which is presented in detail in Appendix B, a final problem statement is derived which will be the basis for this thesis:

Deloitte SCS does not have an optimal knowledge base on how they can advise their Brick-and-Click clients in the fashion sector best regarding how supply chain capabilities should be profitably configured in an omnichannel strategy to meet expected service quality of customers related to the customer fulfillment.

Customer fulfillment involves 'all activities from the point of a customer's purchase decision until the product is delivered to the customer and he or she is fully satisfied with its quality and functionality' (Pyke et al., 2001, p.27). Since full satisfaction is taken into account in customer fulfillment, return activities are seen as part of the customer fulfillment process. The concept is described in more detail in chapter 2.2. In addition, the definition of consumer and customer are used interchangeably in this research, both meaning the people shopping, the final purchasers, or users of the offered goods.

1.2. Research goal

To help Deloitte SCS with their problem, a goal is set for this thesis. The goal of the research is to provide an exploratory study towards omnichannel retailing. The research goal is defined as:

To determine how Brick-and-Click fashion retailers can increase customer satisfaction by implementing the right customer fulfillment services and corresponding capabilities for their omnichannel strategy.

So far, literature fails to address the configuration of supply chain capabilities in this scene and this study aims to fill this gap. Furthermore, firms in the fashion industry that try to implement an omnichannel structure could use the results of this study to guide them.

1.3. Research question

In order to achieve the goal described in the previous chapter, a research question is constructed:

How can supply chain capabilities in an omnichannel strategy for Brick-and-Click fashion retailers be used in a profitable way to achieve higher service quality related to customer fulfillment?

In order to answer this question, the following sub-research questions are constructed:

1. What is an omnichannel strategy?
2. What customer fulfillment services are currently offered by large Brick-and-Click fashion retailers?
3. What customer fulfillment services do customers value most?
4. What supply chain capabilities enable the services customers desire?
5. What are the benefits and challenges corresponding implementation of these supply chain capabilities and services?

Eventually, with this goal and corresponding questions, this research is aimed to explain how supply chain capabilities enhance customer fulfillment quality and in turn improve customer satisfaction. Customer satisfaction is chosen as dependent variable since it is believed to be affected by customer fulfillment quality and in turn increase sales. This is shown in Figure 9 and elaborated upon in chapter 2.

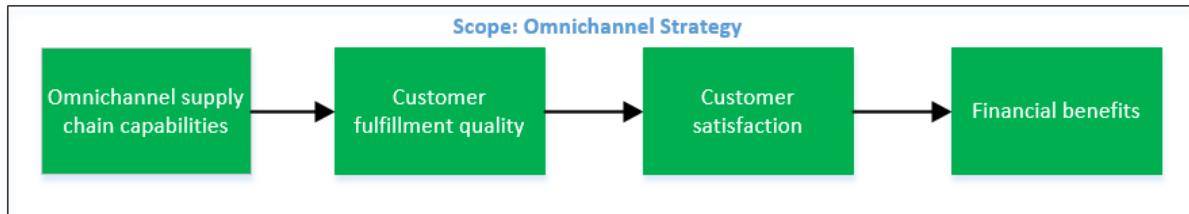


Figure 9: the goal is to increase customer satisfaction by improving customer fulfillment quality with help of supply chain capabilities

1.4. Scope

To make sure the research is feasible, a scope is defined that is aligned with the goal of the research. First of all, the research only concerns fashion retailers. On the one hand, this gives the opportunity to investigate the specific situation fashion retailers are in and get in-depth information in the sector. On the other hand, it will neglect other retail fields and the results can therefore not be extrapolated without caution. Second, the research only focusses on B&C retailers, retailers that operate in the online and offline world as shown in Figure 10. Since the omnichannel's most important aspect is the integration of different separate channels, it is important to assess firms that have multiple channels. Figure 11 shows the combinations existing for channel use, where on the one end, pure B&M stores are present, on the other end pure digital players, B&C retailers as full hybrid, and other configurations in between the three. As can be seen, B&C retailers always show at least two channels (online and offline) and are therefore suitable for this research.



Figure 10: Channels that are present in Brick-and-Click retailers

Furthermore, the study focusses on capabilities related to value-adding services and does not include cost-cutting or efficiency capabilities¹, since for fashion retailers, the increase of revenue is more important than the cutting of costs (Fisher, 1997). Also, the services the capabilities enable are the services related to customer fulfillment (e.g. maximize availability, return in store or same day

¹ Possible efficiency gains from capabilities that enable services is still taken into account to assess benefits

delivery). Finally, only retailers that have delivery options (by store and/or by home delivery) in the Netherlands are taken into account to be able to analyze the market more consistently. The scope is summarized in Table 1.

Table 1: Summary of the research scope

Theme	In scope	Out of scope
Firms	Fashion retailers	Other retailers
	Brick-and-click retailers	Pure online or pure offline players
	Operations in the Netherlands	No operations in the Netherlands
Capabilities	Service enabling (added value) capabilities	Efficiency gaining (cost reduction) capabilities
Services	Customer fulfillment services	Other services (e.g. look and feel of website)

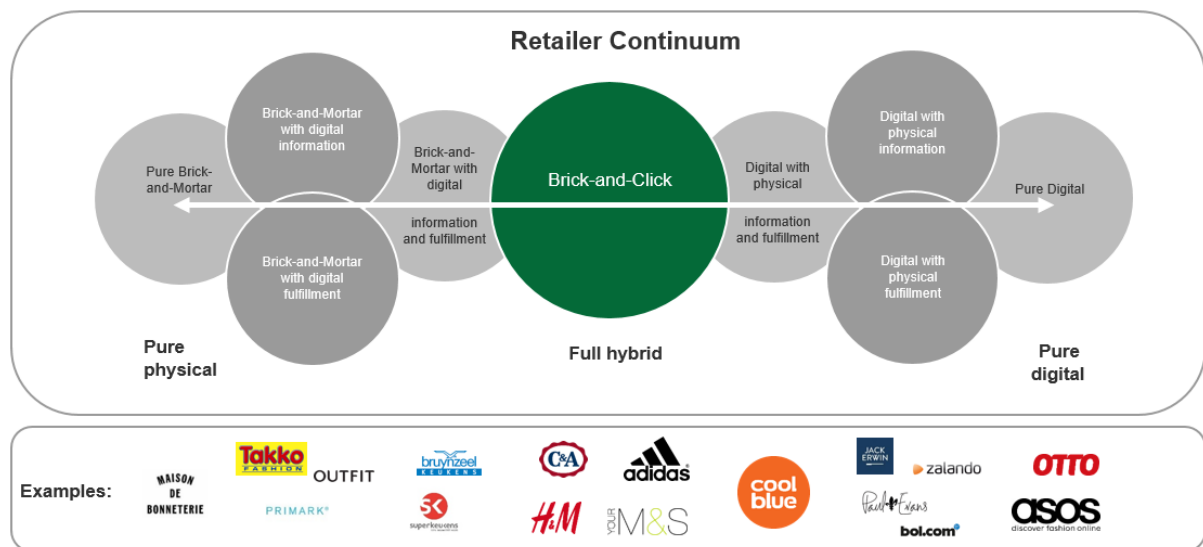


Figure 11: The position of Brick-and-Click retailers on the retailer continuum, including examples

1.5. Research design

The research conducted will mainly have an exploratory purpose. This gives the opportunity to get a clearer idea of the necessary capabilities and to establish priorities, operational definitions and an improved research design (Blumberg *et al.*, 2011).

Furthermore, the research will be conducted following the regulative cycle as shown in Figure 12. The cycle consists of five stages that each lead to decisions in the research process. For this particular research, the first three steps of the cycle will be conducted: 'problem definition'; 'analysis and diagnosis'; and 'plan of action (design)'. The two final stages ('intervention' and 'evaluation') will be out of scope due to the lack of time and resources. However, after the plan of action (design) phase, outcomes will be reflected by experts in order to validate the design. The problem definition is described in detail in chapter 1 and Appendix B as part of the research proposal. Chapter 2 till 7 are used for the analysis and diagnosis. For the design, chapter 8 is used.

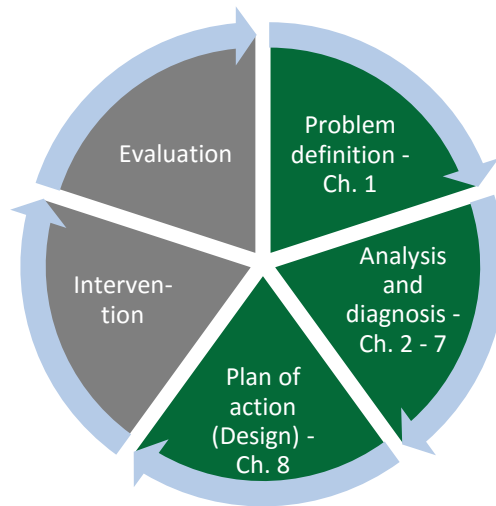


Figure 12: Regulative cycle, based on Van Strien (1997) and van Aken et al. (2007)

The fact that the study will be mainly exploratory and not much research is done on the subject yet, implies that no grounded hypotheses can be constructed. Therefore, for the analysis and diagnosis phase, a sequential mixed design approach will be used as shown in Figure 13. In this design, two strands of analysis are performed in a chronological order. In the first strand, a qualitative study (squared shapes) is performed to create propositions and provide a formulation of questions, data collection, and data analysis for the next strand. In the second strand, a quantitative approach (oval shapes) is used to validate the results of the first strand and to get an even better understanding of the situation. Finally, both strands will provide input for a meta-inference: the discussion (Teddlie & Tashakkori, 2006).

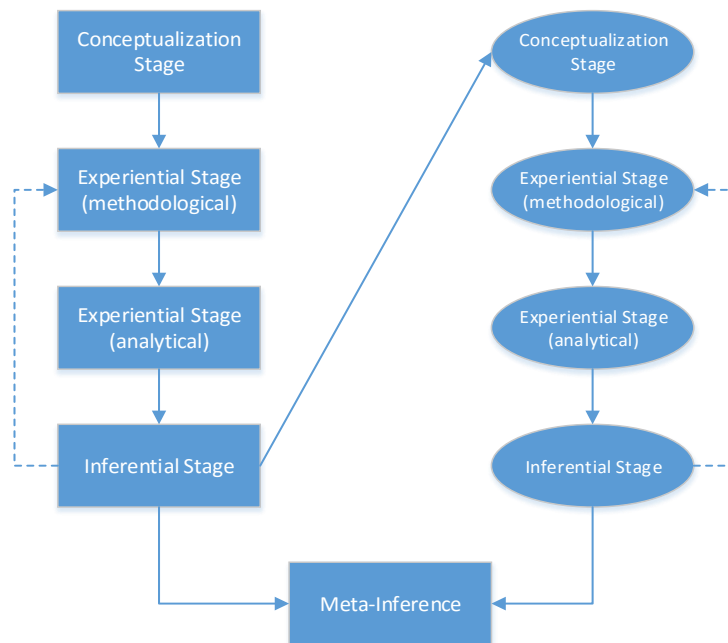


Figure 13: Graphic presentation of sequential mixed design (Teddlie & Tashakkori, 2006)

To tailor the approach of Teddlie & Tashakkori (2006) towards the needs and opportunities of the current study, some adjustments are made, which are also visualized in Figure 14:

- The two strands are extended to three strands, of which the first and last quantitative and the second qualitative

- The inferential stages (i.e. conceptualization of results) at the end of all strands are not performed individually. Instead, both inferential stages are performed combined in the meta-inference stage.
- The three conceptualization stages will be combined in a larger phase that is input for all strands.
- The analytical experiential stage of the first strand will be a direct input to the experiential stage (methodological) of the second strand and the same applies for the second to the third phase.
- Finally, Teddlie & Tashakkori (2006) use the second strand as validation of the first one. This thesis will extend the purpose of the second and third strand and use it as source of additions to the previous strand, providing extra propositions.

Translating the stages into activities, the following steps will be the design for the analysis and diagnosis phase:

1. The conceptualization phase will consist of an academic literature review.
2. The first experiential phase (methodological) will consist of an industry benchmark. The outcomes of this phase will be the input for the first experiential phase (analytical)
3. The first experiential phase (analytical) will consist of the analysis and results of the industry benchmark. The outcomes of this phase will be the input for the second experiential phase (methodological) and the meta-inference phase.
4. The second experiential phase (methodological) will consist of retailer interviews to validate delivered services from the conceptualization phase and the first experiential phase (analytical) and to extend knowledge towards capabilities and strategy.
5. The second experiential phase (analytical) will consist of the analysis and results of the interviews and gives an overview of strategic components, capabilities and services important to omnichannel according to retailers. This will be the input for the third experiential phase (methodological) and the meta-inference phase.
6. The third experiential phase (methodological) will consist of a customer survey to validate the services from a consumers' point of view and to find more insights in expected services.
7. The third experiential phase (analytical) will consist of the analysis and results of the customer survey and gives an overview of expected services. This will be the input for the meta-inference phase.
8. In the meta-inference phase, results of the interviews and survey are combined. Important services and corresponding supply chain capabilities will provide a conceptual description of the results of both strands.

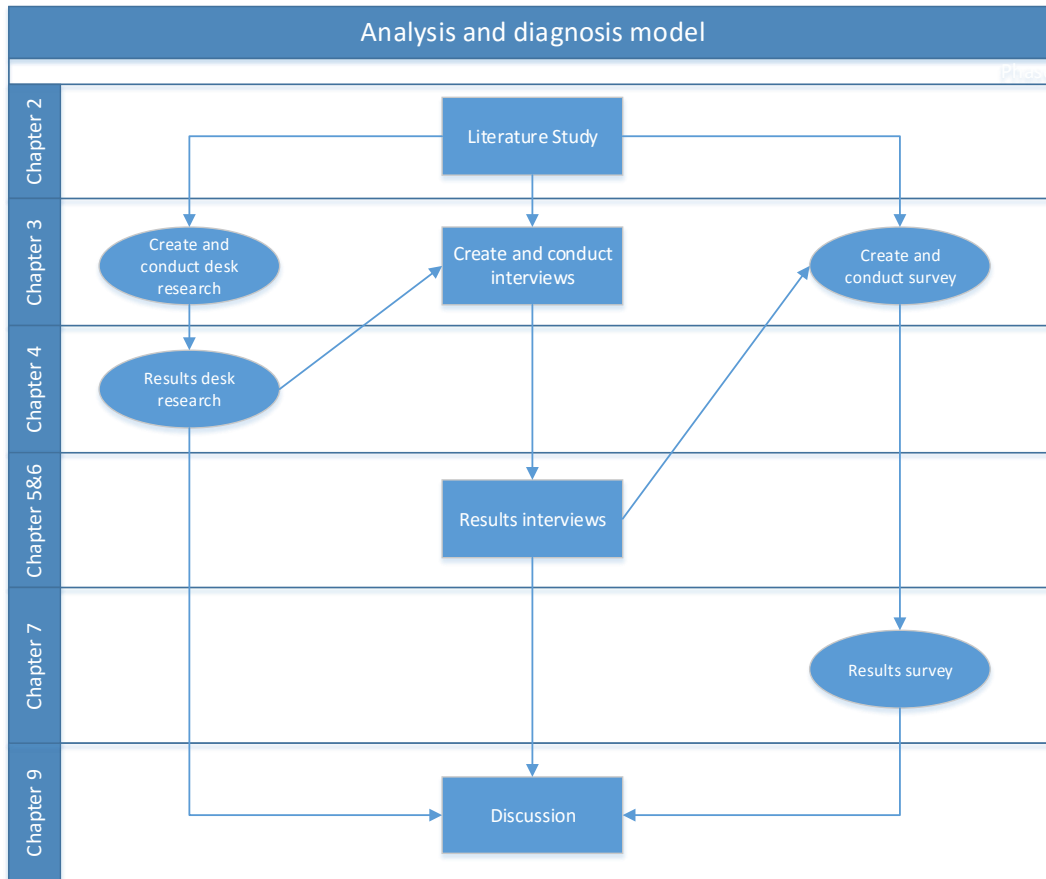


Figure 14: Final analysis and diagnosis approach

Next, the outcome of the analysis and diagnosis phase will be the input for the design. The design aims to create:

- An omnichannel fulfillment model;
- Practical use of the heat maps;
- Practical understanding of the most important capabilities;

All parts will be based on the output of the analysis phase. The first part will aim to give a start of models Deloitte SCS can use for B&C fashion retail clients. The second part will aim to create an understanding in how the heat maps could be used. The third part will be more detailed descriptions of capabilities based on the interviews. (Figure 15).

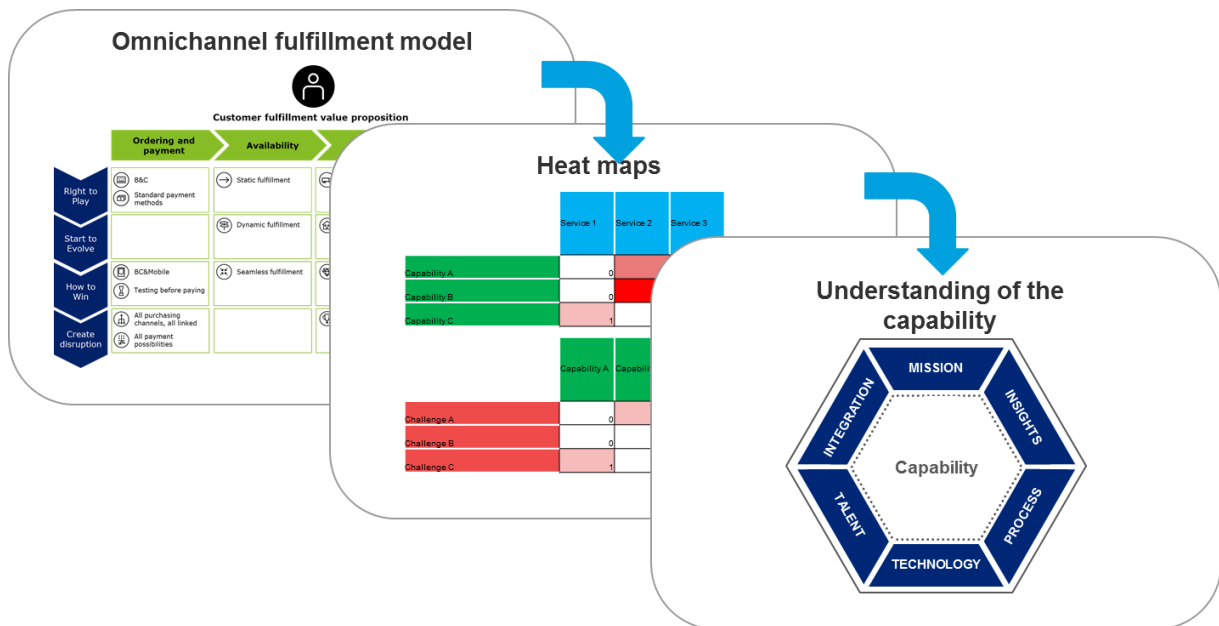


Figure 15: Steps in the design phase

1.6. Thesis structure

As discussed in previous chapters, the analysis and diagnosis of the thesis will be provided in chapter 2 till 7. First, a theoretical literature review is provided in chapter 2, next the methodology for interviews and the survey is discussed in chapter 3. The results of the industry benchmark are shown in chapter 4, the results of the interviews in chapter 5 and 6, and survey results are discussed in chapter 7. Next, a design will be created in chapter 8, followed by an overall discussion and conclusion in chapter 9. The conclusion will include research contributions, limitations and suggestions for further research.

1.7. Conclusion

This chapter shows that there is a need for research in the omnichannel environment. Omnichannel is a disruptive model and retailers are not conclusive about the way to cope with this disruption. By assessing customer fulfillment services from a retailer and consumer perspective, combined with a capability research to enable those services, a step forward for B&C fashion retailers can be achieved. With this basis for a research, the current state of academic literature on the topic can be assessed and this will be done in the next chapter.

2. Literature review

This chapter provides the theoretical background of the subject in order to find out what academics can already tell us about the subject and to derive what concepts need to be investigated to answer the questions of chapter 1. First, omnichannel retailing is discussed. Second, services are elaborated on. Finally, supply chain capabilities are discussed and a synthesis of the literature is provided.

2.1. Omnichannel

Omnichannel Retailing is 'the set of activities involved in selling merchandise or services through all widespread channels, whereby the customer can trigger full channel interaction and/or the retailer controls full channel integration' (Beck & Rygl, 2015, p.175). Furthermore, from the consumer's perspective it is 'an integrated sales experience that melds the advantages of physical stores with the information-rich experience of online shopping' (Rigby, 2011, p.11) and for retailers it infers the 'desire to serve the customer however, whenever and wherever they wish to purchase merchandise (and return it too)' (Kamel & Kay, 2011, p.1). This desire can be defined as creating the 'seamless customer experience'. Omnichannel retailing's point of view is that multiple retail channels (e.g. online and offline) are not seen as separate, distinct channels, but are viewed holistically to enhance consumer satisfaction (Verhoef et al., 2015), where channels are defined as 'a customer contact point or a medium through which the company and the customer interact' (Neslin, et al., 2006, p. 96). In conclusion, omnichannel retailing is a retail environment where boundaries between different customer contact points disappear to achieve a seamless sales experience for customers.

As shown in Figure 16, the world has seen physical stores, e-commerce and is now moving from a multi-channel towards an omnichannel landscape (Burt & Sparks, 2003, Verhoef *et al.*, 2015). With the rise of internet, physical stores started to get competition from e-commerce: stores that operate fully in the digital environment (Dussart, 2000). Digital retailers could enhance convenience for customers while lowering their costs (Burt & Sparks, 2003). However, there are still aspects of retail products that move customers towards a physical store (Bell *et al.*, 2013). Therefore, retailers have started to realise that pure internet channels or pure physical channels are not sufficient to capture the marketplace and a new strategy appeared: multi-channel retailing.

Multi-channel retailing concerns a growing number of online and/or offline channels in retailing to comply with customer needs (Stone *et al.*, 2002). It has mostly aimed at separate management of the different channels (Verhoef *et al.*, 2007). However, nowadays retailers are realizing that this separate management is also not sufficient to fulfill growing customer demands. For a seamless customer experience, management should focus on the integration of the different channels (Berman & Thelen, 2004; Brynjolfsson *et al.*, 2013). This requires an even different and new strategy: the omnichannel strategy.

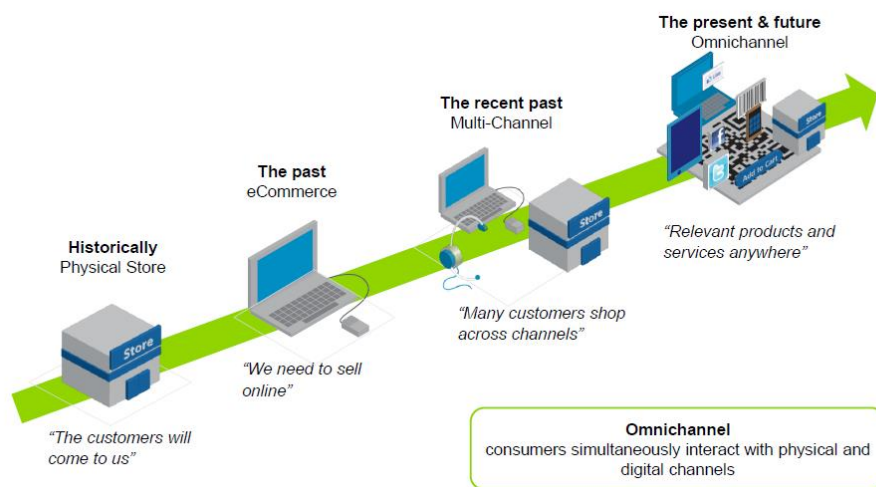


Figure 16: Evolution of retailing (Grootenboer & Nolet, 2015)

In the end, the evolution in the digital landscape increases the availability of information and increases convenience. This creates customers that are increasingly demanding. The omnichannel consumer expects everything to be available when he/she wants and expects the overall brand experience similarly accessible (Fairchild, 2014). Due to the increased use of digital devices, the different channels become blurred as the natural borders (e.g. geography and consumer ignorance) are disappearing (Brynjolfsson *et al.*, 2013). The gathering of information as well as the demand for fulfillment is affected by this trend (Bell *et al.*, 2014). For example, consumers are now frequently looking for information in the physical store while at the same time searching for information on a mobile device regarding offers and more attractive prices (Verhoef *et al.*, 2015).

This results in the fact that, although low pricing and a high variety of products are still important factors, it is not sufficient anymore. Customer demands are now shifting towards the available channels. For example, they want easy access to all products' information, other customer review information, physically sample the product before buying, or home try-on. Furthermore, customers want delivery and return to be free and fast (Bell *et al.*, 2013). Besides the demanding expectations of channels, customers also want to identify with the product (Frazer & Stiehler, 2014). In addition to the academic literature, business studies and articles also provide some insight in services that omnichannel customers might desire. This is shown in Table 18 in Appendix C.

In summary, due to the evolution in the digital landscape, customers expect higher service quality from retailers as proposed in Figure 17.



Figure 17: Digital evolution is proposed to increase expected service quality

So with the demanding omnichannel customer, viewing channels separately is not sufficient anymore and looking at channels in an integrated manner is important (Bell *et al.*, 2013). Therefore, an omnichannel strategy should be aligned with the customer needs. The omnichannel strategy is defined by the goals it should deliver. It is a strategy where retailers offer the customer the possibility to trigger full channel interaction and/or the retailer controls full channel integration to achieve an integrated sales experience for the customer that melds the advantages of physical stores with the information-rich experience of online shopping (Beck & Rygl, 2015; Rigby, 2011). Literature provides several issues that are seen as important for this omnichannel strategy. Most mentioned is integration of channels (Brynjolfsson *et al.*, 2013; Verhoef *et al.*, 2015; Frazer & Stiehler, 2014) and increasing the number of these channels (Verhoef *et al.*, 2015; Frazer & Stiehler, 2014). Also, the channels should be used based on product type and phase in the buying process (Bell *et al.*, 2013; Bell *et al.*, 2014). Attractive pricing, curated content, switching costs, and exclusive products with unique features are important to create. Furthermore, retailers should avoid direct price comparisons, learn to sell niche products, harness the power of analytics, emphasize product knowledge across channels, embrace competition, and increase availability (Brynjolfsson *et al.*, 2013; Verhoef *et al.*, 2015). Finally, providing a seamless customer experience is seen as an important strategic issue for omnichannel retailers (Frazer & Stiehler, 2014; Bell *et al.*, 2014). In addition to the academic literature, business studies and articles also provide some insight in strategic components of an omnichannel strategy and is shown in Table 19 in Appendix C. So a lot of topics need to be addressed and therefore, implementing an omnichannel strategy is easier said than done. It requires a lot of changes in terms of infrastructure and recruiting competent IT specialists. Furthermore, integration of channels is only a part of the issue, since retailers must take caution to not forget the purpose of the integration: 'seamless experience' (Frazer & Stiehler, 2014).

In summary, as shown in Figure 18, to succeed in an omnichannel world, the strategic decisions on all levels should be based on the omnichannel strategy and the results will, to a certain

extent, be determined by the service quality retailers deliver to achieve the seamless customer experience.



Figure 18: the basis for strategy and performance in omnichannel and services

2.2. Services

Service quality could be seen as an important part of the omnichannel strategy and something retailers should try to achieve. Service quality is defined as *‘the difference between customer’s expectation for service performance prior to the service encounter and their perception of the service received’* (Asubonteng *et al.*, 1996, p.64). Customers will encounter low quality if the performance does not meet their expectations. However, if the performance exceeds expectations, the quality will be high (Oliver, 1980). So far, marketing literature is not conclusive about the right model for service quality. For example, some models view service quality as an antecedent for product quality (Sweeney *et al.*, 1997), while others see the image and reputation as important antecedent for service quality (Broderick & Vachirapornpuk, 2002). However, despite the differences in models and measures, there seems a kind of consensus: in almost all of the models service quality is a construct that is defined by expected service quality, perceived service quality and delivered service quality (Seth *et al.*, 2005). Therefore, it is argued that service quality is based on those constructs as shown in Figure 19.

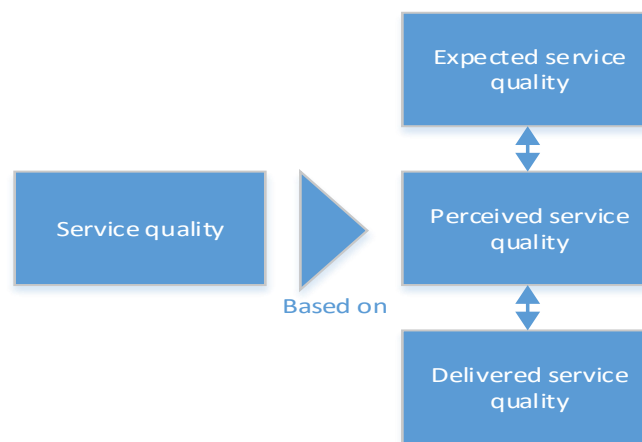


Figure 19: Service quality is proposed to be based different levels

So service quality is important as a part of an omnichannel strategy. However, service quality is a rather broad concept. It can relate to a service desk, personalized marketing or the way an employee helps the consumer. Furthermore, it can relate to order fulfillment services. Order fulfillment can be seen as *‘all the activities involved in successful delivery of products to meet retail customer requirements’* (Davis-Sramek *et al.*, 2008, p. 782). It is identified as an important part of services for e-Commerce (Kim *et al.*, 2006). In general, if the order fulfillment services meet consumer expectations, it increases loyalty and bottom line performance (Davis-Sramek *et al.*, 2008) since it is part of consumers’ expectations (Lee & Johnson, 1997). In the retail setting, order fulfillment is already a complex task since it involves different activities in different functional entities (Lin & Shaw, 1998). When introducing an omnichannel strategy in this process, it could increase the complexity even further due to the merger of distribution channels (Bell *et al.*, 2014).

Besides order fulfillment, return is an important part of service quality (Yalabik *et al.*, 2005). Consumers expect that a generous return policy is offered and are using it often, especially in the fashion industry (Kang & Johnson, 2009). Also returns are known to be a complex task due to, amongs others, costly operations, fraud, and abuse (Wood, 2001; Kang, 2004). In line with the reasoning for order fulfillment, also returns are expected to be more complex in an omnichannel environment (Bell *et al.*, 2014).

Due to the position of order fulfillment and return from a supply chain perspective, the importance of the two topics within service quality, and the expected implications of an omnichannel strategy on these services, order fulfillment and return are seen as a focus area of expected, perceived and delivered service quality as shown in Figure 20. For this thesis, order fulfillment and return combined is defined as customer fulfillment, which corresponds to *'all activities from the point of a customer's purchase decision until the product is delivered to the customer and he or she is fully satisfied with its quality and functionality'* (Pyke *et al.*, 2001, p.27).

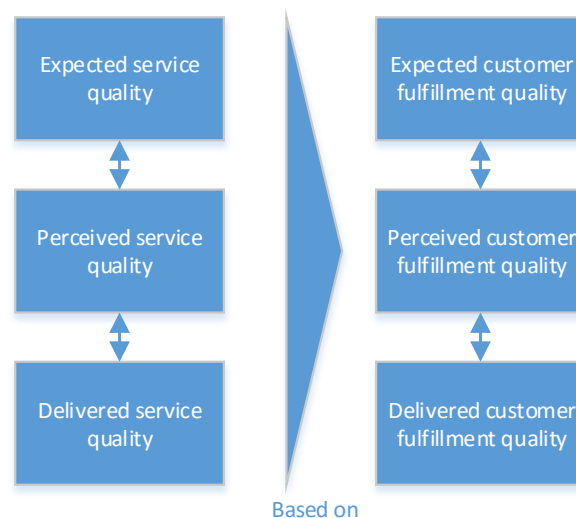


Figure 20: The levels of service quality are based on customer fulfillment quality

2.3. Supply chain capabilities

What are capabilities in the first place? There are a lot of definitions that correspond to capabilities, mostly based on the resource based view of the firm (RBV). Amit and Schoemaker (1993) define capabilities as the ability of the firm to combine a number of resources efficiently to engage in productive activity and attain a certain objective. Dutta *et al.* (2005) provides a slightly different view where it is defined as the efficiency with which a firm uses the inputs available to it, and converts them to outputs it desired. Another slightly different view is that capabilities are ways by which firms deploy resources in order to achieve a desirable objective (Black & Boal, 1994) or complex bundles of skills and accumulated knowledge that enable firms to coordinate activities and make use of their assets (Day, 1990) and it involves business processes that are strategically understood by the firm (Stalk *et al.*, 1991). Even though viewpoints slightly differ, there is some common ground in the definition of capabilities. Therefore, in this research, capabilities are defined as *'a set of processes or bundles of skills and accumulated knowledge that a firm can use to combine efficiently a number of resources (input) and convert them towards objectives desired (output)'*. So in order to translate the strategies defined earlier, a firm should employ capabilities to translate resources towards the goals set in the strategies (Morash, 2001).

Since the definition of capabilities can provide information on different levels of the organisation, this thesis splits capabilities on two levels: firm capabilities and operational capabilities²

² Some researchers propose a distinction between dynamic capabilities and operational capabilities (e.g. Zollo & Winter, 2002). In light of this distinction, all capabilities in this research are operational capabilities and therefore, another segmentation is used.

(Hafeez *et al.*, 2002). Firm capabilities are high level capabilities (e.g. ‘marketing and brand management’, ‘store operations’, and ‘finance’), while operational capabilities are the operational parts within firm capabilities (e.g. ‘manage store inventory’ is seen as an operational capability of the firm capability ‘store operations’).

Capabilities as discussed above focus on processes or skills within a firm. However, there is some criticism on the boundary of a firm on capabilities. There are cases where the processes or bundles of skills and accumulated knowledge to use are not entirely in the firm’s hands, but can be cross-organizational (Croom & Batchelor, 1997). One situation where this occurs is when the capabilities are not only applicable to the firm, but it involves the supply chain. When capabilities are focused on the supply chain instead of just the firm, they can be categorized as supply chain capabilities.

A supply chain contains all of the activities associated with moving goods from the raw-materials stage through to the end user. This includes sourcing and procurement, production scheduling, order processing, inventory management, transportation, warehousing, and customer service. Importantly, it also embodies the information systems necessary to monitor all of those activities (Quinn F. J., 1997). Managing this supply chain, supply chain management (SCM) can be defined as ‘*the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders*’ (Lambert *et al.*, 1998, p.287).

In line with these definitions, supply chain capabilities are defined in this thesis as: *a set of processes or bundles of skills and accumulated knowledge that firms can use to combine efficiently a number of resources (input) and convert them towards objectives desired (output) that relates to moving goods, services, and information from the raw-materials stage through to the end user, including the corresponding supportive activities.*

Supply chain capabilities that are in line with the supply chain strategy can enhance performance of the supply chain (Morash, 2001) as shown in Figure 21. Morash (2001) argues that business strategy, supply chain strategy and supply chain capabilities affect one another: if, for example, an overall cost leadership is pursued as business strategy, operational excellence is a strong way to go as supply chain strategy and vice-versa. In line, low cost logistics is a strong capability to comply with these strategies. If aligned, performance will increase and if that is the case, more emphasis will be placed on strengthening the strategies and capabilities. So for fashion retailers in the omnichannel world, supply chain capabilities that align with the omnichannel strategy are important to have in order to outperform competition.

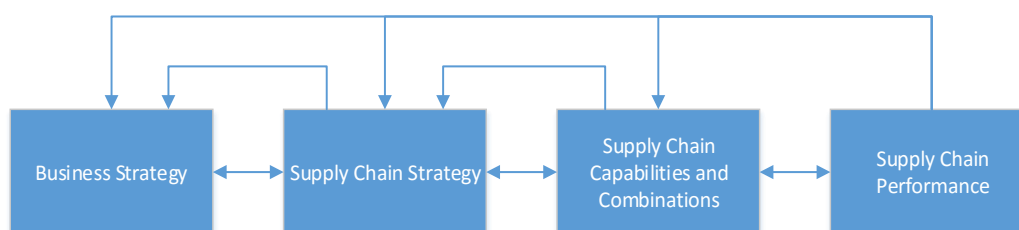


Figure 21: Model of Supply Chain Strategy, capabilities, and performance (Morash, 2001)

If supply chain capabilities are important to enhance performance, it is interesting to know what supply chain capabilities are important for an omnichannel strategy. Literature has not yet focused on these capabilities and as well academic as business literature provides only several statements of capabilities without empirical underpinning. Supply chain management related capabilities like information exchange, efficient coordination and activity integration across the chain are mentioned and increasing responsiveness is deemed important (Wu *et al.*, 2006). Also, management of digital assets is an idea shown in literature (Bell *et al.*, 2013; Bell *et al.*, 2014). Besides the academic literature, business literature shows potential important capabilities as shown in Table 20 in Appendix C. So it is clear that capabilities are important for the omnichannel strategy, but there is no conclusive result on

what are important capabilities. This can be explained due to the newness of the omnichannel landscape and the lack of time to build a large literature base. In addition, the focus of current literature on omnichannel retailing mainly focuses on capabilities to engage the consumer with the retailer and therefore relates more to pre-purchase services instead of customer fulfillment services and it is expected that the latter affects the supply chain more. Therefore, it is expected that there has been less attention to the supply chain capabilities. However, as discussed in chapter 1, this unexplored area of omnichannel retailing is still an interesting area to investigate and to complement current literature with.

2.4. Synthesis

Literature shows academic insight in omnichannel, service quality and capabilities. Combining the literature provides a conceptual model that fits the need of this research. When using Figure 21 as backbone of the conceptual model and by adapting it with Figure 17 till Figure 20, the conceptual model shown in Figure 22 is proposed for an omnichannel B&C fashion retail context.

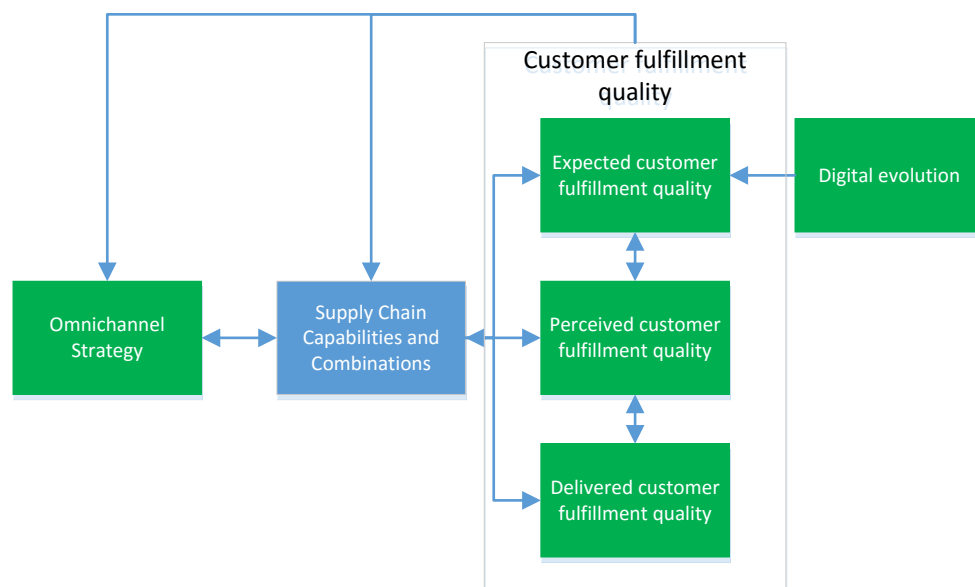


Figure 22: Proposed synthesized conceptual model

However, for the current research, some simplifications are proposed to this model:

- The digital evolution is the reason expected fulfillment services increased, but are not a part of the research. Therefore, this concept is placed out of scope and taken as a given.
- Perceived service quality, and therefore perceived customer fulfillment quality, is mentioned in literature as mainly a marketing/sales function (Seth *et al.*, 2005). Since the nature of the study regards the supply chain function, perceived customer fulfillment quality is put out of scope as a construct and given as a boundary condition.
- The reverse effects of service quality on omnichannel strategy and supply chain capabilities and combinations is put out of scope due to the complexity the inclusion would generate.
- Customer fulfillment quality is proposed to increase customer satisfaction as dependent variable
- When translating an omnichannel strategy to capabilities, challenges will be encountered that hamper implementation

This results in a proposed conceptual model shown in Figure 23, with the constraint that it is applicable to the fashion retail sector. This model shows that there are a lot of similarities with this conceptual model and the model proposed for the research as shown in Figure 9 in chapter 1.3.

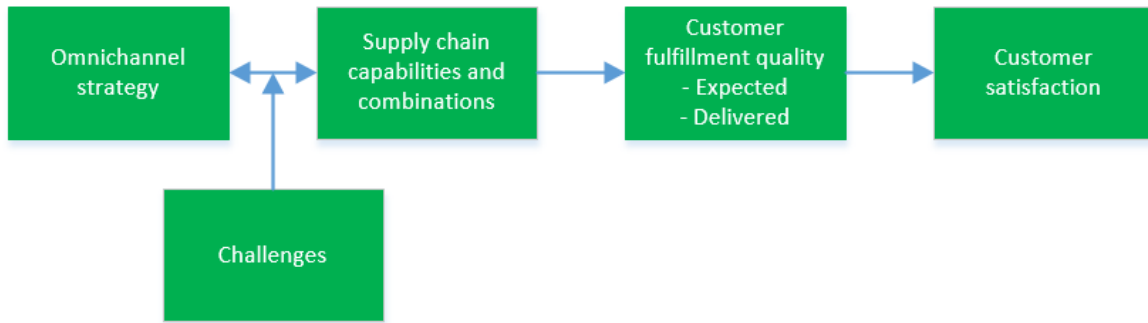


Figure 23: Proposed conceptual model

2.5. Conclusion

Literature shows that there is not much research has been performed in the area of omnichannel retailing and therefore, information is scarce. However, when combining the small pool of omnichannel literature with service marketing and supply chain capability literature, an interesting conceptual model can be constructed that corresponds to the questions at hand. In this model, the omnichannel strategy and supply chain capabilities are proposed to be in line with each other (e.g. cost leadership strategy should result in operational efficiency capabilities and these capabilities can in turn strengthen the strategy), while these capabilities in turn enable customer fulfillment services. These delivered services are in turn associated with expected customer fulfillment services. This model will be used as guideline of the research and will fill the gap in omnichannel retailing where customer fulfillment, supply chain capabilities, and omnichannel strategy come together. However, to investigate this conceptual model and create meaningful results, a strong methodology for the research is necessary. The next chapter will elaborate on this.

3. Methodology

This chapter will provide an overview of the methodology used for the analysis and diagnosis phase (industry benchmark, interviews, and the survey). A valid methodology is necessary in order to gain the right insights from the research. Chapter 3.1 discusses shortly the overall methodology, chapter 3.2 elaborates on the industry benchmark, chapter 3.3 and 3.4 discuss the interview design and analysis, and chapter 3.5, 3.6, and 3.7 elaborate on the survey design and analysis. In addition, appendix L gives more insight in the reliability and validity of the used analysis techniques.

3.1. Overall methodology

As discussed in chapter 1.5., the analysis and diagnosis was based on the exploratory sequential approach. First, an industry benchmark was performed to elaborate on the delivered customer fulfillment quality. Interviews were used to map the retailers' point of view regarding strategy, capabilities, and services. Next, a consumer survey was composed based on the retailers' point of view and the literature review. This survey was used to quantitatively validate the retailers' point of view and to further explore the customers' point of view regarding expected customer fulfillment. All results were consolidated into a discussion.

3.2. Industry benchmark design

The industry benchmark should provide a broad overview of services offered by fashion retailers and therefore focuses on the delivered customer fulfillment quality as shown in Figure 24. It consisted of an investigation of services offered by the retailers and the premiums they charge for them.

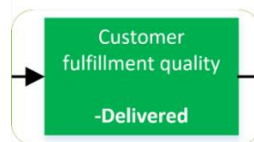


Figure 24: Conceptual model - focus of the industry benchmark

To obtain a better understanding of the current state of customer fulfillment services, the industry benchmark is considered a good method. It is an efficient way to get information on a large amount of retailers and the results are relatively easy to analyze and compare. However, there are some disadvantages as well. The data is usually only available at a high level and there is no deep understanding provided (e.g. only expected time windows of delivery are provided, but no exact average delivery time). Therefore, the industry benchmark can only provide descriptives. Furthermore, the data that is made public by retailers is the information they want to show and some parts might therefore not be complete. Only data that is complete will therefore be compared (e.g. reliability, the percentage a delivery arrives in the time, is not provided at most retailers so it is not taken into account). Finally, since there will be a sample of retailers analyzed, there is a risk the group will not be representative. In this case, specific retailers will be investigated and this risk is therefore high. However, due to the goal of this industry benchmark (i.e. getting a broad understanding of services offered), this risk is tolerated.

In order to get the right data, the right retailers should be selected to investigate. Therefore, several selection criteria were chosen. Furthermore, the information about their services had to be available and the results should be comparable. To achieve this result, the following criteria were set:

- The retailer's main focus had to be on selling fashion and apparel
- The retailer's had to be B&C retailers
- The retailer's or retailer parent firm's annual revenue was at least €500 Million for the year 2014 or the retailer was part of the contacted interviewees
- The retailer had to offer their products in the Netherlands in some way (by means of a physical store, wholesale and/or a delivery option)
- The retailer had a website that provided information about their services

- The website of the retailer was in Dutch and/or English

With these criteria, the basis for the data needs was believed to be met. To find the retailers with the above characteristics, two search engines were used: Dow Jones Companies & Executives and OneSource Business Browsers. Both provided a large base of companies to search from.

Data for the industry benchmark was collected from the websites of identified retailers. Services that are offered were sought on the entire website, with special attention to the following parts of the website:

- Help page for ordering and payment
- Help page for delivery
- Help page for return
- Frequently asked questions page
- Contact page

In case of doubt (e.g. inconsistent information), the company was contacted to verify the information. The data gathering shown above created a broad overview of services related to customer fulfillment.

The data gathered in the data collection was processed in a data sheet in four different ways, if applicable:

- Whether the retailer offered a certain service (1) or not (0)
- What the retailer charged for a certain service (e.g. costs for return)
- What time certain services took (e.g. delivery time)
- The number of different options that were available (e.g. number return channels)

The data could then be interpreted with percentages of retailers that offered a service, average prices, average times and average number of options. As mentioned before, since the goal was to gain broad insights in the current marketplace, the results consisted of descriptives.

3.3. Interview design

Complementary to the broad overview of services provided by retailers, the interviews should deliver more deep insights in the relevance of these services, the capabilities necessary to enable the services, and the strategic motivation of the retailers as shown in Figure 25. The results of the interviews can be used as a basis for the survey.

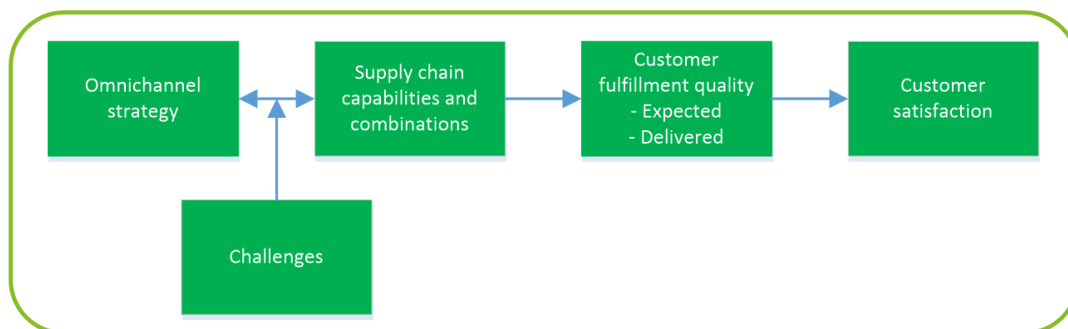


Figure 25: Conceptual model - focus of the interviews

Interviews are the most common used method in business problem solving (van Aken *et al.*, 2007). Interviews have the potential to provide in-depth information related to interviewee's point of view and experiences (Turner, 2010) and they provide a unique access to opinions, experiences and activities of the respondents (Kvale, 2008). When an interview is conducted, good cooperation from respondents can be assumed and there is the probability to probe for answers, use follow-up questions, and gather information by observation (Blumberg *et al.*, 2011). On the other hand, it is important to keep in mind that interviews are difficult to conduct, since there is human interaction and emotion involved (Mann, 2016). To ensure quality, the researcher has done an interview training

and protocols are checked upfront by supervisors. Furthermore, it has to be taken into account that follow-up of interviews is labour intensive and not all respondents are available or accessible (Blumberg *et al.*, 2011).

Semi-structured interviews were used for this research to provide the ability to make a clear comparison between respondents, while leaving room for extra information that might arise during the interview (Kvale & Brinkmann, 2009). On the one hand, semi-structured interviews are formal and follow a specific guideline, assuring that information that is necessary is definitely discussed. Furthermore, it gives the opportunity to zoom in on interesting issues, which in this case were the specific capabilities or services an interviewee touches upon. This method results in a large amount of detail generated, fairly flexible and sensitive data generation and also fairly reliable and easy data analysis. On the other hand, semi-structured interviews have the disadvantage that it is hard to get information that relates less to the topic and the interview protocol. Therefore, the interview protocol should be complete regarding the topics required and the interviewer should focus on interesting issues the interviewee might touch upon that are not fully mentioned in the protocol. Also, cause and effect cannot be inferred and the answers are difficult to compare. Luckily, cause and effect is not the goal of this research. However, the results should be comparable. Therefore, interviewees were instructed on definitions that were used beforehand, so there was a lower probability of different kind of answers across interviews. Furthermore, open-ended questions are more difficult to analyze and flexibility of the interview could lessen reliability. By using the methodology behind the grounded theory approach, where the interview transcript is translated to constructs and constructs linked to each other, the analysis could still be done decently. Furthermore, all interviews were summarized and send back to the interviewees for validation. This decreased the possibility of miscommunication or misperception. All in all, it is important to interview multiple respondents to increase reliability. Furthermore, the questions should be structured in such a way that the answers are comparable and possible to analyze.

The potential participants for the interviews had to meet certain criteria to increase the amount of valuable information that could be obtained:

- The interviewee had to work at a firm that is in scope of the research (i.e. B&C fashion retailers with sales operations in the Netherlands)
- The interviewee had an omnichannel-, supply chain, or e-Commerce profile

The participants were searched in the following ways:

- A. Deloitte accounts
- B. Indirect referrals (i.e. when personal direct connections knew a potential interviewee)
- C. Snowball referrals (i.e. when an interviewee was found via a prior interviewee)

The participants of the interview are shown in Table 2.

Table 2: List of interviewees

<i>Interviewee position</i>	<i>Company</i>	<i>Way of finding</i>	<i>Interview Number</i>
<i>Manager Global Omnichannel Operations</i>	Mid-end fashion A	A	1
<i>Senior Director Global Wholesale</i>	High-end sports apparel A	A	2
<i>Vice-President European Wholesale</i>	High-end sports apparel B	A	3
<i>Director European Digital Supply Chain</i>	High-end sports apparel B	A	4
<i>Project Manager European Digital Supply Chain</i>	High-end sports apparel B	C	4
<i>General Manager</i>	Mid-end fashion investor A	B	5
<i>Director e-Commerce</i>	Mid-end fashion investor A	C	5
<i>Head of e-Commerce</i>	Low-end warehouse A	C	6

The structure of the interview was based on the constructs identified in Figure 23. This resulted in the following building blocks in the interview:

- Personal introductions
- Introduction in the topic of the research, definitions and practical issues (e.g. confidentiality)
- General questions about the company
- Questions on the omnichannel strategy
- Questions on expected and delivered service quality
- Questions about supply chain capabilities

The interview protocol is shown in Appendix E.

To assure completeness of the answers, the interviewees were given conceptual models if they struggle with answering questions. The models were the customer journey (Jansen & Schuster, 2011; Hawkins *et al.*, 1995; Sirakaya & Woodside, 2005) for the service quality block and the supply chain operations reference (SCOR) model (Poluha, 2007; Huan *et al.*, 2004; Stewart, 1997) for capabilities. This provided ways for interviewees to think about their operations while maintaining a complete view (i.e. not guiding towards a specific answer). Furthermore, interviews were recorded and translated into an interview transcript afterwards. The transcript was translated into an interview summary, which was sent to the interviewee for verification to increase reliability. When an interviewee mentioned changes after the interview, these changes are incorporated in the results.

3.4. Interview analysis

For the interview analysis, the methodology of the grounded theory approach was used. The grounded theory approach is an approach to explore unfamiliar territory in a structured way. It is used to develop theory from raw data in a systematic way (van Aken *et al.*, 2007). The grounded theory approach consists of three parts: open coding, theoretical coding and selective coding. In this research, a slight deviation from the grounded theory approach is made by using a conceptual model as basis instead of exploring from scratch. However, the actual methodology is not adjusted since it is proposed to still be useful.

In the open coding phase, the interview transcript was analyzed and data was translated to concepts by codes. Codes were developed during coding to avoid straitjacketing the data. Furthermore, codes were made on 4 different levels, to be able to analyze interviews on a theory building level and a practical level. After coding, the data could be more easily compared towards one another. As result, the amount of interviewees that spoke about a code could be compared. This could give a sense of importance of a certain construct. However, it has to be noted that no solid conclusion can be drawn regarding this importance.

After open coding, theoretical coding extended the development of constructs to relationships. It was used in this research to find relations between the concepts of Figure 23. The data of the interviews was used as indication of the existence of the relationship (Glaser, 1992). The open coding and theoretical coding resulted in concepts and relationships for the strategy, services and capabilities and provided the basis for theory creation.

The final part of the grounded theory approach is selective coding. Here, concepts and relationships found during open coding and theoretical coding were elaborated upon. For this research, interviews were re-scanned when new concepts or relationships arose in later interviews. This was done to see whether the new concepts or relations might be missed before or could be indicated towards.

3.5. Survey design

The industry benchmark and interviews provide a sophisticated view on the retailers' perspective on the concepts described in the conceptual model shown in Figure 23. However, when it comes to the expected service part, consumers have an opinion that is at least as important as those of the retailers. Therefore, a survey is performed to find the preferences of consumers. This enables the researcher to explore the concept of expected customer fulfillment quality further as shown in Figure 26.

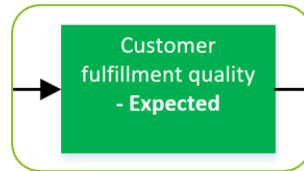


Figure 26: Conceptual model – focus of the survey

The (online) survey is a method that can provide insight in the point of view of a large pool of respondents at relatively low costs. Furthermore, since all respondents are asked similar questions, it is easy to compare results and get a large amount of data on specific topics. On the other hand, there is no possibility to dive deeper into the answers a respondent provides and it is important to frame questions in such a way that no discussion on their meaning is possible. Therefore, it is important to thoroughly examine the information need and frame it in such a way that enough in depth information is provided, all questions are clear, and the burden on the respondents is not too large (Wright, 2005). Besides the above mentioned challenges, surveys have other challenges like missing answers, coverage errors, and low response rates (Fricker & Schonlau, 2002). Therefore, the data gathering and reporting is outsourced to a company that specializes in survey distribution and obtaining data in high quality. This decreases the probability of these kind of errors and increases the quality of responses.

As mentioned before, the primary objective of the survey is to find preferences of consumers towards customer fulfillment services. Retailers provided their view on these services in the industry benchmark and interviews, so the survey should validate the reasoning of the retailers. The main goal of the survey should be to find out what drives the consumer, what value proposition they prefer and what holistic service profile corresponds to their wishes. In order to meet the objectives, two steps were taken to find the right methodology:

- Segment the customer fulfillment options to better serve the needs of the specific segments
- Find the most appropriate questioning method for the specific segments

The segments are based on the concepts found in the interviews and industry benchmark and are distinguished as:

- Ordering and payment services
- Availability services
- Delivery services
- Return services
- Demographics and shopping behavior

In ordering and payment, three subjects were identified in the industry benchmark an interviews:

- The likelihood of the use of certain channels
- The use of payment methods
- Minimum online order thresholds

The channels can be analyzed by means of a Likert scale, where respondents will be given the option to rate the usage of possible channels. Furthermore, the payment options that are used by respondents are asked. Finally, reasonable minimum order thresholds for online orders can be given by respondents. These methods provide basic understanding in how the consumer orders and pays and could provide understanding in their behavior. The downside is that this method is based on the current behavior and not on future developments. However, since the future preferences are based on the retailers' development of services, it is not reasonable to ask these preferences and expect a valid result.

In the availability segment, out-of-stock scenarios are analyzed. Out-of-stock situations can lead to a no-sale, where consumers will either stop their search for the product or go to a competitor to buy the product there. However, it is not clear to what extent this happens and to what extent certain

services could prevent this. Some interviewees mentioned that all stock-outs result in a no-sale, while others think there could still be a sale in one channel if there is a stock-out in another. To find this out, a benchmark question is used where the respondent can provide information on his current out-of-stock behavior for online and offline purchases. Next, questions are used to find out their behavior if a certain service (e.g. reserve in store if there is out-of-stock on the website) could prevent a no-sale. The advantage is that a direct effect can be found by looking at the differences between service and the benchmark. Furthermore, the actual effect on sales volume could be measured. The downside is that consumers do not necessarily behave in one single way every time. Therefore, it is not certain that the behavior they provide is also always the real behavior.

Delivery and return are the two themes that have the most dimensions according to the industry benchmark and the interviews. For delivery, one can talk about speed, costs, reliability, location, timeframes of delivery, and several other, smaller, services. For return, it can be location, costs, time window for return, reimbursement time and convenience. To find out what really drives the consumer in their preferences, two separate three-choice based conjoint analyses were used. The conjoint analysis has the advantage to jointly test the effect of different attributes and measure their relative importance on decision making. This gives the possibility to find the underlying value drivers of the respondents. On the other hand, a full conjoint analysis' design is often too large to execute. Therefore, careful thought has to be given to create a reduced design that is manageable for respondents on the one hand, but statistically relevant on the other hand (Rao, 2014). Furthermore, since the choice based conjoint can only handle up to six variables to achieve decent results (Hair *et al.*, 2009), some of the components are placed outside of the conjoint and asked in another way. The trade-off concept was kept in mind to keep the value driven approach into the questionnaire. The choice regarding inclusion and exclusion of variables in the conjoint analyses was initially based on the researcher's perspective, interview results, and internal consultation. Next, focus groups were used to find out possible improvements in this inclusion and exclusion decision.

For demographics and shopping behaviors, simple questions are used to provide insight in lifestyle, shopping spend and preferences of shopping in general. These questions can help understand the results of the previous sections better.

In order to validate the design of the survey, four focus group sessions were performed to investigate flaws or hard to understand questions within the survey. The focus group sessions were performed with:

- Deloitte retail specialists (n=4)
- Deloitte supply chain specialists (n=5)
- University students (n=5)
- Researchers' family members (n=5)

This way, as well a professional view (Deloitte specialists) and input on understandability and practical issues (students and family members) could be given. The focus group sessions resulted in some changes in the survey design, which in turn resulted in the final design shown in Appendix F. Furthermore, it gave some deeper understanding in the reasoning of respondents and it was possible to test analysis of results.

To create a strong survey, a good sample design is necessary. First of all, only people who sometimes buy online are allowed to participate in the survey, since a large part of questions is based on online behavior and it is chosen rather have a more specified group that has more valuable input than a broader group with less valuable input. Within this specification, proportionate stratified sampling is used. This means that the sample will be representative for the Dutch population in terms of gender, age, family situation, social class and educational level³. Within these constraints, the sample is drawn randomly. The advantage is that the results of this sample are representative for the

³ The sample is conform the "gouden standaard". This is a standard made by MOA and the Dutch central bureau of statistics (MOA, 2015) and it implies representativeness of the sample according the Dutch population.

population. The disadvantage compared to probability sampling is that there is a certain bias in response. However, this is the goal of the survey, since it has to be biased towards the distribution in the Dutch population. Finally, proportionate stratified sampling is hard to achieve due to the number of constraints. Therefore, the response gathering is outsourced to assure the right respondent distribution for this way of sampling. The final sample size for analysis is 608 respondents to assure significance⁴.

3.6. Survey data collection

Data was collected by using an external market research company (Casa Grande B.V., 2016). This company specializes in market research and are able to provide the data based on the sample design described in chapter 3.5. The collection was based on the following steps:

- Survey deployment, where the company programmed the survey
- Survey testing, where the researcher could test the survey before distributing
- Survey data collection, where the company gathered responses
- Data cleaning, where the company removed several responses from the dataset:
 - Respondents that finish the survey clearly too fast
 - Respondents that show a certain answering profile (e.g. always the same multiple choice answer)
 - Respondents that provide strange open question answers (e.g. answering 'xxx' to an open question)
- Data delivery, where the company delivered the results for analysis.

3.7. Survey analysis

After the data has been collected, it was further examined to find appropriate measures for:

1. Missing data
2. Outliers
3. Sanity errors
4. Measurement error
5. Non-response error
6. Acquiescence bias
7. Likewise responding
8. Extreme and mild responding

When the dataset was sufficiently cleaned and examined, analysis could start. The analysis consisted of three parts: demographics descriptives and shopping behavior, main effects analysis, and segmentation analysis.

First, descriptives based on the demographics and some correlations for the shopping behavior building block were analyzed to provide insight in the demographic situation of the respondents and their general shopping behavior. These descriptives were the basis for the groups of the segmentation analysis.

Next, within the different segments (ordering, availability, delivery, and return), the main effects were analyzed. It depended on the segment what methodology was used to estimate the most important components:

- For ordering and payment, and availability, to find the general preferences of the total population, descriptive results were created. Next, mean comparison was performed to see whether the means of certain preferences are significantly different (e.g. the use of particular channels or the no-sale percentage when a certain unavailability service is provided). Also notably high or low means and correlations for shopping behavior were looked for.

⁴ Initial dataset consisted of 1299 responses, but cases were removed due to validity issues. The results section will elaborate on this dataset cleaning

- For delivery and return, the same method as for ordering and availability was used for all non-conjoint related data. In addition, a conjoint analysis was used to find the importance of certain delivery and return attributes and utilities of the attribute levels. The analysis was based on a Hierarchical Bayes analysis, where utilities are based on a more complex algorithm than the simple choice model (Hair *et al.*, 2009). Due to the reduced factorial design, only main effects were sought for and interaction effects between the attributes were excluded from the analysis. For all delivery and return analyses, significant differences were sought for.

Even though general information of the total population might provide interesting results, it is expected that demographics and shopping behavior affect preferences. Therefore, one of two extra analysis were performed, based on the nature of the data:

- Group comparison analysis was performed to search for significant differences in groups of data. The groups were constructed on the basis of the respondent descriptive analysis. The comparison was performed within each segment
- Bivariate correlations analysis was performed to find correlations between demographics or shopping behavior and service preferences. All correlations were computed and significant results were looked for.

Finally, all results were be synthesized so meaningful conclusions could be drawn.

3.8. Conclusion

With the three strands of the analysis and diagnosis phase: the industry benchmark, the semi-structured interviews, and the survey, a large amount of information can be collected on the topic of omnichannel retailing. On the one hand, in the first two strands of the sequential mixed design, the retailer perspective can be investigated where the industry benchmark provides a broad overview of information on a large pool of data and the interviews provide an in-depth overview of information on a smaller pool of data. In addition, the interviews give the opportunity to not only look at the delivered customer fulfillment aspect, but also at the implications for the supply chain (i.e. the supply chain capabilities). On the other hand, in the third strand, the consumer perspective can be investigated to see what services they actually value and what is really important from a marketing perspective. Combining both strands result in information what consumers want, what retailers (can) deliver and how they can deliver. The next chapters will show the results of the analysis techniques discussed in this chapter, starting with the industry benchmark (chapter 4), followed by the interviews (chapter 5 and 6), and the survey (chapter 7)

4. Retailer results - Industry benchmark

This chapter will discuss the results of the industry benchmark. The industry benchmark provide the broad overview of current state offered customer fulfillment services and premiums associated so an understanding of the marketplace can be provided. First, the identified retailers are shown, followed by the descriptive results. Finally, a synthesis is made and conclusions are drawn.

4.1. Industry benchmark group composition

The retailers identified for this research were all B&C fashion retailers that sold their products into the Netherlands. The group consisted of 57 companies and are identified from contacted interviewees and retailers that have more than €500M revenues themselves or have parent firm that does. Figure 27 shows the distribution of the different sources. Appendix D shows the full list of identified retailers.

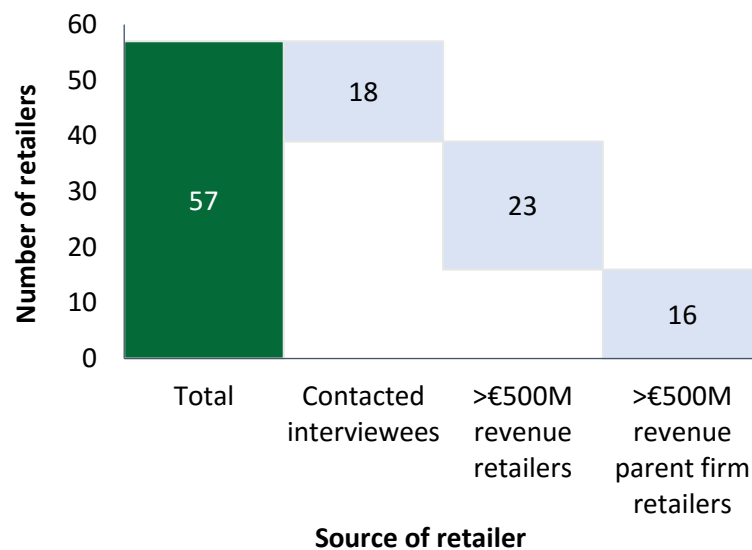


Figure 27: Different sources of identified retailers

4.2. Industry benchmark descriptives – delivered services

The results of the industry benchmark descriptives are segmented into four segments of customer fulfillment: ordering and payment, availability, delivery, and return.

Ordering and payment

As shown in Figure 28, the retailers all offered their products through a store and a website, corresponding to the scope (B&C retailers). Furthermore, 72% ($n=41$, $\sigma=3.39$) of the retailers had a store in the Netherlands, 21% ($n=12$, $\sigma=3.08$) had the possibility to order in an app, 4% ($n=2$, $\sigma=1.39$) had the option to order by calling customer service, and for 2% ($n=1$, $\sigma=0.99$), ordering could be done by e-mail as well. So for ordering channels, most firms still focus on their store and website channel. The third most used option, the app, is used almost 5 times less than the store and website, showing that there is less development in other channel areas. In addition to channels, 5% of the retailers ($n=3$, $\sigma=1.69$) had a threshold for online purchasing to be possible, with an average threshold of €22.67 ($\mu=22.67$, $\sigma=3.2146$).

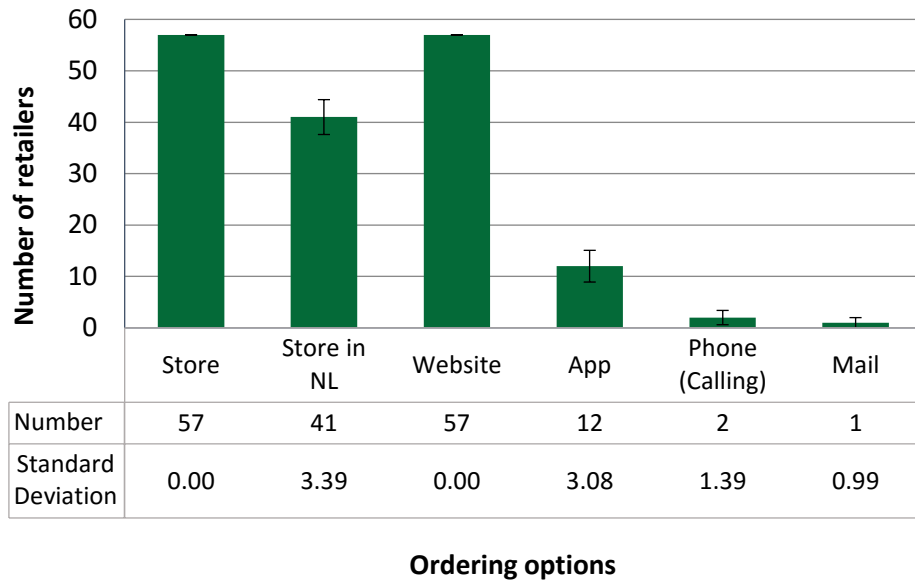


Figure 28: Different ordering options

Different stores use different payment methods across their channels. Figure 29 shows the distribution of payment options for online ordering with a varying number of options per retailer ($\mu=3.60$, $\sigma=1.24$). None of the retailers offers all options (max = 9) and it can be seen that most focus is on credit card, PayPal, and iDeal and a lot of spread is around the other payment methods. This indicates there is no clear view on what payment methods are preferred besides the big three.

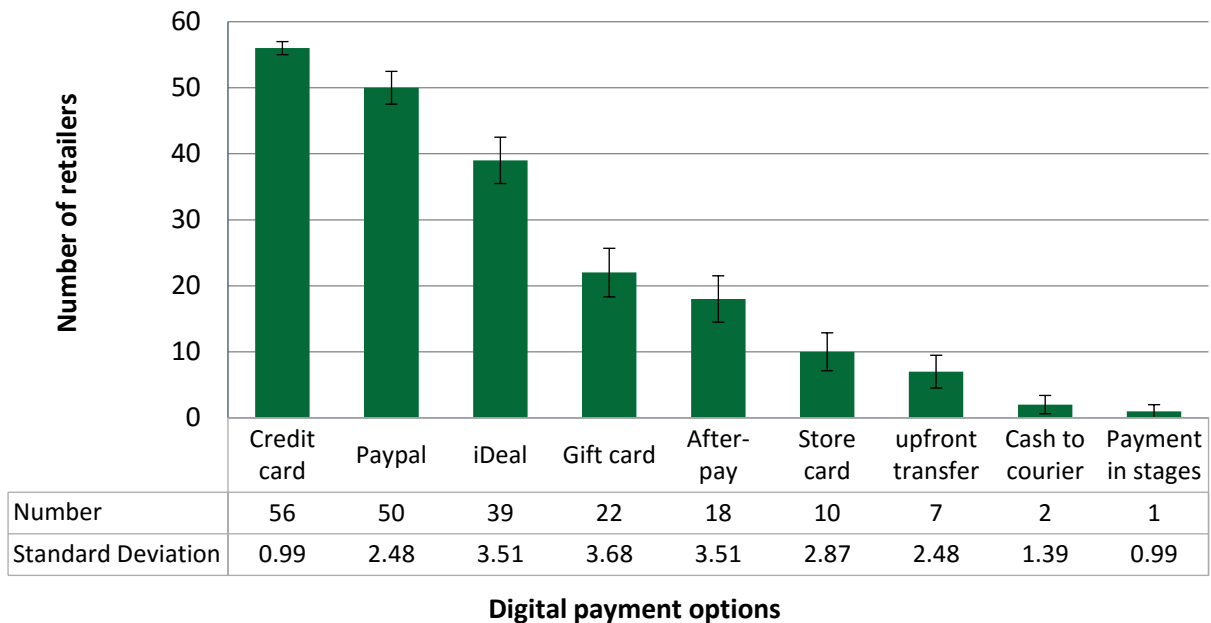


Figure 29: Different digital payment options

Not enough payment information was found of the other channel options and is therefore left out of the analysis.

Availability

During the purchasing phase, all retailers offer services that increase convenience for customers. First, all retailers notify the customer if a product is unavailable online. However, only 14% ($n=8$, $\sigma=2.62$) of the retailers also provide information on store stocks. This means that in these stores, customers are given the benefit of knowing a product they chose is still available at the retailer's own store. Finally, none of the retailers offered information of stock levels in third party stores or websites (e.g. wholesaler stores) or had the opportunity to reserve in store. This shows that when it comes to availability, the omnichannel mindset of integrating channels is not implemented much.

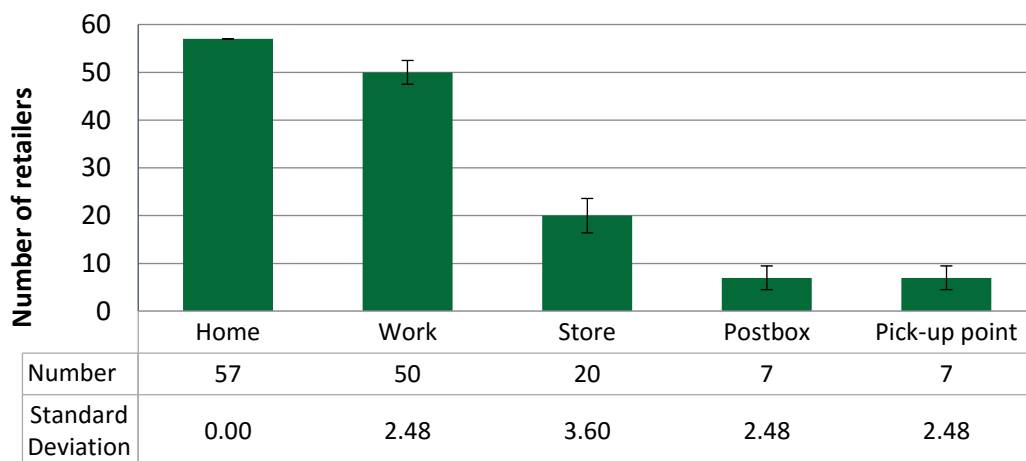
Delivery

When the payment is done, the product needs to get into the hands of the customer. Since only information of the website is investigated, information about store purchase delivery (e.g. home delivery of in store purchases) is not investigated in the industry benchmark and the delivery services are scoped on online purchases.

When ordered online, there are 5 options for delivery locations that retailers offer:

- home;
- work;
- post office box;
- pickup-point; and
- in store⁵

None of the identified retailers had all options available and none of the retailers had the option to deliver at one of their wholesale channel's stores. On average, retailers offer 2.5 different delivery channels ($\mu=2.5$, $\sigma=0.8$). The different delivery options are shown in Figure 30. This indicates that also for delivery, the omnichannel mindset is not much implemented, since only in 35% of the cases ($n=20$, $\sigma=3.60$), delivery can be done in store. For the retailers offering store delivery, 25% ($n=5$, $\sigma=1.94$) offers the option of not waiting in line to pick-up the delivery at the store.



Delivery location options

Figure 30: Online purchase delivery options

When it comes to delivery times, retailers offer a certain time window purchases can be expected in. 42% of the retailer's ($n=23$, $\sigma=3.70$) also offer an express delivery option for an extra fee,

⁵ Based on delivery in Dutch stores

where the item is delivered faster than standard delivery. Table 3 shows the average of the time windows for the retailers for standard and express delivery.

Table 3: Standard and express delivery times

	Average of time window for Standard delivery	Average of time window for express delivery
<i>Fastest retailer</i>	1.5 days	1 day
<i>Slowest retailer</i>	7 days	5 days
<i>Mean</i>	3.7 days	1.9 days
<i>Standard deviation</i>	1.5 days	0.8 days

In case of delivery costs, there are also variations among retailers. 16% of the retailers offer free standard delivery for all purchases ($n=9$, $\sigma=2.75$). For the retailers that do charge a premium for delivery and for express delivery, descriptives are shown in Table 4.

Table 4: Standard and express delivery costs

	Standard delivery	Express delivery
<i>Cheapest retailer</i>	€ 0.95	€ 5.95
<i>Most expensive retailer</i>	€ 10.00	€ 16.00
<i>Mean</i>	€ 4.81	€ 11.35
<i>Standard deviation</i>	€ 1.56	€ 3.03

When looking at retailers that offer both standard delivery and express delivery, the average lead time acceleration is 2.5 days ($\mu=2.5$, $\sigma=0.67$). The average cost increase is €7.18 when choosing for express delivery ($\mu=7.18$, $\sigma=3.31$). This means that, on average, consumers pay €3.82 per day accelerated lead time when choosing for express delivery ($\mu=3.82$, $\sigma=5.22$).

Of those retailers that charge a premium for standard delivery, 73% ($n=35$, $\sigma=3.08$) drops the shipping fee after a certain threshold of purchases. For express delivery, this is 13% of those providing that service ($n=3$, $\sigma=1.69$). Table 5 shows this threshold information for both delivery options. Furthermore, when retailers offer delivery to store, 66% of those retailers ($n=19$, $\sigma=2.56$) drop the shipping costs for this option.

Table 5: Standard and express free shipping thresholds

	Standard delivery	Express delivery
<i>Lowest threshold retailer</i>	€ 20.00	€ 90.00
<i>Highest threshold retailer</i>	€ 150.00	€ 300.00
<i>Mean</i>	€ 63.47	€ 180.00
<i>Standard deviation</i>	€ 30.05	€ 108.17

Finally, as shown in Figure 31, 93% of the retailers ($n=53$, $\sigma=1.93$) provide insight in the status of your delivery. Of these, 43% ($n=23$, $\sigma=3.61$) offer only internal information (i.e. up to handing it over to the third party logistics (3PL)), 8% ($n=4$, $\sigma=1.92$) also offer 3PL information (i.e. until reaching the customer) for express delivery and 49% ($n=26$, $\sigma=3.64$) always offer 3PL information, in addition to internal information.

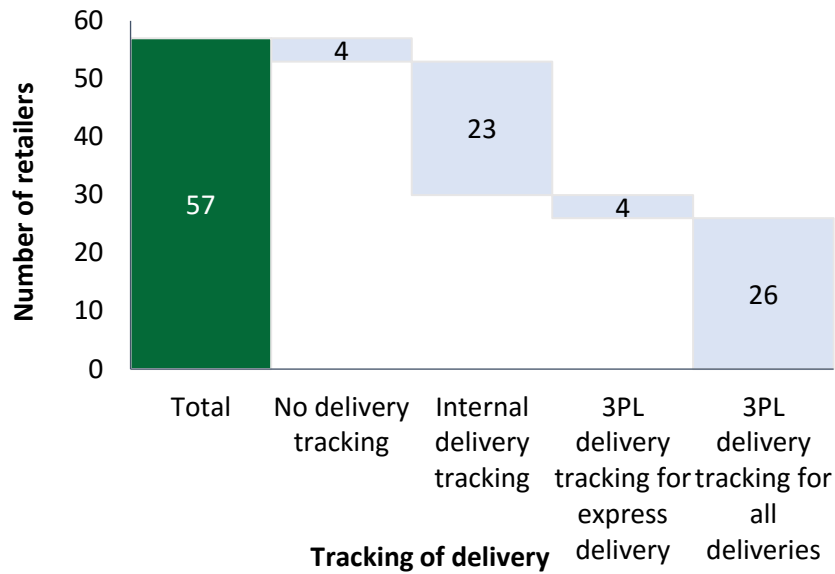


Figure 31: Tracking options for the delivery

In conclusion, when it comes to delivery attributes, there are a lot of variations among the different retailers.

Return

After purchasing, customers will evaluate their purchase. In some cases, this results in the desire to return the product. For purchases outside of the store (e.g. website), retailers have to offer at least a 14 day return period. In practice, all retailers offer at least this return period for store purchases as well. 49% of these retailers ($n=28$, $\sigma=3.77$) offer return periods longer than the mandatory 14 days, up to a maximum of 100 days. On average, a return time window of 25.1 day is offered ($\mu=25.1$, $\sigma=17.1$).

Retailers can offer return by different channels. Locations that are offered for return are:

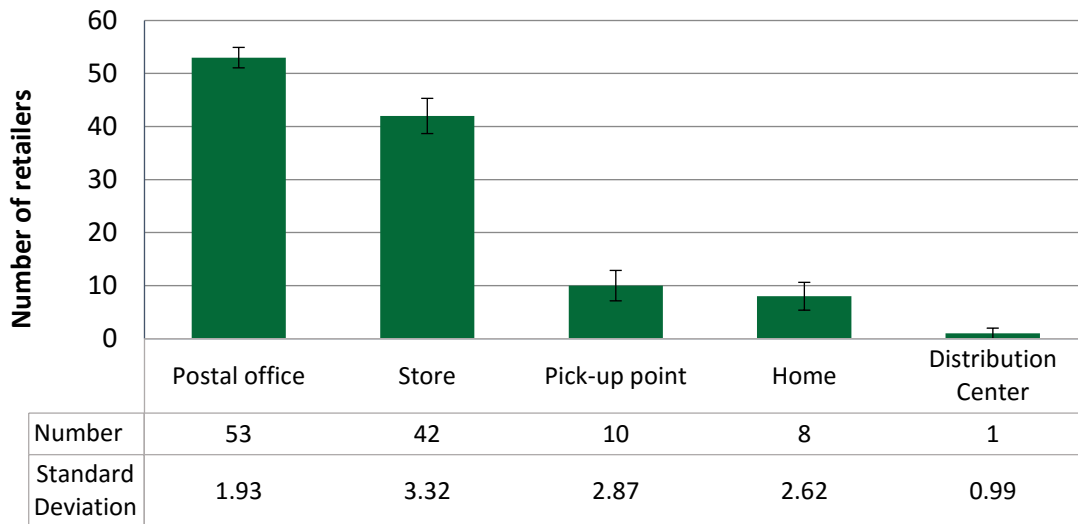
- in store⁶;
- postal office;
- Pick-up point
- from home (i.e. courier will pick it up); and
- distribution center (DC)

As with the delivery channels, none of the retailers offered all options and at none of the retailers there was a possibility to return the product at a third party (e.g. return at a wholesale channel when bought at the retailer's own store). On average, retailers offer 2.0 different channels ($\mu=2.0$, $\sigma=0.6$). The above is summarized in Table 6 and the different return locations are also shown in Figure 32.

Table 6: Return time window and channel numbers

	Return time window	Number of return channels
<i>Minimum</i>	14 days	1
<i>Maximum</i>	100 days	3
<i>Mean</i>	25.1 days	2.0
<i>Standard deviation</i>	17.1 days	0.6

⁶ Based on return in Dutch stores



Return location options

Figure 32: Return location options

The return channels have a certain degree of integration as shown in Figure 33. For 56% of the retailers ($n=32$, $\sigma=3.75$), there is no integration, meaning that products can only be returned via the channel corresponding to the channel they are purchased. For 11% ($n=6$, $\sigma=2.32$), there is partial integration, meaning that there are possibilities of returning a product at another channel, but there are limitations (e.g. not all channels are integrated). For 33% ($n=19$, $\sigma=3.56$) there is full channel integration, meaning that all channels can be used for return, regardless of the purchase channel. This information shows that again, only a minority of retailers show omnichannel behavior for return.

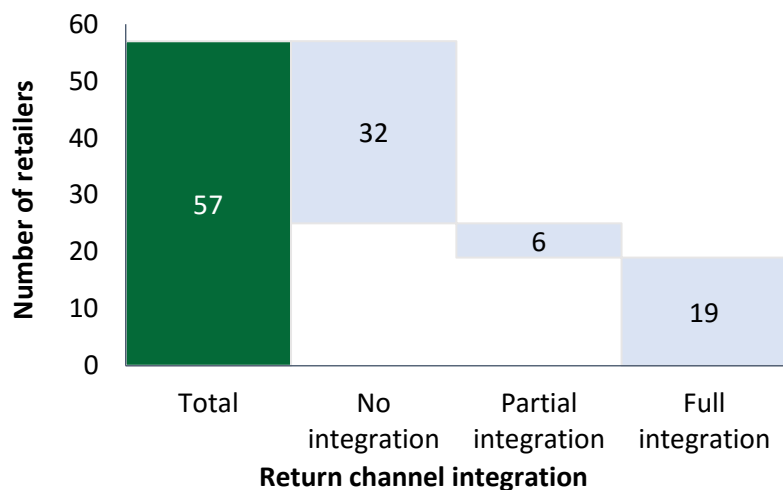


Figure 33: Integration of the return channels

When returning a product, retailers can use some cost structures as shown in Figure 34. By law, all retailers must reimburse the entire purchase, including delivery costs. However, retailers are not obligated to pay the logistics costs for the actual return. In practice, 77% ($n=44$, $\sigma=3.17$) do offer a free return service to consumers. 21% of the retailers ($n=12$, $\sigma=3.08$) lets the customer pay for transporting the product back to the retailer (i.e. store returns are free, but sending it back by mail is not free). Only a single retailer ($n=1$, $\sigma=0.99$) had a different structure where €1.- is charged for return, but no transport costs are charged.

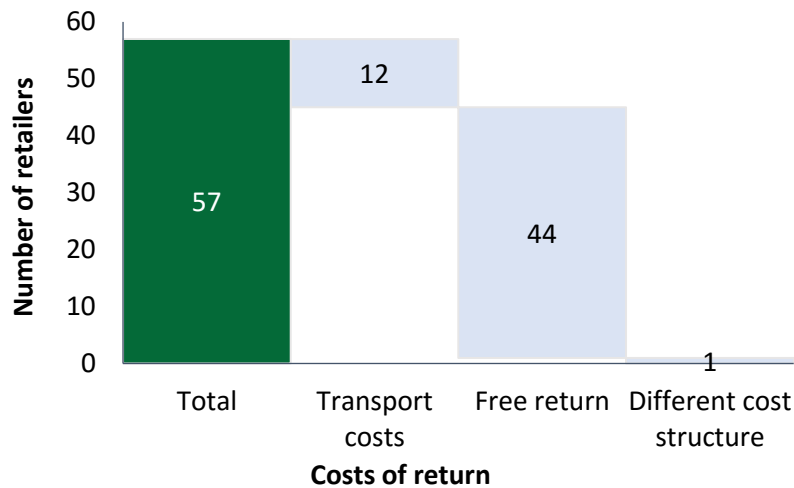


Figure 34: Costs of a return

When sending a product back for return, 4% of the retailers ($n=2$, $\sigma=1.39$) lets customers track the return in a similar way as the delivery. Finally, when a return arrives at the retailer there are different reimbursement times that retailers use. Several retailers ($n=21$) provide information about the windows of reimbursement times they use and this is shown in Table 7.

Table 7: Average reimbursement times for returned products

Average reimbursement time	
Fastest retailer	3 days
Slowest retailer	17.5 days
Mean	9.5 days
Standard deviation	4.1 days

4.3. Synthesis

As shown in Figure 35, the delivered services above can be summarized in a larger customer fulfillment scheme, where all identified services are put upon with the average data from the industry benchmark. This scheme is a first step into the customer fulfillment framework and the input for the interviews and survey and it again shows the large differences in service offerings. For management, it can be used as a benchmarking scheme to assess their own service offerings to see how they perform in the marketplace.

4.4. Conclusion

In conclusion, the industry benchmark provided insights in the current state of customer fulfillment services. Most striking is the large variety of services offered, which indicates that there is either segmentation that determines the best service levels or there is no clear view for retailers on what is the best way to offer services. In addition, when looking at omnichannel specific services (i.e. services that span multiple channels), some interesting findings can be distilled. Availability of other channels is only shown in 14% of the cases and when it comes to online ordering, store delivery can only be done at 35% of the retailers. Also return channel integration is implemented fully by 33% of retailers. The low number of retailers offering these services indicates that the omnichannel strategy is not mature in the marketplace. With the broad view of current offered customer fulfillment services now known, it is interesting to get more in-depth information on the research. The interviews, discussed in the next chapters will elaborate on this.

Customer fulfillment services

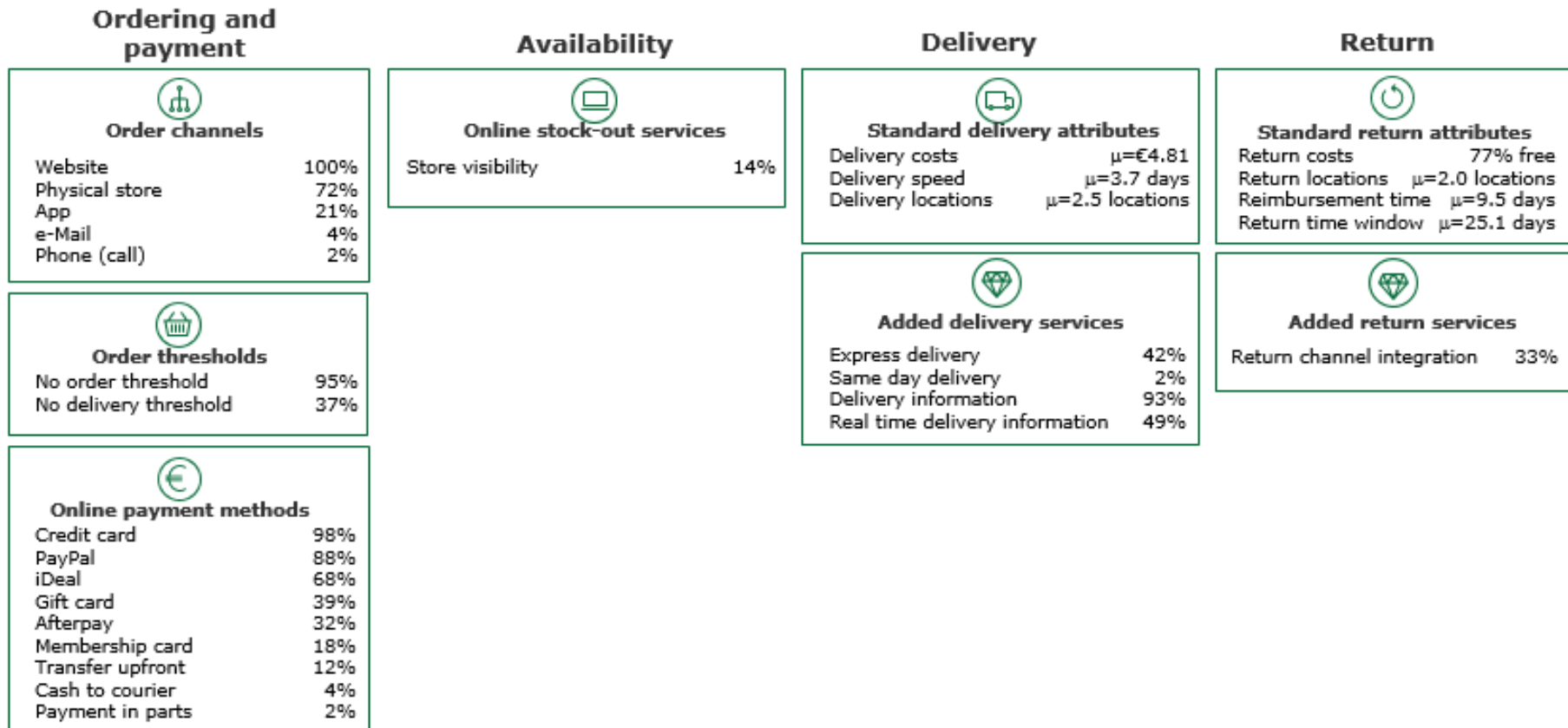


Figure 35: Delivered customer fulfillment services

5. Retailer results – Interview concept generation

The second part of the analysis and diagnosis phase corresponds to the retailer interview section. In this chapter, the concept generation (i.e. open coding) is discussed and will be the input for the next chapter. The goal of this chapter is to show the strategic components, capabilities and services that are important in an omnichannel strategy as being the basis for the links between those concepts. First, the interview descriptives are elaborated on, followed by the results in the different concept groups. In the end, a conclusion is provided.

5.1. Interview descriptives

The interviews are performed with different companies to assure results as unbiased as possible. Figure 36 shows the different sub-sectors of the interviewed companies. There are three types of retailers: high-end (n=2), mid-end (n=2), and low-end (n=1). Furthermore, there is a sport apparel sector (n=2), a regular fashion and apparel sector (n=2), and a warehouse sector (n=1). Overall this creates a broad spectrum of fashion retailers. However, it has to be noted that the different sub sectors and different levels are corresponding (e.g. high-end corresponds to sport apparel and mid-end to regular fashion). This means that, in case of possible differences in data, it cannot be assigned to a specific group (e.g. if high-end sport apparel firms show a different result than the others, it cannot be assigned with certainty to the fact that they are high-end firms or that they are sport apparel firms).

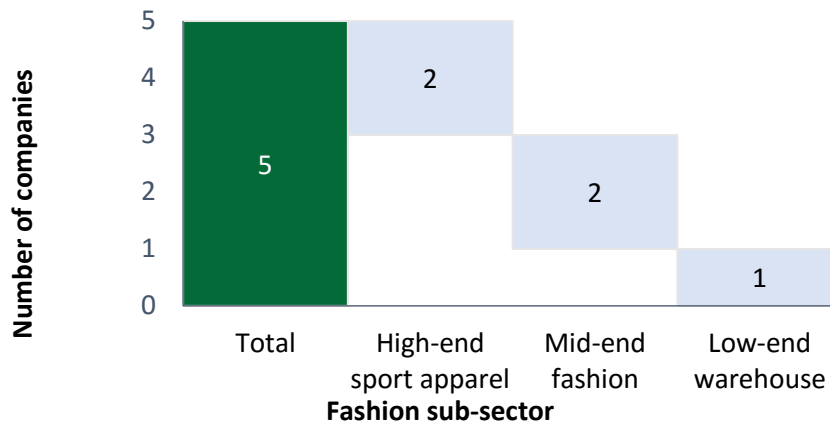


Figure 36: Sub-sectors of interviewed companies

Within the 5 companies, 6 interviews were conducted with in total 8 interviewees. The interviewees had different profiles as shown in Figure 37. This shows there is a large difference in ranks and profiles. Furthermore, some high level management including an executive provided their view, which means that there is a lot of experience available on the topic. Also the profiles are spread which could give a good complete overview.



Figure 37: interviewee profiles

For the interview analysis, concepts are generated by open coding. Transcripts are made of the recorded interviews and concepts are generated while coding. By providing codes on 3 to 4 hierarchy levels, concepts are made on a practical and theoretical level and the amount of interviews a concept is mentioned is provided on all levels, where the addition of the most modular level is the input for the level above et cetera. This chapter shows the different coding concepts and their hierarchies. First, the results on strategy are shown, followed by capabilities, services, benefits, and costs and challenges.

5.2. Strategy

The first concept that was mentioned in interviews and corresponds to the conceptual model is strategy. The concepts are shown in Figure 38 and is performed on 3 different hierarchy levels.

For an omnichannel strategy, all interviewees acknowledged that creating a seamless experience was most important. For consumers, it should not matter from where they want to interact with the retailer: the experience has to be optimal at all those points. As one interviewee put it: *“you want to make it as easy and efficient as possible for consumers and those that can deliver that are the companies that are going to win”*. To achieve this aspiration, retailers have to integrate their channels and with that, make cross-channel interaction easier for consumers or *“integrate the different sales channels with the purpose of improving customer experience”*. One interviewee elaborated on this by comparing management of separate channels to humans: *“Using names like on- or offline is like the racial discussion. It is not black people and white people, but it is just people”*. In addition, the seamless experience and channel integration does not stop at the firm’s boundaries. Network retailing is often mentioned as future development, where omnichannel retailing is extended from retailer to the entire sales network (i.e. franchise firms, wholesaler firms, and the retailer’s own firm).

Although the seamless experience and channel integration are the most mentioned aspects of the omnichannel strategy, there are some other important messages that came from the interviewees. To provide this seamless experience, companies cannot stay in their old ‘distant’ model and only sell their products through wholesale. According to one of the interviewees, they should *“transform from old wholesale focused operating concepts and models to becoming a vertical retailer as well”*. This way they can touch the customer and improve the experience these customers have with a firm or brand and eventually, this improved experience should be aimed to increase conversion: if the experience is better, consumers will buy at your company faster and they also become more loyal. One interviewee puts this even a step further and believes that *“the main goal should be that whenever a consumer shops, it will be converted to buying intent”*.

To transform the old-fashioned multi-channel strategy into this omnichannel strategy and creating the seamless experience also means flexibility is more important. Channel boundaries are blurring, product flows are reallocated rapidly and demand uncertainty increases since channels are not operated individually anymore. *“How do we flex if we get it wrong? Because we will get it wrong!”*

was an important question an interviewee asked himself and another interviewee acknowledged the issue and answered this question with “*agility and responsiveness*”.

In conclusion, the omnichannel strategy circles around integrating channels from the retailer’s perspective in order to create a seamless experience from the consumer’s perspective and it entails all activities that help to enable this.

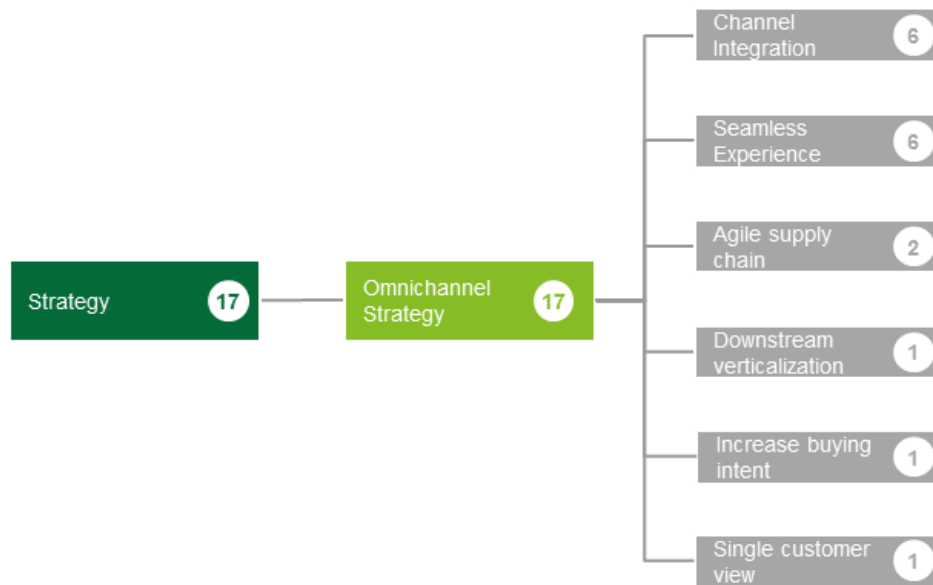


Figure 38: Concept generation for strategy⁷

5.3. Services

In the service category, interviewees mentioned a wide array of concepts as shown in Figure 39. This chapter will walk through the customer’s purchasing process and elaborates on the most interesting service parts mentioned for omnichannel retailing. Again, similar to the industry benchmark results, the customer fulfillment process can be distinguished in four parts: ordering and payment, availability, delivery, and return.

Ordering and payment

At some point in their journey, the consumer makes a decision to buy a certain product. Often, this product can be bought at many places and companies, and one interviewee made it clear that “*The more options you give to your consumers in terms of how and where and when they can buy the product, the more likely they are coming to us*”. Therefore, increasing the number of options for consumers to buy a product, which includes the number of channels and the number of payment methods, the more benefits can be reaped for consumer and retailer.

Availability

When the consumer has decided to buy a product and chosen the channel he or she likes, the right product has to be in the right place to actually fulfill the demand from the channel the consumer wants, because “*if we want to convert a shop into intent, we want to provide the possibility to buy on the spot. So there needs to be inventory*”.

Unfortunately, even with the greatest intent, sometimes a product is not available at the location a consumer wants to buy it from. However, if a retailer wants to deliver the seamless experience, there is no reason to only use the inventory of one channel to fulfill demand. Retailers

⁷ The concept generation is a structuring of the most granular level concepts discussed in the interviews (right) towards combined structures the granular definitions belong to (less granular towards the left)

should provide maximum availability to the consumer by providing their entire stock across all channels. Eventually every order you can fulfill should be fulfilled, which one interviewee mentioned as: *“if we can fulfill the demand then let’s fulfill it”*. This service is defined as seamless fulfillment, where the retailer uses all fulfillment channels possible to fulfill demand, unrestricted by channel boundaries. It results in a situation where a stock-out is only applicable if all stock from all channels is depleted.

Since this is difficult to achieve from the retailers perspective, another direction a retailer can go for is providing visibility to the consumer or give the possibility to reserve in another channel: dynamic fulfillment, which is defined as a form of customer fulfillment where the consumer is offered alternative forms of fulfillment from other channels (e.g. store visibility). If a website’s product is out-of-stock, but a retailer can show real-time inventory of the store or lets you reserve the product in the store, no-sales could be prevented. This same method can also be used the other way around and one interviewee called this *“the endless owl”*, which means that *“if you are in the store and a certain item is not available, a store associate walks with you to a tablet and takes care the order is send to your home or to the store”*.

Delivery

The next step in the process, when the availability is determined and the product can be fulfilled, is that the delivery can happen. When it comes to delivery, interviewees see a lot of aspects that are important and eventually, it all comes down to making it as easy as possible for the consumer. When it comes to the current state of omnichannel and what all interviewed companies also offered, it comes to delivery location that is seen as important. According to one interviewee, *“If the consumer buys online, you can either pick it up at this point or at this point and in that way: so the closest one to them, the easiest one for them.”* Consumers are getting busier and people are not that often at home, so store or pick-up point delivery is seen as a must to create that seamless experience. However, this service is already implemented by all the interviewed companies and is therefore a current state scenario for them.

When looking into the future planning of the companies, there are some other aspects that arise. Most mentioned is still associated with the choice of consumers and making it as easy as possible: delivery flexibility. This service relates to extending the timeframe a product is delivered for the convenience of the consumer. One interviewee sees this and said: *“we see the demand for weekend delivery emerge, since people are at home”*. But even if consumers are not home in the weekend this convenience can be delivered by offering the choice of timeframes, which results in an aspiration like *“What we also would like to offer is that a customer could choose the timeframe of delivery. So, for example, between 6 and 8 PM”*. Eventually this should give the consumer more choice and increase ease of buying for them.

Although the choice and flexibility increases convenience of the consumer, their planning can still change and they want to be in control of the delivery. One interviewee thinks that real time delivery tracking and the possibility to reroute if your planning changes *“is going to be the norm”*. So in addition to choice of location and time, giving the control to the consumer should improve their experience.

However, these convenience related services are only part of the equation. Also statements like *“I think same day delivery is important”* and *“when you want to pick an order up in store, it would be great if you could get a conformation within five minutes with: the product is ready, you can pick it up”* came up in the interviews. This shows that speed is getting more important and interviewees think that customers are willing to pay for this. This speed aspect is however acknowledged to be depended on the target group: *“If you look at our brand A for example, that does not have a target group that spends €25.- or €9.95 euro for same day delivery. Then you can question whether this is a good investment”*. So delivery costs are, even though mentioned a lot less, still a part of the delivery and could make or break the success of the service.

Finally, promises of same day delivery, flexible timeframes and other great things might be a good aspiration, but it means nothing if not offered in a reliable way. One of the interviewees stated this as: *"We want to be reliable in the end of the day right? You can say you do something but if you don't do it at the right service level..."* and another interviewee took this even further by thinking that *"if you do not manage it well end-to-end you can just as well throw the service into the bin, since it will never be profitable and even generate loss due to negative publicity"*.

Return

Next, when the delivery is done, the consumer has its product and had a great experience with the services just discussed. However, there is still a chance that the product is not what the consumer wanted and that he or she wants to return the product. Currently, returns are a headache for a lot of retailers. One interviewee mentioned companies having up to a 65% return rate which takes away margin and on average, consumers return over 20% of their products while this can go up to averages of nearly 40% for specific consumer segments⁸. One interviewee stated it rather simple as *"returns are possible, but rather not"*. However, if the return process could be a part of the seamless experience and increase customer satisfaction, it could result in extra sales and therefore the costs of return could be partly or totally offset. One interviewee gave an example of this where *"this is one of the core strategies of companies like Online Wholesale Retailer A, who has extremely high return rates and they are more than happy that consumers buy a lot and return a lot, because they know these customers will continue to come back and I think that is a very valid point in the marketplace"*. So if a retailer offers this ease to the consumer and does this for free, it will be beneficial. One interviewee mentioned that *"if you lower the barriers and make it easier for them to return, then the probability that they buy at your place is higher."*

If the return experience could eventually increase sales, it is interesting to know how the return process should be configured for consumers. As with delivery, it all comes back to convenience: consumers should be able to return the product at the location they want, at the time they want and they do not want administrative hassle. According to one interviewee this has to go as far as *"also putting in the tape necessary to close the box would be a good idea so consumers do not even have to think about that"*. Providing this maximum convenience will lower the barriers to return and therefore increase satisfaction and bottom line benefits.

Some interviewees also saw opportunities to increase potential revenue from returns even further. This is defined by the interviewees as using returns as a sales channel. For example, consumers, especially Dutch people, tend to buy multiple sizes or colors with the intent to return a part of the purchase. Adding basics or other offerings into the box which consumers can either return or keep is seen a future business model. Some new firms adhere to this philosophy by offering a subscription where once every time period, a box of clothes is send and you can simply return what you do not like and keep what you do. Some interviewees acknowledge that there might be possibilities in using return as a sales channel and one interviewee elaborated on this *"As a consumer we are more and more willing to provide information about ourselves. You have your beard on a certain level and you are willing to tell me that so we can help you by sending shaving stuff once every while. This can also apply to fashion if we are willing to tell about it"*.

In conclusion, from the moment of purchase until return, all services have to be aligned to provide the highest convenience, at high speed for low costs and of course, the quality of these services should be high.

⁸ These numbers will be elaborated upon in chapter 7

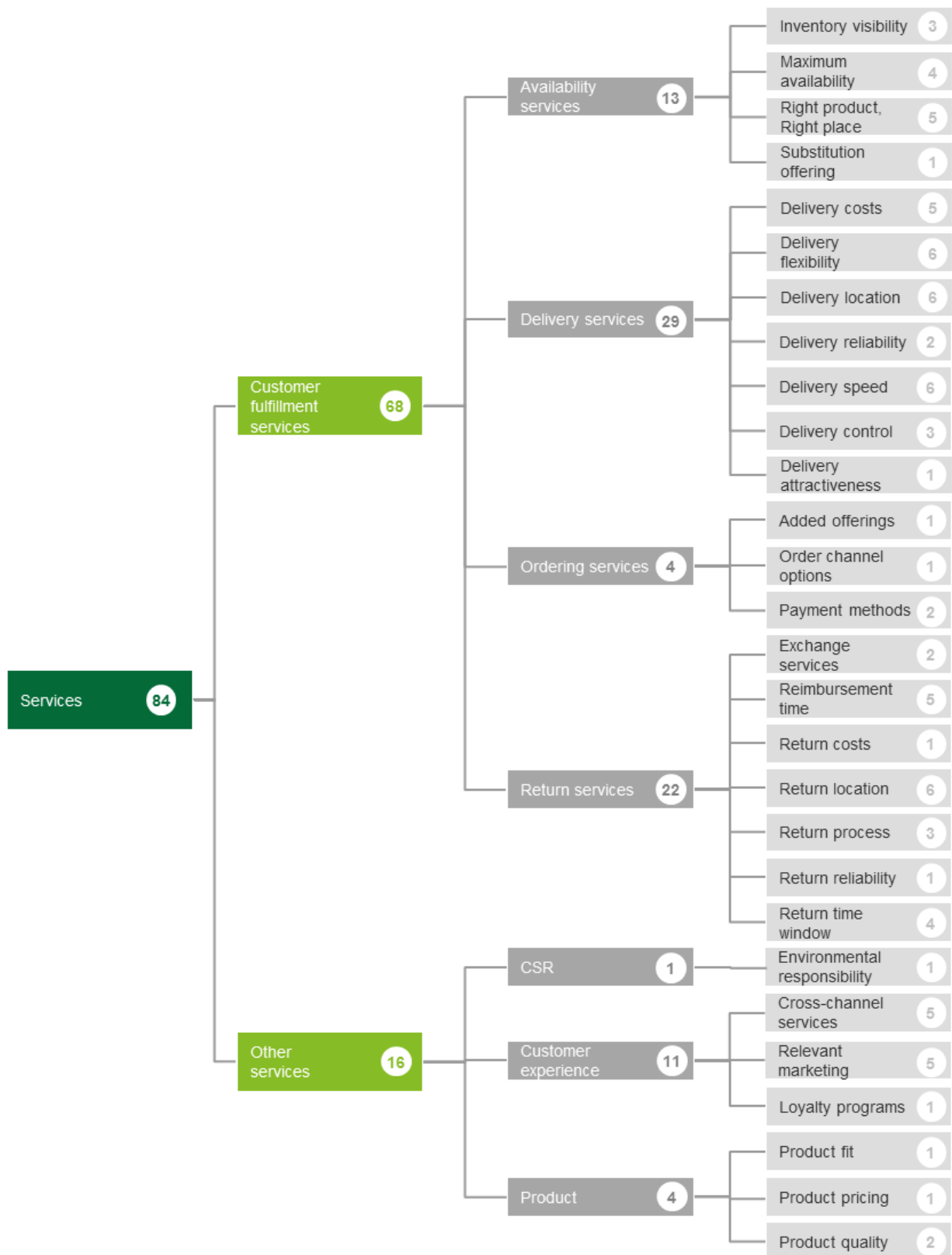


Figure 39: Concept generation for services⁹

⁹ The concept generation is a structuring of the most granular level concepts discussed in the interviews (right) towards combined structures the granular definitions belong to (less granular towards the left)

5.4. Capabilities

To be able to enable the important services for an omnichannel strategy, capabilities need to be in place to transform resources into value. Figure 40 shows the concepts related to capabilities that are extracted from the interviews. In this case, the most granular level concepts (level four) correspond to operational capabilities as discussed in chapter 2.3, while third level concepts relate to firm capabilities. The capabilities that are shown in Figure 40 show that there is end-to-end attention needed in the supply chain to support omnichannel. In the back-end of the supply chain, the capabilities should support the increase of agility and responsiveness. A more detailed description of all capabilities is shown in Appendix G.

The single capability that has the most impact on this is increasing the knowledge of where the inventory is. When visibility of all inventory is real time, it is much easier to fulfill demand from the right places and to eventually be able to increase convenience for the consumer. All interviewees mentioned they have already or want to couple their online and offline inventory and want to know real time where it is so that *“When a product is out-of-stock in the online warehouse, you could have a no-sale if you cannot deliver. However if you know the product is in stock at one of our franchises or owned stores, we can fulfill from there”*. This also shows that it is not only the visibility on inventory, but also the so called *“single view on inventory”*, where inventory is evaluated per channel, but is seen as one holistic inventory and fulfillment could be done from multiple places, independent of the purchasing channel.

In addition, a new mindset in warehouse management is needed to support flexible fulfillment services. For a long time, efficiency has been a key metric and warehouses were centralized to enable this. However, when it comes to omnichannel and increasing agility and responsiveness, centralized warehousing cannot suffice. One of the interviewees, which works at a company with a highly centralized warehousing model, mentioned that they are *“now chasing to have local inventory available, since this is needed for a lot of services”*. For example, when delivery lead times are skewed, fulfilling a large area with a single warehouse is not possible.

Interviewees debated that there are two options to enable this local warehousing in a profitable way, because obviously, building large warehouses in all major cities is not a profitable business. One way is using stores as mini-warehouses in addition to using them as stores. Shipping from store can enable the fastest, most convenience, and cost optimal way of delivery and return. One company that already uses this way of working sees this and mentioned that *“if you as a customer ordered in New York, the package came from our central DC in Amsterdam. Now, we integrated the New York stores to the ship from store concept which decreases shipment costs and improve lead times, because lead time to America with our 3PL is 3 to 5 days. From stores, this can be done much faster”*. However, there is also a flipside on this operating model. Another interviewee mentioned that the possibility for stores as mini-warehouses depend on the demand of that store. If delivery demand is too high, stores get out-of-stock. Furthermore, one interviewee asked out loud *“how much space do you actually have in the store to be able to handle this? And do you want your store associates focusing on shipping orders or do you want them focusing on serving customers?”*

Therefore, another option is to use mini-warehouses in city centers. One interviewee described this option as *“drop-ship warehouses in the middle of city centers. So you can basically deliver some core products that are available to a point of sale easily, because that does not mean that you have to use one central warehouse that offers all deliveries”*. Using these mini-warehouses in important cities improves delivery service quality as well, but does not burden stores or store employees. However, the disadvantage is that extra real estate costs are needed. In summary, inventory holding should move more downstream in the supply chain and it depends on the demand how this should be done.

In line with this, logistics is a key element. With warehousing fixed at some point and inventory visible in the entire chain, the decision on how to ship in the most economical way that still assures customer fulfillment quality is a next step. Integrating channels and therefore inventory has a significant impact on logistics.

From the return perspective, reverse logistics, there are a lot of implications. The most important part is to get products back into the product flow fast. This means that returns should be processed and should be easily transferable between channels if necessary. Especially when products are returned in another channel than they are purchased, the time it takes to get the product back to a-grade and to resell it is long, with one interviewee mentioning it can take up to multiple months. However, when working with a seasonal structure or even with continuous portfolio refreshments, this is a critical issue: *“if you get a product back early in the season and get it back in the stock fast, you can still sell it at full price. If it takes a couple of months, you are drifting into that clearance zone where you can only sell it at a markdown price. If it comes even later in the process, you are more talking about liquidation type of margins”*. So the longer it takes for returns to be processed, the higher the probability that margins decrease even further than the necessary operational costs of processing returns. One of the key components of increasing speed in the return process is bringing the returned product directly back into store stock in case of in-store return: *“If processed by mail, the product will go to our distribution center, it will be brought back to a sellable quality which is almost always necessary, and then shipped to the next order. This creates very expensive handling costs and takes long, which is a great disadvantage for pure players. If the returns are brought back in store, the store associates just unpack the return, place it in the shelves, and it is done. That is a huge advantage”*. In addition, fast reverse logistics also increases convenience for the consumer since then they get their money back faster and there is more room for an extended return time window. So for reverse logistics, speed is key and it helps decreasing margin hits and it helps improving customer satisfaction.

For forward logistics, there are other complications. Stores usually order a few large orders, while the online channel consist of larger number of smaller orders. Since B&C retailers use both channels, complexity of logistics increases when working in an omni way (i.e. bulk volumes and order picking flows are combined). However, even though all interviewees acknowledge this complexity, none of them had a solution at hand. This is mostly because logistics are often outsourced to 3PLs. With support of the inventory visibility however, it is possible to use algorithms to find the most economical route to the customer with the inventory available. Order management should be in charge of utilizing this information and assign stock to orders and find the best way to fulfill demand. At that point, it is up to the 3PLs to comply with the input this algorithm gives them.

This bridges to another important capability and arguably the most important one for success in omnichannel retailing: partner management. There are a lot of stakeholders involved in the omnichannel process and 3PLs are only one of them that need to be managed right in order to deliver success. A lot of retailers have stores that are owned or operated by third parties like franchisers. The fulfillment plans can be great, but if there are not the right incentives for these stores to cooperate, the entire plan will fail since it cannot be translated from back-end operations to front-end service. Since omnichannel is a significant change in way of working, this management is of vital importance. One interviewee experienced that *“In the beginning it is a battle. Franchises are shivery for online since they see their customers going to online and they lose them. However, it is up to us to convince them that we as a brand will end up stronger if we collaborate”*. Placing the right incentives to improve collaboration is therefore key.

Also partnership management with the wholesale channel has to be done in a new way. Several interviewees mentioned that in the perfect omnichannel state, not only the own stores are integrated, but also the wholesale stores are integrated. The way of thinking should be, according to one of the interviewees, that *“if the inventory is in our wholesale A’s store, maybe we can steer the customer to that store, because it is the most convenient thing for the customer or that is what the customers want, despite the fact it could also be sitting in our own store a little bit further away: integrated retailing”*. Two firms are already experimenting with integration of wholesale partners where, for example, a wholesale channel is integrated in the ship-from-store concept or warehouse inventory is shared with a wholesale channel. Eventually, according to interviewees, network retailing where the value chain operates as one, will be able to greatly improve the seamless experience.

Now that wholesalers and third party owned stores are managed, the next step is to manage all stores, including those partner stores, in the right way. Key part of this store management capability is to leverage the effect of sales associates. A lot of the services mentioned in the previous chapter are performed in store: delivery in store, reserve in store, return in store et cetera. To make these services successful, sales associates have to work customer centered. One interviewee described this as *“You can develop services, but if it is not empowered by stores, you will not get the results you want. The store associates need to understand what the services entail and how they can optimize it so they can respond in the best and most personal way possible”*.

Interestingly, overarching to the above described capabilities, finance is a capability that affects a lot of the omnichannel fulfillment process. For all back-end processes like being able to find the most economic routes for logistics, tax management is mentioned as a more increasingly difficult task. When working internationally, different laws, duties, and tax rates have effect on the total fulfillment costs. For example, retailers initially payed profit tax of online purchases in the country their e-Commerce is located, which is usually a tax efficient location. However, when delivering products from stores, it is arguable that the stores are generating part of e-Commerce profit and therefore, the distribution of profit tax among countries changes. Retailers need to take this into account to avoid high costs. For the front-end and partnership side, finance capabilities consist of organizing payments that need to be made in the right way. One interviewee asked himself for omnichannel retailing: *“who gets the revenue? And who gets the handling costs? That is something that is hard to get clear. If you order a product online and you want to pick it up at a store or a partner store, than the latter gets handling costs and the first gets revenue. There is no concession on this yet.”* So especially when product flows and financial flows diverge, payment management gets more important.

Finally, to implement all these capabilities, general supply chain management should be dedicated to the task and also be authorized to implement capabilities, even though uncertainty is still high. One of the interviewees said that *“Someone have to be able to say top-down: we are going to do this and now we are putting the customer in front of everything”*. There needs to be someone in charge overarching the processes. In all interviewed companies, there is also mentioned that someone is put in charge of omnichannel or they are planning to hire someone overarching the processes.

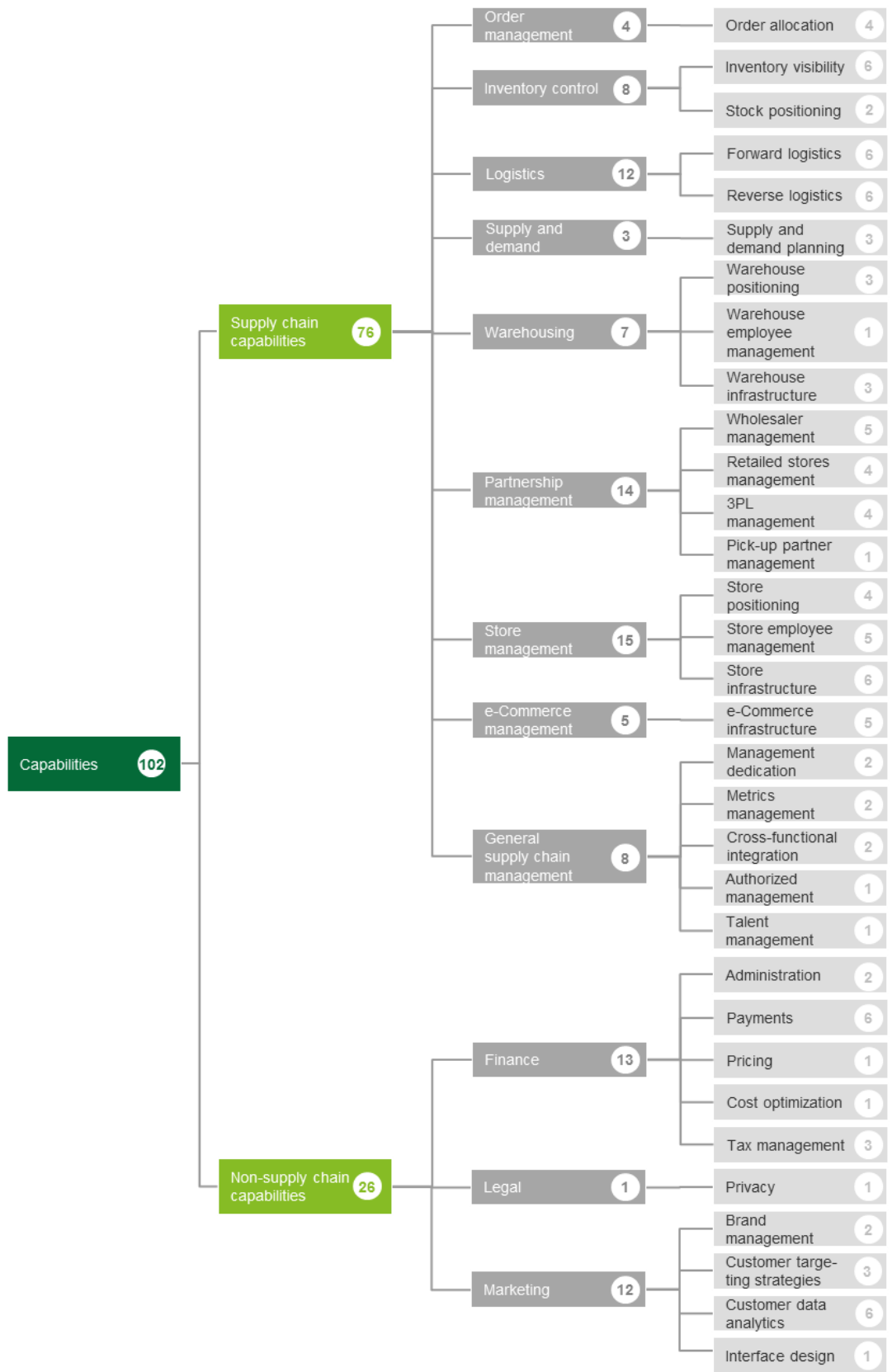


Figure 40: Concept generation for capabilities¹⁰

¹⁰ The concept generation is a structuring of the most granular level concepts discussed in the interviews (right) towards combined structures the granular definitions belong to (less granular towards the left)

5.5. Benefits

Bridging the gap between delivered customer fulfillment quality and expected fulfillment quality improves, logically, customer satisfaction. However, this satisfaction has to result in bottom line benefits because, eventually, an omnichannel strategy should be profitable. Luckily, the strategy and the identified capabilities and services generate some benefits as shown in Figure 41. These benefits can be gained to improved customer satisfaction or other sources of benefits.

For the first, it is mainly in the increase of sales volume or additional revenue streams. As mentioned before, providing the right options increases the probability of customers coming to your store, but, as one interviewee put it *“it is the returning customer. The customer satisfaction increases, customers come back more often and you generate more revenue”*. In conclusion, the customer satisfaction mentioned before generates additional sales. Another increase in sales volume is the fact that consumers come to the store more often: *“If consumers come to the store to return something, it is a good moment to sell something again”*.

Other benefits that can be derived from improved customer satisfaction are mainly in improved brand image and increased customer loyalty. One of the interviewees described this as customers that will think more easily: *“This company is a great, viable brand and they make it easy for me to buy”* and he believes that that is cracking the code of getting customers to return. Again, these benefits are related to the customer satisfaction concept that is discussed before.

In addition, there are some cost reduction possibilities as well that are not directly related to customer satisfaction. For cost reduction, the benefits are in reduced logistics costs, economies of scale and reduced inventory.

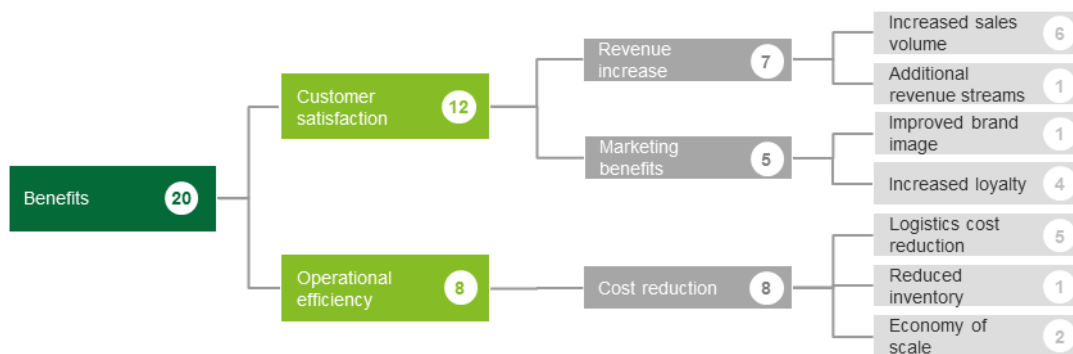


Figure 41: Concept generation for benefits¹¹

5.6. Costs and challenges

Unfortunately, the omnichannel strategy and identified capabilities do not only have benefits. To be able to implement the omnichannel strategy, some costs and challenges arise as shown in Figure 42.

The main issue in implementation is incumbent complexity. One interviewee said that they *“have systems and infrastructures and databases build up over decades in networks. To unravel that spaghetti and kind of uncook it, so to speak, is a challenge”*. Also the existing business models like the earlier mentioned distance wholesale model and often siloed processes have to be redesigned, which is a big challenge. This is also one of the reasons why the younger pure players are disrupting the market: since they are IT specialists that build from scratch, the incumbent complexity does not harm them as much as large multinational organizations.

Also the fact that omnichannel is new makes it very difficult to implement. Not only the lack of knowledge and experience makes this a challenge, but one interviewee also argued that *“a lot of retailers are moving this way in terms of strategy, but if you look at offered solutions in the*

¹¹ The concept generation is a structuring of the most granular level concepts discussed in the interviews (right) towards combined structures the granular definitions belong to (less granular towards the left)

marketplace, there are not that much that offer them good enough” and therefore, a lot of the solutions are built from scratch.

Even if the solutions are available, there is a lot of resistance as well. As mentioned before, channel cannibalization decreases the willingness for partners to cooperate, but also increased workload for store associates or the risk necessary to take are often barriers for employees and management to cooperate.

When looking beyond challenges and move towards direct costs, mainly investment costs for IT and warehouses are mentioned. Operational costs seem to diminish into the entire picture. One interviewee was even wondering whether it was logical that he was not taking that into account that often or whether he might not be as smart: “I actually never really looked at the cost drivers. I just looked from the consumer’s perspective: if the consumer is happy and he or she returns, we will make our targets. Of course the costs should not explode, but that we are going to do it is already decided. Are we maybe not thinking about this right?”. However, other interviewees did mention operational costs, mainly logistics costs, revenue loss, and maintenance.

So in conclusion, the biggest difficulty lies within implementation of supply chain capabilities and especially the complexity incumbent firms experience makes omnichannel retailing difficult. In addition, some operational costs also create challenges in implementation.

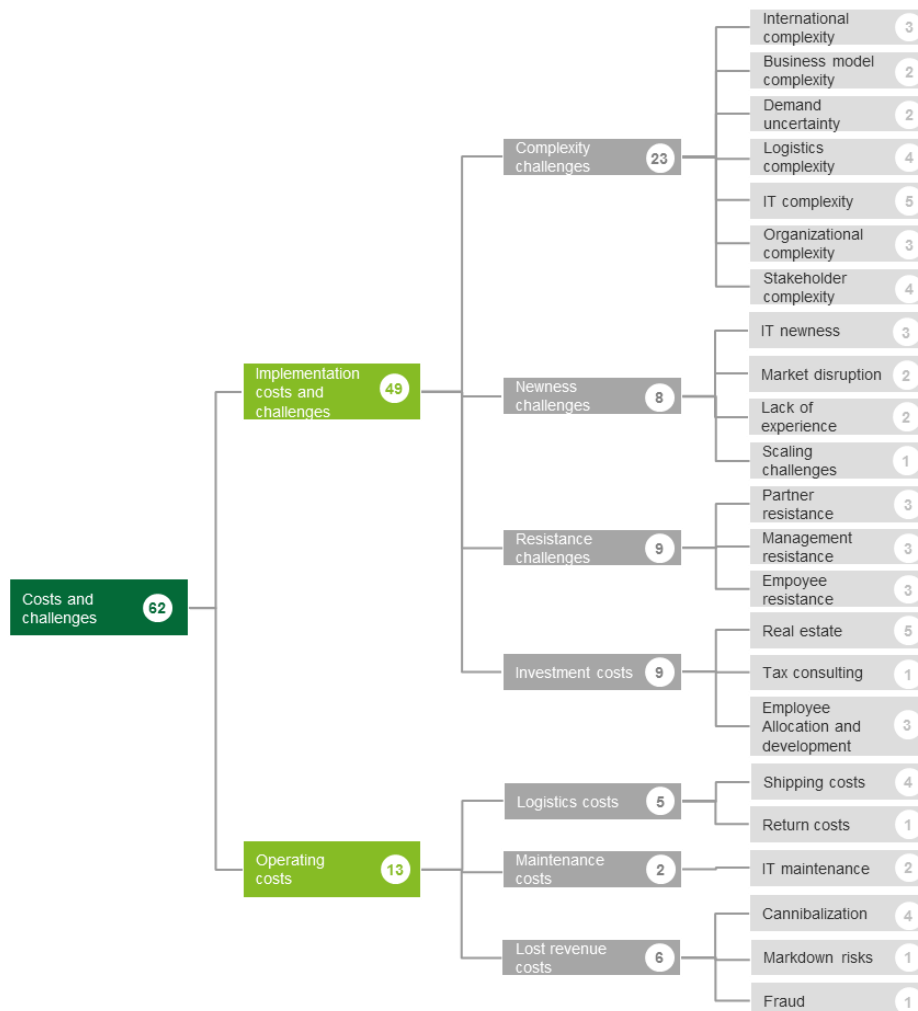


Figure 42: Concept generation for costs and challenges¹²

¹² The concept generation is a structuring of the most granular level concepts discussed in the interviews (right) towards combined structures the granular definitions belong to (less granular towards the left)

5.7. Conclusion

This chapter provides the overview of concepts necessary to build the omnichannel strategy and related customer fulfillment quality. It shows that first of all, the words flexibility, agility and responsiveness keep returning as goal of all components: services should be made flexible for convenience, capabilities need to increase supply chain agility and on a strategic level, the company also needs to be more flexible. This flexibility will in turn increase effectiveness of channel integration and the corresponding seamless experience.

Another interesting insight is that all interviewees acknowledge that omnichannel is not an evolution that a retailer takes on their own. Network retailing, where wholesalers, franchises, and retailers partner up could extend omnichannel to new levels and gives the retailer the possibility to get closer to the consumer. This is necessary, since the consumer is getting more demanding. With twenty service areas identified in customer fulfillment alone, it gives an indication of what has to be arranged for the consumer to be satisfied.

Luckily, the omnichannel implementation will provide benefits. As expected, customer satisfaction increase will generate more revenue for the company, but also cost reductions can be achieved. On the other hand, the implementation will also be hard for B&C retailers due to challenges. Especially the complexity of incumbent firms makes it hard to achieve the agility required for omnichannel retailing.

However, currently only the concepts are known as stand-alone concepts. To get real insight in these concepts, the relations between the concepts are interesting to investigate. The next chapter will elaborate on these relationships.

6. Retailer results – interview theory building

As shown in chapter 5, there are many concepts that are related to the omnichannel strategy. As well the strategic level, the capability level, the service level, the benefits level, as the challenge/costs level have multiple components. However, these components do not merely exist on their own, but also have relations with each other and the interviews gave insights in these relations. This chapter will provide information on these insights so the scheme in the previous chapter can be translated towards a model. First, the relations between strategy and capabilities are mentioned, followed by the link between capabilities and services. Next, the capabilities' internal linkages, the benefits associated with the services, and the benefits associated with the capabilities are discussed. Finally the link between challenges/costs and capabilities is provided.

6.1. Strategy to capabilities

First of all, all interviewees acknowledged that capabilities should be aligned to the omnichannel strategy. The capabilities should drive the goals associated with the omnichannel strategy and enhance the components shown in chapter 5.2. No direct link between specific strategic components and specific supply chain capabilities is distilled from the interview, because this relation was mainly talked about in a holistic manner. However, it is mentioned in all interviews that the omnichannel strategy is the basis for the capabilities (Figure 43).

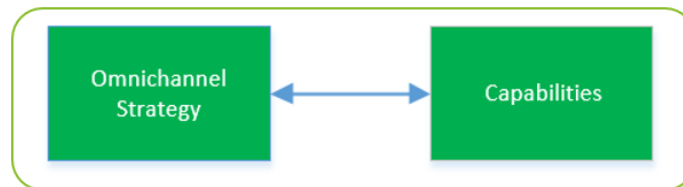


Figure 43: Back to the conceptual model: strategy to capabilities

6.2. Capabilities to services

During the interviews, an extensive elaboration was given on how specific capabilities help enabling added-value services. In this chapter, as well as the next chapters, these links are discussed on the second highest level of detail, the third open coding level. This is done because the highest detailed level has too much detail to discuss decently. However, Table 21 and Table 22 in Appendix H provide this relation for capabilities to services in the highest level of detail. Table 8 provides a heat map for the linkages between capabilities and services. This table shows what firm level capabilities (vertical axis) enable what services (horizontal axis). As shown in Figure 44, the numbers in the heat map are the amount of times the link between the fourth level concepts related to the third level concepts are mentioned (e.g. logistics to availability services is mentioned five times, because forward logistics and maximized availability was mentioned two times, forward logistics and right product, right place was mentioned two times and reverse logistics and right product, right place was mentioned once. This sums up to five times a mentioning of the logistics capability enabling availability services).

	Inventory visibility	Maximum availability	Right product, right place	Substitution offering	
Forward Logistics	0	2	2	0	Availability Services Logistics 5
Reverse Logistics	0	0	1	0	

Figure 44: Translation of fourth to third level theoretical coding

This table shows that all capabilities enable between zero and five services and all services are affected by between one and ten capabilities. It shows that availability, delivery, and return services are affected by most capabilities and these will be discussed in more detail.

To enable availability, the most important part is inventory control. To be able to use other channels to fulfill in case of stock-outs, dynamic fulfillment, a retailer need to know its own stock positions real time (i.e. a retailer cannot promise availability if stock levels are unknown). As one interviewee mentioned: *“we offer store stock levels on our website by providing our own real time information to the consumer. Then the consumer can say: I want this item and I want to reserve it in the store now.”* Therefore, enabling real time visibility information is the most important for redirecting consumers to other channels. When retailers want to take it a step further to seamless fulfillment, store management and logistics will also be a large part of the equation. Fulfilling from any channel towards consumers in any case creates extra complexities and the right capabilities should overcome those. Your employees will have to be trained to be order pickers in addition to sales associates and in addition, logistics will transform from purely warehouse to consumer into store, local hubs, and warehouses to consumers. When this form of fulfillment is extended for network retailing and wholesalers will also be integrated, partner management will become more important as well. Using partner stores as alternative availability or fulfill wholesale partners' orders seamless you're your distribution network needs the right management. One interviewee elaborated on an example of this where he mentioned *“integrating wholesale partners is hard, but we are trying a pilot with wholesale partner A now. We integrated them into our ship from store program where we can ship their orders from our stores.”*

Delivery services are most demanding for capabilities as already indicated by the high numbers on the heat map of Table 8. For example, one of the interviewees mentioned that *“if you go for same day delivery, this asks a very lot of your logistics”*. So in this example, logistics is important to enable delivery speed. However, interviews show two main reasons many capabilities are needed to improve delivery services. One of them is that deliveries start to happen cross-channel. *“If you talk about customers being able to pick-up a delivery or return in store, there will be a new logistics flow, a new financial flow, a new administrative flow, and all processes that correspond to those flows need to be integrated and managed to enable this on all levels”* is how one interviewee elaborated on this. So capabilities need to be managed cross-functional and in this example, logistics, finance, inventory control, and order management are already needed for delivery location services. The second main reason that makes delivery services demanding is the flexibility that is required to deliver fast, in different time slots, and in different locations. For example, interviewees see the need to decentralize their warehousing to be able to be more flexible. One of the interviewed companies used to ship from Amsterdam only, but just opened two extra warehouses and is also using ship from store now and another interviewed company is starting to shift from purely centralized warehousing to more decentralized warehousing. The additional capacity to use stores as decentralized warehouses further increases the need for capabilities in this area. In addition, logistics is influenced heavy by this flexibility. Shipping from one warehouse in bulk volumes is much less capability demanding than shipping small parcel sizes from stores or local hubs in small timeframes: *“the nature of online business is piece picking, so that is a lot more intensive. Whereas if you deliver to a key account, you deliver container loads of products and that is much more efficient”*. When going to network retailing, all these aspects will also expand towards wholesale partners and franchises, making partner management even more important and also 3PL partners need to be managed in a different way due to the high burden they will receive with this flexibility.

For return services, there are similar capabilities needed as for delivery services, since flows are similar. The only difference is the direction of the flow. However, logistics, more specifically reverse logistics, are more important to process returns more profitable. As described in chapter 5.4., returns need to be brought back in the regular product flow quickly to avoid markdowns and in addition, they can be used to fulfill where demand is high. As an example, one interviewee would like to use returns so that *“a store enters a return into an order management system, where this system*

will start to think: this item just came back, where in the network do we need it, and where can we immediately use it again". This way, returns could be used to avoid stock-out situations, increase supply in high demanding areas, and be utilized as effectively as possible.

Finally, in addition to supply chain capabilities enabling fulfillment services, there seems to be some spillage: some non-supply chain capabilities like finance and marketing are seen as important to enable customer fulfillment services and some other, non-customer fulfillment services are also enabled by supply chain capabilities. For example, one interviewee mentioned that for returns, "it is about the ease of how it goes, also the payment". Here, finance is necessary to enable reimbursement time.

Table 8: Heat map capabilities (rows) to services (columns) – theoretical coding¹³

	Ordering services	Availability services	Delivery services	Return services	CSR	Customer experience	Product
e-Commerce management		2	4			1	
General supply chain management				1			
Logistics		5	16	14	1		
Partner management		6	21	11	1	1	
Store management		7	16	6		4	2
Supply and demand		2	3				
Inventory control		12	12	3			
Order management		2	4	7		2	
Warehousing		1	9				
Finance	1		5	6			1
Legal							
Marketing		1	3	1		13	1

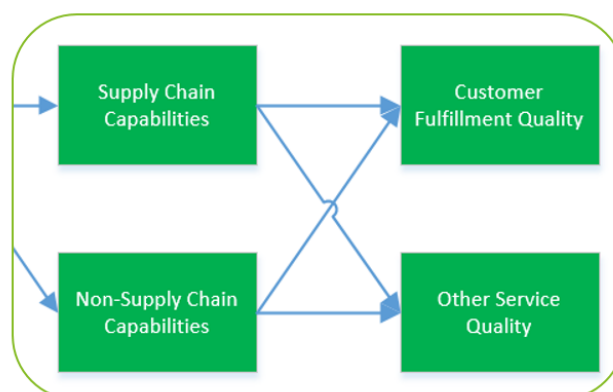


Figure 45: Back to the conceptual model: capabilities to services

¹³ This table shows what capabilities (vertical axis) enable what services (horizontal axis) and how many times the linkage is mentioned in interviews (e.g. logistics enabling delivery services is mentioned 16 times)

In conclusion, it seems that supply chain capabilities mainly enable customer fulfillment services, non-supply chain capabilities mainly enable other services, but there is some spilling in both directions (Figure 45). Furthermore, availability, delivery, and return services are most mentioned as demanding for supply chain capabilities and partner management, logistics, store management, and inventory control is most mentioned as enablers.

6.3. Capabilities to capabilities

Another interesting insight is that capabilities do not stand alone in an omnichannel strategy. Often, one capability affects or leverages the effect of another. One interviewee mentioned this specifically by saying there is “a very large chain dependency” among capabilities and elaborated that “If an error is entered in the chain in China, it is garbage-in, garbage-out and that error gets a multiplier that results in a fulfillment that is not geared towards serving the end consumer anymore”. This chapter will elaborate on these dependencies between capabilities. Like in the previous chapter, Table 9 provides a level three linkage between the capabilities and Table 23 to Table 26 in Appendix H provide a detailed view between the capabilities.

Results show that all capabilities affect between one and eight other capabilities and all capabilities are affected by between zero and eleven capabilities¹⁴. The interactions that are mainly given are between supply chain capabilities. Especially partner management and the combination of order management and inventory control are mentioned to affect a lot of other capabilities. For example, when a wholesale partner is integrated into the customer fulfillment network, different capabilities will be combined: “What we are doing is integrating wholesaler A into our ship from store program. So we send store stock levels to wholesale retailer A. As soon as someone orders from wholesaler A, the item can be send from our stores”. In this case, inventory control, partner management, order management and forward logistics interact with each other. If one of the aspects does not work right, the underlying idea of flexible shipping will not work as effective as possible. On the other hand, logistics, partner management, and store management are often mentioned to be affected by a lot of other capabilities.

Another interesting finding is that a non-supply chain capability, finance, is often mentioned to affect the supply chain capabilities necessary for services. When, for example, working with franchise stores, one interviewed company works with incentive systems to motivate those stores to cooperate. Payment management here is important to enable this partnership management. This indicates that supply chain capabilities on their own might not be sufficient to enable omnichannel services in a profitable way.

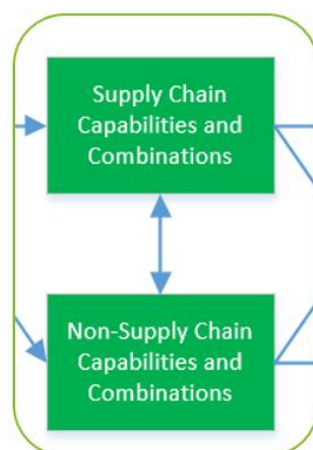


Figure 46: Back to the conceptual model: capabilities to capabilities

¹⁴ Capabilities can affect themselves on this level, if on a more detailed level two different capabilities in the same concept affect one another. On the detailed level, no interactions between the same constructs exist.

Table 9: Heat map capabilities to capabilities – theoretical coding¹⁵

	e-Commerce management	General supply chain management	Logistics	Partner management	Store management	Supply and demand planning	Inventory control	Order management	Warehousing	Finance	Legal	Marketing
e-Commerce management		1		3	1				2			
General supply chain management			1	3			1	3	1	1		1
Logistics		1	4	9	5		1	2		1		
Partner management	3		7	2	7		4	1	3			1
Store management	1		4	3								
Supply and demand planning			2	1	1				1			
Inventory control	1		5	5	3	2		1	1			
Order management	1		4	8	2	1	1		1	2		
Warehousing	2		7	3	1			1				
Finance		1	8	10	2			1		2		
Legal												1
Marketing				2								

In conclusion, capabilities show a lot of interactions between one another and implementing them in a separate manner might not be sufficient for an omnichannel strategy. Therefore, not only the capabilities are important, but also their combinations (Figure 46) and a lot of thought has to be given to implement capabilities into the organizational structure and into other capabilities in order to let them work effectively.

6.4. Other linkages

Besides the main effects of capabilities to services and the capabilities among themselves, there are some additional links that are important. First, when implemented, services provide certain benefits. As mentioned in chapter 5.5., the main benefit to enable is customer satisfaction, but some other benefits are found as well. Table 27 in Appendix H shows a more detailed view on the relations between services and benefits.

Customer fulfillment services are mainly linked to revenue increase and marketing benefits. One interviewee mentioned, for example, that even in case of strong return services, “you have the

¹⁵ This table shows what capabilities (vertical axis) affect what other capabilities (horizontal axis) and how many times the linkage is mentioned in interviews (e.g. logistics affecting store management s is mentioned 5 times)

extra costs and margin hit to take on the returns, but those customers will be loyal to the brand, they are continuing coming back more and more”. Especially delivery services and availability services are often mentioned as increasing revenue, while return services are more often mentioned as increasing loyalty. This is logical since delivery and availability services are placed closer to the current sale and return services are more geared towards future sales (i.e. it has less impact on the current purchase, since that purchase is going to be returned). So customer fulfillment services create benefits due to increased customer satisfaction (Figure 47).

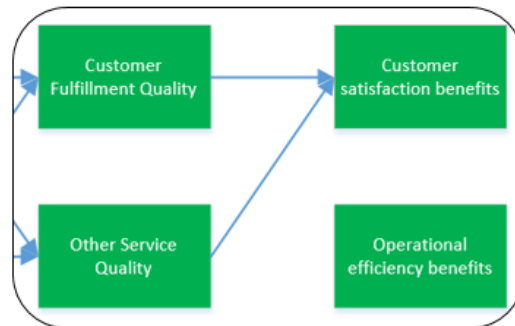


Figure 47: Back to the conceptual model: services to benefits

Another interesting insight is that capabilities do not only provide benefits indirectly through services as just discussed, but also directly. Table 28 in Appendix H shows the detailed links.

Even though capabilities also generate benefits, they do in another way than services. Where services generate benefits through customer satisfaction increase, capabilities generate cost reductions by operational efficiency and these benefits are mainly associated with supply chain capabilities¹⁶. Especially logistics can create cost reduction due to efficiently configuring the necessary logistics (e.g. reverse logistics that enable returns to be used in store directly could decrease shipping costs towards DCs), followed by inventory control that creates possible inventory reductions: “you can reduce inventory, because you can offer them as an integral stock and therefore do not have to keep safety margins at every individual stock position”. So in conclusion, supply chain capabilities and combinations generate operational efficiency benefits (Figure 48) directly and value added benefits (customer satisfaction) indirectly through services.

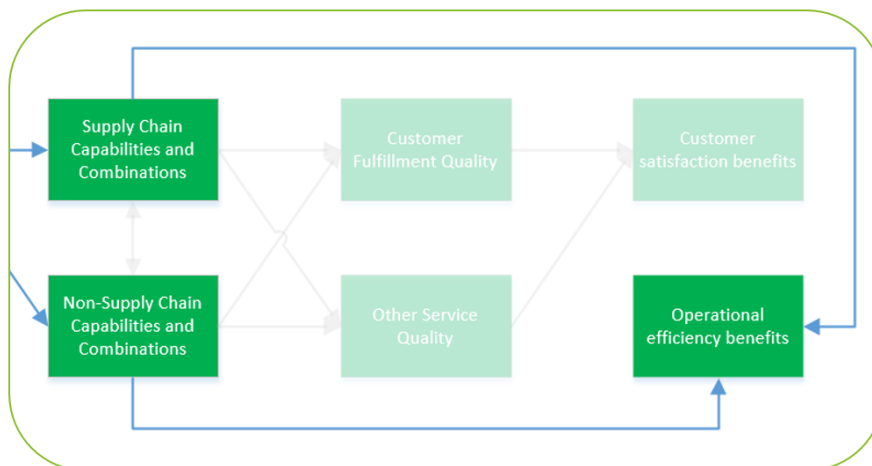


Figure 48: Back to the conceptual model: capabilities to benefits

¹⁶ Although the scope of the research excluded cost reduction capabilities, the possible cost reduction benefits associated with capabilities that (indirectly) add value can still be assessed

However, unfortunately, capabilities do not only have benefits, but also challenges and costs to implement and operate them. Table 29 and Table 30 in Appendix H provide a detailed overview of the linkages between capabilities and costs.

The main insight, as already touched upon in chapter 5.5., is that especially complexity seems to be a large challenge, since it is mentioned for almost all capabilities and also often. This is also a logical result, since B&C retailers have difficulty to compete with new, pure players. The fact that there is complexity in their current way of working could explain a part of this struggle, since for new players this incumbent complexity is less. One of the interviewees sees that they, as many other incumbent firms *“built a system and another system and another system and another system and then you have SAP. It is difficult to bring it back to one common system, one common flow”*. This indicates that already all IT related capabilities (e.g. inventory control, order management, and finance) experience this complexity. In addition, the newness of omnichannel creates a situation where not only there is a lack of knowledge, but industry-ready solutions are also missing: *“A lot of work what we are doing now is custom made and we have to build it from scratch. That is a big challenge since sometimes you are just reinventing the wheel, while you expect that there are some solutions available”*. This newness also contributes to increased resistance within and beyond the organization. One interviewee used the Dutch saying *“onbekend maakt onbemind”*, which means that the unknown is unloved. Also the employees that are working in the offline world are often shivery of online, since they are afraid their business will be cannibalized upon and management is often afraid due to the unknown return of investments of omnichannel projects. Finally, a large amount of money is necessary to implement omnichannel operations. One interviewee mentioned, for example: *“I just launched a new website, which also means a new back-end of the website, new logistics systems, pick-up locations, and the entire design of the warehouse infrastructure. That is a serious amount of money involved”*.

Besides implementation challenges and costs, there are issues on the operational side. Here, lost revenue is mentioned most as a cost driver. On the one hand, this seems to contradict the fact that capabilities enable services, which in turn enable revenue growth. On the other hand, the revenue losses are often on a channel level (e.g. cannibalization of one channel for the good of another), but the revenue increase is based on the entire system (e.g. cannibalization might decrease revenue for one channel, but the total system could have a revenue increase). So therefore, even though there is lost revenue in one channel, it is not recommended looking at this cost too much since total revenue will increase. Also logistics costs are often mentioned to increase significantly due to omnichannel. Again, that seems like a contradiction since logistics costs were also expected to decrease in the benefits section. However, the amount of logistic movements can decrease (e.g. a trip from the warehouse to the consumer is not necessary with in-store delivery, where stock of the store can be used), but the percentage of more expensive movements increase (e.g. offering same day delivery is more expensive than regular delivery). Whether the scale is more in favor of cost decrease or cost increase depends on the magnitude of difference in both sides and depends on the organization and its market.

In conclusion, a lot of challenges are associated with implementing the capabilities and some capabilities also have operational costs (Figure 49), although those are often seen as less important.

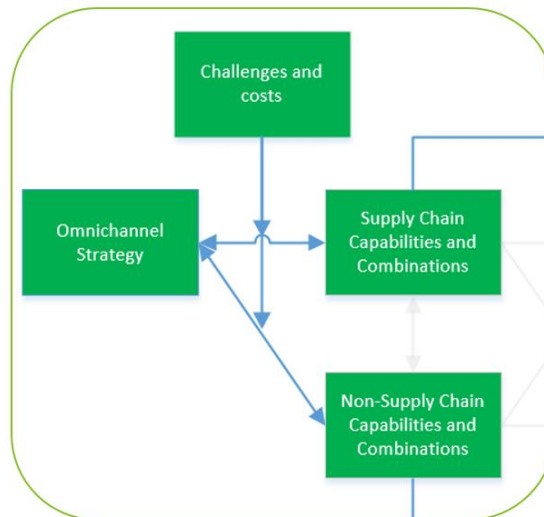


Figure 49: Back to the conceptual model: costs to capabilities

6.5. Additional findings

The grounded theory analysis revealed some interesting insights in the omnichannel landscape and the corresponding strategy, capabilities, and services. However, besides these concepts and relations, some other interesting findings came out of the interviews:

On a scale from 1 to 5, none of the interviewees ranked their firm higher than a 3 or lower than a 2 when assessing their omnichannel strategy as shown in Figure 50. They all mentioned that they were doing things to get to a higher level, but still a lot had to be done. One retailer also mentioned that not a single retailer currently existing is at level 5 in their omnichannel operations.

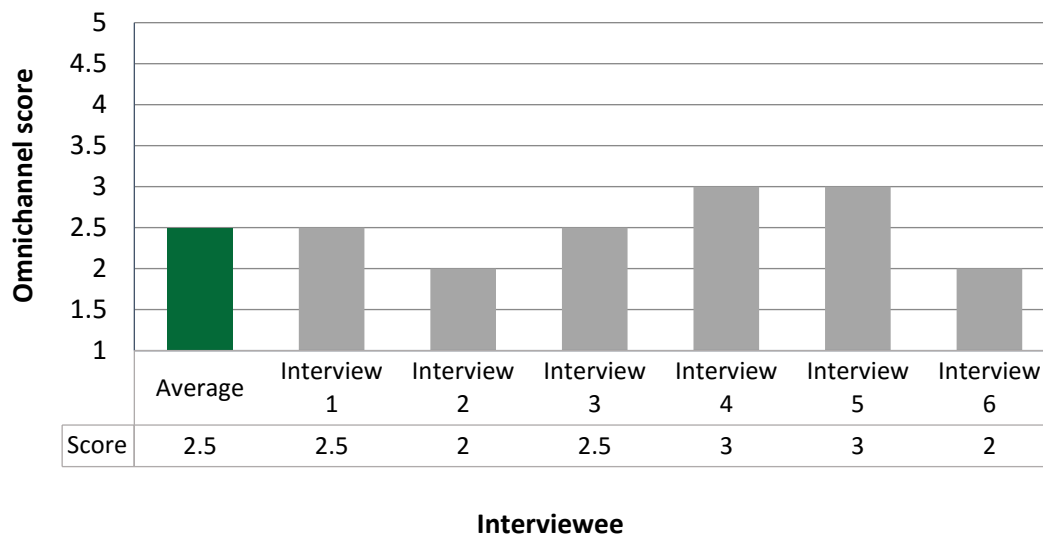


Figure 50: Omnichannel scores given by interviewees

Retailers are inconclusive about whether they have to achieve a level 5 score at all costs. The low-end warehouse and both mid-end fashion companies think they should reach level 5 to be able to compete, while both high-end sport apparel companies do not think this is the case. They think they should reach for higher levels of omnichannel, unless it will go at the cost of product quality (i.e. when budget cuts on product quality are necessary to be able to implement omnichannel capabilities). This conclusion could be expected, since high-end firms are usually known for high quality and that is their competitive advantage. Mid-end firms more often base their competitive advantage on other aspects like omnichannel services and might therefore think this is more important. Another reasoning could

be that sports apparel firms are more niche players than general fashion firms and therefore need the competitive advantage of the omnichannel strategy less compared to more generic firms. However, even though the high-end sport apparel companies do not think a level 5 has to be necessary, they still acknowledge the importance of an omnichannel strategy and the right customer fulfillment proposition. Also one of the retailers mentioned that the perfect omnichannel state, the level 5, is not a static state: *“there is rapid and disruptive growth in retail expectations. It could be that if we spoke again in a year, I would still rate myself at a two. Did nothing happen in that time? Yes, but then I just was not able to keep up!”*

In addition, where low-end firms are usually known for low prices, the interview results show that they have the most difficulty in providing cost-leadership in fulfillment. The lower margins they have and smaller order sizes leaves less room for taking the fulfillment costs. The low-end retailer elaborated on this by discussing their free delivery threshold: *“I think 50 euro as threshold is a shame. I want to go to 20 euros. However if you do the math, we cannot bear those costs now”*. So there seems to be a contradicting situation where low-end firms want to be cost-leaders, but that same fact makes it difficult to be so on a fulfillment perspective due to lower product margins.

Besides the above, no noticeable difference between the different retailer groups is found. When it comes to what are important fulfillment services, capabilities necessary or strategic decisions that need to be made, there seems to be a reasonable similar view across the groups. This might be due to the fact that omnichannel is a relatively new concept and a lot of companies might not have the real live experience to differentiate their view drastically.

6.6. Synthesis

The theoretical coding provides links between the concepts of chapter 5. Figure 51 shows the holistic view of this model and therefore the model of the retailer perspective. The model synthesizes all results of this chapter to one model where the omnichannel strategy is the basis for the capabilities and services. The supply chain capabilities and non-supply chain capabilities enable the services, as well customer fulfillment services and other services. Also, the capabilities affect one another. Capabilities can be implemented, but doing so is hampered by with costs and challenges. However, capabilities do result in operational efficiency and services generate customer satisfaction. Finally, the concepts of customer fulfillment services mentioned in the interviews correspond to the delivered services provided in the industry benchmark.

The question remains whether the values of the services (the actual quality of the delivered services) is similar to the service quality consumers expect. The fact that there is a large difference in delivered customer fulfillment service quality between companies in the industry benchmark might indicate that this is not always the case. The next chapters aims to find more insights in this potential gap.

6.7. Conclusion

The results of this chapter show that the components of omnichannel retailing are not stand-alone activities or concepts. Instead, there are a lot of correlations and interactions in the model. Most interesting is the high dependence of capabilities to one another. The effect of one capability can ripple through the supply chain or bad integration with other capabilities could inhibit the effect of others. Careful thought has therefore to be given to how capabilities should be implemented.

As expected, the supply chain capabilities in place will enable customer fulfillment services. To enable availability services, inventory visibility seems the most critical component, accompanied by store management, logistics, and partner management if a retailer desires to take it to the highest level. For delivery and return, inventory visibility is again key, but also it needs more flexible warehousing and logistics accompanied by thorough store management and partnership management in order to fulfill fast, flexible, and convenient. Interestingly, there does not seem to be a lot of work in implementing ordering and payment services, since almost no capabilities are required.

Also, there is spillover across concepts. Supply chain capabilities also enable other services and non-supply chain capabilities also help enabling customer fulfillment services. This strengthens the proposition that there is a large effect of capabilities on one another and specific capabilities alone are not enough to be able to arrange customer fulfillment services in a profitable way.

Finally, services will improve customer satisfaction and generate corresponding benefits. On the other hand, capabilities generate operational efficiency benefits. Therefore, implementing a strong omnichannel fulfillment strategy can cut on both sides of profitability: revenue and costs. These benefits will be needed to offset the costs associated with the challenges of implementation. Especially the rearrangement of incumbent processes and systems towards omnichannel is shown to be complex.

With the large amount of capabilities needed to enable the customer fulfillment services, the corresponding effect of capabilities on each other, and the challenges associated with these capability implementations, it is important to enable the right customer fulfillment services. Although the interviews show that there are ideas on what is important, it is important to know what the consumer actually values. The next chapter will elaborate on this consumer view.

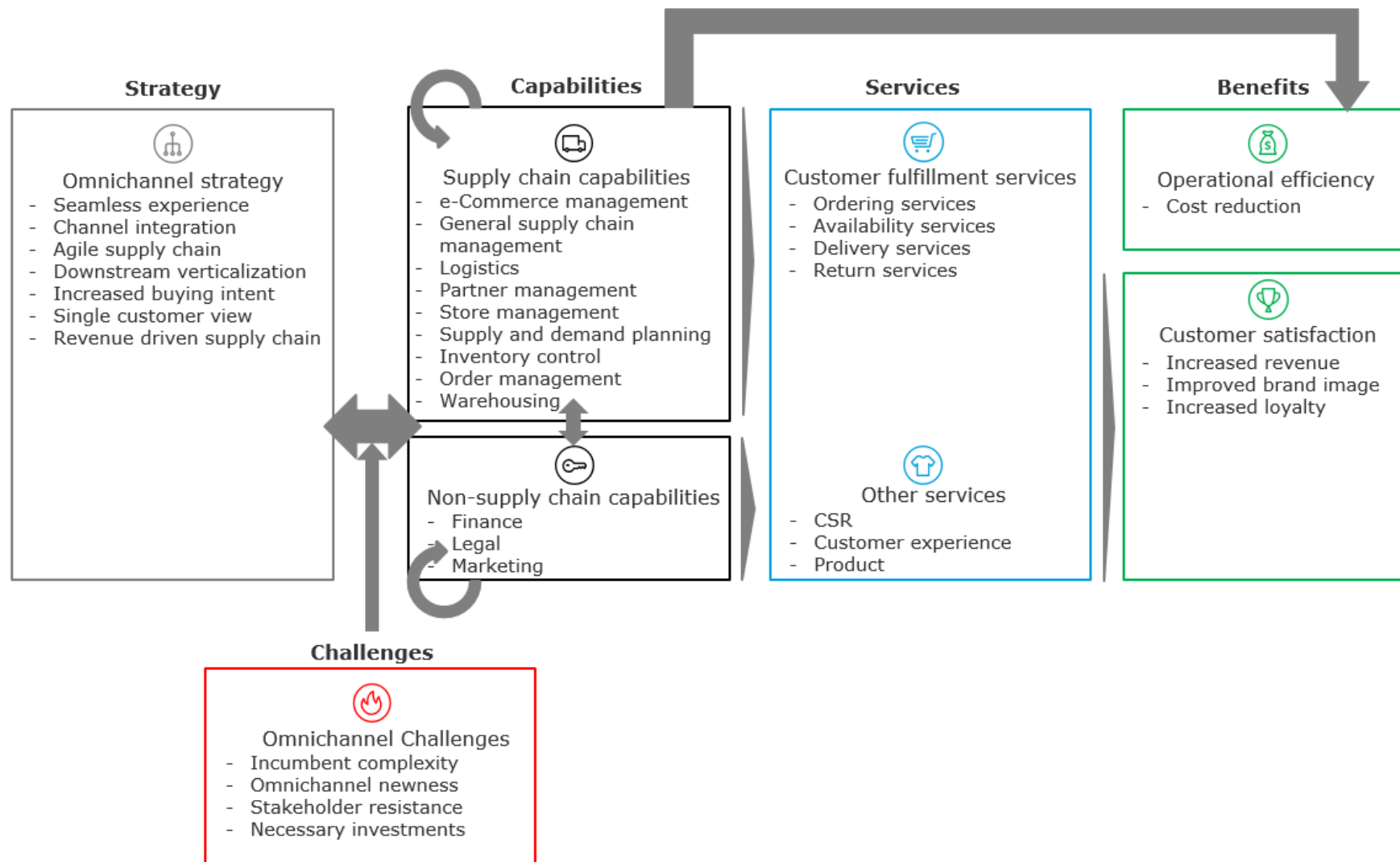


Figure 51: Empirical model – Retailer perspective

7. Results consumer's perspective

The previous chapters elaborated on the retailer's view of customer fulfillment: "what are they doing?", and "what is important?". However, the omnichannel strategy has to enable customer experience and satisfaction. Therefore, it is important to listen to the voice of the consumer and this survey is aimed to do this. With the results, it is aimed to find what drives the preferences of the consumers and establish ways to meet those customer demands. To get valuable information out of the survey, the survey is first prepared, then assumptions are tested and results are provided. In the end, a synthesis and conclusion is provided.

7.1. Data preparation and assumptions

Before the analysis is performed, data is prepared to assure reliable and valid results. First, data is cleaned and next, data validity is assessed. The detailed cleaning results are shown in Appendix I.1 and the summarized cleaning results are shown in Figure 52.

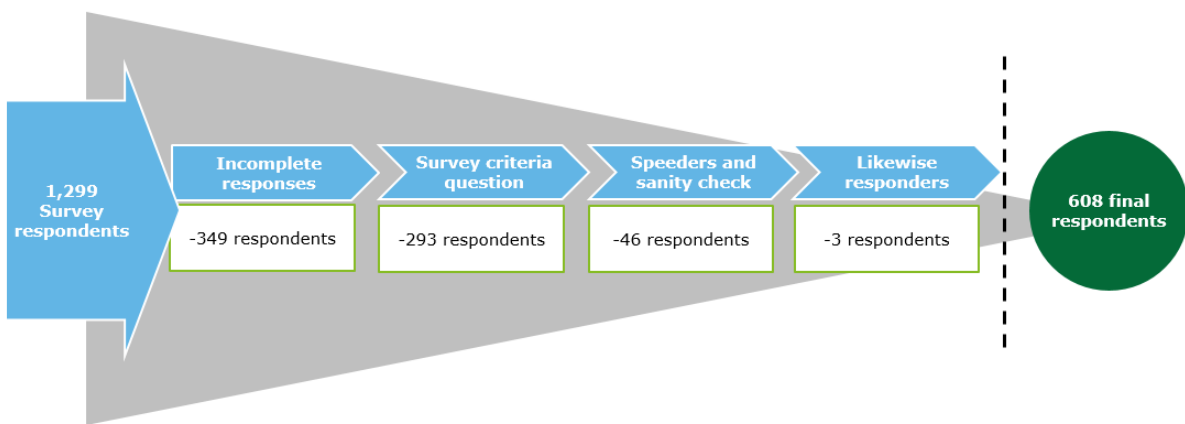


Figure 52: Dataset cleaning funnel

In addition, some assumptions are required for parametric tests. These assumptions are normally distributed data, homogeneity of variances and independence (Field, 2009). Appendix I shows a detailed assessment of these assumptions.

In conclusion, due to the high number of respondents, thorough cleaning could be achieved while maintaining a high number of respondents. Furthermore, validity is assessed positive with some small exceptions. Finally, the assumption of homogeneity of variances was not met, resulting in the use of non-parametric tests for analysis.

7.2. Demographic descriptives and shopping behavior

This chapter shows the descriptives of the demographics and shopping behavior. Of the 608 cases remaining in the dataset, 45.1% is male and 54.9% is female. Furthermore, the respondents were all adults with 23.5% between 18-29 years old, 22.5% between 30-44 years old, 32.4% between 45-59 years old, and 21.6% was 60 years or older. 19.9% of the respondents had a low education, while 37.5% had a middle education and 42.6% had a high education. Of all respondents, 42.7% was single, while 57.3% had a partner. Furthermore, 32.9% had kids living in with them and 67.1% did not. 62.6% of the respondents had a payed job, of which 62.0% full-time (38.8% of entire sample). 11.1% of the respondents still studied, 4.9% was looking for a job, 6.3% did volunteering, 11.0% was unemployed without looking for a new job and 11.7% was retired. Independent of the working scenario, 20.6% was from home in office hours, 43.9% was often from home outside of office hours and 35.5% was at home most of the time. Furthermore, Figure 53 shows the distribution of annual income among the respondents.

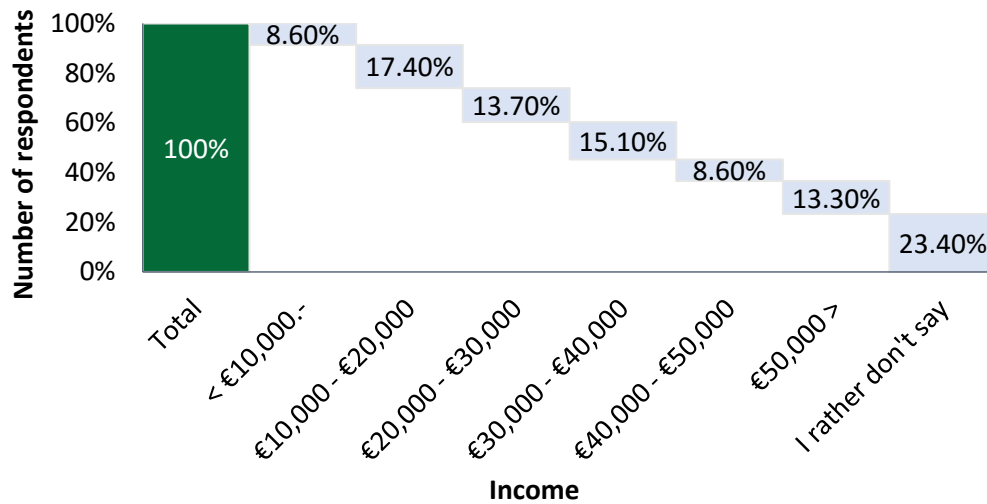


Figure 53: Distribution of annual income

Regarding the place respondents live (Figure 45), 35.7% lives in the main 3 Dutch cities (Amsterdam, Rotterdam, and The Hague) or bordering municipalities. 31.9% lives in one of the remaining cities in the provinces North-Holland, South-Holland or Utrecht, 6.1% lives in the provinces Friesland, Groningen or Drenthe, 11.7% lives in Overijssel, Gelderland or Flevoland and 14.6% lives in Noord-Brabant, Limburg or Zeeland. 75.7% lives in urban areas while 24.3% lives in rural areas.

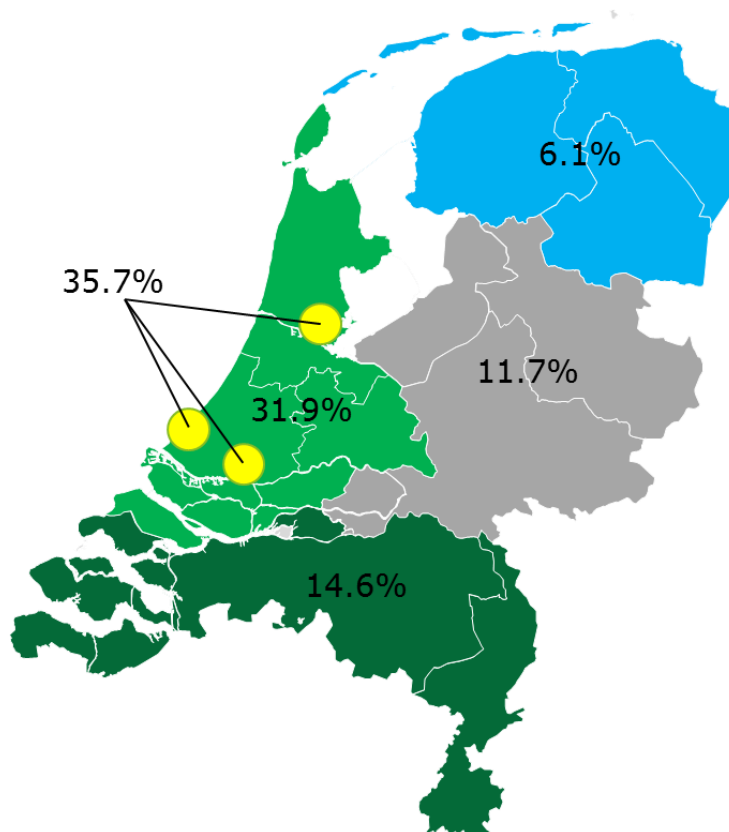


Figure 54: Distribution of living location

Besides demographics, respondents show different behaviors in shopping. Figure 55 shows the monthly spend on clothing of the respondents. Furthermore, of this spending, 43.36% is spend on

online purchases ($\mu=43.36$, $\sigma=28.34$). Furthermore, respondents spend on average 8.59 hours shopping ($\mu=8.59$, $\sigma=12.87$), of which 41.70% online ($\mu=41.70$, $\sigma=31.69$). 26.0% of respondents usually only buys one item per purchase. For 53.6%, this is 2 or 3 items, 17.1% buys between 3 and 5 items per purchase, 2.3% buys between 5 and 10 items and 1.0% buys more than 10 items per purchase. Furthermore, 57.1% focusses mainly on the price of the product when purchasing, while 40.5% focusses mainly on quality and 2.5% on brand. However, 16.1% indicates that when they buy clothing, they like to buy the same brand. 32.6% rather buys at the same shop, 10.9% via the same channel and for the majority (40.5%) it does not matter. When it comes to the use of digital channels for gathering information on clothing, 88.3% uses this before going to the store, 7.7% during the ride to the store, 16.0% in the store and 8.9% after their purchase.

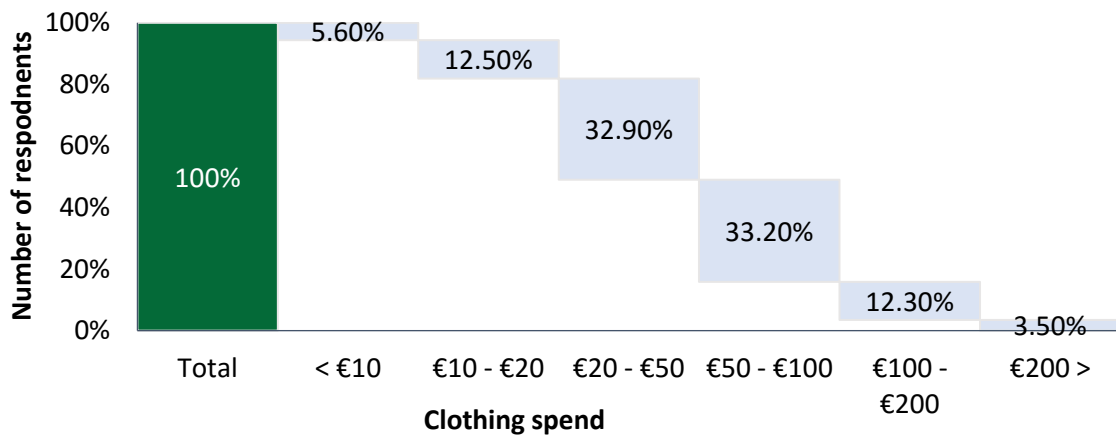


Figure 55: Distribution of monthly clothing spend

To investigate shopping behavior a bit further before the main analysis, bivariate correlations are computed using spearman correlations¹⁷. When looking at the bivariate correlations of these variables, there are a lot of significant correlations. These correlations are summarized in Table 10 and a detailed description is provided in Appendix I. Especially spending more money or time shopping, as well in total as only online, correlates with many other aspects of shopping behavior.

¹⁷ Spearman correlations are used to correct for ordinal variables and heterogeneous variances.

Table 10: Correlations between shopping behavior variables¹⁸

	Shopping spend (€)	Online shopping spend (%)	Time spend shopping (h)	Online time spend shopping (%)	Products per purchase (#)	Buying last minute (Likert)	Spending more than planned (Likert)	Thoroughly researching before purchase (Likert)	Following fashion trends (Likert)
<i>Shopping spend (€)</i>	0	+	+	+	+	0	+	0	+
<i>Online shopping spend (%)</i>	+	0	+	+	+	0	+	+	+
<i>Time spend shopping (h)</i>	+	+	0	+	+	0	+	0	+
<i>Online time spend shopping (%)</i>	+	+	+	0	+	+	+	0	0
<i>Products per purchase (#)</i>	+	+	+	+	0	+	+	0	0
<i>Buying last minute (Likert)</i>	0	0	0	+	0	0	+	0	0
<i>Spending more than planned (Likert)</i>	+	+	+	+	+	+	0	-	+
<i>Thoroughly researching before purchase (Likert)</i>	0	+	0	0	0	0	-	0	+
<i>Following fashion trends (Likert)</i>	+	+	+	0	0	0	+	+	0

Finally, when delivery and return services are not the way a respondent likes, only 5.3% still buys the product directly. 24.0% will go to the store to purchase the product and 45.9% will first look for an alternative place to purchase the product. 24.8% will not purchase the product. Also when the experience with regard to delivery or return is not satisfactory in retrospect, 53.8% will not order at the same store again and 41.4% will look for alternatives. Only 4.8% will not be affected by a negative experience. This again shows the importance of good customer fulfillment quality, because it could result in between 24.8% and 70.7% no-sale percentage before the actual purchase and it could result in between 53.8% and 95.2%¹⁹ loss of retention afterwards.

7.3. Main effects results

This chapter discusses the results based on the total dataset. It will be split into the four main segments, corresponding to the industry benchmark and interview results. First, ordering and payment is discussed, followed by availability and delivery. The chapter will end with a discussion on returns.

¹⁸ Even though the correlations show indication of multicollinearity, this is not an issue since these variables are not simultaneously used in the ANOVA tests

¹⁹ For upfront and afterward no-sales, 'looking for alternatives' is seen as a possible no sale, which creates a margin between minimum and maximum loss of sales or loss of retention

Ordering and payment

For ordering, there are three different items to analyze: 1) the use of channels, 2) the use of payment methods, and 3) thresholds for online ordering and free delivery. For the first, the means of the usage of different channels for a purchase were compared to the mean of all channels by means of a one sample t-test²⁰. Figure 56 shows the results of this analysis. It shows that the use of a physical store or a website is significantly more likely compared to the overall mean of all channels. For a mobile website, it cannot be said with confidence that there is a difference and for the other channels, a significantly lower likelihood of usage can be seen.

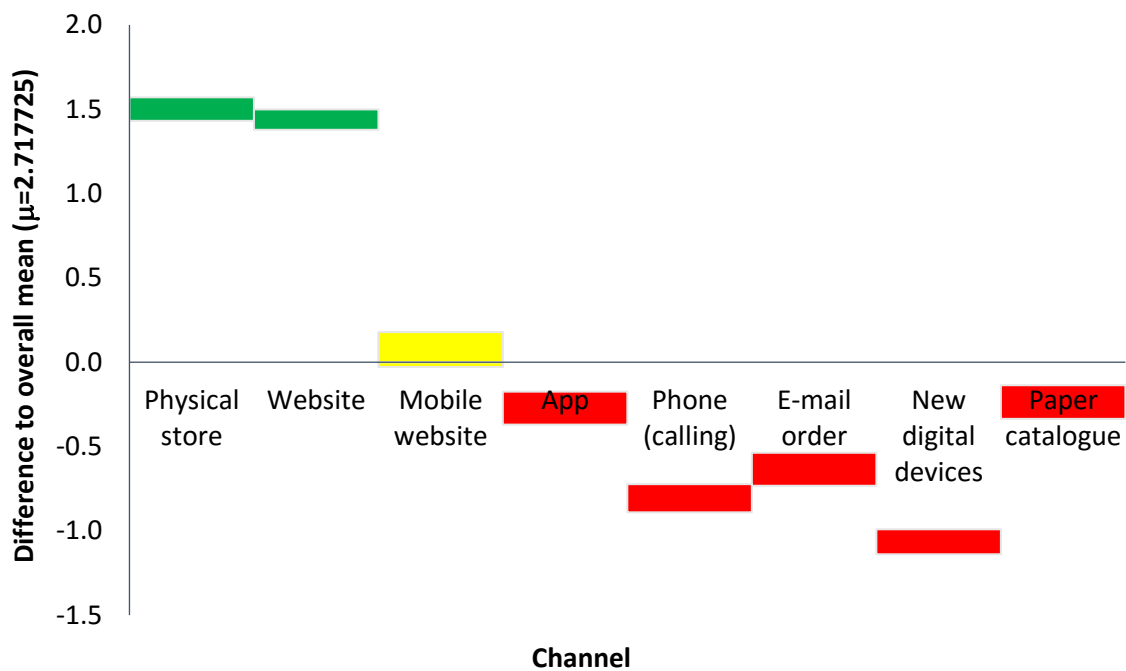


Figure 56: 95% confidence intervals of mean difference compared to overall mean for channel use

Next, a deeper dive into channel usage is done by using a paired sample t-test and Wilcoxon signed rank test for all channels and the results are summarized in Table 11²¹. This shows significant differences in means between the specific usages of purchasing channels. A detailed description of results is shown in Appendix I. The results show that use of all channels significantly deviate from another, with disrespect of the pair physical store – website and app-paper catalogue. Physical store and website are, in line with Figure 56, most likely to be used, followed by mobile website, app and paper catalogue, e-Mail, call, and new digital devices.

²⁰ No better alternative for the one sample t-test was available to correct for heteroscedasticity

²¹ Wilcoxon signed rank test is used in addition to paired samples t-test to correct for heteroscedasticity

Table 11: Paired-sample differences of channel use

	Physical store	Website	Mobile website	App	Phone (calling)	E-mail order	New digital devices	Paper catalogue
Physical store		0	+	+	+	+	+	+
Website	0		+	+	+	+	+	+
Mobile website	-	-		+	+	+	+	+
App	-	-	-		+	+	+	0
Phone (calling)	-	-	-	-		-	+	-
E-mail order	-	-	-	-	+		+	-
New digital devices	-	-	-	-	-	-		-
Paper catalogue	-	-	-	0	+	+	+	

For payment methods, a similar analysis is performed as for channels used. Since payment methods were binary variables (either use or not use), means and differences in means are also percentages of use that correspond to these means (e.g. the mean of credit card use of 0.2714 corresponds to 27.14% respondents that would use a credit card). The one sample t-test shows that credit card use is 3.6% more likely to be used ($\Delta\mu=0.0357$, $p=0.048$) than the average of all payment methods ($\mu=0.2357$), iDeal is used 64.3% more likely ($\Delta\mu=0.6426$, $p=0.000$), and afterpay 29.2% ($\Delta\mu=0.2923$, $p=0.000$). PayPal is not used significantly more or less than average ($\Delta\mu=-0.0054$, $p=0.750$). The other payment methods are used significantly less than the average. Gift cards are used 5.1% less ($\Delta\mu=-0.0515$, $p=0.001$), payment in parts is used 14.4% less ($\Delta\mu=-0.1436$, $p=0.000$), transfer upfront is used 17.8% less ($\Delta\mu=-0.1781$, $p=0.000$), cash to courier is used 20.1% less ($\Delta\mu=-0.2012$, $p=0.000$), membership cards are used 16.7% less ($\Delta\mu=-0.1666$, $p=0.000$), and other payment methods (e.g. bitcoins) are used 22.4% less ($\Delta\mu=-0.2242$, $p=0.000$).

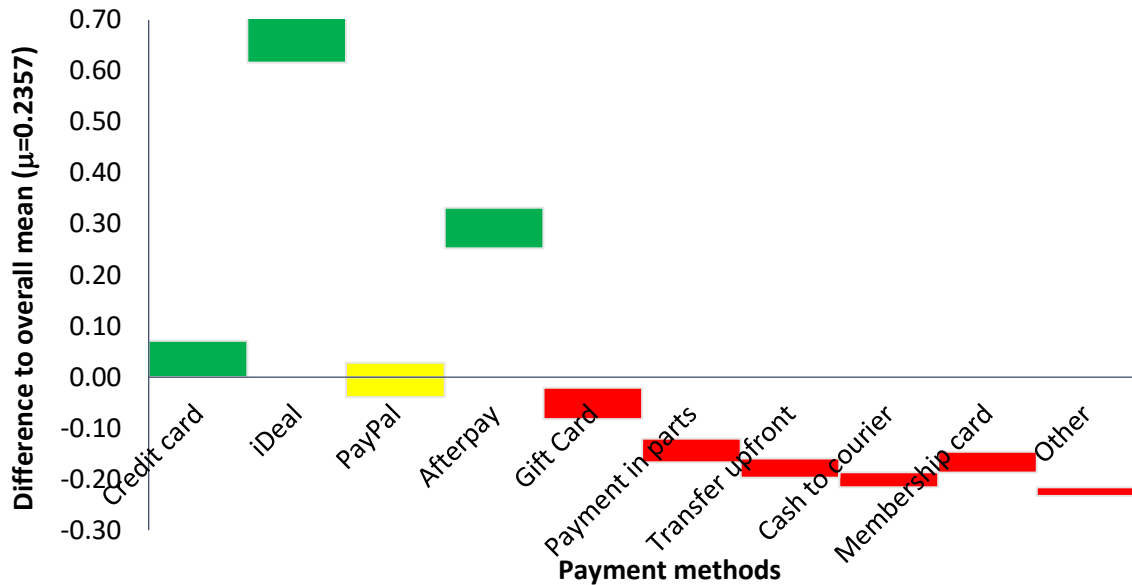


Figure 57: confidence intervals of mean difference compared to overall mean for payment

Dive a bit deeper and the differences between the separate payment methods can be assessed. First of all, iDeal has a significantly higher mean than other payment methods ($\mu=0.8783$, $\sigma=0.3272$), which is followed by afterpay ($\mu=0.5280$, $\sigma=0.4996$). Then, credit card ($\mu=0.2714$, $\sigma=0.4450$) and PayPal ($\mu=0.2303$, $\sigma=0.4214$) are used most likely. Both have significantly higher means than the remaining payment methods, besides compared to their own. For the remaining payment methods, gift card has the highest mean ($\mu=0.1842$, $\sigma=0.3878$), followed by payment in parts ($\mu=0.0921$, $\sigma=0.2894$), membership card ($\mu=0.0691$, $\sigma=0.2538$), transfer upfront ($\mu=0.0576$, $\sigma=0.2331$), cash to courier ($\mu=0.0345$, $\sigma=0.1828$), and other payment methods ($\mu=0.0115$, $\sigma=0.1068$).

Table 12: Paired sample differences in payment methods

	Credit Card	iDeal	PayPal	Afterpay	Gift Card	Payment in parts	Transfer upfront	Cash to courier	Membership card	Other
Credit Card	-	-	0	-	+	+	+	+	+	+
iDeal	+	-	+	+	+	+	+	+	+	+
PayPal	0	-	-	-	+	+	+	+	+	+
Afterpay	+	-	+	-	+	+	+	+	+	+
Gift Card	-	-	-	-	-	+	+	+	+	+
Payment in parts	-	-	-	-	-	-	+	+	0	+
Transfer upfront	-	-	-	-	-	-	-	0	0	+
Cash to courier	-	-	-	-	-	-	0	-	-	+
Membership card	-	-	-	-	-	0	0	+	-	+
Other	-	-	-	-	-	-	-	-	-	-

The third part of ordering and payment is minimum thresholds. There are two identified thresholds: for the possibility of online ordering and for free delivery. For the first, 55.4% (n=337,

$\sigma=12.26$) thinks there should be no threshold for online ordering. If these respondents are excluded, it can be found that the remaining 44.6% is willing to accept a threshold of, on average, €18.56 ($\mu=18.5646$, $\sigma=17.0005$). As expected, the threshold for free delivery is higher. Here, 24.5% ($n=149$, $\sigma=10.61$) thinks there should be no threshold for free delivery and if these respondents are excluded, it can be found that the remaining 75.5% is willing to accept a threshold of, on average, €28.71 ($\mu=28.7102$, $\sigma=24.5658$).

Availability

When ordered something, the product can be unavailable. This can be on the website, but also in the store. Interviewees mentioned that the ability to see inventory of other channels or even reserve the product in this other channel could prevent no-sales (dynamic fulfillment). For online and offline channel stock-outs, the reaction of respondents are assessed by categorizing in definite sales situation, definite no sales situation and maybe sales situation. For online stock out, Figure 58 shows this effect.

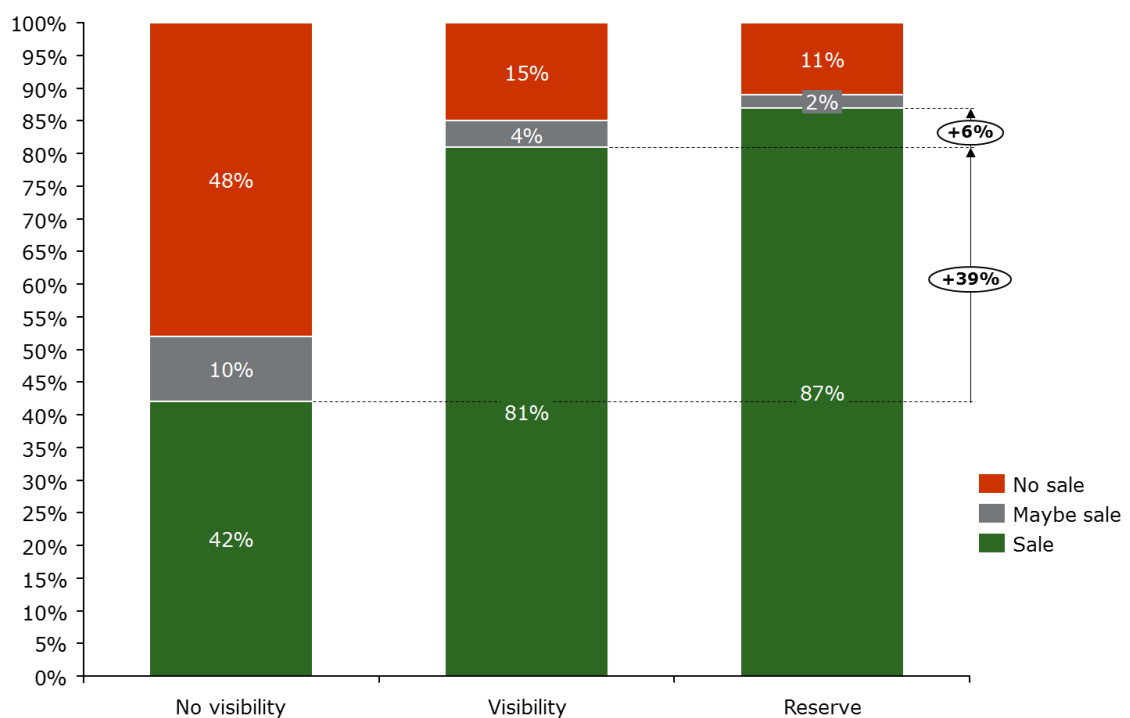


Figure 58: The effect on sales for stock visibility or reserve options in case of online stock-out

When looking closer to the data, a paired-sample t-test, validated with a Wilcoxon test, shows that providing the store visibility option online significantly increases the percentage of sales with an average 39.3% ($\Delta\mu=0.393$, $\sigma=0.5400$). Adding the option to reserve in store creates an additional sales of, on average, 5.8% on top of that ($\Delta\mu=0.058$, $\sigma=0.3610$). From another perspective, providing store visibility online decreases the percentage of no-sales with an average of 32.9% ($\Delta\mu=-0.329$, $\sigma=0.5070$) and the reserve in store option decreases the percentage of no-sales further with an average of 3.9% ($\Delta\mu=0.039$, $\sigma=0.3270$).

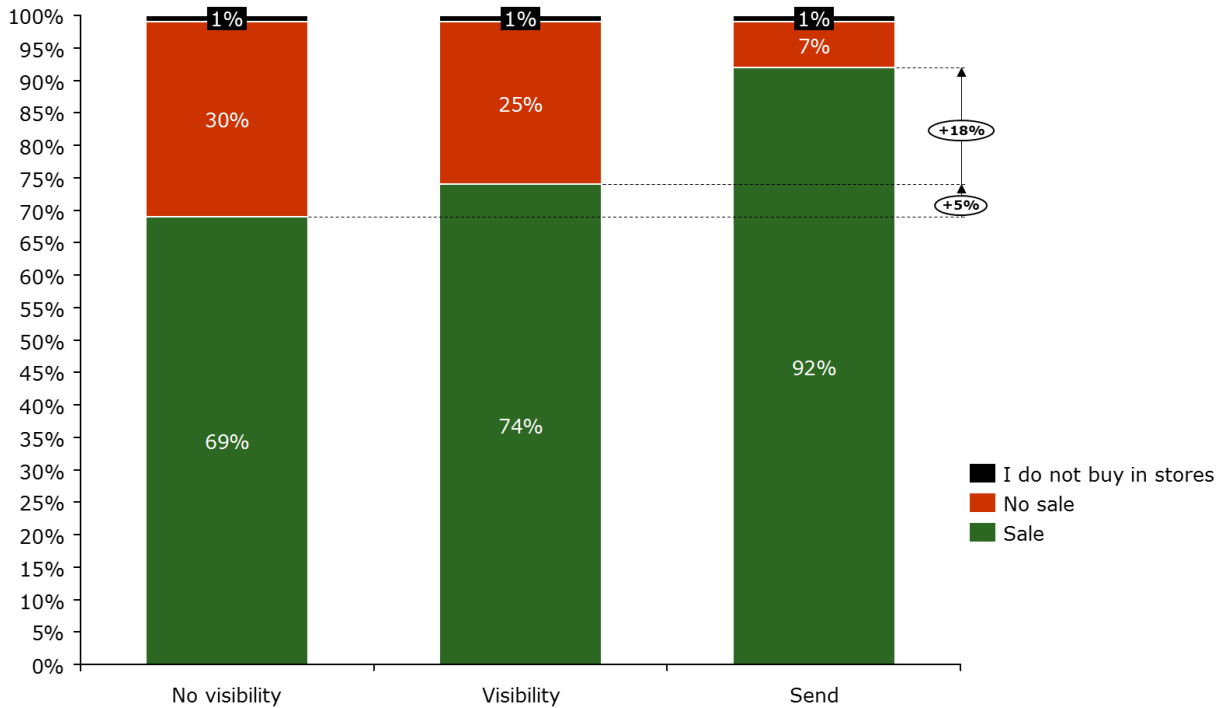


Figure 59: The effect on sales for stock visibility or send order options in case of store stock-out

A similar exercise is performed for a stock-out in the store. Figure 59 shows the results. Again, when diving deeper into the data similar tests show that when providing visibility in other stocks, a significant increase in sales of 4.7% can be achieved ($\Delta\mu=0.0477$, $\sigma=0.5096$). When providing the option to send the product from another location to a given location (e.g. home or store), an additional 17.8% sales ($\Delta\mu=0.1776$, $\sigma=0.4571$) can be achieved (or no sales can be prevented). Besides the in-group comparison of online and offline, another interesting insight showed up comparing offline and online behavior in stock-out cases. Without visibility, the no-sales percentage is 17.1% higher for the online channel than the offline channel ($\Delta\mu=0.1710$, $\sigma=0.0232$). However, when introducing visibility, there is a switch and instead of the online channel, the offline channel has a 15.8% higher no-sales percentage ($\Delta\mu=0.1579$, $\sigma=0.0218$). When introducing a reserve or send option, there is no significant difference between the two anymore.

Delivery

When ordered online, the product needs to get from the company to the customer. The interviews already showed that a lot of factors influence the quality of the delivery. In this chapter these preferences are assessed. First the conjoint analysis is performed. The conjoint is analyzed by means of a Hierarchical Bayes analysis and creates a model that predicts the preferences of consumers by means of utilities. The model will be based on the equation:

$$y_k = \sum_{j=1}^J \sum_{m=1}^{M_j} \beta_{jm} \cdot x_{jm} + \varepsilon$$

y_k = estimated total utility for incentive k

β_{jm} = partial utility for value (category) m of factor j

$x_{jm} = \begin{cases} 1 & \text{if incentive } k \text{ has value } m \text{ of factor } j \\ 0 & \text{else} \end{cases}$

This means that every level of an attribute gets a partial utility (e.g. 2 days for delivery will get a specific utility). Next, all utilities will be multiplied by either 0 or 1, dependent on whether the factor is present (e.g. to assess the utility of a profile with free delivery, this level will receive 1 while €3.95 and €5.95 will receive 0). Sum this over all levels within an attribute and sum that over all attributes will give an estimated total utility of a profile.

The analysis for the delivery conjoint showed the utility levels provided in Table 13 and therefore the following model:

$$y_{delivery} = -1.5974 \cdot x_{speed,5} + 0.7275 \cdot x_{speed,2} + 0.8699 \cdot x_{speed,0} - 0.2335 \cdot x_{frame,o} + 0.3403 \cdot x_{frame,e} - 0.1069 \cdot x_{frame,w} - 4.5351 \cdot x_{cost,6} - 0.1427 \cdot x_{cost,4} + 4.6777 \cdot x_{cost,0} - 0.2791 \cdot x_{rel,day} - 0.5574 \cdot x_{rel,hour} + 0.7765 \cdot x_{rel,no} - 0.6307 \cdot x_{loc,store15} - 0.6110 \cdot x_{loc,pick5} + 0.2811 \cdot x_{loc,store5} + 0.9606 \cdot x_{loc,home} + \varepsilon$$

Table 13: Delivery conjoint utility levels

Attribute	Level	Code	Utility	Standard deviation
Speed	5 day delivery	X _{speed,5}	-1.5974	0.9353
	2 day delivery	X _{speed,2}	0.7275	0.8987
	Same day delivery	X _{speed,0}	0.8699	0.4789
Timeframe	Office hour timeframe	X _{frame,o}	-0.2335	0.6825
	Office hour + Evening timeframe	X _{frame,e}	0.3403	0.3567
	Office hour + Evening + Weekend timeframe	X _{frame,w}	-0.1069	0.6211
Costs	€5.95 delivery fee	X _{cost,6}	-4.5351	2.2098
	€3.95 delivery fee	X _{cost,4}	-0.1427	0.4269
	No delivery fee	X _{cost,0}	4.6777	2.2247
Reliability	Sometimes a day late	X _{rel,day}	-0.2791	0.6117
	Sometimes 2 hours late	X _{rel,hour}	-0.5574	0.4337
	Always on time	X _{rel,no}	0.7765	0.6922
Location	Store delivery (15 minutes away)	X _{loc,store15}	-0.6307	0.6107
	Pick-up point delivery (5 minutes away)	X _{loc,pick5}	-0.6110	0.8424
	Store delivery (5 minutes away)	X _{loc,store5}	0.2811	0.6896
	Home delivery	X _{loc,home}	0.9606	0.8045

A one-sample t-test shows that all utilities shown in Table 13 significantly deviate from zero. In addition, a paired sample t-test shows that all levels within an attribute also significantly deviate from each other, with disrespect to the pair pick-up point delivery (5 minutes away) and store delivery (15 minutes away). When looking at the utility values, most of them are logical (e.g. 5 day delivery has a negative effect on the total utility and free delivery has a positive effect). However, some stand out:

- It seems that sometimes 2 hours delay has a more negative impact than sometimes a day late
- It seems that the most flexibility (choice in office hours, evening and weekend delivery) has a negative impact on total utility and is also less than the second flexible option (choice in office hours and evening)

For the first, the unexpected result still is in the expected direction. However, for the last, it shows also an unexpected direction. Several reasons might be the basis for these findings:

- There is a valid underlying reason people like these unexpected cases better (e.g. a day late can be prepared for, two hours late cannot be prepared for)

- Due to the low importance of both attributes, which is explained further below, there is a higher probability respondents simply did not rate the attributes and focused on the more important ones. Therefore, the levels could be influenced in an unexpected way
- There might be an influence of location on the timeframe and reliability. It could be reasoned that timeframe and reliability do not matter anymore if the delivery location is not your own home (i.e. shops are open anyway, so why bother the timeframe and reliability).

However, there is no certainty regarding the above reasoning or even other factors that might be in play.

Based on the utilities, the importance of different attributes can be computed by assessing the difference between the highest and lowest utility level. This shows that delivery fees account for 49.86% of the decision making process for delivery ($\mu=49.8853$, $\sigma=15.9501$), followed by delivery speed with 17.62% ($\mu=17.6256$, $\sigma=9.1342$), delivery location with 14.44% ($\mu=14.4448$, $\sigma=7.5734$), reliability with 10.28% ($\mu=10.2778$, $\sigma=6.2563$), and delivery timeframe with 7.80% ($\mu=7.7965$, $\sigma=5.1701$).

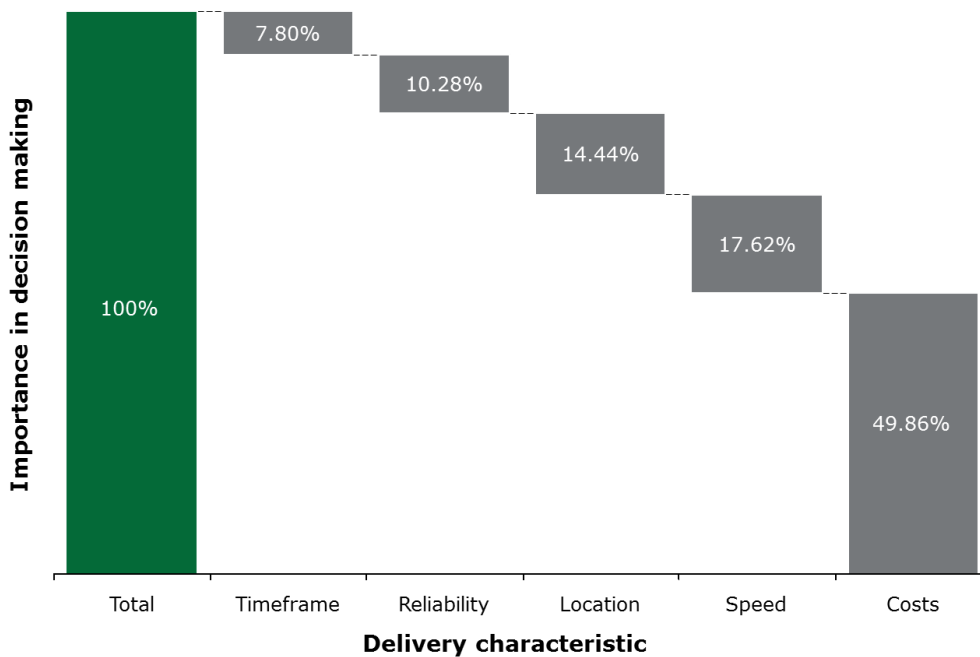


Figure 60: Importance of delivery characteristics in decision making of customers

For all importance levels, a one sample t-test shows they significantly deviate from their overall mean (20%) and a paired sample t-test shows they also significantly deviate towards each other. This provides an interesting insight, since it seems that for standard delivery, not convenience or speed is most important to consumers like interviewees mentioned, but costs are much more important.

Next, the overall model fit is assessed. This is done in three ways and the detailed description is shown in Appendix I. The model is seen as a good fit to the data based on the assessment.

Now that the model is determined, price sensitivity can be assessed. First, the utility levels of delivery costs are made continuous by linearizing between the cost utility values as shown in Figure 61. Next, the differences in utilities in other attribute levels are compared to this price graph and a willingness to pay can be calculated as shown in Table 14.

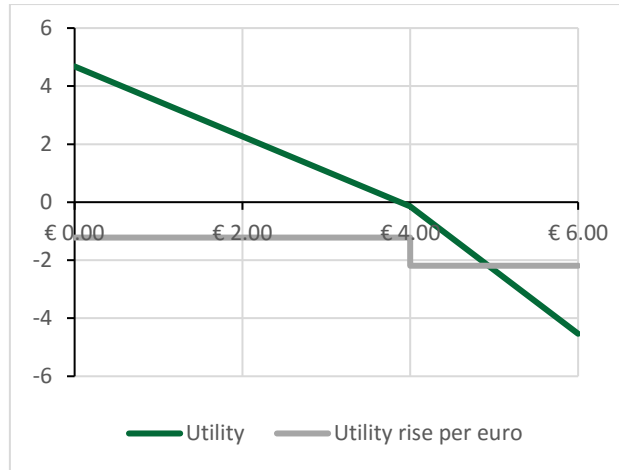


Figure 61: Utility change per euro

Table 14: Willingness to pay for customer fulfillment increase

Change	Willingness to pay from €0 to €3.95 perspective	Willingness to pay from €3.95 to €5.95 perspective
Same day delivery (compared to 2 days)	€0.12	€0.06
Next day delivery (compared to 2 days)	€0.06	€0.03
A day faster delivery (between 5 and 2 days)	€0.64	€0.35
Timeframe from office to evening hours	€0.47	€0.26
Certainty of on time delivery instead of some hours too late	€1.09	€0.61
A delivery location a km closer	€0.07	€0.04
At home instead of in store	€0.56	€0.31

These results show some interesting insights. Mainly that, even though customer fulfillment services seem to be important, the consumer is not willing to pay money for it. Therefore, trade-off should come from other places (e.g. certainty of on time delivery instead of some hours too late has the same utility difference as 1.6 days later delivery. Therefore, it might be better to find a trade-off in that area than in costs). It has to be noted that the assessment of price sensitivity by a conjoint analysis is argued to be inadequate. However, even if exact values might not be fully valid, the fact that there is a low willingness to pay to change standard delivery attributes is still assumed.

Besides the conjoint analysis, some other components of delivery were assessed. First of all, the willingness to pay for added-value delivery services was assessed. The assessed services were same day delivery, delivery reallocation, and a smaller time window of delivery. 37.7% of the respondents was not willing to pay for same day delivery. Excluding this group, consumers are willing to pay €4.29 to get products delivered the same day ($\mu=4.2929$, $\sigma=2.5874$). This is an interesting insight, since the willingness to pay for same day delivery is much lower in the conjoint analysis, indicating that for standard delivery, there is a much lower value for speed than in case of added-value services. 31.6% of the respondents would be willing to pay for the ability to reroute the delivery to be able to obtain the package. Those willing to pay are willing to pay €4.10 ($\mu=4.1042$, $\sigma=3.3566$). Also, a spearman bivariate correlation test shows that there is a positive correlation between the amount of times a person misses a courier ($\mu=33.5858$, $\sigma=29.2280$) and the willingness to pay for rerouting ($\rho=0.211$, $p=0.000$). Finally, 33.4% of the respondents would be willing to pay to decrease the time window of delivery from 4 hours to 1 hour. This group of consumers are willing to pay on average €3.74 ($\mu=3.7438$, $\sigma=3.1282$). These results indicate that for standard delivery, consumers are not

willing to pay for a better service quality, but when offered as an added-value services, consumers are more willing to pay.

To conclude delivery, the main insight is that a distinction can be made between standard delivery and added-value service delivery. In the first, costs are the major component of decision making and willingness to pay is low. For the second, there is a willingness to pay and therefore, offering the option of certain services for a fee could increase satisfaction.

Return

For return, a similar approach is used as for delivery. First, the conjoint analysis results will be discussed and then some separate questions are analyzed. The conjoint analysis for return followed in the utilities shown in Table 15 and give the following conjoint equation:

$$y_{return} = -0.244 \cdot x_{window,14} + 0.244 \cdot x_{window,28} - 0.694 \cdot x_{reimb,28} + 0.694 \cdot x_{reimb,14} - 4.724 \cdot x_{costs,6} - 0.783 \cdot x_{costs,4} + 5.507 \cdot x_{costs,0} - 0.609 \cdot x_{conv,off} - 0.095 \cdot x_{conv,on} + 0.704 \cdot x_{conv,no} - 0.670 \cdot x_{loc,store15} + 0.749 \cdot x_{loc,pick5} - 0.572 \cdot x_{loc,store5} + 0.493 \cdot x_{loc,home} + \varepsilon$$

Table 15: Return conjoint utility levels

Attribute	Level	Code	Utility	Standard deviation
Time window	14 days	X _{window,14}	-0.244	0.339
	28 days	X _{window,28}	0.244	0.339
Reimbursement times	28 days	X _{reimb.,28}	-0.694	0.412
	14 days	X _{reimb.,14}	0.694	0.412
Costs	€5.95 return fee	X _{cost,6}	-4.724	1.729
	€3.95 return fee	X _{cost,4}	-0.783	0.382
	No return fee	X _{cost,0}	5.507	2.018
Convenience	Download and fill form	X _{conv,off}	-0.609	0.488
	Online application	X _{conv,on}	-0.095	0.650
	No action required	X _{conv,no}	0.704	0.568
Location	Store return (15 minutes away)	X _{loc,store15}	-0.670	0.684
	Pick-up point return (5 minutes away)	X _{loc,pick5}	0.749	0.470
	Store return (5 minutes away)	X _{loc,store5}	-0.572	0.456
	Home return	X _{loc,home}	0.493	0.884

In addition, all utilities shown in Table 15 show significant deviation from zero and are significantly different from one another. Furthermore, no strange utility values were found. The most outstanding result in utilities is that returns are not favored in store and are rather done at a pick-up point or from home.

From the utilities, the importance of attributes is computed and shown in Figure 62. This shows that costs account for even a larger part of decision making than the case in delivery with 60.16% ($\mu=60.1617$, $\sigma=12.3072$). This is followed by location with 14.96% ($\mu=14.9585$, $\sigma=7.4538$), convenience with 11.35% ($\mu=11.3485$, $\sigma=6.3595$), reimbursement time with 8.83% ($\mu=8.8292$, $\sigma=4.1158$), and time window of return with 4.70% ($\mu=4.7021$, $\sigma=4.2033$). All levels of importance are significantly deviating from the overall average (20%) and from each other by testing with a one sample t-test and a paired sample t-test respectively. Furthermore, when comparing the return model to the delivery model, a paired sample t-test shows that costs are more important for return than for delivery ($\Delta\mu=-10.3065$, $\sigma=16.5034$), while location is not significantly different in importance for delivery or return. Combined with utility values, this indicates that delivery and return show

approximately equal importance location, but the preferences within location differ (e.g. store has a negative utility for return and a positive utility for delivery).

Again, model fit is examined and again, this indicates a good model fit.

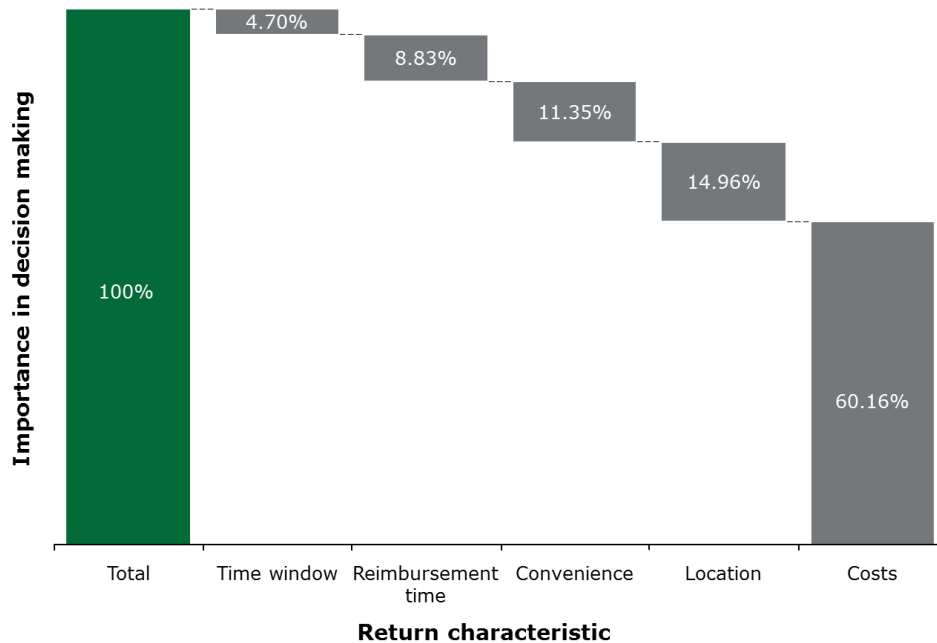


Figure 62 Importance of return characteristics in decision making of customers

Willingness to pay is not tested for the return, since the importance and utilities of costs are even higher than for delivery and the willingness to pay was already low in that segment²². So again, it is better to look at other trade-offs than the price to find optimal service levels.

Besides conjoint analysis, some other components were assessed. This relates to return behavior and using return as a sales channel. First, 77.8% of the respondents returns products (n=473, $\sigma=10.25$). Those people return, on average, 22.70% of their products ($\mu=22.6998$, $\sigma=20.2977$). This stresses the need for a good reverse logistics structure as discussed in chapter 5.4. Furthermore, 31.46% of those returns are products they want exchanged (e.g. different size or color necessary). 63.0% of the respondents sometimes orders more than 1 size or color of the same product, with the intent to send one or more back. People who do this, do this on average 39.08% of their purchases ($\mu=39.0805$, $\sigma=30.4161$). If a retailer knows the consumer is going to send back, they could send extra products with the delivery with the option to keep or return that product. 51.0% of the respondents was not negative towards this option. Finally, all these variables correlate positively with one another according to a spearman bivariate correlation analysis. Returning a higher percentage of clothing correlates positively with more exchange returns ($\rho=0.364$, $p=0.000$), the amount of time more than one size or color is ordered ($\rho=0.487$, $p=0.000$), and how much the person appreciates products being send with these orders ($\rho=0.130$, $p=0.005$). Also the percentage of returns that are for exchanges correlates positively with the amount of time more than one size or color is ordered ($\rho=0.300$, $p=0.000$), and how much a person appreciates the extra products ($\rho=0.151$, $p=0.001$). Also the amount of times people buy more than one size or color and how much they appreciate products with this delivery is positively correlated ($\rho=0.148$, $p=0.001$)

²² Higher importance/utility differences mean that there is more utility value per euro and therefore, the willingness to pay is even less.

In conclusion, standard return is appreciated most when free. Willingness to pay for standard delivery service quality is low and therefore, most important is to keep it free. The extra service of sending multiple products with the option to return is accepted mediocre. Therefore, it is not likely doing this standard is preferred, but as an added value service, it could enhance customer satisfaction and sales.

7.4. Segmentation results

Although the overall results provided some interesting findings, it is interesting to look a bit deeper into segmentation patterns. In this chapter, the differences for demographic attributes are provided. Table 16 shows how these differences occur. The percentages in the table show what percent of the variables have different means in demographic groups (e.g. 25% of the channels have different usage means for men than for women). In addition, the percentage of variables affected by a demographic or the number of demographics that affect a variable is displayed in the column and row of 'total' respectively.

Table 16: Percentages of significant differences created by demographic attributes²³

	Use of channels	Use of payment methods	Thresholds	Online stock-out behavior	Store stock-out behavior	Standard delivery attributes	Added-value delivery services	Standard return attributes	Added-value return services	Total
Gender	25%	33%		60%	20%	10%	25%		50%	78%
Age	100%	33%	50%	20%	20%		75%	5%	100%	89%
Income	25%	9%					38%		25%	44%
Family situation	50%	9%		40%			13%	5%		56%
Urban vs rural	25%	18%		40%	20%		38%			56%
Working situation	75%	27%					38%		50%	44%
Time planning	75%			20%			25%	16%	50%	56%
Education	50%	18%		20%	20%	5%	38%	5%	50%	89%
Shopping spend	38%	9%					25%		50%	44%
Percentage online spend	75%	36%		20%	40%	14%	50%		75%	78%
Time spend shopping	38%		50%						25%	33%
Percentage time spend online	63%	18%			40%		50%	16%	75%	67%
Channel loyalty	38%	9%	25%							33%
Basket size	25%	9%		20%	20%		38%		100%	67%
Shopping behavior	88%	67%	25%	40%	20%	14%	88%	37%	100%	100%
Total	100%	87%	27%	60%	53%	27%	87%	40%	80%	

²³ The table does not show to what extent the differences are distributed within the demographic attribute (i.e. 100% of channel use is different for age groups, but it is not specified whether it is between 2 age groups or between all age groups)

The most interesting insights that are found in the analysis and shown in Table 16:

- For almost all demographic and shopping behavior characteristics, mobile channel use (mobile site and app) differed significantly and in several cases, the use will go from not significant or below average to above average (or vice-versa). This indicates that when targeting progressive groups, mobile channels might improve customer satisfaction
- Out of stock behavior with and without services is influenced by demographics and shopping behavior especially in the online scenario. This indicates that for the website, services for stock-outs should be more tailored to the target group while for the store, there is a more uniform approach possible
- Standard delivery and return attributes are barely influenced by characteristics. Added-value services, however, do change. This indicates that standard delivery and return is more a one size fits all approach while added value service propositions are more tailored based on demographics and shopping behaviors of the target group

A more detailed analysis, where the actual differences are discussed (i.e. what differences were found on a granular level) can be found in Appendix J.

7.5. Additional findings

One additional finding is found during the analysis of the survey results. Most interesting is that 81% of the respondents indicated that they would show similar preferences among other product categories. This indicates that, even though this research is focused on fashion retailers, other areas of retailing might show similar results. When diving deeper into this data, it is found that similar behavior is mostly shown in the retail segments of 'electronics and home appliances', 'books, games, and toys', and 'communication'.

7.6. Synthesis

The consumer perspective provided the possibility to deepen the understanding regarding expected customer fulfillment services. Figure 63 shows the outcomes of this chapter. For the four segments of customer fulfillment services, it shows different identified sub-groups (e.g. order channels, order thresholds and payment methods for the ordering segment) and within sub-groups, specific options are shown in the order of importance (based on pairwise correlation, if applicable). Furthermore, the color relates to the position of the service compared to the within-group average. Green means the option is significantly more important than average, red means it is significantly less important than average and if yellow, it cannot be determined with significance if it is better, equal or worse than average. Black services are not rated in the survey and cannot be positioned. The framework gives a general overview. This means that slight adjustments can occur when focusing on specific sub groups (e.g. if only looking at young people as target group, the mobile website would be significantly better than average).

In addition to colors and importance, percentages are shown in the model. These percentages correspond to the percentage of retailers in the industry benchmark that offer the service of the model (in case of ordering and payment, availability, added delivery services and added return services) or the percentage of retailers that offer an attribute at a utility level of 0 or higher (in case of standard delivery and return attributes: the conjoint information)²⁴. Some services could not be found in the industry benchmark and therefore are not incorporated as a percentage in the model. These services are noted with a "?%". On the other hand, due to survey size limitations, the offline payment building block is not tested in the survey and only based on industry benchmark results.

The results shows that in none of the areas, all services are offered by a majority of retailers. However, in most cases, the above average services (i.e. the green services) are offered by a majority

²⁴ Utility levels lower than 0 indicate a negative effect on preference, within the boundaries of the attributes measured (i.e. it could change to positive if other attributes were measured). Therefore, this comparison has to be interpreted with caution

of retailers. Some outstanding numbers are the low number of retailers offering afterpay as payment method, providing store visibility information, having positive utilities on delivery costs or providing same day delivery. In addition, there are a lot of companies that have the right return locations and reimbursement time, while those are seen as below in-group average. In conclusion, if retailers want to offer the seamless experience in fulfillment, there are still a lot of services that are currently barely introduced.

7.7. Conclusion

The consumer results show some interesting insights that are in some cases contradictory to previous findings in this research. First of all, since website and store are most commonly used by consumers, this indicates that Brick-and-Click is a strong business model to satisfy customer needs. In addition, mobile site and app use can be significantly above average for certain segments of consumers. Taking this into account, an interesting finding is that Brick-Click-and-Mobile might be a new business model that could increase customer satisfaction for certain progressive groups.

When comparing industry benchmark results to customer survey results, a discrepancy is also found for the possibility to pay after purchase. Almost 53% of consumers indicated that they are likely to use this payment methods, while only 32% of retailers offers this option. To improve convenience, offering this option seems a good option. The industry benchmark and the survey also show a discrepancy in the availability services. A large amount of no-sales can be prevented by providing visibility on the inventory. However, only 14% of investigated retailers offers this service, while it can enhance customer satisfaction and prevent no-sales.

More striking are the results in the delivery section. Interviewees debated that the most important aspect was improving convenience, creating more seamless fulfillment options, and deliver fast. However, when investigating the preferences of the consumers for regular delivery, it can be found that costs make up to 50% of decision making. This indicates that the more convenient services might be good to increase customer satisfaction, but are rather un-useful when a delivery fee is in place. Also it is interesting that these results do not vary significantly across different demographic characteristics. Similar results are found for return services.

When offered as added-value service on the other hand, consumers are willing to pay for convenient services like same day delivery, delivery re-allocation, and a smaller time window. This indicates that the convenient services might be enabled profitably when offered as added-value instead of standard.

The next chapter will show the practical implications of the results of chapter 4 to 7 to give the opportunity for managers to use the results in a practical environment.

Customer fulfillment services

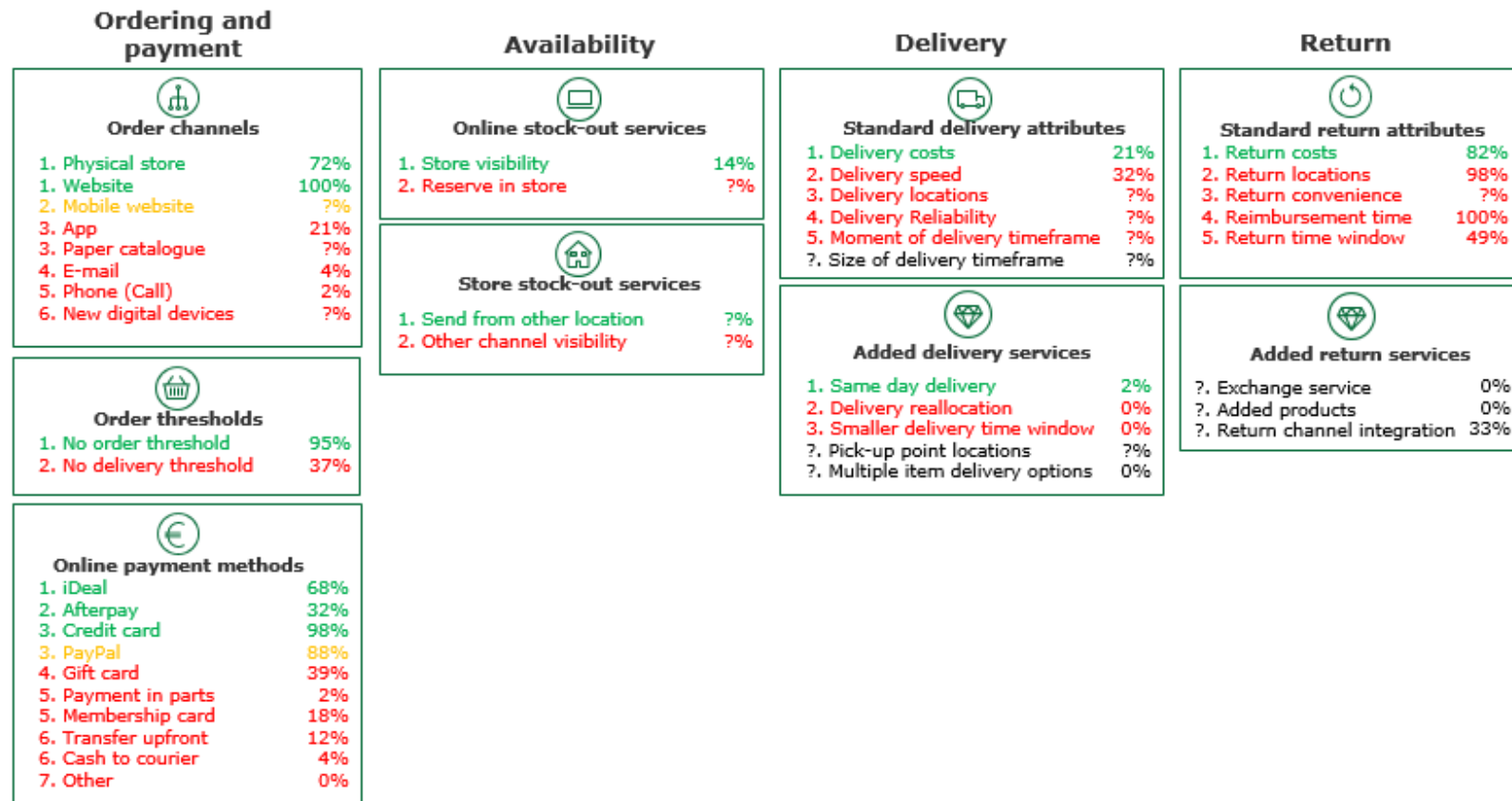


Figure 63: Framework from the consumer's perspective - Expected customer fulfillment quality²⁵

²⁵ Note that: offline payment methods are not investigated, delivery information is seen as a weakened version of delivery reallocation, and express delivery as a weakened version of same day delivery

8. Design

This chapter will deepen the understanding of how to use the capabilities that followed from the analysis and diagnosis phase. First, a methodology for design is discussed. Next, the practical implications of the heat maps are shown, followed by main capability descriptions.

8.1. Methodology

The design should be useful and therefore a solid methodology is important. This chapter describes the methodology per component of the design.

First, an omnichannel fulfillment model is proposed based on the results of previous sections. The model is validated and extended in a supply chain and retail expert workshop.

Second, the heat maps provided in chapter 4.5 gave insight in the relationships between concepts. One of the most important insights was that one could not easily make a one on one comparison between two concepts, because almost always more concepts would interact. In the heat map design, a step by step approach is provided on how to use the heat maps in practice. The approach will be evaluated with a workshop with supply chain experts to improve and validate the design.

Finally, high-level concepts like logistics and store management are important, but rather un-useful if there is no guidelines regarding how logistics should be done and how stores should be managed. This part of the design is aimed to provide a more detailed understanding of the different capabilities. This is done by using the Deloitte Capability Hexagon™. Besides often used dimensions to understand capabilities like talent, processes and technology, the hexagon also provides insight in how the capability fits in the mission of the company, what insights are gained from the capability and how it is integrated in the organizational structure (Deloitte, 2015b) as described in more detail in Figure 64. The content of the hexagon will be filled by the input from interviews and will be validated in a retail- and supply chain specialist's workshop. The output of this part is given in Appendix K.

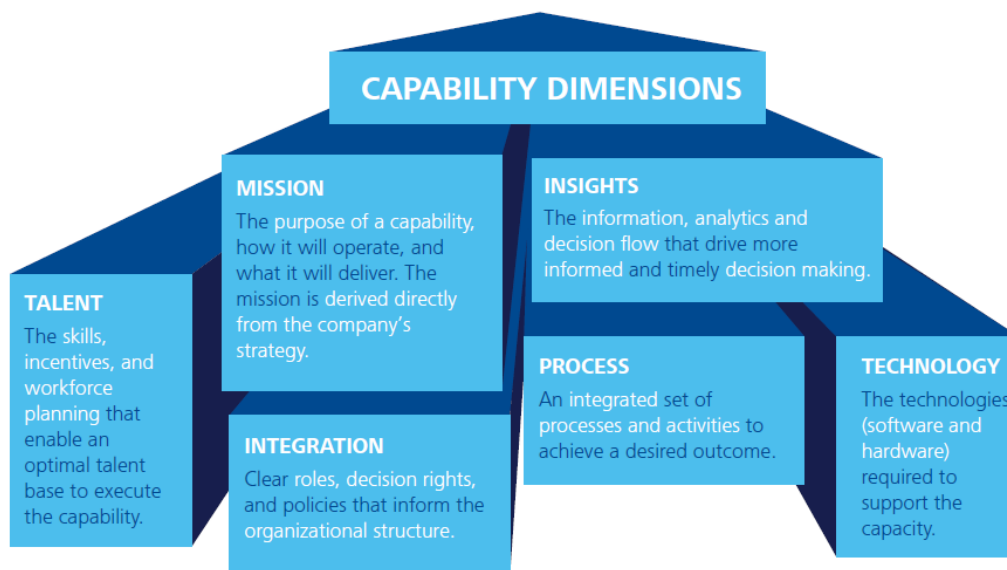


Figure 64: Dimensions of capabilities (Monitor Deloitte, 2015)

8.2. Omnichannel fulfillment model

This chapter will provide a model for Deloitte SCS that can be used as basis for advice for their B&C fashion retail clients. The model assesses two areas of the equation: the customer fulfillment value proposition and the supply chain capability building blocks.

For the first, the four areas of customer fulfillment services (ordering and payment, availability, delivery, and return) were assessed based on minimum requirements in order to survive (right to play), an evolving state (right to evolve), a state that meets consumer demands (right to win), and a perfect state of customer fulfillment (right to disrupt). Every area has certain propositions that

need to be met before moving on to the next and all subsequent stages are an enhancement of the first. It has to be noted that for delivery and return, fulfillment services should be delivered in two distinct offerings: the lean standard with cost leadership as main driver, and red carpet treatment, where added-value services and options are used to enhance quality for a premium.



Figure 65: Different value propositions for different scenarios

The total mapping of the value proposition is shown in Figure 66. It shows that as bare minimum, B&C purchasing, standard payment methods, and cost leadership delivery and return should be offered. Although still a lot of aspects of consumers desire miss in this configuration, it gives the right to play and the opportunity to survive (i.e. it is expected that these services are enough to maintain current consumers, but not more satisfaction is generated). Growing a level further means enhancing conversion and sales by offering dynamic fulfillment, in-store delivery, and in-store return. This creates some extra traffic and the majority of no-sales prevention, but is still not focusing to adhering to all current consumer needs. Only when coming to the third level, maturity, all offerings valued by consumers are offered: mobile channels, payment after purchase, premium delivery services, and as extra conversion method: return as sales options. The final level, disruption, would extend offered services beyond levels of expectations and could result in a new way of disruption. In this level, cost-leadership standards are improved to red carpet treatment quality without increasing costs. This would set industry standards higher and therefore increase consumer expectations and disrupt the proposed value proposition.

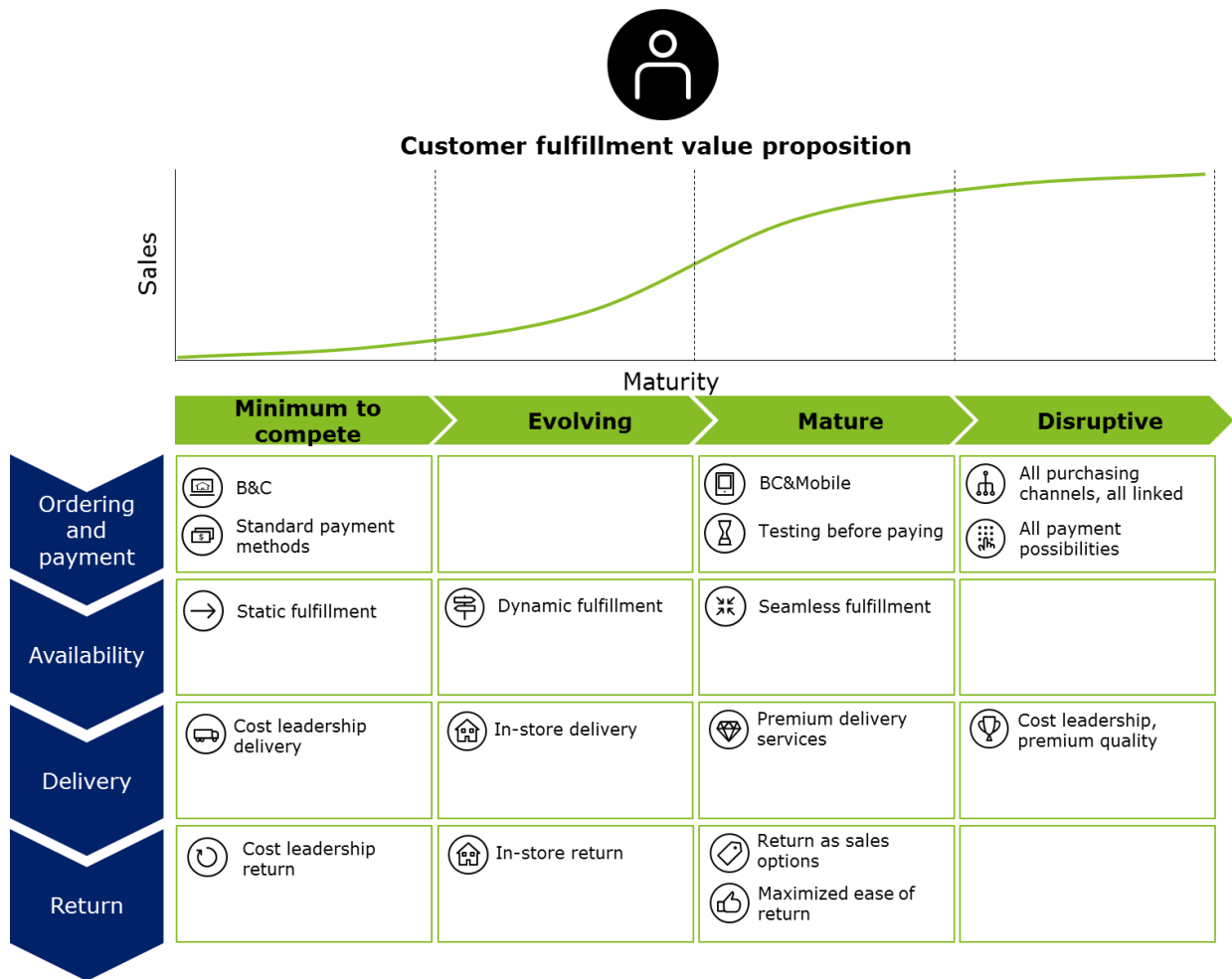


Figure 66: Customer fulfillment value proposition

The delivery and return area within “mature” (i.e. premium delivery services and return as sales option) can be further segmented into different possible services. This segmentation has a maturity by itself. Figure 67 shows the different areas of delivery and return options in combination with proposed maturity levels within this area. It can be used to assess current state of added value services and as basis of a roadmap of development. It has to be noted that the maturity states are applicable within the field of interest (e.g. same day delivery is more mature than express delivery, but the tool is not meant to assess the maturity of same day delivery compared to evening delivery).



Added-value services value proposition

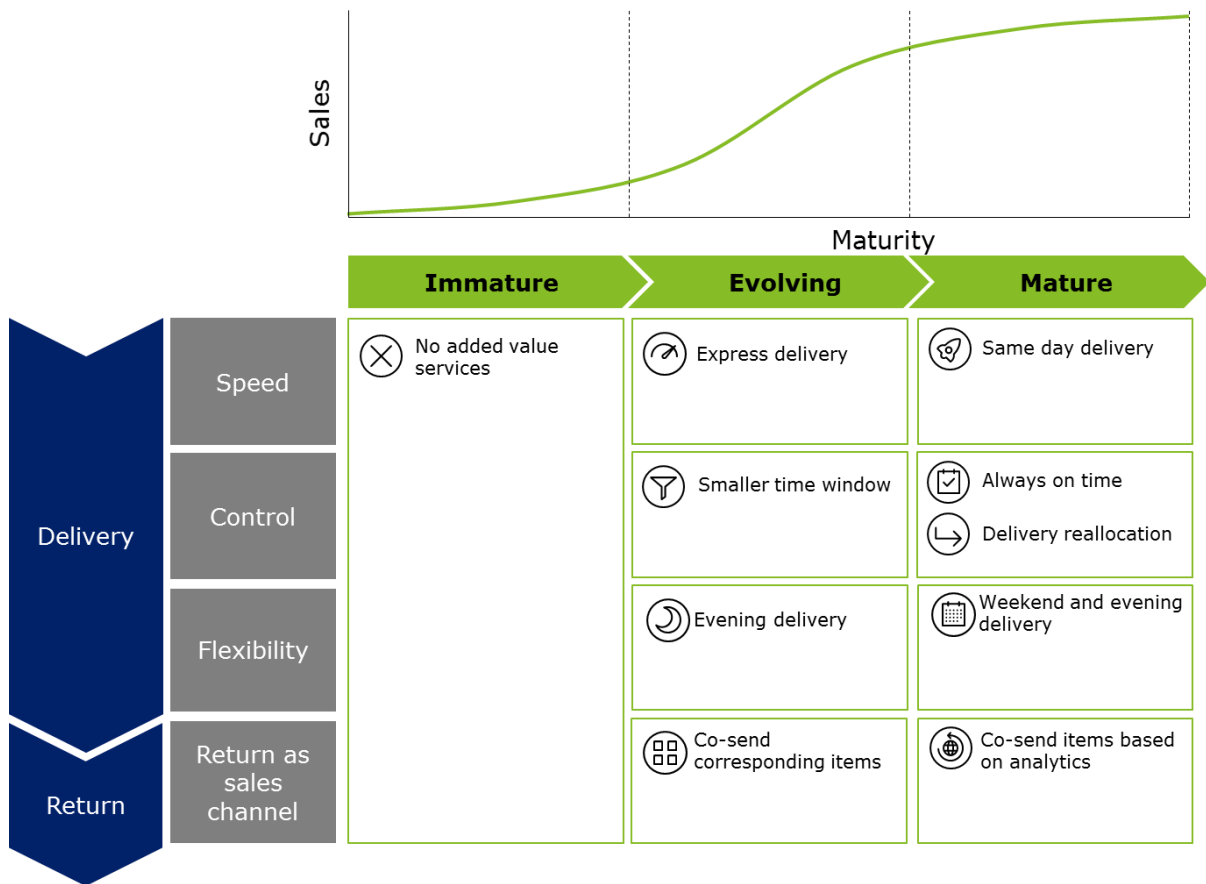


Figure 67: Added-value services value proposition

With service value propositions in place, the supply chain capability configuration can be made. Figure 68 shows a proposed capability house framework. For omnichannel fulfillment to be enabled, a foundation of crucial supply chain and non-supply chain capabilities is proposed. This foundation is necessary of supports the rest of the house. It consists of end-to-end inventory visibility, effective revenue and cost allocation policies, optimized tax routings, and effective legal policies. With the foundation in place, the structure of the house is based on logistics, warehousing, and inventory deployment (a combination of supply and demand and inventory allocation). It is based on two tiers, where the bottom tire is based on cost-leadership and efficient fulfillment. The top tire is an addition to the efficient bottom that enables flexibility for added value services. It creates a hybrid model of efficiency and flexibility to enable cost leadership and red carpet treatment. On top of the structure, commercial supply chain capabilities can transform the operational structure to commercial success. It involves network retailing with wholesale and franchise partners and it involves leveraging the store potential.

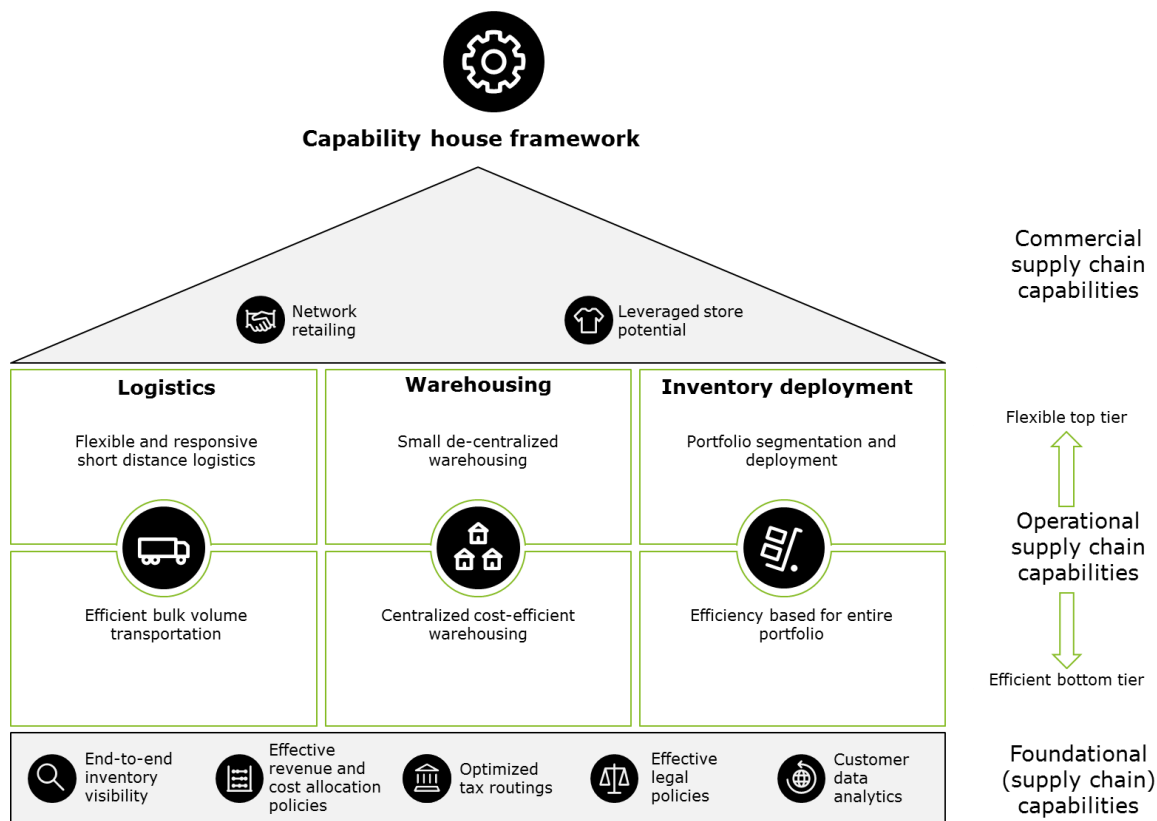


Figure 68: Capability house framework

Finally, it is acknowledged that especially in case of the second tier operational capabilities (flexible fulfillment capabilities), there are differences in how this could be achieved. Although no solid evidence can be provided regarding these options, a first proposition is made based on interviews and an expert workshop (Figure 69). Due to the large impact of warehousing (i.e. warehousing is often fixed for multiple years, while logistics and inventory deployment is based on warehousing and can more easily be changed), this area is explored further. It is proposed that two variables are main components of warehouse modes (and corresponding logistics and inventory deployment) to add to the centralized cost efficient network mode: 1) volume and portfolio size of the added-value service demand (e.g. one interviewee mentioned that stores cannot be used as local warehouses if the volume exceeds a certain limit, since it puts pressure on the store's operations), and 2) maturity of network retailing. The first creates a segmentation of three levels, where in the first level, store inventory can be used if demand is small. When volume grows and stores cannot suffice, city hubs can be used to quickly distribute demand. When volume grows even further, city hubs do not suffice due to high costs and limited space. In this case, satellite hubs can be used where larger hubs just outside of prime locations are used. On the second axis, it is determined whether the retailer uses its own warehousing and shared warehousing with partners. The latter can be evolved even further where also the inventory in warehouses are shared, indicating an extended customer order decoupling point²⁶. To evolve in this area, network retailing has to be more mature. Since this part of the design is only lightly based on the results of this thesis, it is recommended to explore this further.

It has to be noted that there is a situational aspect within the entire proposed fulfillment model, meaning that some services or capabilities might be more appropriate for one firm than another (e.g.

²⁶ Customer order decoupling point indicates at what point in the supply chain it is assigned to the customer (Olhager, 2010). Usually, for fashion, this is early on (Make to Stock). Extending this moment could help in network retailing.

a very local operating firm might have less benefits of decentralized warehousing due to the small fulfillment area)

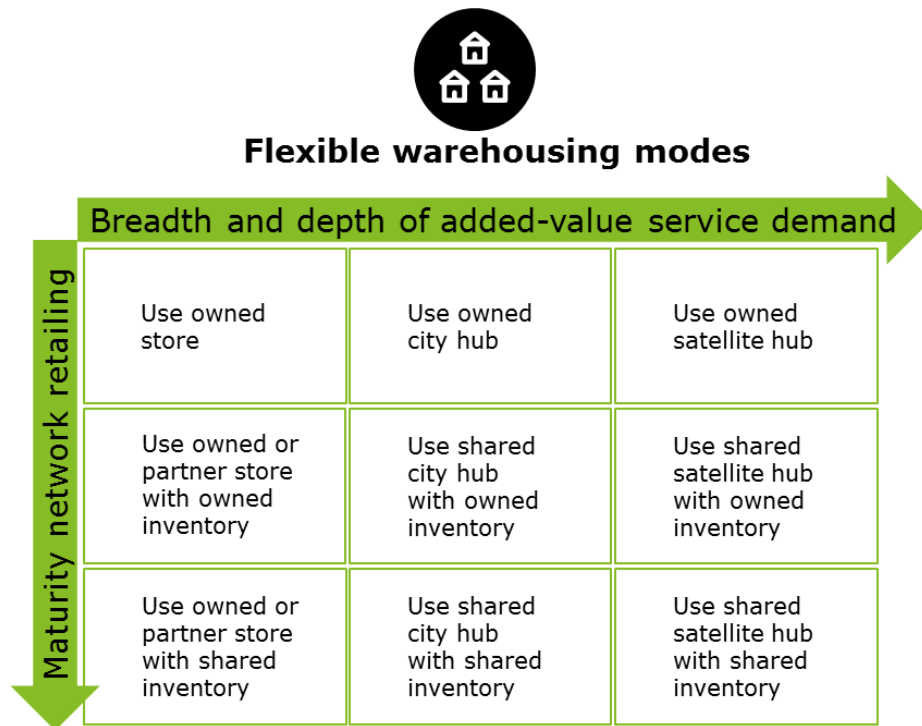


Figure 69: Flexible warehouse mode framework

8.3. Heat maps

The omnichannel fulfillment model is a guidance in implementing services and capabilities. However, a retailer could choose to implement certain services or sets of services based on their own preferences or they could be more interested into the effect of capabilities into their organizational structure. To achieve this, a step by step plan is proposed. Figure 70 shows this plan for service implementation based on the results of chapter 4 and 5. It has to be noted that the plan is not a sequential process. For example, if certain capabilities are seen as unrealistic to implement, an iteration has to be done to redefine services.

Step 1: define services

Based on the omnichannel strategy, a portfolio of interesting services can be defined that a retailer should pursue. For example, if their omnichannel strategy is based on maximizing convenience for all consumers, delivery and return locations should be made available and timeframes should be flexible. The services could best be defined based on the voice of the consumer that is shown in chapter 7. The output of step 1 will be a shortlist of services that are key for the retailer.

Step 2: Find enabling capabilities

The heat maps of Table 8 and Table 21 to Table 22 provide insight in the capabilities that are directly linked to services that are the output of step 1. This gives the possibility to find out what capabilities are already in place at the retailer, what capabilities should be implemented or what services might be unable to pursue profitably based on the capabilities necessary. The output of this step will be a shortlist of capabilities required to enable the services of step 1.

Step 3: Find interacting capabilities

The heat maps of Table 9 and Table 23 to Table 26 can be used to find what capabilities interact with the capabilities found in step 2. This can be used to assess what capabilities should be implemented in addition to those of step 2, what existing capabilities might be changed to fit the capabilities of step 2 into the organizational model or what capabilities might not be able to implement. The output of this step will be a revised shortlist of capabilities to enable the services of step 1 directly and indirectly.

Step 4: Assess benefits and costs

The heat maps of Table 27, Table 28 and Table 29 to Table 30 give the possibility to assess what services and capabilities provide what benefits and what capabilities experience what costs and challenges. This gives the opportunity to assess upfront what can be expected instead of experiencing it while working on the implementation and to assess profitability of implementing services and capabilities. The output will be a cost and benefit assessment for the services and capabilities.

Step 5: Build business case and make decisions

Now that the entire picture of services, capabilities, benefits, and costs is clear, a business case can be built and final decisions can be made regarding what services to enable and what capabilities to implement. The output will be a shortlist of services and capabilities that will be implemented.

Step 6: Make a plan and execute

The next step is building a roadmap that shows when capabilities are implemented and when services are rolled-out. This is also the moment to start executing the plan.

Step 7: Evaluate

The final step is evaluating the implemented capabilities and services towards the omnichannel strategy: does it meet expectations? Is it in line with the strategy and what are the next steps to take? Possible changes can be made in capabilities or services and also a revision in strategy could result from evaluations and a new plan for services can be started.

8.4. Conclusion

This chapter shows how the research can be used as managerial guidelines for fashion retailers. First, a service quality assessment can provide guidelines into the current state of fulfillment and a desired state. In addition, the capability house framework can help enabling the desired service levels. In addition, the step by step implementation plan provides more detailed, but general guidelines in implementing services with help of the constructed heat maps. In conclusion, this research provides a strong guideline basis for retail managers and supply chain consultants.

The next chapter will complement this practical view on the research with a theoretical and academic discussion to further build theory.

Omnichannel Strategy

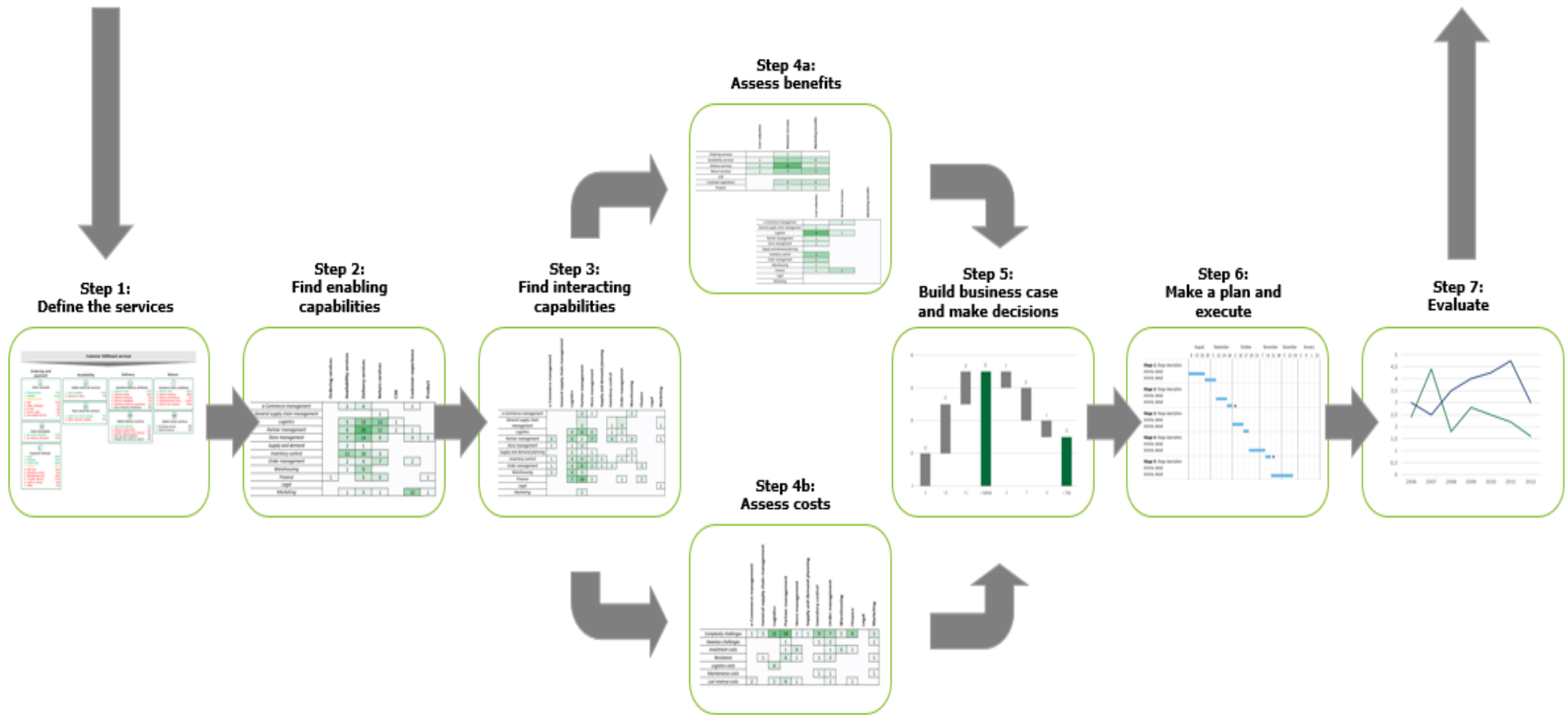


Figure 70: Implementation plan for services and capabilities

9. Conclusion and discussion

This chapter aims to combine the results of the previous chapters into a meta-inference stage of the sequential mixed design model. Here, main findings are discussed and combined with the current state on literature to elaborate on interesting new findings, extensions of existing knowledge or discrepancies. First, the main findings will be elaborated on, followed by the research contribution, limitations and suggestions for further research.

9.1. Main findings

A lot of information is gathered and analyzed in the previous chapters and a lot of insights are found. This chapter will elaborate on these findings by first providing a holistic picture of the research and answering the main research question, followed by a discussion on the omnichannel strategy, the customer fulfillment services, supply chain capabilities, and benefits and challenges individually.

Conclusions

This research started with the research question: *“How can supply chain capabilities in an omnichannel strategy for Brick-and-Click fashion retailers be used in a profitable way to achieve higher service quality related to customer fulfillment?”* The results show that the conceptual model of Figure 23 is a valid proposition to answer the question. Figure 71 shows how this model is proposed as result of this research and the content is discussed in this chapter. It has to be noted that the resulting model is a mature state of the omnichannel strategy and corresponding capabilities and customer fulfillment. There is a dynamic road towards this model before it can be reached.

The higher service quality of customer fulfillment that is looked for in the research question is proposed to be based on the difference between expected customer fulfillment quality and delivered customer fulfillment quality. It is found that there are differences between what is currently delivered, what retailers plan to deliver, and what consumers expect. To achieve higher service quality means bridging this gap or even succeed consumer expectations. When taking the consumer expectations as goal of the omnichannel strategy, findings show that customer fulfillment quality should be assessed holistically to assure a seamless experience across the entire customer journey. This results in the segmentation of customer fulfillment quality in four building blocks: ordering and payment, availability, delivery, and return. All these building blocks are important to deliver a total customer fulfillment quality.

Delivering ordering and payment quality can be reached with enabling Brick-and-Click as purchasing model, and extended with mobile purchasing channels for certain target groups (i.e. progressive consumers). Availability quality is proposed to be delivered with dynamic or seamless fulfillment. In the first, stock-out scenarios are resolved by enabling cross-channel interaction on the consumer's side (i.e. consumers are given the opportunity to order in another channel) and seamless fulfillment enables cross-channel interaction on the retailer's side (i.e. the retailer uses other channels to fulfill consumer demand). Delivery and return quality is delivered by enabling a dual mode fulfillment proposition. This means providing cost leadership standard and added-value as options for the consumer.

With the consumer demand side of customer fulfillment quality known, the operational side of the retailers can be assessed (i.e. how to deliver). It is proposed that supply chain capabilities and combinations are the basis for delivering the described customer fulfillment quality. The supply chain capabilities necessary for customer fulfillment quality show high interdependency among each other and implementing a supply chain capability without considering the effect on others could harm performance. Therefore, supply chain capability combinations are considered an important part of the operational side.

With this in mind, six supply chain capabilities are seen as the main enablers of the defined customer fulfillment quality. First of all, real time end-to-end inventory visibility is seen as the basis to enable customer fulfillment quality and to support the other capabilities. Knowing where inventory is at all times increases flexibility and opportunities to fulfill in the most efficient and effective way. In

addition, it enables the opportunity to show consumers the inventory in a much higher quality and therefore enable services like dynamic fulfillment. Second, a hybrid centralized and decentralized warehousing model is proposed to be most beneficial to enable the dual fulfillment mode for delivery and return. A model where centralized, efficient warehousing can fulfill the large standard volume and centralized, flexible warehousing can fulfill smaller added value services is proposed to be most suited for the omnichannel strategy. This also means that there is a necessity for a capability that ensures corresponding logistics with cost-efficient bulk volumes for standard deliveries and flexible small volumes for added value services. In addition, fast reverse logistics are proposed as part of the important supply chain capabilities. On the one hand, it increases customer fulfillment quality due to higher speed of processing returns and therefore services like reimbursement time can also improve. On the other hand, it increases efficiency since faster processing decreases the probability of products getting into markdown or even liquidation. For the basis of customer fulfillment, it is also proposed that stores play a more important role. For translation of the operational part towards value for consumers, stores need to deliver the service in a satisfying way. In the same time, stores can utilize extra traffic due to enabled customer fulfillment services. Finally, partnership management is considered to be an opportunity for fashion firms to extend the customer fulfillment quality offered by themselves towards wholesale and franchise partners and with that increase customer satisfaction further.

The supply chain capabilities and combinations that enable the customer fulfillment quality should be based on the omnichannel strategy, since the strategic choices define how value should be created. For example, a strategic pillar of supply chain agility needs to be supported by flexibility in warehousing and logistics in order to work. Research findings suggest that an omnichannel strategy consists of more than integrating firm channels to create a seamless experience. First of all, the firm is not the boundary of the channel integration and subsequent seamless experience. Extending omnichannel to wholesale and franchise partners is also part of an omnichannel strategy. In addition, to enable the seamless experience, fashion firms should get closer to consumers to capture the consumer's preferences and deliver the experience more easily and to be able to integrate channels, an agile supply chain is proposed.

The above shows how supply chain capabilities can be used to enable higher customer fulfillment quality in the omnichannel strategy. Results indicate that the proposed configurations could also be made profitable. On the one hand, the customer fulfillment services increase satisfaction and therefore improve revenues. On the other hand, capabilities implemented right can result in operational efficiency in addition to enabling customer fulfillment services. It is proposed that if implemented right, these benefits could offset the challenges related to implementing the capabilities.

The above shows the content of how to enable customer fulfillment quality in a profitable way. However, the remainder of this chapter will discuss the individual components in more detail and discusses the main propositions and its relation with current literature in order to elaborate on why the concepts are proposed to be important.

Omnichannel strategy

The research question related to the omnichannel strategy was: *'What is an omnichannel strategy?'*

The centerpiece of the omnichannel strategy is the seamless experience and doing so by integrating the different channels. These findings correspond to earlier studies where omnichannel is seen as an integrated sales experience and the advantages of physical stores and online shopping are combined (Rigby, 2011) and where retailers enable full channel integration for consumers and themselves (Beck & Rygl, 2015).

However, as mentioned in the conclusion, this study gave insight in the fact that the omnichannel strategy consists of more than this. First of all, the boundary of channel integration and the seamless experience is not constrained to the firm. Partner firms like wholesale retailers and franchise stores play a crucial role in the omnichannel experience. From a consumer perspective, when

they buy a product from a reseller (i.e. partner firms), the experience needs to be transferred through an extra intermediary (i.e. the reseller) in order to satisfy the consumer (Zboja & Voorhees, 2006) and therefore, it can indeed be expected that partner firms play this crucial role in delivering the seamless experience. From a retailer perspective, the extension of channel integration to partner firms gives the opportunity to use each other's fulfillment network to improve flexibility and agility. For example, if a fashion brand and a reseller have access to inventory of each other's warehouse, the accessible stock is decentralized without having the costs of new warehousing or burden on store space. In conclusion, it is proposed that network retailing, where fashion retailers and partner firms work together on channel integration and seamless experience, could benefit the retailer and the partner firms.

In addition, a lot of fashion and apparel firms are currently operating in a wholesale model where they sell through resellers and are not retailing themselves. To enable the seamless experience, fashion firms have to get closer to the consumer and operating purely via resellers does not suffice. Since the basis of the omnichannel strategy lies in creating a seamless customer experience, it is logical that this transition towards the consumer is found. Providing an experience needs, on the one hand, close communication with consumers about their preferences and data gathering is harder to do indirectly than directly (e.g. due to legal issues a fashion firm cannot easily use data gathered by a reseller for their own purposes). On the other hand, the possibility to control the experience delivered to consumers is easier to accomplish when managing retail operations yourself than by "outsourcing" it to resellers. Decreased control on quality is seen in literature as a possible risk of outsourcing (Quinn J. B., 1999) and in case of omnichannel, it is proposed that this risk is also there when it comes to the quality of delivering experience to consumers. The fact that store management is mentioned as important capability strengthens this statement, since this indicates that controlling the final communication from retailer to consumer is key to deliver created service value to consumers, which is again in line with the fact that a reseller would be an extra intermediary that affects the experience transfer (Zboja & Voorhees, 2006). So in conclusion, downstream verticalization, where fashion firms are actively moving their operations closer to consumers is an important part of the omnichannel strategy since it enables communication with consumers in both ways (retailer to consumer and vice-versa) better than selling purely indirect.

Finally, this research shows the importance of an agile supply chain for fashion retailers in an omnichannel strategy. Previous studies already mentioned the importance of agile and responsive supply chains for fashion retailers (Fisher, 1997). When a fashion retailer wants to pursue an omnichannel strategy, the importance of this agility further increases. Not only is demand uncertain and are market mediation costs significantly higher than operational costs for fashion in general (Fisher, 1997), but also the fulfillment network is more based on order picking instead of bulk volumes, fulfillment routes that continuously change, and flows of goods that need to move between channels easily. So where Fisher (1997) especially focusses on creating agility upstream of the supply chain (i.e. moving production closer to sales operations), this study proposes the addition of the need to create agility more downstream in the supply chain (i.e. from DC to stores and consumers) in order to meet more challenging customer fulfillment demands.

In conclusion, the components of the omnichannel strategy are extended from purely channel integration and seamless experience within the firm towards cross-organizational channel integration and seamless experience. In addition, moving closer to the consumer and supply chain agility are seen as integral part of the omnichannel strategy.

Customer fulfillment quality

Two research questions were related to customer fulfillment services: *'What customer fulfillment services are currently offered by large Brick-and-Click fashion retailers?'* and *'What customer fulfillment services do customers value most?'*

Results indicate that competing on product alone is not sufficient anymore: services are a more important part of the equation and necessary to provide the experience a consumer wants,

which is in line with previous literature (Kuo *et al.*, 2009). As previous literature also mentioned, results show that firms should enable high-quality fulfillment services to maintain and extend market share (Davis-Sramek *et al.*, 2008; Lee & Johnson, 1997). With the importance of customer fulfillment quality in mind, the omnichannel evolution creates a situation where the bar is raised. Consumers are now demanding a holistic shopping experience and all aspects of the journey determine the view of consumers to the brand and retailer. Therefore, it is proposed that customer fulfillment is a combined function from the moment a consumer decides she wants the product until she is fully satisfied. From the other perspective this means that customer fulfillment is not a concept of separate functions like just delivery or return as some scholars assess the topic (Davis-Sramek *et al.*, 2008; Bernon *et al.*, 2011; Brynjolfsson *et al.*, 2009). This results in a segmentation of customer fulfillment quality where the four previously mentioned building blocks of ordering and payment, availability, delivery, and return can best be assessed holistically.

For ordering and payment service quality, it is found that more options increases the possibility of a “match” between consumer preferences and delivered preferences. This is in line with previous literature stating that more channels creates a higher possibility of a sale (Friedman & Furey, 1999). However, investing in all possible options also increases costs and when looking at consumer preferences, brick-and-click purchasing options are the most valued. This is logical since it is the most offered and well known form of retailing and previous literature also shows similar results (Sharma & Krishnan, 2002). However, findings show the increasing importance of mobile purchasing channels in addition to brick-and-click options. More progressive groups are already more likely to use this options and it is expected that technological growth will only strengthen this finding in the future.

Availability is seen as an important issue for customer fulfillment quality, since on the one hand, stock-outs directly decrease revenue due to lost sales and in addition could harm customer satisfaction. A large amount of literature already studied the behavior of consumers when facing stock-outs (e.g. Emmelhainz *et al.*, 1991; Campo *et al.*, 2004) and solutions to stock-out are often looked for in supply and demand planning and order management (Verhoef & Sloot, 2005). In this study, interview results indicated that omnichannel retailing provides opportunities to combat these stock-out scenarios by using other channels to fulfill demand. Providing visibility on stock-levels of other channels or give the option to reserve out-of-stock products at another channel stimulates consumers to use that channel instead of stopping their purchase or going to a competitor. This stimulation can be explained due to decreased switching costs of one channel to another with dynamic fulfillment (Burnham *et al.*, 2003). By improving convenience of purchasing in the other channel, it takes less work or risk (i.e. not knowing stocks in other channels means there could be a stock-out there as well) to actually move to that other channel while the switching costs towards a competitor do not decrease.

In the case of dynamic fulfillment, the consumer is offered to do some extra work (i.e. go to another channel) to still be able to do their purchase. In the case of online stock-outs there is a possibility to take away this extra work by providing seamless fulfillment. This creates a fulfillment option where retailers arrange fulfillment from other locations if there would be a stock-out in the e-Commerce DC (e.g. deliver from the store to the consumer). Consumers will not notice a stock-out since the retailer arranges the solution for the consumer without confronting them with the issue. In theory, this would decrease no-sales to 0% as long as there is stock in any channel, since switching costs towards this other channel are decreased to zero²⁷ (Burnham *et al.*, 2003). It would therefore improve satisfaction and no-sales percentages even further. In conclusion, it is proposed that dynamic and seamless fulfillment improves availability quality and that seamless fulfillment does this more than dynamic fulfillment.

The next phase in the fulfillment process, the delivery, is already known to be important from previous literature (Thirumalai & Sinha, 2005). However, previous literature still mainly focused on enabling delivery efficiently and cost-effective (Lee & Whang, 2001; Fernie & McKinnon, 2004). In an

²⁷ It is assumed that since consumers do not notice the order is fulfilled from another channel, there are no switching costs incurred.

omnichannel strategy, it is proposed that delivery quality can also be used to improve customer satisfaction, since it is a part of the customer journey and corresponding seamless experience. On the one hand, it is found that retailers want delivery to be offered to consumers with a high level of convenience, flexibility, and speed to support this experience. It is also found that consumers are not willing to pay for this quality when it comes to standard delivery on the one hand, but are willing to pay for this quality when offered as an added-value option. To be able to adhere to these findings, it is proposed that a dual mode of customer fulfillment could enhance customer satisfaction better than focusing purely on costs or purely on premium quality. In this dual mode, standard delivery is offered according to cost-leadership and added value options are offered according to premium quality. This will give the consumer the opportunity to both choose for low costs or high quality, and as result better satisfy its needs.

This dual mode of delivery focusses on providing customer satisfaction in the most optimal way. However, it has to be acknowledged that the location of the delivery not only improves satisfaction, but also increases in-store traffic and therefore revenue (Babakus *et al.*, 2004; Pauwels & Srinivasan, 2004) since the consumer will go to the store for this delivery option. Therefore, the argument that more premium quality involves costs and a trade-off is necessary is less applicable and in this case, premium quality for delivery location simultaneously increases sales opportunities. To get most out of these findings, it is proposed that in-store delivery is best offered in any case (i.e. both cost-leadership as added-value) in order to improve satisfaction as much as possible and adhere to the opportunities of in-store traffic. In conclusion, it is proposed that a dual fulfillment mode with low cost standard delivery and premium quality options, with in-store delivery possibilities in both modes improves delivery quality in an optimal way for the omnichannel strategy.

As last part of the fulfillment quality concept, return quality is proposed. Returns are often seen as a burden and necessary evil and focus of literature is often how to decrease returns (Shulman *et al.*, 2010), how to reduce costs of return (Lloyd, 2010), or other ways to cope with them (Ruiz-Benitez & Muriel, 2014; Ruiz-Benitez *et al.*, 2014). However this research shows that not only this cost and burden side of returns are there, but there are opportunities to use returns to improve customer satisfaction. If returns are made more easy for the consumer, the barrier to purchase is lower and the consumer can be more satisfied at the end of the journey. In line with the findings of delivery quality, retailers also see speed of processing returns, convenience, and flexibility as drivers of return quality. However, consumers are not willing to pay for this quality. Therefore, it is again proposed that also for return, cost leadership standard is the most optimal way of increasing return quality. Even though cost leadership is the center of standard return options, results indicate that contrary to delivery, premium quality can be achieved while simultaneously increase efficiency (e.g. faster return processing decreases markdowns while also decrease reimbursement time) and return location can again increase in-store traffic and sales (i.e. in-store return has the same advantage as in-store delivery). This results in a proposition that for return, premium quality and cost-leadership can be offered simultaneously.

Even with premium quality and cost-leadership in one single fulfillment mode, results indicate a possibility to enable an added-value service mode as well. For return, it is found that return as a sales option can be used to further enhance revenue (e.g. subscription models where clothes are send while known that the consumer will return most of it). However, there is a diverse acceptance on this service proposition and therefore, offering it as an option instead of standard could enable improved satisfaction and direct revenue. In conclusion, it is proposed that a dual fulfillment mode with low cost, premium quality return mode with in-store return and a return as a sales channel option mode increases return quality in an optimal way for the omnichannel strategy.

Supply chain capabilities

The research question '*What supply chain capabilities enable the services customers desire?*' helps identifying the operational model to enable the services defined before.

To enable the demanding customer fulfillment expectations and build on the omnichannel opportunities, capabilities among the entire supply chain need attention. Results indicate that due to the high number of relationships between capabilities, they are better implemented in combinations than stand alone in order to enhance customer fulfillment quality. Morash (2001) also proposed that supply chain capability combinations enhance performance, but this research adds that not only combinations of supply chain capabilities enhance performance (i.e. customer fulfillment quality), but also the reverse is true. It is proposed that for the omnichannel strategy, supply chain capabilities not implemented as combinations could harm performance. Due to the integration of channels, interdependencies in the organizational structure increase, which results in more effects of capabilities on one another and a change in these capabilities without taking others into account could create disconnections and harm customer fulfillment quality. For example, if the capability store management is configured to accept returns in store, but finance is not co-configured, reimbursements could stay out and therefore harm return quality.

When looking at the supply chain capability configuration for omnichannel retailing, the basis lies within increasing flexibility, in line with the strategic pillar of supply chain agility. Rigid supply chains have difficulty to cope with demanding services like same day delivery and flexibility will increase the quality of these kind of services (Zailani & Rajagopal, 2005; Li *et al.*, 2008). Results indicate that this flexibility can be achieved by decentralized warehousing and corresponding flexible logistics, since this makes stock more locally available and the distance towards consumers smaller. However, it is proposed that due to the high costs of decentralized warehousing and corresponding logistics (Hammer, 1990) combined with the finding of the importance of low standard delivery costs (i.e. the costs of decentralized warehousing cannot not be forwarded to the consumer for optimal satisfaction), this warehousing mode is sub-optimal for the omnichannel strategy. Centralized warehousing, on the other hand, is a more cost efficient mode to deliver fulfillment (Matthews & Hendrickson, 2002; Abrahamsson *et al.*, 1998) and would better enable cost-efficient standard delivery. However, this mode is sub-optimal for the flexibility needed for added-value services. Therefore, it is proposed that the optimal fulfillment model for the omnichannel strategy is based on a hybrid centralized and decentralized model. The combination of cost-efficient centralized warehousing to fulfill standard delivery for low costs and a flexible decentralized warehousing to fulfill added value services benefits the mentioned needs while costs are more effectively contained.

While the discussion on hybrid warehousing and logistics is important for the delivery part of the customer fulfillment, logistics also plays an important role in return: reverse logistics. Since costs are also identified as main driver for return, an efficient way of reverse logistics should again be the basis and for the return as a sales channel option, flexibility should be implemented in the supply chain. Interestingly, the results indicate that for return, contrary to delivery, a large part of the capabilities for added value flexibility also improves efficiency. First of all, getting the returned product back into sellable stock decreases markdown costs and reduces logistics costs which are identified as high costs for retailers (Fisher, 1997). Secondly, this also increases availability by having the product back to stock earlier on, improves reimbursement time, and gives the opportunity to increase time windows for return. Therefore, it is proposed that for reverse logistics should be done fast and flexible in order to contain return costs while simultaneously increase the quality of return for consumers.

In addition, the agility of supply chain and integration of channels is supported better with increased visibility in the inventory levels. End-to-end inventory visibility is more often assessed by scholars. However, advantages are usually based on better supply and demand opportunities, lower inventory safety stock necessary, and improved supply chain collaboration (Delen *et al.*, 2007; Holweg *et al.*, 2005). This research shows that the advantages of supply chain visibility are larger for the omnichannel strategy. First of all, visibility in stock levels supports the flexibility in logistics required for the supply chain. When known where inventory is placed real time, the best pick location can be assessed and routings can be optimized without losing on flexibility (e.g. when the most cost-optimal route might be from the closest warehouse to the consumer, inventory visibility might show that the stock levels from this warehouse are almost depleted and an alternative warehouse might be better

to use). In addition, inventory visibility creates the opportunity for dynamic and seamless fulfillment. If inventory levels are not known real time, proposed alternative fulfillment options for consumers are not accurate and will harm consumer satisfaction. Therefore, it is proposed that for dynamic fulfillment and seamless fulfillment, end-to-end inventory visibility is foundational while it also supports agility in the supply chain.

The omnichannel strategy also gives additional opportunities for Brick-and-Click retailers specifically. It is known that e-Commerce is growing, but consumers still go to the physical store (Dussart, 2000; Bell *et al.*, 2013). However this research shows the opportunities of having store and online presence for customer fulfillment quality in an omnichannel strategy as well. This has the implication that the importance of store management in the supply chain capability concept is high. On the one hand, the store is the last stage to deliver the service to the consumer and this interaction has impact on the satisfaction of the consumer. Stores are an important part of satisfaction in the first place (Thang & Tan, 2003; Semeijn, *et al.*, 2004), so it is proposed that this role of satisfaction can be leveraged by enabling high customer fulfillment services like in-store delivery and return. However, this means that for an omnichannel strategy the stores are moving from pure sales point towards a combination of sales point and pick point for services like in-store delivery and return. Building the capability to handle this well will increase customer fulfillment quality and in turn enhance satisfaction.

Finally, in line with the strategic choice of extending channel integration and seamless experience towards wholesaler and franchise partners, the role of partnership management is increasingly important. To enable network retailing, the burden on partners and the relationship between partners increases. For example, when delivery in-store is extended to wholesale partners, questions like who gets the revenue and who gets the costs will arise. Managing the interest of the partners and facilitate continuous communication among partners is a necessity to make network retailing work. Findings show that for the system, revenues could increase due to increased collaboration, but per partner, there could be cannibalization. Especially the increasing growth of online revenues creates a tension between the online channels and offline channels of partners. Therefore, on the one hand, focus on increasing the total revenue has to be high in order to offset the possible cannibalization of online. However, on the other hand, findings show that clear cost and revenue allocation increases the willingness for partners to cooperate and will eventually increase the success of network retailing. This shows the need for a balance between focus on growth and dividing the total revenue, in line with propositions in literature (De Man, 2006). Even though partnership management is now discussed as cross-organizational matter, the same applies also within the firm's own organization. Discussions on cost and revenue allocation and other benefits are also applicable for the business units of channels, since for example stores could see cannibalization from the online channel within the firm as well. In conclusion, managing partners' interests is an important part to gain support across the organization and the network and eventually enable customer fulfillment in the most optimal way.

Bottom line advantages and encountered challenges

The final research question investigated in this research is '*What are the benefits and challenges corresponding implementation of these supply chain capabilities and services?*' Results show that implementing identified customer fulfillment services increases customer satisfaction, which will increase loyalty, revenue, brand image, and generate additional revenue streams. This is in line with literature on service quality and customer fulfillment quality (Davis-Sramek *et al.*, 2008; Lee & Johnson, 1997; Kim *et al.*, 2006). However, implementing capabilities to enable the services identified also provide the opportunity to achieve operational efficiency. For example, a single view on inventory decreases the necessary safety stocks, and network retailing gives the possibility to utilize an economy of scale. Therefore, it is proposed that omnichannel fulfillment gives the opportunity to improve customer satisfaction and resulting revenue while simultaneously decrease certain costs.

However, implementing the supply chain capabilities not only cuts costs, but also induces costs and challenges. For example, as already discussed before, decentralization is costly (Hammer, 1990). When looking at the main challenges for omnichannel fulfillment implementation, interview results show that the main issue is incumbent complexity. The more complex the existing organization is, the harder it is to re-engineer the business for omnichannel retailing. This is in line with the fact that organizational complexity is already inhibitor for innovation in general (Damanpour, 1996) so let alone if this innovation involves changing this same organization cross-functionally or even cross-organizationally in case of network retailing. Other important challenges show a lot of similarities of challenges that correspond to disruptive or radical innovations: newness and uncertainty of omnichannel, resistance of stakeholders, and a large amount of investments (Markides, 2006; Dewar & Dutton, 1986). In addition, supply chain capabilities also show increased operational costs.

In conclusion, there are benefits on customer fulfillment services and supply chain capabilities related to improved satisfaction and operational efficiency respectively. However, there are also implementation challenges and operational costs for the capabilities, indicating that a balance is required to get the most out of the omnichannel fulfillment model.

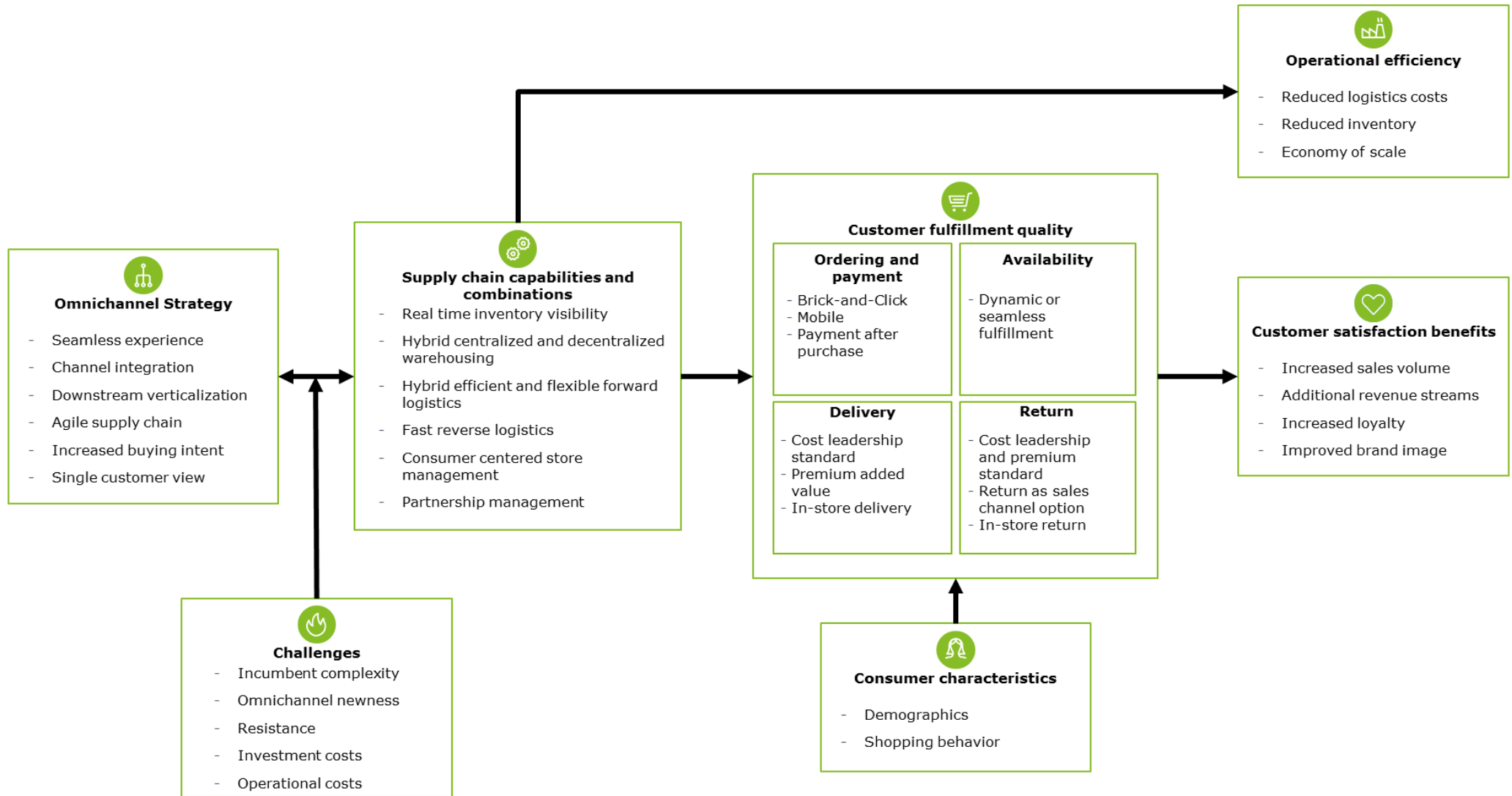


Figure 71: Proposed research model

9.2. Research contributions

This study fills a large gap in academic literature of omnichannel retailing. As discussed in chapter 2 as well, there was no model existing for customer fulfillment quality in an omnichannel strategy and no basis for corresponding supply chain capabilities in such a strategy as well. Although it is not expected that a conclusive model is generated in this research, a start in exploring the area has been provided.

The model of Figure 71 fills the mentioned gap. This research shows the relationship of the omnichannel strategy and supply chain capabilities, where both are based on each other. This paper also adds to current literature that supply chain capabilities and combinations can in turn enable customer fulfillment services for this omnichannel strategy and that these fulfillment services increase satisfaction. Also the combined satisfaction increase and operational efficiency potential gives new insights in omnichannel retailing. In addition, this research added to current literature the configuration of the different concepts. Where existing literature focusses on channel integration and seamless experience as the components of an omnichannel strategy, this research extended this with downstream verticalization, an agile supply chain, increased buying intent, and a single customer view. Also the corresponding supply chain capabilities and combinations configuration is contributed to literature. The need for end-to-end inventory visibility, a hybrid warehousing and logistics network, fast reverse logistics, store management, and partnership management create this new configuration. This research has also looked deeper into customer fulfillment quality and mainly the expected customer fulfillment quality adds to current literature. Especially the potential of omnichannel to enable dynamic and seamless fulfillment has not yet been investigated and also the dual modes for delivery and return provide new insights in the field of customer fulfillment management, where focus has been mainly on operational cost reduction of delivery and return.

In conclusion, this research has given the basis of the omnichannel strategy in relation to customer fulfillment and with that, fills a gap in the fields of omnichannel retailing, supply chain management, and service marketing literature.

9.3. Limitations

This study provides deeper understanding in omnichannel retailing in the area of supply chain capabilities and customer fulfillment. However, there are some limitations in the research. First of all, scoping of this research has been brick-and-click fashion retailers. This means that the results cannot be extrapolated without caution. The fact that 19% of survey respondents would not show similar behavior in other retail fields and that no individual retail area shows more than 57% of respondents that would show similar behavior validates that at least for the consumer perspective, this is indeed the case. Furthermore, the research area scoped on was customer fulfillment and supply chain capabilities, but interview results already indicated that there is spillage in other areas. Since those areas are not intensively investigated, the results could be influenced by decisions in those areas. Furthermore, interviews and survey design is not based on literature due to the lack of articles on the subject. This means that they are less valid than those based on literature. Besides these scoping limitations, a more in-depth quality assessment of validity and reliability is performed and provided in Appendix L.

9.4. Suggestions for further research

This study is one that is on the forefront of omnichannel retailing and a lot more can be investigated. First of all, this research is an explorative one and validation of the model and individual components is an important next step to gain more understanding of the omnichannel fulfillment and supply chain capability landscape. In line with this validation, research to the quantitative effect of the concepts could more elaborate on the relative importance of concepts or components of concepts and their effect on customer satisfaction or bottom line performance. This validation and quantification can be done within the Brick-and-Click fashion industry, but it is also recommended to start exploring other areas of retailing and to actively find similarities, complementarities, and differences. Furthermore,

when it comes to extending to other industries, it is suggested to investigate the impact of omnichannel retailing on other parts of the retail value chain. For example, a discussion with a third party logistics expert shows that there are a lot of implications of omnichannel fulfillment on their business model as well. In addition, it is suggested to extend the research on a geographical scale. In this study, the Netherlands are used as basis for research. However, it is expected that areas that are, for example, larger or have more difficult logistics (e.g. more mountain areas) will show different results and also consumer preferences will be different for other geographical areas.

Besides the extension of the current research, it is also suggested to look deeper into the sub-components of this study to generate more in-depth knowledge. For example, when it comes to decentralized warehousing, it is interesting to know how this could be achieved best for the omnichannel situation as already touched upon in chapter 8.2. Also when looking at customer preferences like the high importance of delivery costs, it is interesting to know why this is the case.

This study also focused on customer fulfillment quality and as mentioned before, it is acknowledged that omnichannel retailing has also a large impact on the pre-purchase phase of the customer journey. It is suggested to create a similar study towards this area of omnichannel retailing to find consumer preferences and capabilities in this area as well.

Finally, it is recommended to start looking into the possible future development that could again disrupt the field of retailing. The increased use of e-Commerce has been the start of retail disruption and has been a basis of omnichannel retailing, but some indications already came up during this study that there will be more disruptions in the future. For example, one online platform company is already starting to implement a model where it sells a product on their website, but the entire fulfillment is done by the brand of the product instead of the platform. Research towards this development or other trends in retailing might provide interesting results in the “what’s next?” of retailing.

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Appendix A: Company description

'Deloitte is the brand under which tens of thousands of dedicated professionals in independent firms throughout the world collaborate to provide audit, consulting, financial advisory, risk management, tax and related services to select clients' (Deloitte Touche Tohmatsu Limited, 2016).

Within Deloitte, the Supply Chain Strategy (SCS) team operates as team within the Strategy & Operations (S&O) service area and they work in the consulting function (Figure 72).

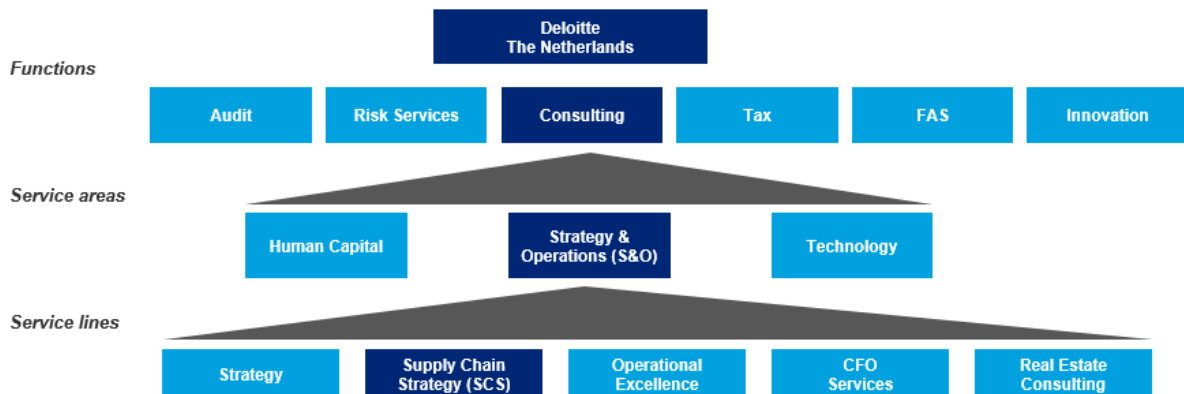


Figure 72: Supply Chain Strategy team within Deloitte The Netherlands

The SCS team helps senior executives align supply chain capabilities and operating models with their business strategies. Services that are provided in the team are: vision alignment; segmentation and market offering alignment; risk and resiliency; mergers and acquisitions; operating model redesign; analytics and performance management; and global footprint strategy and network design. This to achieve potential bottom-line benefits like significant top-line growth, improved gross margin, operating income and asset efficiency, new profit sources in emerging markets, risk prioritized based on intensity, vulnerability, and node criticality, and a supply chain that becomes a competitive advantage and growth enabler.

The SCS team consists of approximately 40 employees, consisting of partners, directors, managers, consultants, business analysts and interns. The team is located in 'The Edge' in Amsterdam and works for clients all over the world in a broad range of industries:

- Consumer business;
- Financial service industry;
- Manufacturing, energy and resources;
- Public Sector;
- Technology, Media and Communication;
- Regional Markets.

Appendix B: Internal and External orientation

Appendix B.1. Internal Orientation

The initial problem statement is still too broad and vague to answer: what are brick-and-click fashion retailers? What is the omnichannel world? What is “surviving and thriving”? What is necessary and what is beneficial? After internal discussions and initial research, some specifications were made:

- ‘Surviving and thriving’ is based on maintaining and/or increasing financial results. However, Deloitte is not interesting in capabilities for decreasing costs and therefore ‘surviving and thriving’ is based on the increase in revenues. Deloitte is not interested in how products should be priced. Since revenues are based on price and volume, the latter is the point of interest.
- The ‘omnichannel world’ is the current trend where multiple channels of sending information to and gathering information from the customer, purchasing, fulfillment and return are merging and being simultaneously used. The omnichannel customer is the customer that uses the different channels simultaneously (e.g. using a phone in a physical store to find other alternatives or returning bought stuff to the store while ordered online). So Deloitte wants to know how to increase sales volume by decreasing the gap between the expected omnichannel customer service quality and the delivered customer service quality.
- B&C retailers are retailers that both have a physical and digital channel for delivering information to and gathering information from the customer, purchasing, fulfillment and return. The minimum channels for these retailers are shown in Figure 10 and the position of these retailers compared to others is elaborated on in Appendix A. These are the clients of Deloitte that are not sure how to use their existing channels or expand their channels in the right way.
- ‘Necessary or beneficial’ relates to two parts. First, it relates to the supply chain capabilities that enable the services that omnichannel consumers desire (necessary) or that support those services (beneficial). Furthermore, it relates to the services customers want to have in order to shop at the retailer (necessary) or services customers are willing to pay a premium for (beneficial)

The above specifications result in the following redefined problem statement:

Deloitte SCS does not know how they can advise their Brick-and-Click clients in the fashion sector best regarding how supply chain capabilities should be configured in an omnichannel strategy to meet the expected service quality.

Appendix B.2. External Orientation

The problem that is synthesized by the internal orientation seems as a good start, but the question remains whether the problem actually exists in the broader community than Deloitte SCS alone. Therefore, an external orientation is performed to validate the redefined problem statement and adapt where necessary. The external orientation consists of three parts:

1. Expert interviews
2. A case study
3. Secondary document analysis

Expert Interviews

Methodology

The expert interviews are conducted with omnichannel specialists within Deloitte with a more diverse background than SCS: the Deloitte Retail Community. The background of the interviewees is shown in

Table 17. All the interviewees had extensive experience in retail and omnichannel strategy. Furthermore, the interviewees had backgrounds in strategy and marketing, digital and supply chain strategy to provide a broad view on the problem context. The interviews were open interviews where only general topics were planned up front.

Table 17: Interviewees expert interviews

Function	Department
Senior Manager	Monitor Deloitte (Strategy)
Manager	Deloitte Digital
Senior Consultant	Deloitte Supply Chain Strategy

Results

The interviews provided several insights in the problem context. First of all, it was acknowledged by all interviewees that an omnichannel strategy is important to survive and that service quality was an important component of the omnichannel strategy. An omnichannel retailer should create a ‘seamless customer experience’ where the customer gets what he wants, when he wants and how he wants. Furthermore, the interviewees showed a segmentation in the kind of problems retailers face when implementing an omnichannel strategy.

On the one hand, there are problems related to the digital environment. For example, one interviewee stated that *‘companies still struggle to implement the possibility to use the same voucher on different platforms. The customer does not understand that his voucher does work in store, but not online or vice versa.’* and *‘We have seen a retailer²⁸ that could not provide pictures of new shoes to their wholesale retailers on time. Therefore the retailers had to use concept drawings on their websites, which is unacceptable from a marketing point of view. And if they send the pictures on time, often they were not even used because wholesalers want to use their own pictures.’*

On the other hand, there are service issues that are related to the goods sold. These are issues related to availability, fulfillment and return. One interviewee mentioned that *‘customers want flexibility and consistency. If they want to return a purchase, they want to do that via the channel they want and they do not understand the complexity necessary for that’.* Another interviewee acknowledged this, but also mentioned that this is hard to achieve to a perfect level: *‘I wonder whether it is realistic to achieve the perfect omnichannel environment. If company A has a special collection that is only sold through wholesale retailer B and the customer wants to return that product through the store of company A, their DC receives a product they have never seen. That causes an expensive manual process. And who pays for the return? Company A or wholesale retailer B?’* However, all interviewees mentioned examples of their cases where fulfillment issues are tried to be resolved like a shared inventory between a retailer and an internet wholesale retailer or ordering different colors of an item online while still being in the store.

For Deloitte SCS, the problems related to the second segment of services is of most important, since those require the most attention of the supply chain. Therefore, the first segment will be put out of scope in this research.

Case Study

Methodology

A case study is provided to look on a deeper level to the problems identified and see how they are dealt with. Two cases of the same company (High-end sports apparel B) are used as input for the case:

1. A distribution network design to achieve better fulfillment services (i.e. lead times, service levels, and availability) in China: A case done by Deloitte SCS in 2015

²⁸ Retailer names are removed due to confidentiality

2. A network strategy to achieve better fulfillment services and optimal cost structures for Europe: A case done by Deloitte SCS in 2012

For the cases, documents were studied, if available, where:

- High-end sports apparel B Annual Report 2015
- Case proposals
- Case deliverables
- Case summaries
- Mailings

Results

The overall information (e.g. annual report information) showed that High-end sports apparel B prioritizes service quality. In their annual report alone, 15 statements were made on the importance of delivering service to customers and it was mentioned that the inability to meet the expected service quality could result in significant losses in sales. Furthermore, several risks were identified that could affect service quality because of the failure of supply chain components (High-end sports apparel B, 2015).

The first case (China) showed that for High-end sports apparel B, it was important to change their supply chain in China in order to meet customer service quality related to fulfillment. Lead times varied greatly throughout China due to the fact that only a single DC existed there. Furthermore, due to a push-model where inventory was pushed towards retailers, a lot of between store transports were used when products were unavailable at a certain store. This is a costly operation and it reduces the flexibility. Therefore, sales were lost and a higher percentage of forced markdowns was inevitable. This shows that providing better service quality by means of shorter lead times and higher availability in stores was beneficial, but High-end sports apparel B was not sure how to effectively handle this. In this case, Deloitte SCS worked with High-end sports apparel B to provide an optimal DC network and to change the supply chain towards a pull model, where inventory was kept in central DC to be able to respond more quickly to forecasted unavailability and less excess products.

In the second case (Europe), High-end sports apparel B wanted to support their growth in Europe and was not sure how to keep service levels high and how a responsive distribution model could be used for their multi-channel operations. Deloitte SCS worked with High-end sports apparel B on how to effectively expand inventory capacity to maintain availability, maintain the availability of space of returns and maintain fulfillment reliability (i.e. the percentage of products that is delivered within the promised lead time). Furthermore, a digital solution and centralized inventory solutions were provided that integrated the supply chain of the different channels effectively.

The annual report and the cases show that for High-end sports apparel B, service quality for fulfillment is very important and they are not always sure how they can best implement supply chain solutions to achieve this quality. This validates the problem statement. An interesting part of the cases is that in all parts, it is mentioned that they were not conclusive how to implement supply chain solutions in an effective way. This indicates that they were probably able to provide the services, but not in an effective way.

Secondary documents

Methodology

The earlier validation methods are still focused on specific cases: interviews within Deloitte and a case study of High-end sports apparel B. To complement this more focused view, secondary documents are used to find validation in a broader spectrum of sources. Sources studied were:

- Internal studies (i.e. Deloitte studies)
- External studies
- News articles

All the sources were studied and statements that related to the problem statement were identified to provide an overview of problems in the omnichannel landscape.

Results

The secondary documents validated the redefined problem statement, since a lot of articles mentioned improvement possibilities in service quality and the importance of fulfillment and return. Furthermore, it validated the indication of the case study that it is not meeting the service quality that is the problem, but doing it in a profitable way. The studies showed that only between 15% and 30% of retailers could provide omnichannel services in a profitable way: *'we want to go faster... but not to throw lots of dumb money at it'* (Gibson & Clifford - Defee, 2014). For example, lead times could be within a day if there was a DC on all street corners. However, that is way too expensive to do. Based on these results, the problem will be redefined so it is based on a profitable way of delivering the fulfillment services instead of just delivering the services.

Final problem statement

Based on the external orientation, the redefined problem statement will be adjusted towards a final problem statement:

Deloitte SCS does not have an optimal knowledge base on how they can advise their Brick-and-Click clients in the fashion sector best regarding how supply chain capabilities should be profitably configured in an omnichannel strategy to meet expected service quality of customers related to the customer fulfillment.

Appendix C: Review - Omnichannel strategy, services and capabilities

Table 18: Identified desired services of omnichannel customers

Theme	Desired service	Source
<i>Product</i>	Low price	Bell <i>et al.</i> (2013); Kalakota (2012); Kleespies, (2013)
	High variety of products	Bell <i>et al.</i> (2013); Kleespies (2013)
<i>Information channels</i>	Ease of access to all products' information	Bell <i>et al.</i> (2013); Kalakota (2012)
	Be able to check availability	Speer (2012)
	Access other people's review information	Bell <i>et al.</i> (2013)
	Physically sample the product	Bell <i>et al.</i> (2013)
	Home try-on	Bell <i>et al.</i> (2013)
	One log-in place	O'Heir (2012)
<i>Fulfillment and return channels</i>	Fulfill how customer wants	O'Heir (2012)
	Return how customer wants	Kurt Salmon (2013)
	Free delivery and return	Bell <i>et al.</i> (2013)
	Low delivery times	Bell <i>et al.</i> (2013); Kalakota (2012)
<i>Experience</i>	Identify with the product	Frazer & Stiehler (2014)
	A consistent experience	Kalakota (2012)
<i>Service</i>	Personalized offers	Kalakota (2012)
	Exceptional customer service	Kleefspies (2013)

Table 19: Components of an omnichannel strategy

Theme	Strategy component	Source
<i>Product pricing</i>	Attractive pricing	Brynjolfsson et al. (2013)
	Avoid direct price comparisons	Brynjolfsson et al. (2013)
	Establish switching costs	Brynjolfsson et al. (2013)
<i>Product portfolio</i>	Curated content	Brynjolfsson et al. (2013)
	Learn to sell niche products	Brynjolfsson et al. (2013)
	Create exclusive products and unique features	Brynjolfsson et al. (2013)
<i>Supply chain</i>	Streamline logistics	Deloitte (2014)
	Take a holistic view on inventory	Deloitte (2014)
	Have a consumer driven supply chain	Deloitte (2014)
<i>Technology</i>	Harness the power of data and analytics	Brynjolfsson et al. (2013)
	Embrace the emerging enablers	Deloitte (2014)
<i>Channels</i>	Integrate channels	Brynjolfsson et al. (2013); Verhoef et al. (2015); Frazer & Stiehler (2014); Deloitte (2014); Deloitte (2015); Deloitte Digital (2014)
	Increase the number of channels	Verhoef et al. (2015); Frazer & Stiehler (2014); Deloitte (2014)
	Emphasize product knowledge across channels	Brynjolfsson et al. (2013)
	Use channels based on product type	Bell et al. (2013); Bell et al. (2014)
	Use channels based on buying process	Bell et al. (2014); Deloitte (2014)
	Increase availability	Verhoef et al. (2015)
	Redefine the store	Deloitte (2014)
<i>Customers</i>	Create a seamless experience	Frazer & Stiehler (2014); Bell et al. (2013); Deloitte (2014); Deloitte (2015); Deloitte Digital (2014)
	Serve the customer as fast as possible	Deloitte & Retail Council of Canada (2014)
	Enable cross-border trade	Deloitte (2014)
<i>Competition</i>	Embrace competition	Brynjolfsson et al. (2013)

Table 20: Capabilities for omnichannel retailing

Theme	Capability	Source
Product pricing	Price Matching	Kalakota (2012)
Product portfolio	Alternative products/sourcing options and related “bundled” offerings	Deloitte Digital (2013)
Supply chain	Information exchange	Wu <i>et al.</i> (2006)
	Efficient coordination	Wu <i>et al.</i> (2006)
	Activity integration	Wu <i>et al.</i> (2006)
	Responsiveness	Wu <i>et al.</i> (2006)
	Cross-channel inventory visibility	Illanes <i>et al.</i> (2013); Deloitte Digital (2013); Kleespies (2013); Kurt Salmon (2013)
	Real-time visibility	Deloitte Digital (2013); Speer (2012); Hardgrave (2012)
	Dynamic inventory allocation	Deloitte Digital (2013); Llamasoft (2013); Kurt Salmon (2013)
	Inventory sharing	Illanes <i>et al.</i> (2013)
	Transportation routing systems	Kleespies (2013); Llamasoft (2013)
	Supply chain segmentation	Llamasoft (2013)
	Right sizing inventory	Llamasoft (2013)
	Inbound consolidation	Llamasoft (2013)
	Cross-functional buying teams (including analytics)	Illanes <i>et al.</i> (2013)
Technology	Advanced analytics	Deloitte Digital (2013); Kalakota (2012)
Channels - Visibility	Store formats (Pop-up, showrooms)	Bell <i>et al.</i> 2013
	Store management (digital displays etc.)	Speer (2012)
	Digital website options (e.g. virtual try-on)	Bell <i>et al.</i> 2013; Bell <i>et al.</i> 2014
Channels - HR	Merge channel responsibilities	Illanes <i>et al.</i> (2013)
	Leverage sales associates	Speer (2012); Kalota (2012)
	Labor allocation software	Kurt Salmon (2013)
Channels – Fulfillment and return	Search and send	Speer (2012)
	All delivery options	Kalakota (2012)
	All return options	Kurt Salmon (2013)
	Same day delivery	Kalakota (2012)
Customer	Personalization and offer management engine	Kalakota (2012)
	A single view of the customer	Kurt Salmon (2013)

Appendix D: Identified industry benchmark retailers

Name of company	Name of parent company (if applicable)
Nike	
De Bijenkorf	
ASICS	
Adidas	
G-Star	
Gsus	Varova
Sissy Boy	Varova
On Tour	Varova
Men at work	Varova
Kings of Indigo	Varova
Open 32	Varova
Denham	
Scotch and Soda	
Tommy Hilfiger	
Decathlon	
Brunotti	
C&A	
Footlocker	
H&M	
Christian Dior	
Mark and Spencer	
Next	
Sport Direct	
Debenhams	
Miu Miu	
Guess	
JD Sports	
New Look	
s. Oliver	
Kiabi	
Mango	Punto Fa SI
Etam	Groupe Etam Suisse
Monki	
C&J Clark	
Tom Tailor	
Springfield	
Charles Voegele	
Cortefiel	
Superdry	Supergroup
Monsoon	
Zeeman	
Zara	Inditex
Pull & Bear	Inditex
Massimo Dutti	Inditex
Bershka	Inditex
Stradivarius	Inditex
Oysho	Inditex

Uterque	Inditex
Burton	Arcadia Group
Dorothy Perkins	Arcadia Group
Evans Fashion	Arcadia Group
Miss selfridge	Arcadia Group
Topshop	Arcadia Group
Topman	Arcadia Group
Wallis	Arcadia Group
Street one	CBR Fashion
Cecil	CBR Fashion

Appendix E: Interview protocol

Date:

Time:

Duration:

Sub-sector:

Company:

Interviewee:

Function interviewee:

1 – Interview Introduction (Practical)

Introduce myself, explain the background of the study and the context (master thesis at Eindhoven University of Technology), confidentiality, Use of results, Feedback on results, Follow-up

2 – Subject/Situation introduction

- a) *Context: omnichannel retailing for brick and click fashion retailers*
- b) *Topic: what services, and specifically purchase and post purchase services (availability, delivery cost, time and locations and return policies) are important in an omnichannel strategy and how the supply chain should be configured so they can be offered profitable.*
- c) *Definitions: services, capabilities*

3 – Company Background

- a) *Size*
- b) *Subsector*
- c) *Customer segment*

4 – Strategy

- a) *How would you describe an omnichannel strategy?*
- b) *What are the most important aspects/components of this strategy?*
- c) *Why should a company pursue an omnichannel strategy? What are the benefits?*
- d) *Do you see an omnichannel strategy as profitable? Do the benefits outweigh the costs?*

5 – Expected and delivered services (Customer journey)

- a) *What are in your opinion the most important services omnichannel customers want?*
- b) *What of these services are new compared to traditional customers?*
- c) *In what extent is your company delivering those services?*
- d) *When looking forward, what services would you see becoming more important?*

6 – Capabilities (SCOR)

- a) *In order to provide the services mentioned earlier, what capabilities are important to have*
- b) *What are the revenue upsides of these capabilities, besides enabling the service?*
- c) *What are the drivers of operational costs of this capability?*
- d) *What are the risks of operating the capability (unavailability etc.)?*
- e) *What are the main cost drivers behind implementing these capabilities?*
- f) *What are the challenges of implementing the capability?*
- g) *What needs to be done in order to make this capability profitable (e.g. increase revenues or decrease costs)*
- h) *To what extent has your company implemented the capability?*

Appendix F: Consumer survey

Beste deelnemer,

Welkom bij dit onderzoek van de Technische Universiteit Eindhoven en Deloitte. Ten eerste wil ik u bedanken voor het meewerken aan dit onderzoek. Wij willen door middel van deze enquête inzicht krijgen in uw winkelgedrag en uw voorkeuren wanneer u kleding koopt. Dit zal vooral gaan over het moment van aankoop en verder. Wanneer er niet specifiek gemeld wordt dat het om een aankoop bij een fysieke winkel of webshop gaat, kunt u er vanuit gaan dat het over uw algehele aankoopgedrag gaat. De enquête zal 20 tot 30 minuten in beslag nemen. Uiteraard zullen al uw antwoorden en gegevens anoniem verwerkt worden en niet voor andere doeleinden worden gebruikt dan dit onderzoek.

Met vriendelijke groet,

Wesley Snoeren

De eerste vragen gaan over de aankoop- en betaalvoorkeuren bij het kopen van kleding.

1. U zou graag een aantal kledingstukken willen kopen. Hoe waarschijnlijk gebruikt u dan de onderstaande kanalen om de product aan te kopen. U kunt er hierbij vanuit gaan dat de winkel alle kanalen beschikbaar heeft. Let op: het gaat hierbij niet om het informatie verzamelen of ideeën opdoen, maar om de daadwerkelijke aankoop.

	Zeker niet	Waarschijn- lijk niet	Neutraal	Waarschijn- lijk	Heel waarschijn- lijk
Fysieke winkel	0	0	0	0	0
Website	0	0	0	0	0
Mobiele website	0	0	0	0	0
App	0	0	0	0	0
Bellen naar de service desk	0	0	0	0	0
Je ordergegevens mailen naar het bedrijf	0	0	0	0	0
Nieuwe digitale middelen (bijv. Smartwatch)	0	0	0	0	0
Papieren catalogus	0	0	0	0	0

2. Als u zou kiezen voor een aankoop op een website, welke betaalmethoden zou u het liefst willen gebruiken? U kunt hierbij meerdere opties kiezen.

- Credit card
- iDeal
- PayPal
- Achteraf betalen

- Cadeaukaart
- Verspreid betalen
- Vooraf overmaken
- Contant aan de koerier betalen (Rembours)
- Winkelkaart/Membership kaart van de winkel
- Anders, namelijk:
- Ik bestel nooit online

3. Wat vindt u een reëel aankoopbedrag dat een bedrijf als minimum stelt voordat u online iets kunt bestellen? (Als u vindt dat een bedrijf geen minimum op hoort te leggen kunt u 0 kiezen)



4. Wat vindt u een reëel minimum aankoopbedrag voor gratis levering van een online bestelling? (Als u vindt dat een bedrijf geen minimum op hoort te leggen kunt u 0 kiezen)



De volgende vragen gaan over uw reactie wanneer een kledingstuk niet meer beschikbaar is. Ga er vanuit dat de prijzen en voorwaarden overal hetzelfde zijn.

5. U hebt besloten een bepaald kledingstuk te kopen **via de website** van een winkel. Nu blijkt dit product niet meer op voorraad te zijn op de website. Wat is uw meest voorkomende reactie als...

... u niet weet of het product in een fysieke winkel wel aanwezig is.

- Ik wacht tot het product weer online beschikbaar is
- Ik stop mijn zoektocht en ik koop niets
- Ik koop hetzelfde of een vergelijkbaar product bij de concurrent
- Ik koop een vergelijkbaar product online bij hetzelfde bedrijf
- Ik ga naar de winkel om het product daar te zoeken en te kopen
- Ik contacteer de klantenservice voor meer informatie
- Ik koop nooit kleding online

... u weet dat het product in een fysieke winkel aanwezig is

- Ik wacht tot het product online weer beschikbaar is
- Ik stop mijn zoektocht en ik koop niets
- Ik koop hetzelfde of een vergelijkbaar product bij de concurrent
- Ik koop een vergelijkbaar product online bij hetzelfde bedrijf
- Ik ga naar de winkel om het product daar te kopen
- Ik contacteer de klantenservice voor meer informatie
- Ik koop nooit kleding online

... u weet dat het product in een fysieke winkel aanwezig is en je kunt het reserveren.

- Ik wacht tot het product online weer beschikbaar is
- Ik stop mijn zoektocht en ik koop niets
- Ik koop hetzelfde of een vergelijkbaar product bij de concurrent
- Ik koop een vergelijkbaar product online bij hetzelfde bedrijf
- Ik ga naar de winkel om het product daar te kopen
- Ik reserveer het product in de winkel om het daar te kopen
- Ik contacteer de klantenservice voor meer informatie
- Ik koop nooit kleding online

De volgende vragen gaan over de levering van het kledingstuk.

6. Stelt u voor dat u via een webshop een aantal kledingstukken bestelt, dan heeft u waarschijnlijk een voorkeur hoe de bezorging gebeurt. De volgende vragen geven u verschillende opties voor levering. Graag zien wij welke van de opties uw voorkeur heeft. Probeer de antwoorden te baseren op een gebruikelijke situatie en niet op speciale gelegenheden (zoals last-minute een cadeau nodig hebben). Wanneer u normaliter niet via internet bestelt, probeer alsnog een voorkeur te geven.

U krijgt in de volgende vragen telkens 3 profielen te zien met 5 eigenschappen. Onderstaand staat de uitleg van de eigenschappen die gebruikt worden in de volgende vragen.

<ul style="list-style-type: none"> • Levertijd • Locatie • Moment tijdvak 	<p>De tijd dat het duurt voordat de kledingstukken op de locatie geleverd worden</p> <p>Geeft de locatie aan waar het product geleverd wordt</p> <p>Het moment wanneer het product geleverd wordt (thuislevering) of wanneer u het kunt ophalen (winkel en pick-up point). U kunt er vanuit gaan dat de winkel/pick-up point op deze tijdstippen ook open zijn en dat u een tijdvak hebt van 4 uur waarin het product aankomt.</p>
<ul style="list-style-type: none"> • Leverkosten • Betrouwbaarheid 	<p>Geeft aan hoe duur de levering is</p> <p>Geeft aan in hoeverre de levering op tijd is of niet</p>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd • Locatie 	<p>5 dagen</p> <p>Winkel van het bedrijf (15 minuten afstand)</p>	<ul style="list-style-type: none"> • Moment tijdvak • Leverkosten • Betrouwbaarheid 	<p>Keuze doordeweeks overdag of de avond of weekend</p> <p>Gratis</p> <p>Soms 2 uur te laat</p>
<ul style="list-style-type: none"> • Levertijd • Locatie 	<p>Zelfde dag</p> <p>Winkel van het bedrijf (15 minuten afstand)</p>	<ul style="list-style-type: none"> • Moment tijdvak • Leverkosten • Betrouwbaarheid 	<p>Doordeweeks in kantooruren</p> <p>Gratis</p> <p>Altijd op tijd</p>
<ul style="list-style-type: none"> • Levertijd • Locatie 	<p>2 dagen</p> <p>Winkel van het bedrijf (15 minuten afstand)</p>	<ul style="list-style-type: none"> • Moment tijdvak • Leverkosten • Betrouwbaarheid 	<p>Keuze overdag, avond of weekend</p> <p>€6,95</p> <p>Altijd op tijd</p>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd • Locatie 	<p>Zelfde dag</p> <p>Thuis of werk</p>	<ul style="list-style-type: none"> • Moment tijdvak • Leverkosten • Betrouwbaarheid 	<p>Keuze overdag, avond of weekend</p> <p>€3,95</p> <p>Soms 2 uur te laat</p>
<ul style="list-style-type: none"> • Levertijd • Locatie 	<p>5 dagen</p> <p>Pick-up point in een andere winkel (5 minuten afstand)</p>	<ul style="list-style-type: none"> • Moment tijdvak • Leverkosten • Betrouwbaarheid 	<p>Keuze overdag, avond of weekend</p> <p>Gratis</p> <p>Soms een dag te laat</p>
<ul style="list-style-type: none"> • Levertijd • Locatie 	<p>Zelfde dag</p> <p>Pick-up point in een andere winkel (5 minuten afstand)</p>	<ul style="list-style-type: none"> • Moment tijdvak • Leverkosten • Betrouwbaarheid 	<p>Keuze doordeweeks overdag of de avond</p> <p>€3,95</p> <p>Altijd op tijd</p>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten €3,95 • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Thuis of werk • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten Gratis • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten €6,95 • Betrouwbaarheid Soms 2 uur te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten Gratis • Betrouwbaarheid Soms 2 uur te laat 	<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten €3,95 • Betrouwbaarheid Soms een dag te laat 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten Gratis • Betrouwbaarheid Soms een dag te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Thuis of werk • Moment tijdvak Doordeweeks in kantooruren • Leverkosten €6,95 • Betrouwbaarheid Soms een dag te laat 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten Gratis • Betrouwbaarheid Soms een dag te laat 	<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten Gratis • Betrouwbaarheid Soms 2 uur te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten Gratis • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Thuis of werk • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten €3,95 • Betrouwbaarheid Soms 2 uur te laat 	<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten €3,95 • Betrouwbaarheid Altijd op tijd
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten €6,95 • Betrouwbaarheid Soms 2 uur te laat 	<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten €6,95 • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten €3,95 • Betrouwbaarheid Soms een dag te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond €3,95 • Leverkosten Altijd op tijd • Betrouwbaarheid 	<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten Gratis • Betrouwbaarheid Soms 2 uur te laat 	<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten Gratis • Betrouwbaarheid Soms een dag te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten €6,95 • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten €3,95 • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Thuis of werk • Moment tijdvak Doordeweeks in kantooruren • Leverkosten €6,95 • Betrouwbaarheid Soms een dag te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten Gratis • Betrouwbaarheid Soms een dag te laat 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (5 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten €6,95 • Betrouwbaarheid Soms 2 uur te laat 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Winkel van het bedrijf (15 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten Gratis • Betrouwbaarheid Altijd op tijd
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<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Thuis of werk • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten Gratis • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Keuze doordeweeks overdag of de avond • Leverkosten €3,95 • Betrouwbaarheid Altijd op tijd 	<ul style="list-style-type: none"> • Levertijd Zelfde dag • Locatie Thuis of werk • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten €3,95 • Betrouwbaarheid Soms 2 uur te laat
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

U wilt uw kledingstukken geleverd hebben. Welk van de drie profielen spreekt u het meest aan?

<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Keuze overdag, avond of weekend • Leverkosten Gratis • Betrouwbaarheid Soms een dag te laat 	<ul style="list-style-type: none"> • Levertijd 5 dagen • Locatie Thuis of werk • Moment tijdvak Doordeweeks in kantooruren • Leverkosten €6,95 • Betrouwbaarheid Soms een dag te laat 	<ul style="list-style-type: none"> • Levertijd 2 dagen • Locatie Pick-up point in een andere winkel (5 minuten afstand) • Moment tijdvak Doordeweeks in kantooruren • Leverkosten Gratis • Betrouwbaarheid Soms 2 uur te laat
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Als u een pick-up point in een andere winkel aangeboden zou krijgen als leverlocatie. In wat voor soort winkel zou u dit het liefst hebben? Ga er hierbij vanuit dat alle opties op dezelfde afstand bevinden.

- Supermarkt
- Bouwmarkt
- Boekhandel
- Warenhuis
- Tankstation
- Anders, namelijk: _____
- Dat maakt mij niet uit
- Ik bestel nooit online

8. Hoeveel zou u extra willen betalen om een product dezelfde dag geleverd te krijgen?

€0.-  €20.- ik laat nooit een product verzenden

9. Stel u bestelt 2 artikelen online en deze hebben verschillende levertijden (bijvoorbeeld het ene artikel 2 dagen en het andere artikel 5 dagen), welke optie zou u dan het beste bevallen? Ga er vanuit dat u in alle gevallen slechts een maal verzendkosten betaald.

- Ik ontvang de twee artikelen apart om ze zo snel mogelijk in bezit te hebben.
- Ik ontvang de twee artikelen tegelijk, maar krijg ze pas op het levermoment van het langst durende artikel
- Het maakt mij niet uit
- Ik bestel nooit online

10. Wanneer u een product aan huis laat leveren, zou het kunnen voorkomen dat u niet thuis bent of om een andere reden uw bezorger mist.

Hoe vaak gebeurt het ongeveer dat u de bezorger mist op het moment dat uw bestelling aankomt?



11. Hoeveel zou u extra willen betalen als u de levertijd en/of leverlocatie kunt veranderen na aankoop, zodat u alsnog de bezorger niet mist?



12. Hoeveel zou u extra willen betalen om vak waarin de levering plaatsvindt te verkleinen van 4 uur naar 1 uur (dus bijvoorbeeld van 15:00 tot 19:00 naar 18:00 tot 19:00).



De volgende vragen gaan over het retoursturen van het kledingstuk wanneer dit u niet bevalt.

13. De kledingstukken die u gekocht heeft blijken toch niet te bevallen en u wilt deze retourneren. De volgende vragen bevatten een aantal mogelijkheden tot retourneren. Graag zouden wij zien welke optie u het meeste aanspreekt. Probeer de antwoorden te baseren op een gebruikelijke situatie en niet op speciale gelegenheden. Als u nooit retourneert zien wij alsnog graag uw voorkeur voor als dit onverhoopt een keer nodig zou zijn.

U krijgt in de volgende vragen telkens 3 profielen te zien met 5 eigenschappen. Onderstaand staat de uitleg van de eigenschappen die gebruikt worden in de volgende vragen.

- Retourtijd
- Retourkosten
- Terugbetaaltijd
- Administratie
- Locatie

De maximale tijd die u heeft om het product retour te brengen

Geeft aan hoe duur de retourzending is

De tijd die het duurt voordat u uw geld terugkrijgt na de retour

Geeft aan wat voor administratieve taken u moet uitvoeren voordat u kunt retourneren

De locatie waar u de retour kunt afgeven

U wilt de kledingstukken terugsturen. Welk van de drie profielen spreekt u het meest aan?

- **Retourtijd** Binnen 28 dagen
- **Retourkosten** Gratis
- **Terugbetaaltijd** 28 dagen
- **Administratie** Retour online aanmelden
- **Locatie** Het wordt opgehaald van huis of werk



- **Retourtijd** Binnen 28 dagen
- **Retourkosten** €5,95
- **Terugbetaaltijd** 14 dagen
- **Administratie** Bijgevoegd label opplakken
- **Locatie** Winkel van het bedrijf (15 minuten afstand)



- **Retourtijd** Binnen 14 dagen
- **Retourkosten** €3,95
- **Terugbetaaltijd** 28 dagen
- **Administratie** Bijgevoegd label opplakken
- **Locatie** Winkel van het bedrijf (5 minuten afstand)



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- **Retourkosten** Gratis
- **Terugbetaaltijd** 28 dagen
- **Administratie** Formulier printen en invullen
- **Locatie** Winkel van het bedrijf (15 minuten afstand)



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- **Retourkosten** €5,95
- **Terugbetaaltijd** 28 dagen
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- **Terugbetaaltijd** 28 dagen
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- **Locatie** Pick-up point in een andere winkel (5 minuten afstand)



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<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	

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<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	

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<ul style="list-style-type: none"> • Retourtijd • Retourkosten • Terugbetaaltijd • Administratie • Locatie 	Binnen 14 dagen Gratis 18 dagen Formulier printen en invullen Het wordt opgehaald van huis of werk	<ul style="list-style-type: none"> • Retourtijd • Retourkosten • Terugbetaaltijd • Administratie • Locatie 	Binnen 28 dagen Gratis 14 dagen Retour online aanmelden Winkel (15 minuten afstand)	<ul style="list-style-type: none"> • Retourtijd • Retourkosten • Terugbetaaltijd • Administratie • Locatie 	Binnen 14 dagen Gratis 14 dagen Bijgevoegd label opplakken Winkel van het bedrijf (5 minuten afstand)
<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	

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<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	

14. Hoeveel van uw aangekochte kledingstukken retourneert u ongeveer?



15. Hoeveel procent van uw retouren zijn spullen die u zou willen ruilen (bijvoorbeeld door een verkeerde maat of kleur) – Skip if Q14 = 0%



16. Hoe vaak bestelt u meer dan 1 maat of kleur van hetzelfde product met als doel de niet passende/bevallende producten terug te sturen?



17. In hoeverre zou u het op prijs stellen als bij dit soort bestellingen extra artikelen zouden zitten die u of mee terug kan sturen of kan houden en betalen? – Skip if Q16 = 0% or 'ik bestel nooit online'

Totaal niet op prijs	Niet op prijs	Neutraal	Wel op prijs	Heel erg op prijs
0	0	0	0	0

18. U heeft in de vorige vragen voorkeuren gegeven voor aankoop, betaling, levering en retour voor kledingaankopen. Bij welke categorieën zou u vergelijkbare voorkeuren hebben? Meerdere antwoorden zijn mogelijk.

- Dagelijkse boodschappen
- Alcoholhoudende dranken en tabak
- Elektronica en huishoudelijke apparaten
- Meubels en stoffering
- Gereedschap en kluspullen
- Medische producten
- Grote vervoersmiddelen (bijv. een auto)
- Kleine vervoersmiddelen (bijv. een fiets)
- Communicatiemiddelen (bijv. een telefoon)
- Vrijtijdsspullen (bijv. boeken of spellen)
- Tuinproducten en planten
- Cosmetica
- Geen van allen

19. Waarom zou u bij kleding andere voorkeuren hebben dan bij bovenstaande productcategorieën?

Om uw antwoorden beter te kunnen bestuderen zouden wij graag wat extra informatie van u willen.

20. Wat is uw leeftijd?

21. Wat is uw geslacht?

- Vrouw
- Man

22. Wat is uw gezinssituatie?

- Alleenstaand
- In een relatie
- Samenwonend
- Getrouwd
- Gescheiden
- Weduwe(naar)
- Zeg ik liever niet

23. Heeft u kinderen?

- Nee
- Ja, namelijk __ kinderen
- Zeg ik liever niet

24. Welke van de volgende categorieën geeft het beste het totale bruto jaarinkomen van uw huishouden weer? Voeg alle bronnen van inkomsten toe aan dit totaal, inclusief eventueel inkomen van kinderen. Wij garanderen dat wij al uw andere antwoorden absoluut vertrouwelijk zullen behandelen.

- <€10,000
- €10,000 - €20,000
- €20,000 - €30,000
- €30,000 - €40,000
- €40,000 - €50,000
- >€50,000
- Zeg ik liever niet

25. Woont u in een stedelijk of landelijke plaats (dorp)?

- Stedelijk
- Landelijk

26. Welke provincie woont u?

- Friesland
- Groningen
- Drenthe
- Flevoland
- Overijssel
- Noord-Holland
- Zuid-Holland
- Gelderland
- Utrecht
- Noord-Brabant
- Zeeland
- Limburg

27. Wat is uw hoogst genoten opleiding?

- Basisschool
- LBO / VMBO-kader/VMBO-basisberoeps
- MAVO/ VMBO-theoretisch/ VMBO Gemengd
- Havo
- VWO
- MBO
- HBO / WO Bachelor
- WO Master
- PhD / WO post-master
- Anders, namelijk: _____

28. Hoeveel uren doet u betaald werk per week?

- 32 uur per week of meer
- 20 tot 32 uur per week
- Tot 20 uur per week
- Eigen ondernemer
- Ik studeer
- Ik studeer en werk parttime
- Ik ben werkzoekend

- Ik doe vrijwilligerswerk
- Ik ben niet werkzaam
- Gepensioneerd

29. Wat voor planning past het beste bij uw huidige werksituatie?

- Ik ben van 9 tot 5 van huis
- Ik heb stabiele werktijden buitenshuis, meestal buiten kantooruren (bijv. nachtdiensten of weekendwerk)
- Ik heb flexibele werktijden buitenshuis, maar wel doordeweeks
- Ik heb flexibele werktijden buitenshuis, inclusief het weekend
- Ik ben meestal thuis

Wij denken dat uw ingevulde antwoorden afhankelijk zijn van uw aankoopgedrag. Graag stellen wij hier ook wat vragen over.

30. Wat geeft u gemiddeld per maand uit aan kleding? Het gaat hierbij om uitgaven die u uiteindelijk echt maakt, dus geen bestellingen die u retour stuurt. Neem tevens alle soorten kleding mee. Dus denk ook aan schoenen, jassen of sportkleding.

- <€10
- €10 - €20
- €20 - €50
- €50 - €100
- €100 - €200
- €200 >

31. Hoeveel procent van uw kledinguitgave spendeert u ongeveer aan online uitgaven?



32. Hoeveel uur besteedt u maandelijks ongeveer aan het winkelen van kleding (online en offline), inclusief de tijd dat u niets koopt maar wel aan het zoeken bent?

33. Hoeveel procent van deze tijd spendeert u aan online winkelen?



34. Noem tot 5 winkels en/of merken waar u het meeste kleding koopt (minimaal 3 en zowel online als offline):

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35. Hoeveel producten koopt u gemiddeld per keer?

- Meestal 1 stuk per aankoop
- 2 tot 3 kledingstukken per keer
- 3 tot 5 kledingstukken per keer
- 5 tot 10 kledingstukken per keer
- Meer dan 10 kledingstukken per keer

36. Welk van onderstaande vindt u het belangrijkste bij kleding?

- Prijs
- Kwaliteit
- Merkbekendheid

37. Hoe erg bent u het eens met de volgende stellingen?

Ik koop vaak last-minute de kleding die ik nodig heb

Totaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Heel erg mee eens
0	0	0	0	0

Wanneer ik ga winkelen koop ik vaak meer dan ik van plan was

Totaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Heel erg mee eens
0	0	0	0	0

Ik doe van te voren grondig onderzoek voordat ik kleding koop

Totaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Heel erg mee eens
0	0	0	0	0

Ik volg altijd de laatste mode trends

Totaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Heel erg mee eens
0	0	0	0	0

38. Als u zou moeten kiezen, welk van de onderstaande stelling past het beste bij u?

- Als ik kleding koop, koop ik dit graag altijd bij dezelfde winkel(s)
- Als ik kleding koop, koop ik dit graag altijd van hetzelfde merk/dezelfde merken
- Als ik kleding koop, koop ik dit graag altijd via eenzelfde soort kanaal (bijvoorbeeld altijd op de website of altijd in de fysieke winkel)
- Als ik kleding koop, heb ik geen voorkeur voor een specifieke winkel, merk of kanaal

39. Geef aan op welk moment of op welke momenten u een digitaal apparaat (laptop, pc, telefoon, app, digitale kiosk, smartwatch etc.) gebruikt tijdens het winkelen voor kleding. U kunt geen, één of meerdere antwoorden kiezen.

- Voordat u naar de winkel gaat (bijv. thuis)
- Tijdens uw rit naar de winkel
- In de winkel
- Na uw aankoop

40. Wanneer de leverings- en/of retourvoorwaarden bij een webshop niet naar wens zijn, hoe reageert u dan het meest?

- Ik koop het product alsnog bij deze webshop
- Ik kijk bij andere website of het product met betere voorwaarden verzonden kan worden
- Ik koop het product niet
- Ik ga naar de winkel om het product daar te kopen
- Ik koop nooit kleding online

41. Wanneer ervaring met levering of retour achteraf niet goed bevallen is, wat heeft dit voor gevolgen?

- Ik zal niet meer bij deze winkel bestellen
- Ik zal eerder andere alternatieve zoeken voordat ik iets bij deze winkel bestel
- Dit zou geen effect hebben op mijn aankoopbeslissing

Dit was het einde van de enquête. Wij willen u graag bedanken voor uw deelname en wensen u een prettige dag toe.

Appendix G: Definitions of identified supply chain capabilities

Supply chain capabilities

e-Commerce Management:	Utilizing the aspects of the online stores. It involves translating consumer data into useable actions, gathering consumer fulfillment preferences and capturing orders to translate them towards the order management
General SCM:	All supporting activities to build the omnichannel landscape. It involves acquiring the right talents, incentivize management, give the right authorizations, manage the metrics, and manage research and development
Inventory Control:	All activities related to managing the inventory. It involves visibility of stock across all nodes and allocating stock to inventory positions
Logistics:	All activities related to the movements between hubs (e.g. suppliers to warehouses, warehouses to warehouses, warehouses to stores, and warehouses to consumers). Logistics can be forward (from supplier, to warehouse, to store, to consumer) or reverse (from consumer, to store, to warehouse)
Order Management:	All activities related to allocating the placed orders towards available inventory. With information of known orders, the characteristics of the orders (e.g. location), and inventory positioning, order management can decide where to ship what order from
Partnership Management:	Management of all partners upstream (e.g. 3PL partners), and downstream (e.g. wholesalers and franchisers) of the supply chain.
Store Management:	Utilizing all aspects of physical stores. It involves the positioning of stores, the management of employees and the internal design and processes (infrastructure) of the store
Supply and Demand:	The planning of the consumer demand and available supply. It complements inventory control by planning the amount of supply necessary at all nodes to fulfill demand corresponding to those nodes.
Warehousing:	The management of warehouse activities. It involves determining locations (e.g. centralized/decentralized decisions, and where to place them), infrastructure (i.e. how the inside of warehouses is used and designed), and employee management

Non-supply chain capabilities

Finance:	Managing financial flows related to fulfillment. It involves tax management, cost optimization, and administration as directly related activities, and payments that relate to revenue and cost allocation as indirectly related activities
Legal:	All privacy related issues for consumer data use
Marketing:	Managing the image of the firm and acquiring customers by means of brand management, customer targeting strategies, data analytics, and interface design

Appendix H: Theoretical coding – detailed view

Table 21: Heat Map Capabilities to Services – Theoretical coding detailed view A

	Inventory visibility	Maximum availability	Right product, right place	Substitution offering	Delivery costs	Delivery flexibility	Delivery location	Delivery reliability	Delivery speed	Delivery controlling	Added offerings	Order channel options	Payment methods	Exchange services	Reimbursement time	Return costs	Return location	Return process	Return reliability	Return time window	Environmental responsibility	Cross-channel service	Relevant marketing	Loyalty programs	Product fit	Product pricing	Product quality
e-Commerce infrastructure	0	1	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Authorized management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Management dedication	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Metrics management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Research and development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Talent management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
forward logistics	0	2	2	0	3	2	3	1	6	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
reverse logistics	0	0	1	0	0	0	0	0	1	0	0	0	0	1	2	0	5	2	1	2	0	0	0	0	0	0	0
3PL management	0	1	0	0	0	1	3	1	4	1	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0
Owned store management	0	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0
Pick-up partner management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Wholesaler management	0	2	2	0	1	1	3	0	3	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0
Store employee management	0	1	0	0	0	0	2	0	2	0	1	0	0	0	1	0	1	0	0	0	0	2	1	0	0	0	1
Store infrastructure	0	2	2	0	0	1	3	0	3	0	1	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	1
Store location management	0	1	1	0	0	1	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Supply and demand planning	0	1	1	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 22: Heat Map Capabilities to Services – Theoretical coding detailed view B

	Inventory visibility	Maximum availability	Right product, right place	Substitution offering	Delivery costs	Delivery flexibility	Delivery location	Delivery reliability	Delivery speed	Delivery controlling	Added offerings	Order channel options	Payment methods	Exchange services	Reimbursement time	Return costs	Return location	Return process	Return reliability	Return time window	Environmental responsibility	Cross-channel service	Relevant marketing	Loyalty programs	Product fit	Product pricing	Product quality
Inventory visibility	2	2	3	0	0	3	4	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	
Stock positioning	1	1	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Order allocation	0	1	1	0	0	1	1	0	2	0	0	0	0	2	2	0	2	1	0	0	0	1	1	0	0	0	
Warehouse employee management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Warehouse infrastructure	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Warehouse locations	0	1	0	0	1	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Administration	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	
Cost optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Payments	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	0	1	0	0	0	0	0	0	0	0	0	
Pricing	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
Tax management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Privacy management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brand management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	
Customer targeting strategies	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	
Customer data analytics	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	4	1	1	0	
Interface design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	

Table 23: Heat Map Capabilities to Capabilities – Theoretical coding detailed view A

	e-Commerce infrastructure	Authorized management	Management dedication	Metrics management	Research and development	Talent management	forward logistics	reverse logistics	3PL management	Owned store management	Pick-up partner management	Wholesaler management	Store employee management	Store infrastructure	Store location management	Stock positioning	Supply and demand planning	Inventory visibility	Order allocation	Warehouse employee	Warehouse infrastructure	Warehouse locations	Administration	Cost optimization	Payments	Pricing	Tax management	Privacy management	Brand management	Customer targeting strategies	Customer data analytics	Interface design
<i>e-Commerce infrastructure</i>	0	0	0	1	0	0	0	0	0	1	0	2	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
<i>Authorized management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Management dedication</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Metrics management</i>	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
<i>Research and development</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Talent management</i>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>forward logistics</i>	0	0	0	1	0	0	0	2	1	2	0	4	0	3	1	0	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>reverse logistics</i>	0	0	0	0	0	0	2	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>3PL management</i>	0	0	0	0	0	0	3	1	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0

Table 24: Heat Map Capabilities to Capabilities – Theoretical coding detailed view B

	e-Commerce infrastructure	Authorized management	Management dedication	Metrics management	Research and development	Talent management	forward logistics	reverse logistics	3PL management	Owned store management	Pick-up partner management	Wholesaler management	Store employee management	Store infrastructure	Store location management	Stock positioning	Supply and demand planning	Inventory visibility	Order allocation	Warehouse employee	Warehouse infrastructure	Warehouse locations	Administration	Cost optimization	Payments	Pricing	Tax management	Privacy management	Brand management	Customer targeting strategies	Customer data analytics	Interface design	
<i>Owned store management</i>	1	0	0	0	0	0	1	0	0	0	0	1	1	2	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Pick-up partner management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Wholesaler management</i>	2	0	0	0	0	0	2	0	0	1	0	0	0	1	1	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
<i>Store employee management</i>	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Store infrastructure</i>	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Store location management</i>	1	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Supply and demand planning</i>	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
<i>Inventory visibility</i>	1	0	0	0	0	0	4	1	0	3	0	5	0	2	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0

Table 25: Heat Map Capabilities to Capabilities – Theoretical coding detailed view C

	e-Commerce infrastructure	Authorized management	Management dedication	Metrics management	Research and development	Talent management	forward logistics	reverse logistics	3PL management	Owned store management	Pick-up partner management	Wholesaler management	Store employee management	Store infrastructure	Store location management	Stock positioning	Supply and demand planning	Inventory visibility	Order allocation	Warehouse employee	Warehouse infrastructure	Warehouse locations	Administration	Cost optimization	Payments	Pricing	Tax management	Privacy management	Brand management	Customer targeting strategies	Customer data analytics	Interface design	
Stock positioning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Order allocation	0	0	0	0	0	0	2	2	1	2	0	2	0	2	0	0	1	1	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0
Warehouse employee management	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Warehouse infrastructure	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Warehouse locations	2	0	0	0	0	0	3	2	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Administration	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cost optimization	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Payments	0	0	0	0	0	0	0	1	0	4	0	4	0	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	
Pricing	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tax management	0	0	0	0	0	0	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	

Table 26: Heat Map Capabilities to Capabilities – Theoretical coding detailed view D

	e-Commerce infrastructure	Authorized management	Management dedication	Metrics management	Research and development	Talent management	forward logistics	reverse logistics	3PL management	Owned store management	Pick-up partner management	Wholesaler management	Store employee management	Store infrastructure	Store location management	Stock positioning	Supply and demand planning	Inventory visibility	Order allocation	Warehouse employee	Warehouse infrastructure	Warehouse locations	Administration	Cost optimization	Payments	Pricing	Tax management	Privacy management	Brand management	Customer targeting strategies	Customer data analytics	Interface design
<i>Privacy management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>Brand management</i>	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Customer targeting strategies</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Customer data analytics</i>	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Interface design</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 27: Heat Map Services to benefits – Theoretical coding detailed view

	Logistics cost reduction	Reduced inventory	Economy of scale	Increased sales volume	Additional revenue streams	Improved brand image	Increased loyalty
<i>Inventory visibility</i>	0	0	0	1	0	0	0
<i>Maximum availability</i>	0	0	0	3	0	1	2
<i>Right product, right place</i>	0	0	0	3	0	1	0
<i>Substitution offering</i>	0	0	0	0	0	0	0
<i>Delivery costs</i>	0	0	0	1	1	0	0
<i>Delivery flexibility</i>	0	0	0	3	1	0	1
<i>Delivery location</i>	0	0	0	3	0	0	1
<i>Delivery reliability</i>	0	0	0	0	0	0	0
<i>Delivery speed</i>	0	0	0	3	1	0	1
<i>Delivery controlling</i>	0	0	0	0	0	0	0
<i>Added offerings</i>	0	0	0	1	0	0	0
<i>Order channel options</i>	0	0	0	1	0	0	0
<i>Payment methods</i>	0	0	0	0	0	0	0
<i>Exchange services</i>	0	0	0	0	0	0	0
<i>Reimbursement time</i>	0	0	0	2	0	0	2
<i>Return costs</i>	0	0	0	1	0	0	1
<i>Return location</i>	0	0	0	3	0	0	2
<i>Return process</i>	0	0	0	1	0	0	1
<i>Return reliability</i>	0	0	0	0	0	0	0
<i>Return time window</i>	0	0	0	1	0	0	1
<i>Environmental responsibility</i>	0	0	0	0	0	0	0
<i>Cross-channel service</i>	0	0	0	2	0	1	1
<i>Relevant marketing</i>	0	0	0	2	0	1	1
<i>Loyalty programs</i>	0	0	0	0	0	0	0
<i>Product fit</i>	0	0	0	1	0	0	1
<i>Product pricing</i>	0	0	0	1	0	0	0
<i>Product quality</i>	0	0	0	0	0	1	0

Table 28: Heat Map Capabilities to benefits – Theoretical coding detailed view

	Logistics cost reduction	Reduced inventory	Economy of scale	Increased sales volume	Additional revenue	Improved brand image	Increased loyalty
<i>e-Commerce infrastructure</i>	0	0	0	0	0	0	0
<i>Authorized management</i>	0	0	0	0	0	0	0
<i>Management dedication</i>	0	0	0	0	0	0	0
<i>Metrics management</i>	0	0	0	0	0	0	0
<i>Research and development</i>	0	0	1	0	0	0	0
<i>Talent management</i>	0	0	0	0	0	0	0
<i>forward logistics</i>	2	1	0	0	0	0	0
<i>reverse logistics</i>	3	0	0	0	0	0	0
<i>3PL management</i>	1	0	0	0	0	0	0
<i>Owned store management</i>	0	0	0	0	0	0	0
<i>Pick-up partner management</i>	0	0	0	0	0	0	0
<i>Wholesaler management</i>	0	0	0	0	0	0	0
<i>Store employee management</i>	1	0	0	0	0	0	0
<i>Store infrastructure</i>	0	0	0	0	0	0	0
<i>Store location management</i>	0	0	0	0	0	0	0
<i>Supply and demand planning</i>	0	0	0	0	0	0	0
<i>Stock positioning</i>	0	0	0	0	0	0	0
<i>Inventory visibility</i>	2	1	0	0	0	0	0
<i>Order allocation</i>	2	0	0	0	0	0	0
<i>Warehouse employee management</i>	0	0	0	0	0	0	0
<i>Warehouse infrastructure</i>	0	0	0	0	0	0	0
<i>Warehouse locations</i>	1	0	0	0	0	0	0
<i>Administration</i>	0	0	0	0	0	0	0
<i>Cost optimization</i>	1	0	0	0	0	0	0
<i>Payments</i>	0	0	0	0	0	0	0
<i>Pricing</i>	0	0	0	0	0	0	0
<i>Tax management</i>	0	0	0	0	0	0	0
<i>Privacy management</i>	0	0	0	0	0	0	0
<i>Brand management</i>	0	0	0	0	0	0	0
<i>Customer targeting strategies</i>	0	0	0	0	0	0	0
<i>Customer data analytics</i>	0	0	0	0	0	0	0
<i>Interface design</i>	0	0	0	0	0	0	0

Table 29: Heat Map Capabilities to Costs – Theoretical coding detailed view A

	International complexity	Business model complexity	Demand uncertainty	Logistics complexity	IT complexity	Organizational complexity	Stakeholder complexity	IT newness	Scaling challenges	Market disruption	Lack of experience	Real estate investments	Tax consulting costs	Employee allocation and development	Partner resistance	Management resistance	Employee resistance	Shipping costs	Return costs	IT maintenance	Cannibalization	Markdown risk	Fraud
<i>e-Commerce infrastructure</i>	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0
<i>Authorized management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Management dedication</i>	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Metrics management</i>	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
<i>Research and development</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Talent management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>forward logistics</i>	2	1	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
<i>reverse logistics</i>	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
<i>3PL management</i>	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Owned store management</i>	1	0	0	1	0	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0
<i>Pick-up partner management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Wholesaler management</i>	0	1	0	2	0	1	2	0	0	0	1	1	0	0	2	0	0	0	0	0	2	0	0
<i>Store employee management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
<i>Store infrastructure</i>	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
<i>Store location management</i>	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0

Table 30: Heat Map Capabilities to Costs – Theoretical coding detailed view B

	International complexity	Business model complexity	Demand uncertainty	Logistics complexity	IT complexity	Organizational complexity	Stakeholder complexity	IT newness	Scaling challenges	Market disruption	Lack of experience	Real estate investments	Tax consulting costs	Employee allocation and development	Partner resistance	Management resistance	Employee resistance	Shipping costs	Return costs	IT maintenance	Cannibalization	Markdown risk	Fraud
<i>Supply and demand planning</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Stock positioning</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Inventory visibility</i>	0	1	0	0	5	2	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0
<i>Order allocation</i>	1	1	1	0	3	1	0	2	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1
<i>Warehouse employee management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Warehouse infrastructure</i>	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
<i>Warehouse locations</i>	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
<i>Administration</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Cost optimization</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Payments</i>	2	1	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Pricing</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Tax management</i>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Privacy management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Brand management</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Customer targeting strategies</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Customer data analytics</i>	0	1	0	0	2	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
<i>Interface design</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix I: Survey – Descriptives and main effects

Appendix I.1. Data preparation and assumptions

The dataset resulted in 1299 responses. Of these 1299 responses, 349 were not completed. The incomplete cases were removed from the dataset. Next, all respondents that answered 'no' to the first selection question (whether they shopped online or not) were analyzed and removed from the dataset. This resulted in 293 extra removals and resulted in 657 remaining and complete cases.

Next, outliers were assessed. Only a few questions that were asked were interval or ratio scale and could be influenced by outliers. In almost all these cases, several outliers were present. However, since no regression or other modeling techniques were used for these variables, the outliers were chosen not to be removed.

In addition, a sanity check is performed. This means double mail-addresses were looked for to find out whether respondents took the survey more than once. No double cases were found. Furthermore, the time it took to complete the survey is assessed to find people who intentionally took the survey for other motives than providing their honest view (i.e. respondents were paid for taking the survey, so speeding could be a tactic to earn money fast). In the focus group tests, the fastest respondent took about 15 minutes to finish the survey. Therefore, it is chosen to remove all cases that completed the survey in under 10 minutes. This resulted in 44 removed respondents and left the dataset with 613 remaining. Finally, there was one open question in the survey. This question was used to assess whether there were answers that were clearly illogical (e.g. an answer 'xxx'). There were 4 cases where a respondent answered in line with "I do not know"²⁹. The cases were studied to see whether other illogical answers show up for these respondents. For 2 cases, inconsistent answers occurred in the dataset, resulting in a removal and therefore 611 remaining cases.

Besides data cleaning, validity is assessed. The measurement instrument (survey) can be seen as valid if the measurement validity is high. To assure validity the survey has been made on the basis of the industry benchmark and the interviews. Furthermore, the survey was tested internally within Deloitte and externally to assure validity even further. These measures all improved measurement validity. However, unfortunately the survey could not be built on previous studies, since there was no study found that took a similar survey. This is a risk to measurement validity. Finally, to assess measurement validity further, the abortion points of the incomplete responses was assessed to find out whether some questions could be too difficult to answer and could therefore also harm the validity of complete results. Only one of the abortion points stands out, which relates to the start of the second conjoint question block. Since a similar question block was already performed, it can be assumed that the question was not too difficult and was rather a cut-off point because people were not willing to go through another conjoint block.

Non-response error relates to the difference in answering for those who took the survey and potential people that did not take the survey. The error can be indicated by comparing the early respondents' data to the late respondents' data. Similar responses indicate that there is no issue regarding non-response error. Comparing the means of all variables with ordinal, interval or ratio scale, only 3 of the 30 variables showed significant difference in mean. This result, combined with the assumption that the subject of the survey is not of nature that it creates a non-response error (e.g. very personal subjects), indicates that non-response error does not have to be seen as an issue.

In addition, if acquiescence bias occurs, respondents tend to mainly agree to certain questions. This bias can be decreased by making questions directions balanced, meaning that questions are sometimes reversed in positivity (i.e. the highest rating means the lowest outcome). In this survey, questions that could be affected by acquiescence bias were sometimes reversed. Furthermore, for the conjoint questions, the options in a question were placed independent of the characteristics (e.g. it was assured that not all options with the lowest costs were placed as first option in all questions).

In case of likewise responding, respondents answer questions the same way for all questions. This indicates that a respondent has no intent of answering honest, but rather skips through the questions.

²⁹ The question regarded what shops they usually buy, so not knowing that is seen as worth investigating

To find this out, standard deviations of segments of questions were analyzed. If the standard deviation was zero, the respondent filled in all questions within the segment with the same answer. However, this could be intentional and honest. Therefore, cases were removed only if more than half of the identified segments showed a standard deviation of zero, because this would indicate that likewise responding occurred in multiple topics and the probability of intentional and honest answering is seemed unlikely. Based on this criterion, three cases were removed from the dataset, resulting in 608 remaining cases.

Finally, mild and extreme responding refers to respondents answering questions either in an intermediate way or in extreme ways (i.e. very high or low values). To test this, standard deviations from all Likert scales were computed for the separate cases and assessed for normality. If the standard deviations are normally distributed, mild and extreme responding is not seen as a problem. Normality was tested with visual inspection of the histogram and Q-Q plot, and the statistical inspection of skewness, kurtosis, a Kolmogorov-Smirnov test, and a Shapiro-Wilk test. The Kolmogorov-Smirnov test ($p=0.049$) and Shapiro-Wilk test indicated non-normality ($p=0.033$). Therefore, there seems to be some deviation from normality, but since visual inspection and skewness and kurtosis did indicate normality and Likert scale questions are only a small part of the survey, this is still seen as acceptable.

Normal distribution of the population is important since validity of parametric tests are based on this assumption (Hair *et al.*, 2009). Normality will be tested by Skewness and Kurtosis values and by the Kolmogorov-Smirnov and Shapiro Wilk tests for all ordinal and interval data. For four variables, Skewness and Kurtosis values showed non-normality: thresholds for free delivery, willingness to pay for reallocation, willingness to pay for a smaller time window and time spend shopping. For the first three variables, this is due to a high percentage willing to pay nothing or accept no threshold. Correcting for those responses will improve the Skewness and Kurtosis values. However, for all variables, both Kolmogorov-Smirnov and Shapiro Wilk tests showed significant results ($p=0.00$ for all variables). This implies non-normality. However, since the sample size is very large ($n=608$), the violation of the normality assumption should not cause major problems for parametric tests (Ghasemi & Zahediasl, 2012). In conclusion: even though normality of the sample cannot be assured, this will not cause major issues and therefore the parametric tests are still applicable based on this assumption.

One of the assumptions is homogeneity of variance, or homoscedasticity. This is assessed by calculating the variance ratio within (sub)-segments of questions. The variance ratio can be calculated by dividing the highest variance with the lowest. If this number is lower than 2, homoscedasticity can be assumed (Field, 2009). For the initial dataset, the variance ratio is higher than 2 for most building blocks, which indicates heteroscedasticity instead of homoscedasticity. When manipulating variables for analysis, homogeneity is tested again for those variables.

The answers given by a respondent should not depend on the answers given by another respondent (i.e. independence should be assured). In this case, the online characteristic of the survey decreases the possibility of dependent answers. The only case where dependence could arise if multiple participants filled in the survey together. However, this is hard to test and is not assumed likely for enough respondents to influence survey results. Therefore, the responses are assumed independent.

Appendix I.2. Descriptives

First of all, spending more money on clothing correlates positively with spending a higher percentage of spending online ($\rho=0.258$, $p=0.000$). When spending more money on clothing, also a positive correlation exists for the percentage of time spend on shopping clothes ($\rho=0.332$, $p=0.000$), the percentage of this time spend online ($\rho=0.142$, $p=0.007$), the amount of products bought per purchase ($\rho=0.212$, $p=0.000$), buying more than originally planned ($\rho=0.197$, $p=0.000$), and to what extend a person is sensitive to fashion trends ($\rho=0.296$, $p=0.000$).

Not only absolute spend, but also relative online spend is positively correlated with the amount of time spend on shopping ($\rho=0.237$, $p=0.000$), the percentage of this time spend online

shopping ($\rho=0.525$, $p=0.000$), the amount of products bought per purchase ($\rho=0.253$, $p=0.000$), spending more than planned ($\rho=0.148$, $p=0.000$), and following fashion trends ($\rho=0.119$, $p=0.003$). In addition, relative online spend also positively correlates with how thoroughly a person researches the offerings before the actual purchase ($\rho=0.098$, $p=0.016$). The amount of time people spend on shopping also positively correlates with the percentage of this time is spend online ($\rho=0.171$, $p=0.000$), the amount of products bought per purchase ($\rho=0.121$, $p=0.003$), to what extend people spend more money than planned ($\rho=0.219$, $p=0.000$) and following fashion trends ($\rho=0.213$, $p=0.000$). Again, not only absolute time spend but also relative online time spend correlates positively with the amount of products bought in one purchase ($\rho=0.199$, $p=0.000$) and to what extend a person spends more than planned ($\beta=0.152$, $p=0.000$). In addition, the percentage of time spend shopping online positively correlates with the extent to which people buy clothing last-minute ($\beta=0.091$, $p=0.025$). Also, buying more products per purchase correlates positively with the extent people buy more than planned ($\rho=0.254$, $p=0.000$). There is also a positive correlation between the extent people buy clothing last-minute and the extent they buy more than originally planned ($\rho=0.206$, $p=0.000$). The extent to which people buy more than planned negatively correlates with the extent they thoroughly do research before they actually purchase ($\rho=-0.144$, $p=0.000$) and positively correlates with the extent they follow fashion trends ($\rho=0.205$, $p=0.000$). Researching more thoroughly before a purchase correlates positively with following the latest fashion trends as well ($\rho=0.143$, $p=0.000$).

Appendix I.3. Main effect results

Ordering and payment

As expected, the physical store ($\mu=4.2188$, $\sigma=0.87422$) and website ($\mu=4.1563$, $\sigma=0.7595$) had higher means compared to all other channels, with exception of the difference between their own means (i.e. no significant statement can be made according the preference of the use of a physical store compared to the website). Again expected according to Figure 56, the mean of the mobile website ($\mu=2.7928$, $\sigma=1.2960$) was also significantly higher compared to the remaining channels. Next in line were the app ($\mu=2.4457$, $\sigma=1.2246$) and paper catalogue ($\mu=2.4819$, $\sigma=1.2548$), who both had higher means than the remaining channels, with disrespect to the difference in their own means (which was not significant). E-mailing the order ($\mu=2.0822$, $\sigma=1.2284$) had a significantly higher mean than calling ($\mu=1.9112$, $\sigma=1.0374$) or new digital devices ($\mu=1.6530$, $\sigma=0.9374$) and calling had in turn a higher mean than new digital devices, which had the lowest mean.

Delivery

The conjoint model's fit is assessed in three distinct ways. First, by assessing the root likelihood (RLH). The root likelihood defines how much better the model is, compared to a model based on chance. The RLH for a perfect model is 1.0 and, since there are 3 options per question, the expected RLH value for a chance model is 1/3. The model's RLH is 0.734. Dividing this with the chance value shows that the model is approximately 2.2 times better than a chance model (Sawtooth Software, 2009). Second, the percent certainty (Hauser, 1978) is assessed. This can be calculated by dividing the difference between the log likelihood of the model and the chance model with the log likelihood of the chance model. Zero indicates a model equal to the chance model and 1 indicates a "perfect" solution. The percent certainty value of the model is 0.4892, indicating it is 48.9% on its way to "a perfect model". Finally, two hold-out cases were introduced. This means that 2 choice questions were added in the survey and not used in the analysis. Instead, they were predicted with the model and compared to the respondents' answers. For the two hold-out questions, the model predicted 87% and 66% of the cases right. When looking deeper into this difference between the two, it is found that the first hold-out question focused its differences on important attributes (speed and costs), while the second focused its differences on less important attributes (timeframe, reliability and location). Therefore, the difference in total predicted utilities was lower. Based on these values, the model is considered a decent fit, especially for predicting high-importance attributes.

Also the location of pick-up points is assessed: what kind of store does a consumer want his product delivered in case of a pick-up point. Most people, 51.6% ($n=314$, $\sigma=12.32$), would like the pick-up point in a supermarket, while 37.2% ($n=226$, $\sigma=11.92$) would not mind where the pick-up point would be located. The remaining 11.2% has preferences distributed among other types of stores. This might indicate that most people would like to combine their pick-up with their regular schedule (assuming that grocery shopping is in everyone's regular schedule) and another large part would pick up the product without having another goal (i.e. they don't mind where the product will be delivered).

Another interesting insight regards how multiple products in one purchase are sent. If lead times would differ, it can be sent separate so consumers will have the products as fast as possible or it can be sent at the same time so there is one batch that has a slower overall lead time (i.e. all products arrive according to the latest lead time). When performing a paired sample t-test, there is no significant difference whether consumers rather have the products separate ($\mu=0.3618$, $\sigma=0.4809$), combined ($\mu=0.3405$, $\sigma=0.4743$) or whether they do not mind ($\mu=0.2977$, $\sigma=0.4576$).

Return

The conjoint model shows a RHL value of 0.822, while the chance model value is 0.333. This means the model is 2.5 times better than a chance model. The percent certainty of the model is 0.4931. Finally, the model predicted 54.6% and 94.4% right in the holdout two hold-out cases. The difference can again be explained due to focus on important variables.

Appendix J: Survey - Detailed segmentation Analysis

Appendix J.1. Ordering and payment

It is expected that different order and payment behavior is present for different people. Therefore, the demographic characteristics of chapter 7.2. are compared in this chapter.

Gender differences

Independent sample t-tests show, as can be seen in Figure 73, that woman are more likely than men to use a website for their purchase ($\Delta\mu=-0.1382$, $p=0.025$). On the other hand, men are more likely to mail an order ($\Delta\mu=0.2954$, $p=0.003$). For payment methods, men use a credit card on average 19.0% more often ($\Delta\mu=0.1903$, $p=0.000$) and use PayPal on average 7.9% more often ($\Delta\mu=0.0791$, $p=0.023$). On the other hand women tend to use transfer upfront 3.8% more often on average ($\Delta\mu=-0.0384$, $p=0.37$). There does not seem to be a significant difference in acceptable order or delivery thresholds.

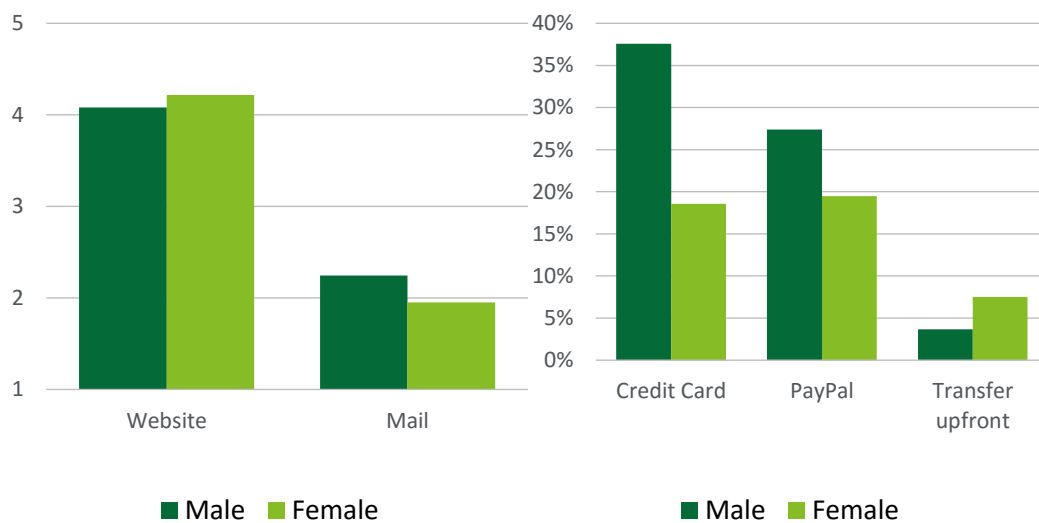


Figure 73: Means of significant differences in channel and payment uses

Age differences

A one way ANOVA with post-hoc Dunnett C test³⁰ shows that there is a difference in use of all channels for different age groups as shown in Table 31. Most notable differences are found in mobile website and app use in favor of younger age groups, and call, e-mail and catalogue in favor of older age groups. Interesting and unexpected result is the middle age groups (30 – 59 years old) use new digital devices more often. Especially the fact that 45-59 year olds would use this channel more than 18-29 year olds is interesting, since you would expect younger people to be trendsetters here.

³⁰ A post-hoc Dunnett-C test tests individual differences and is suitable for unequal variance and large samples. Unless mentioned otherwise, a one way ANOVA with Dunnett C. Post-Hoc test is used for this entire chapter

Table 31: significant differences between age groups and channel use³¹

Age category	Compared to age category	Physical Store	Website	Mobile website	App	Call	e-Mail	New Digital Devices	Catalogue
18-29	30-44	+	0	0	0	0	-	0	-
	45-59	0	0	+	0	-	-	-	-
	60+	0	+	+	+	-	-	0	-
30-44	18-29	-	0	0	0	0	+	0	+
	45-59	0	0	+	+	-	-	0	-
	60+	0	0	+	+	0	-	+	-
45-59	18-29	0	0	-	0	+	+	+	+
	30-44	0	0	-	-	+	+	0	+
	60+	0	+	+	+	0	0	+	0
60+	18-29	0	-	-	-	+	+	0	+
	30-44	0	0	-	-	0	+	-	+
	45-59	0	-	-	-	0	0	-	0

Figure 74 shows the means of the channel use across age groups.

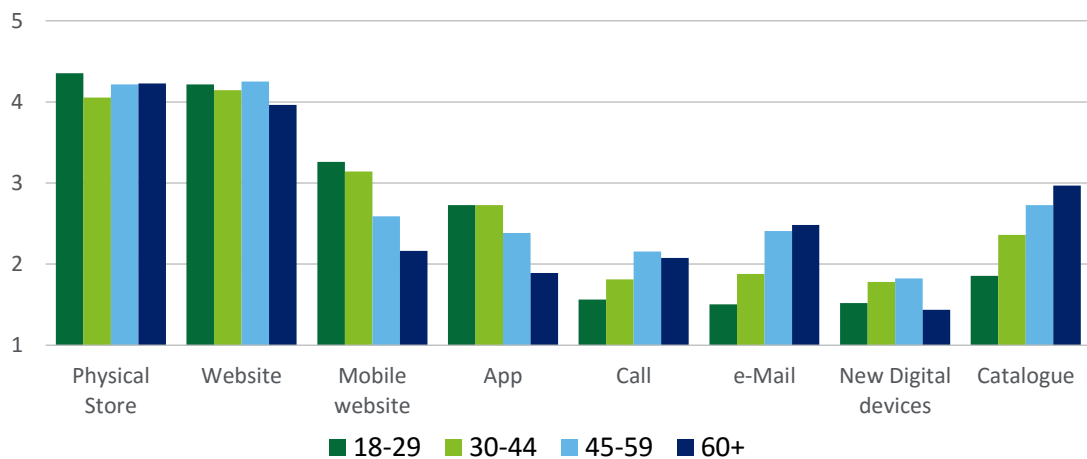


Figure 74: Means for channel use based on different age groups

A similar exercise for payment method use shows that there are less differences in this area. Table 32 shows that iDeal, PayPal and a gift card are less likely to be used by older people, in which the difference in mean can go up to 13.4% (iDeal), 24.6% (PayPal) and 16.2% (Gift card).

³¹ The table can be read from left to right (e.g. the age group 18-29 is more likely to use, compared to the age group 30-44, the physical store)

Table 32: significant differences in payment method use across age groups

Age category	Compared to age category	iDeal	PayPal	Gift card
18-29	45-59	+	0	0
	60+	+	+	+
30-44	45-59	+	0	0
	60+	0	+	+
45-59	18-29	-	0	0
	30-44	-	0	0
	60+	0	+	0
60+	18-29	-	-	-
	30-44	0	-	-
	45-59	0	-	0

Figure 64 shows the means of the payment method use across age groups.

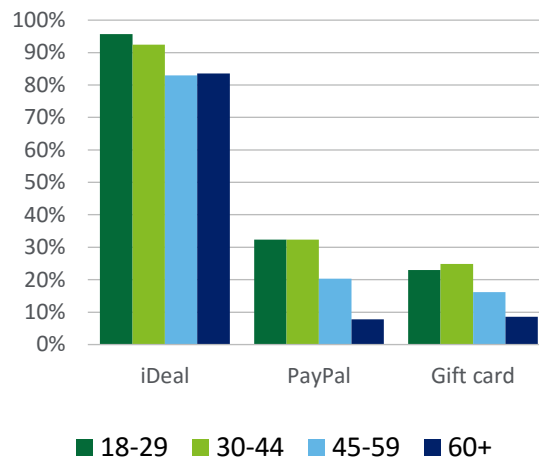


Figure 75: Means of payment use based on different age groups

Table 33 shows the significant differences regarding thresholds. It seems that younger people are more often willing to accept a threshold for free delivery and this can go up to a mean difference of 14.9%. However, the height of the threshold is not significantly different. For an order threshold, there is no significant difference in the amount of people willing to accept a threshold, but when they are willing to accept, there is a slight difference where older people (45-59 years old) are willing to accept a, on average, €7.70 higher threshold than middle age (30-44) people.

Table 33: significant differences in thresholds across age groups

Age category	Compared to age category	Delivery threshold yes/no	Height of order threshold
18-29	30-44	+	0
	45-59	+	0
30-44	18-29	-	0
	45-59	0	-
45-59	18-29	-	0
	30-44	0	+

Income differences

For annual income groups, only a few significant differences show up. First of all, people with an income of €50K or more use mobile website ($\Delta\mu=0.6539$, $\sigma=1.2915$) and app ($\Delta\mu=0.5582$, $\sigma=1.1710$) more than people with an income of €20K and €30K. Furthermore, credit card use is higher for €50K income groups than income groups below €40K. Differences in mean are between 23.4% and 37.2% in descending order, which indicates that the difference declines when the difference in income groups decline.

Family situation differences

The tests show some differences for family situation groups as depicted in Table 34. There are some differences in mobile website, app, call and new digital device use and in credit card use. However, no pattern or explanation can be distilled from this information.

Table 34: significant differences in channel and payment use across family groups

<i>Family situation</i>	Compared to Family situation	Mobile website	App	Call	New digital devices	Credit card
<i>Alone, no kids</i>	Partner, no kids	0	0	0	0	-
	Partner, kids	-	-	0	-	0
<i>Alone, kids</i>	With parents	0	0	+	0	0
<i>Partner, no kids</i>	Alone, no kids	0	0	0	0	+
	Partner, kids	-	-	0	0	0
<i>Partner, kids</i>	Alone, no kids	+	+	0	+	0
	Partner, no kids	+	+	0	0	0
<i>With parents</i>	Alone, no kids	0	0	-	0	0

Working situation

A lot of differences are found in the working situation demographics as shown in Table 35 and Table 36. Especially the use of mobile website and app, which is favored significantly more by students and working people, while call, mail, and catalogue is more favored by working people and those not working (i.e. job hunting, volunteering, not working, or retired). In payment preferences, there are less differences.

Table 35: significant differences in channel use across working groups

Working situation	Compared to working situation	Web-site	Mobile website	App	Call	Mail	Paper catalogue
>32 hours	Study	0	0	0	+	+	+
	Study with job	0	0	0	+	+	0
	Volunteer	0	0	+	0	0	0
	Not working	0	+	0	0	0	0
	Retired	0	+	+	0	0	-
20-32 hours	Study	0	0	0	+	+	+
	Study with job	0	0	0	+	+	0
	Retired	0	+	+	0	0	-
< 20 hours	Study	0	0	0	+	+	+
	Study with job	0	0	0	+	+	0
	Retired	0	+	+	0	0	0
Entrepreneur	Retired	+	+	0	0	0	0
Study	>32 hours	0	0	0	-	-	-
	20-32 hours	0	0	0	-	-	-
	<20 hours	0	0	0	-	-	-
	Job hunting	0	0	0	-	0	-
	Volunteer	0	0	0	-	0	-
	Not working	0	0	0	-	-	-
	Retired	0	0	0	-	-	-
	Retired	+	+	+	-	-	-
Study with job	>32 hours	0	0	0	-	-	0
	20-32 hours	0	0	0	-	-	0
	<20 hours	0	0	0	-	-	0
	Job hunting	0	0	0	-	0	0
	Volunteer	0	+	0	-	-	0
	Not working	0	+	0	-	-	0
	Retired	+	+	+	-	-	-
Job hunting	Study	0	0	0	+	0	+
	Study with job	0	0	0	+	0	0
Volunteer	>32 hours	0	0	-	0	0	0
	Study	0	0	0	+	0	+
Not working	Study with job	0	-	0	+	+	0
	>32 hours	0	-	0	0	0	0
	Study	0	0	0	+	+	+
Retired	Study with job	0	0	0	+	+	0
	Retired	+	0	0	0	0	0
	>32 hours	0	-	-	0	0	+
	20-32 hours	0	-	-	0	0	0
	<20 hours	0	-	-	0	0	0
	Entrepreneur	-	-	0	0	0	0
Study	Study	0	0	0	+	+	+
	Study with job	-	-	-	+	+	+
	Not working	-	0	0	0	0	0

Table 36: significant differences in payment use across working groups

Working situation	Compared to working situation	Credit card	PayPal	Gift card
>32 hours	20-32 hours	+	0	0
	Not working	+	0	0
	Retired	0	+	+
20-32 hours	32> hours	-	0	0
Not working	>32 hours	-	0	0
Retired	>32 hours	0	-	-

Shopping spend

Table 37 shows that people who spend more money on clothing are significantly more likely to use mobile website and app. Also credit card use seems to be dependent on clothing spend. The means of the different groups are shown in Figure 76.

Table 37: significant differences in channel and payment use across clothing spend groups

Spend category	Compared spend category	Mobile website	App	New digital devices	Credit card
<€10	€50-€100	-	-	0	-
	€100-€200	-	-	0	-
€10 - €20	€50-€100	-	-	-	-
	€100-€200	-	-	0	0
€20 - €50	€50-€100	-	-	0	-
	€100-€200	0	-	0	0
€50 - €100	<€10	+	+	0	+
	€10-€20	+	+	+	+
	€20-€50	+	+	0	+
€100 - €200	<€10	+	+	0	+
	€10-€20	+	+	0	0
	€20-€50	0	+	0	0

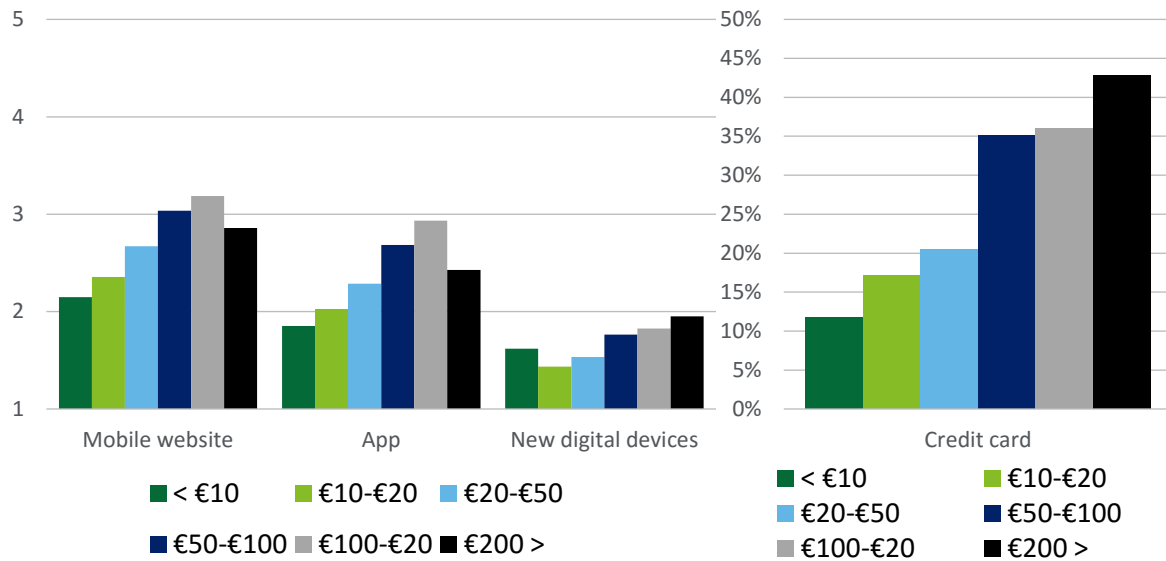


Figure 76: Means of channel and payment use based on different clothing spend groups

Shopping time differences

Not only money spend on clothing, but also time spend on clothing shows some significant differences. As Table 38 shows, people who spend more time shopping tend to use a website, mobile website and new digital devices a bit more as also shown in Figure 77 as well.

Table 38: significant differences in channel use across clothing time spend groups

Time spend category	Compared to time spend category	Website	Mobile Website	New digital devices
<5h	5h-15h	0	-	0
	15h-30h	-	-	0
	50h>	0	0	-
5h-15h	<5h	0	+	0
	15h-30h	-	0	0
	50h>	0	0	-
15h-30h	<5h	+	+	0
	5h-15h	+	0	0
50h>	<5h	0	0	+
	5h-15h	0	0	+

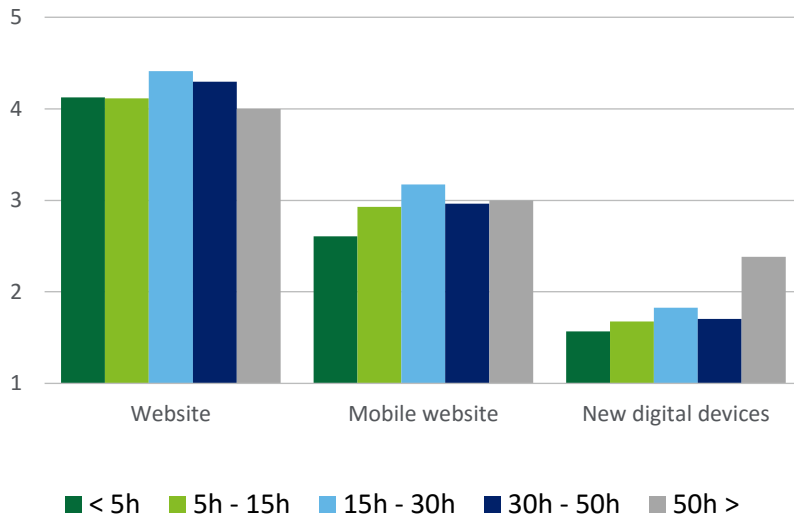


Figure 77: Means of channel use based on different clothing time spend groups

When it comes to thresholds, people who spend more than 50 hours on shopping per month more easily accept a threshold than the other groups. However, there is no difference in the amount they would accept.

Online shopping

Of the spend a person has and the time a person spends shopping, a certain percentage is online. The percentage of this online spend also shows significant Spearman correlations in channel. Table 39 shows these significant correlations for channel use, while Table 40 shows the correlations with payment method usage. This shows that especially digital channels are use more often when spending more time or money online, while physical channels are used less.

Table 39: Significant correlations between online spendings and channel use

	Physical store	Website	Mobile website	App	New digital devices	Paper catalogue
Percentage online money spend	-	+	+	+	+	-
Percentage online time spend	-	+	+	+	0	-

Table 40: Significant correlations between online spending and payment method use

	Credit card	PayPal	Afterpay	Payment in parts
Percentage online money spend	+	+	+	+
Percentage online time spend	0	+	0	+

Channel loyalty

Some small differences are shown for channel loyalty. Those more loyal to specific retailers show a higher likelihood of physical store use compared to those loyal to specific channels. However, they are less likely to use a website compared to this same group and compared to those that do not have a preference or loyalty. Similarly, those loyal to a brand are less likely to use a catalogue compared to those without preference.

In addition, consumers that think price is most important are more likely to use a website compared to those looking for quality. The same applies for the use of payment after purchase. In addition, they are less willing to accept a minimum order threshold.

Urban vs rural difference

For the distinction between people who live in urban or rural areas, independent sample t-tests were performed. As pictured in Figure 78, urban living people tend to use the physical store more ($\Delta\mu=0.1641$, $p=0.047$), while rural living people are more likely to call ($\Delta\mu=-0.2335$, $p=0.017$). Regarding payments, urban living people use PayPal ($\Delta\mu=0.0811$, $p=0.029$) and transfer upfront ($\Delta\mu=0.0404$, $p=0.024$) more often. Especially the use of physical stores by urban people seems logical, since often more stores are in the neighborhood.

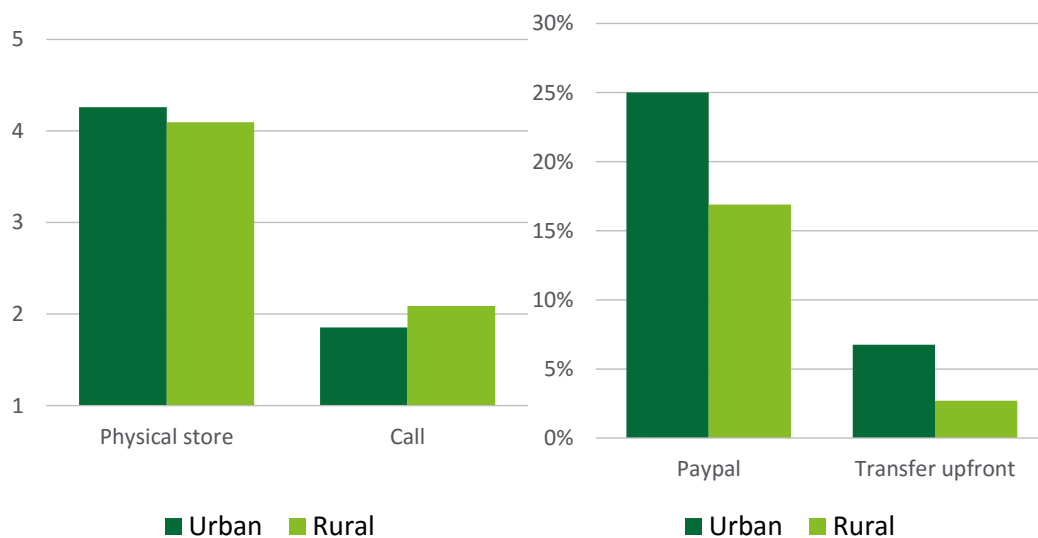


Figure 78: Significant differences between urban and rural living customers

Time planning difference

The amount of time a person is at home and at what time of the day also showed some differences. Table 41 shows that people who are home more often are less likely to use mobile website and app. On the other hand, they are more likely to use call, mail or catalogue compared to people who are away from home during office hours.

Table 41: significant differences in channel use for different time planning

<i>timeplan category</i>	Compared timeplan category	Physical store	Mobile website	App	Call	Mail	Paper catalogue
<i>Away in office hours</i>	Mostly at home	0	+	+	-	-	-
<i>Away outside of office hours</i>	Flexible away during week	+	0	0	0	0	0
	Mostly at home	0	+	+	0	0	0
<i>Flexible away during week</i>	Away outside of office hours	-	0	0	0	0	0
	Mostly at home	0	+	+	0	0	0
<i>Flexible away during weekends</i>	Mostly at home	0	+	+	0	0	0
	Away in office hours	0	-	-	+	+	+
<i>Mostly at home</i>	Away outside of office hours	0	-	-	0	0	0
	Flexible away during week	0	-	-	0	0	0
	Flexible away during weekends	0	-	-	0	0	0

Basket size difference

The amount of products customers buy in one purchase also resulted in some differences. First, mobile site and app are used less by people who usually only buy one thing at a time compared to people who buy 2 to 3 (for mobile site) or 3 to 5 (for both) products per purchase. This indicates that people who shop on a mobile site or app might buy more at once than those who do not. Also PayPal is used less by one product buyers compared to 3-5 product buyers.

Education difference

When it comes to education, there are significant differences as well. Higher educated people use physical stores more likely, while lower and middle educated people more likely use call, e-mail and catalogue. When it comes to payment, the higher the educational level, the more likely the use of credit card (higher educated people use it 29.2% more than lower educated people) and PayPal (higher educated people use it 18.8% more than lower educated people). The differences and mean are shown in Table 42 and Figure 79 respectively.

Table 42: Significant differences for channel and payment use for different education categories

Education category	Education category	Physical store	Call	e-mail	Catalogue	Credit card	PayPal
Low	Mid	0	0	0	0	-	-
	High	-	+	+	+	-	-
Mid	Low	0	0	0	0	+	+
	High	0	+	+	+	-	0
High	Low	+	-	-	-	+	+
	Mid	0	-	-	-	+	0

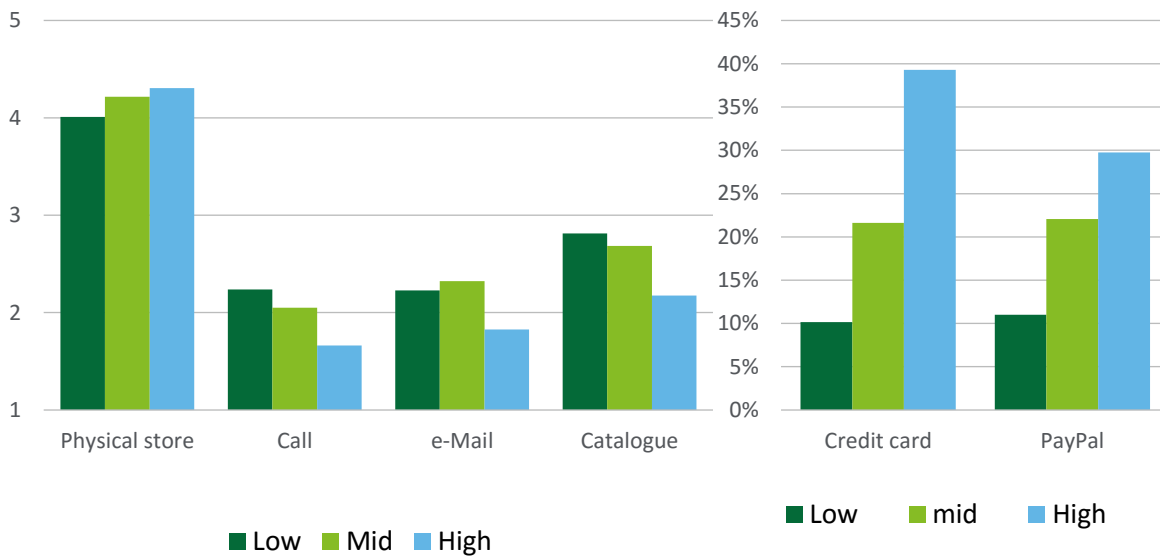


Figure 79: Means of channel and payment use based on education level

Shopping behavior difference

Finally, some other aspects on shopping behavior were measured in the survey. Table 43 shows the bivariate spearman correlations. Buying last minute positively correlates with the use of mobile website ($\rho=0.130$, $p=0.001$), app ($\rho=0.123$, $p=0.002$), and new digital devices ($\rho=0.134$, $p=0.001$). This indicates that people that buy last minute more often tend to use more kind of digital devices than those who do not buy last minute very often. Similarly, spending more than planned also positively correlates with the use of a mobile website ($\rho=0.251$, $p=0.000$), app ($\rho=0.216$, $p=0.000$), and new digital devices ($\rho=0.132$, $p=0.001$). In addition, it also positively correlates with the use of the regular website ($\rho=0.112$, $p=0.006$). This indicates that people who use digital devices more might be spending more. On the other hand, those who thoroughly research before purchasing also use calling ($\rho=0.106$, $p=0.009$) and the paper catalogue ($\rho=0.094$, $p=0.021$) more often than those who do not research that much. Finally, following fashion trends correlates positively with the use of the website ($\rho=0.106$, $p=0.009$), mobile website ($\rho=0.232$, $p=0.000$), app ($\rho=0.261$, $p=0.000$), calling ($\rho=0.135$, $p=0.001$), e-mailing ($\rho=0.104$, $p=0.010$), and new digital devices ($\rho=0.131$, $p=0.001$). Therefore, it seems that fashionable people use almost all channels more often than those who are not. In addition, they are also using the membership card 10.7% more often per “Likert-step” ($\rho=0.107$, $p=0.008$)

Table 43: correlations between shopping habits and channel use

	Physical store	Website	Mobile website	App	Call	e-mail	New digital devices	Paper catalogue
<i>Buying last minute (Likert)</i>	0	0	+	+	0	0	+	0
<i>Spending more than planned (Likert)</i>	0	+	+	+	0	0	+	0
<i>Thoroughly researching before purchase (Likert)</i>	0	0	0	0	+	0	0	+
<i>Following fashion trends (Likert)</i>	0	+	+	+	+	+	+	0

Synthesis

A lot of channel and payment use differed per segment. However, when it comes to order and delivery thresholds, there seems to be more consensus. Zooming in on channel use, especially the use of mobile sites, apps and digital devices differed in different groups. In 9 out of 11 segments, there was a difference in mobile sites an apps and often new digital devices was also differing. Since all three are rather new methods of shopping, it is likely that more progressive groups (e.g. younger people) tend to use it more. On the other hand are more conservative shopping methods like calling, a paper catalogue and e-mail. All three are often associated with the more conservative groups (e.g. those who are home most of the time). When it comes to payment, especially PayPal and credit card use return often and the latter often with large differences. In conclusion, for ordering and payment options, it is important to look at the target group of a company before deciding to focus on specific channels or payment methods.

Appendix J.2. Availability

For availability services, sales and no-sales numbers can be assessed based on services provided. For practical reasons, this segmentation only focus on the sales part. This is chosen since assessing both sides will not create much more information since no-sales and sales are related (i.e. if a higher percentage of sales will be created, it will decrease the percentage of no-sales). Furthermore, two parts will be analyzed:

- Does the sales percentage with or without a certain service differ among groups
- Does the increase in sales percentage when implementing a certain services differ among groups

Unless stated otherwise, all comparisons are based on a one way ANOVA with a Dunnett C. Post Hoc test.

Gender difference

An independent sample t-test is used to assess the differences in gender. When it comes to the sales percentages, significant differences are found between male and female in both online and offline stock-out situations. In online stock-outs, females tend to stay more loyal to the company in all cases and show a 11.2% higher percentage of sales if no visibility services are present ($\Delta\mu=-0.112$, $p=0.005$), 6.4% higher sales percentage if store visibility is present ($\Delta\mu=-0.064$, $p=0.047$), and 6.2% higher sales if a reserve option is available ($\Delta\mu=-0.062$, $p=0.026$). When it comes to store-stock-outs, only a significant difference exists in a no-visibility situation. Here, women show an 8.8% higher sales

percentage than men ($\Delta\mu=-0.0882$, $p=0.020$). In all cases, the growth in sales when a service is introduced is not significantly different.

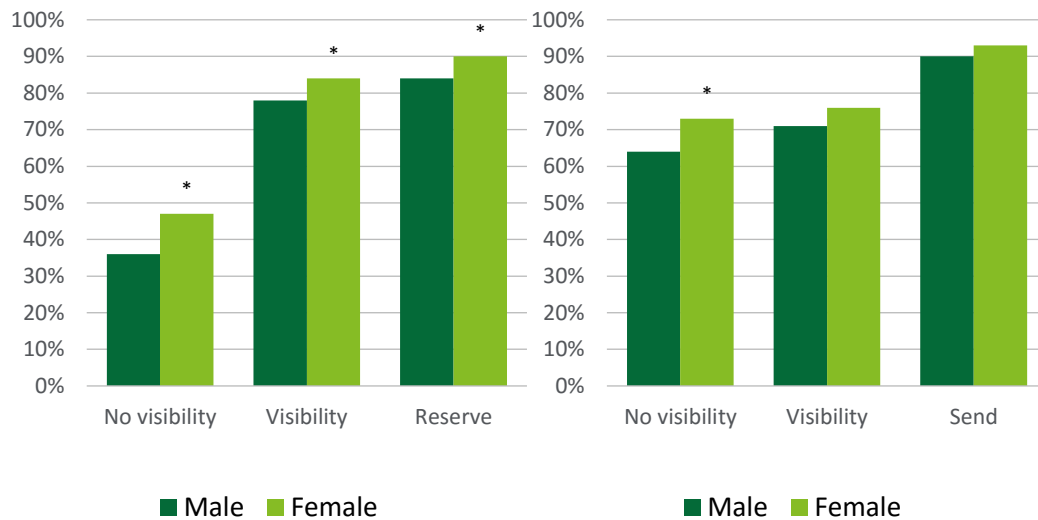


Figure 80: Means of sales percentage in online stock-out (left) and offline stock-out (right)³²

Age difference

Contrary to ordering and payment, there are not so much differences in saved sales for different age groups. In online stock-outs, there is only a higher mean for the 18-29 group compared to the 30-44 group ($\Delta\mu=-0.1330$, $\sigma=0.4253$) of 13.3% sales in case of visibility. For offline stock-outs, there is only a difference when there are no visibility services where the youngest people show a 16.6% higher sales percentage than the oldest people ($\Delta\mu=-0.1664$, $\sigma=0.3396$). No significant difference in growth is found.

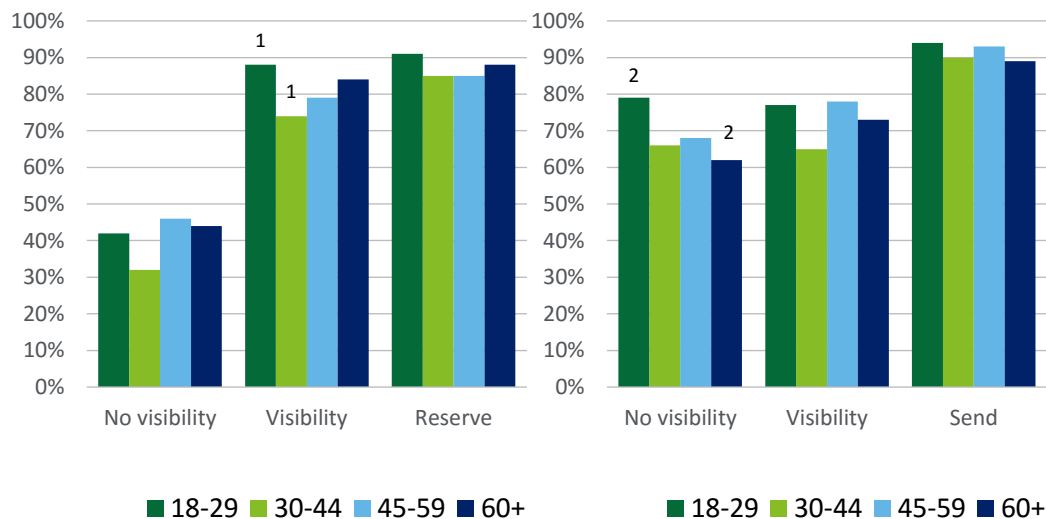


Figure 81: Means of sales percentages in online stock-outs (left) and offline stock-outs (right)³³

³² Bars marked with a star show significant differences between groups

³³ Bars marked with similar numbers show significant differences for these same bars

Income difference

No differences were found regarding percentage of sales for online and offline stock-out situations and also no differences were found for the growth between services.

Working situation

No differences were found regarding percentage of sales for online and offline stock-out situations and also no differences were found for the growth between services.

Family Situation difference

As shown in Figure 82, when it comes to family situations, there are only two significant differences. People with partner and kids show 28.0% lower sales percentages in online no visibility stock-out than those alone with kids ($\Delta\mu=-0.280$, $\sigma=0.083$). Also the growth for these two groups from no visibility to visibility is significant ($\Delta\mu=0.3123$, $\sigma=0.1006$). It is unclear why people with partner and kids show this low percentage at no sales.

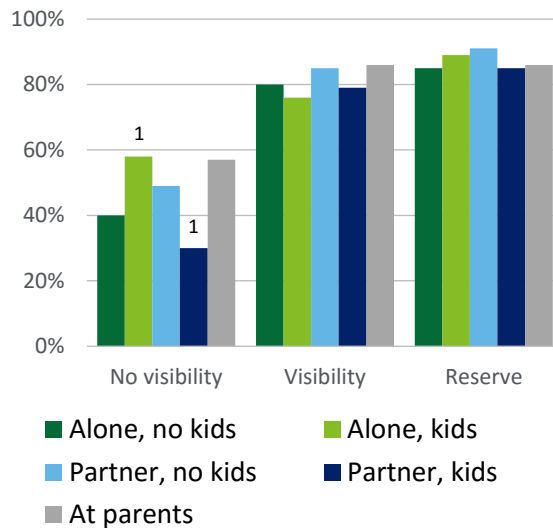


Figure 82: Means of sales percentages in online stock-outs

Shopping Spend difference

No differences were found regarding percentage of sales for online and offline stock-out situations and also no differences were found for the growth between services.

Time spend shopping difference

No differences were found regarding percentage of sales for online and offline stock-out situations and also no differences were found for the growth between services.

Online spending difference

When segmenting shopping spend and time spend shopping to the percentage of online spend in both sections, some differences could be found. First, there is a negative correlation between percentage online money spend and online visibility sales ($\rho=-0.081$, $p=0.045$). This indicates that those spending more online do not want to go to the store for their purchase. Furthermore, there is a positive correlation between online shopping spend for time and money and those who do not go to a physical store (and therefore the store stock-out situation does not apply). Time spend online shopping correlates negatively with offline no sales without visibility ($\rho=-0.090$, $p=0.027$), indicating that when in a store, those who are online more often more easily stay at the store they are in.

Channel loyalty

No differences were found regarding percentage of sales for online and offline stock-out situations and also no differences were found for the growth between services.

Urban vs rural difference

An independent sample t-test shows that people who live in urban areas respond differently to stock outs than those who live in rural areas. In online stock-outs, urban people show 10.9% and 7.8% higher sales percentages when the visibility ($\Delta\mu=0.109$, $p=0.007$) or reserve option ($\Delta\mu=0.078$, $p=0.028$) is given, respectively. In offline stock-outs situations, this difference is present with 11.8% when there is no visibility ($\Delta\mu=-0.1182$, $p=0.010$). No significant difference is found in the growth of sales when a service is introduced. In conclusion, it seems that urban people are more loyal to retailers in case of stock-outs than rural people.

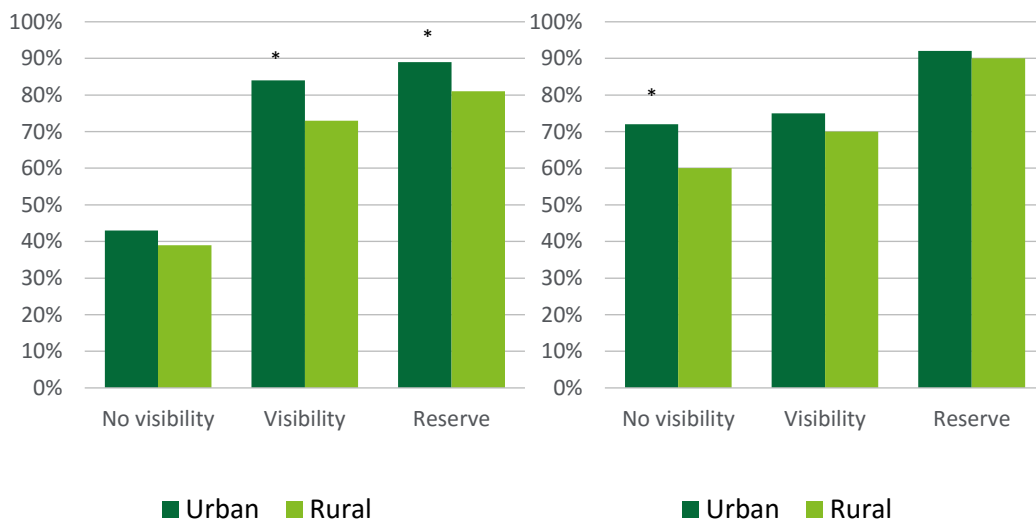


Figure 83: Means of sales percentages in online stock-outs (left) and store stock-outs (right)

Time planning difference

In the basis, no significant difference are found between the different stock-out situations. However, a significant growth is found when the reserve option is provided in online-stock out situations compared to the visibility situation. People who are away flexible in weekdays show 12.9% more growth than those who are away in office hours ($\Delta\mu=0.1291$, $\sigma=0.3213$).

Basket size

There is a significant difference between having 3-5 pieces per purchase and 1 piece per purchase for online stock-out with visibility ($\Delta\mu=0.1440$, $\sigma=0.3319$), with a difference is 14.4%³⁴. Furthermore, the growth from offline without sales to offline with sales shows a significant difference for 2 to 3 pieces per purchase and one piece per purchase ($\Delta\mu=0.1327$, $\sigma=0.3720$). No explanation could be found for these differences.

³⁴ Online stock-out with reserve option shows a 100% sale, meaning all sales are preserved. However, due to a small sample group (n=6), this has to be interpreted with caution.

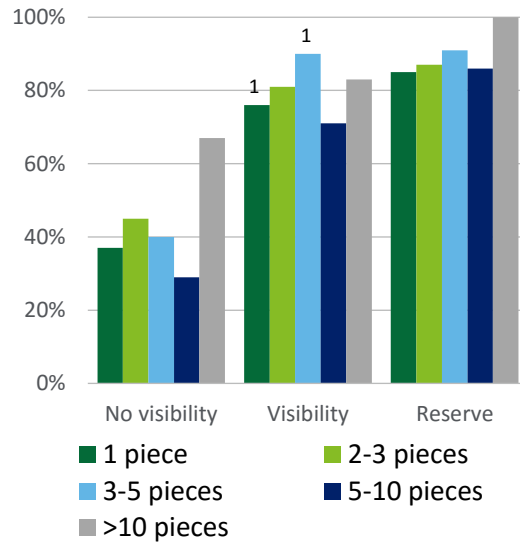


Figure 84: Means of sales percentages in online stock-outs

Education difference

When it comes to education, there is a difference between high and low education for online stock-out without visibility (Figure 85). High educated people show on average 15.9% less sales in this situation ($\Delta\mu=-0.1590$, $\sigma=0.3840$). However, when visibility is offered, the growth is 22.6% higher than for low educated people ($\Delta\mu=0.2259$, $\sigma=0.4017$) and with this growth the difference in the basis is compensated for.



Figure 85: Means of sales percentages in online stock-outs

Shopping behavior

The spearman bivariate correlation shows that buying last-minute more often negatively correlates with the sales percentage of an online stock-out without visibility ($\rho=-0.084$, $p=0.037$). This means that people who buy more often last-minute tend to be less loyal in online stock-out situations. However, there is a positive relation between shopping last minute and the growth of sales between no visibility and visibility ($\rho=0.111$, $p=0.006$). This shows that those who buy last-minute might be less loyal without services, but when the visibility service is offered they will be more eager to stay with the

retailer. Furthermore, buying more than originally planned positively correlates with store stock-out without visibility ($\rho=-0.085$, $p=0.037$), indicating more loyalty for stores.

Synthesis

First of all, less differences were found compared to ordering and payment. Also, the differences were found mainly in the no visibility and visibility situations and seemed to fade away in the reserve or send situation. Difference in growth were also especially found between the first two situations. Offline stock-outs also seem to have less differences than online stock-outs. This might be due to the low switching costs of online shopping. The main differences were found in gender and urban vs rural, since in at least half of the cases there was a difference. Finally, a strange result was found at the family situation segment. Since this also happened at ordering and payment this is an interesting finding.

Appendix J.3. Delivery

For delivery, the conjoint and non-conjoint data is compared across the same variables as in previous chapters. Unless stated otherwise, the analyses are performed based on a one way ANOVA with Dunnett C. Post Hoc Test.

Gender difference

First of all, the conjoint utilities are compared with an independent sample t-test. This shows that offering evening delivery has on average 22.4% more value for women than for men ($\Delta\mu=-0.0680$, $p=0.019$). When taking the importance of the timeframe component into account, this means offering evening delivery provides on average a 1.7% higher utility level for women compared to men. Similarly, store delivery 15 minutes away has 17.2% less negative value for women than for men ($\Delta\mu=-0.1006$, $p=0.043$), which has a more positive effect on total utility of 2.5%. This indicates that when it comes to time planning, women like the flexibility of evening delivery more than men, but they are willing to travel further to pick-up the product.

Besides the conjoint model, the percentage of men that would be willing to pay something for reallocation of delivery or a smaller time window is 7.6% ($\Delta\mu=0.0762$, $p=0.046$) and 9.6% ($\Delta\mu=0.0964$, $p=0.013$) higher than for women. This indicates that men seem to be willing to pay to be more in control of the delivery. For those willing to pay, the amount does not seem to differ among men and women.

Age difference

For the conjoint model, there is no significant difference when it comes to age. However, there are differences in other delivery areas as shown in Table 44 and Figure 86. Overall, up to 24% more younger people would be willing to pay for same day delivery compared to older people. They are also willing to pay, on average, up to €1.01 more for the service. Up to 16.7% and 23.6% more young people would be willing to pay for a smaller time window or reallocation respectively. Also younger people miss the courier more often than older people, with up to 39.4% difference.

Table 44: Significant differences in mean for different age groups

Age category	Compared to age category	Willing to pay for same day delivery	€ for same day	Willing to pay for smaller time window	Willing to pay for reallocation	% of time missing courier
18-29	30-44	0	0	0	0	+
	45-59	+	0	+	+	+
	60+	+	+	+	+	+
30-44	18-29	0	0	0	0	-
	45-59	0	0	0	0	+
	60+	+	0	0	+	+
45-59	18-29	-	0	-	-	-
	30-44	0	0	0	0	-
	60+	0	0	0	0	+
60+	18-29	-	-	-	-	-
	30-44	-	0	0	-	-
	45-59	0	0	0	0	-

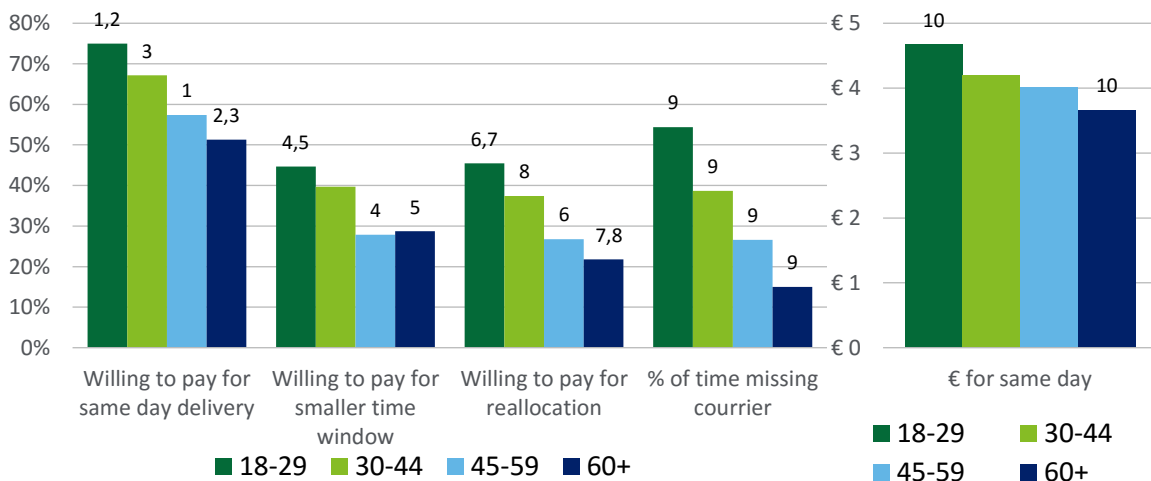


Figure 86: Means of delivery service attributes for different age groups

In addition, when multiple items with different deliveries are offered, 15.6% more younger people in the category of 18 to 29 years old rather have the product separate and fast compared to older in the category of 45 to 59 years old people ($\Delta\mu=0.1563$, $\sigma=0.4003$)

Income difference

For the conjoint model, there is no significant difference when it comes to income. For the other delivery services, an interesting insight is found as shown in Table 45 and Figure 87. For the group consumers with the lowest income, there are up to 26.2% more people willing to pay for same day delivery and up to 26.4% more people willing to pay for reallocation. Although the amount they are willing to pay for both does not differ significantly, it is unexpected that this group is willing to pay more than middle income consumers. Furthermore, this same group also miss the courier up to 16.9% more than their middle income peers.

Table 45: Significant differences in mean for different income groups

Income category	Compared to income category	Willing to pay for same day delivery	Willing to pay for real-location	% of time missing courier
<€10K	€10K-€20K	0	+	+
	€20K-€30K	+	+	+
	€30K-€40K	+	+	0
€10K-€20K	<€10K	0	-	-
€20K-€30K	<€10K	-	-	-
€30K-€40K	<€10K	-	-	0

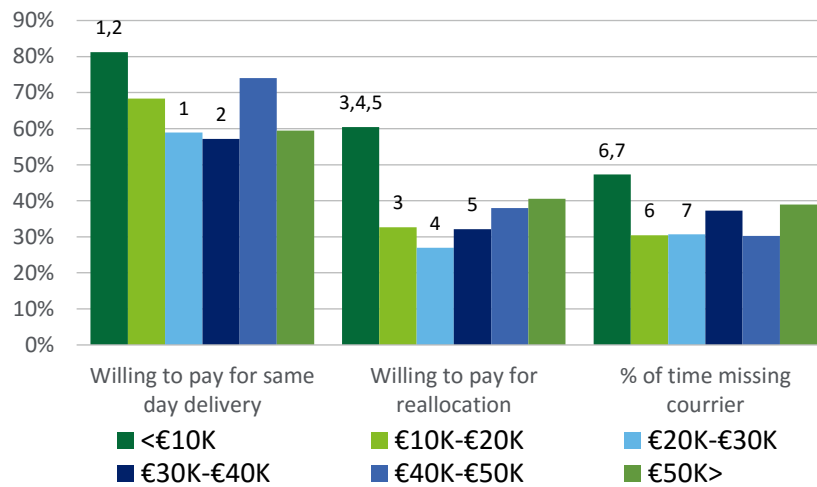


Figure 87: Means of delivery service attributes for different income groups

Family situation difference

For the conjoint model, there is no significant difference when it comes to family situation. For the other services, there is only a difference in the amount consumers are willing to pay for same day delivery³⁵. Consumers that live at their parents are willing to pay between €3.30 and €3.55 more than people that live alone without kids or people that live with their partner (both with or without kids).

Working situation

For the conjoint model, there is no significant difference when it comes to working situation. For the other services, there is a difference in the amount of consumers willing to pay for reallocation and a smaller time window. For the first, 20.1% more of those working more than 32 hours are willing to pay than those not working ($\Delta\mu=0.20171$, $\sigma=0.3915$), 42.2% more students ($\Delta\mu=0.42217$, $\sigma=0.4758$) are willing to pay for reallocation and 32.6% more of students with a job ($\Delta\mu=0.3256$, $\sigma=0.4564$) are willing to pay compared to those not working. For a smaller time window, 25.4% more of those working 32 hours or more ($\Delta\mu=0.2544$, $\sigma=0.3941$) are willing to pay compared to those working less than 20 hours, while 34.1% more students with a job ($\Delta\mu=0.3409$, $\sigma=0.4468$) are willing to pay compared to the same group.

³⁵ Analyzed for the group that is actually willing to pay for same day delivery

Shopping spend difference

For the conjoint model, there is no significant difference when it comes to shopping spend. With regard to other delivery services, the group with the lowest shopping spend (€10,- per month) has less willingness to pay than the group between €50,- and €100,- per month and also misses the courier less often.

Shopping time spend difference

For the conjoint model as well as the other delivery services, there is no significant difference when it comes to time spend shopping.

Online spending difference

For the conjoint model, there is no correlation between online money or time spend. For the other services, there is a positive correlation between online money spend and willingness to pay for same day delivery ($\rho=0.146$, $p=0.000$) and reallocation ($\rho=0.093$, $p=0.021$). Also there is a positive correlation with missing the courier ($\rho=0.186$, $p=0.000$). In addition, when multiple products are ordered with different lead times, those who spend more online rather have it separate and fast ($\rho=-0.084$, $p=0.029$) compared to combined and convenient ($\rho=-0.103$, $p=0.011$). When it comes to willingness to pay, also spending more time online correlates positively with same day delivery ($\rho=0.148$, $p=0.000$) and reallocation ($\rho=0.109$, $p=0.007$). In addition, also the willingness to pay for a smaller time window correlates positively ($\rho=0.100$, $p=0.013$) and the courier is missed more often ($\rho=0.217$, $p=0.000$)

Channel loyalty

For the conjoint model and other attributes, no significant differences were found.

Urban vs rural difference

For the conjoint model, there is no significant difference when it comes to living in an urban or rural place. For the other services, urban living people are 12.3% more likely to be willing to pay for reallocation and 9.3% more likely to be willing to pay for a smaller time window for delivery. Finally, they are on average 8.3% more likely to miss the courier. The means of the significant differences are shown in Figure 88.

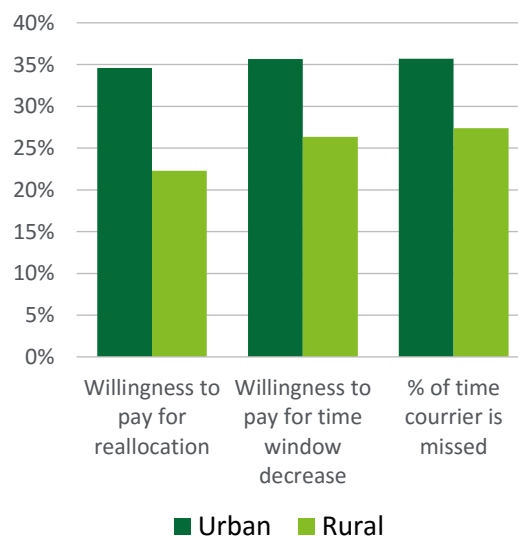


Figure 88: Means of delivery service attributes for urban and rural areas

Time planning difference

For the conjoint model, there is no significant difference when it comes to time planning. However, as expected, people who are home often miss the courier up to 29.8% less than others.

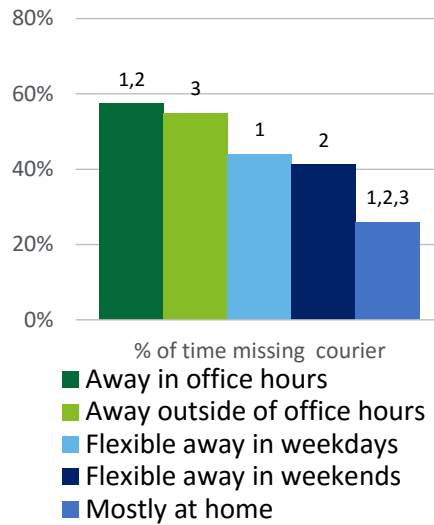


Figure 89: Means of missing courier for different planning types

Basket size difference

For the conjoint model, there is no significant difference when it comes to basket size. For other delivery services, there is a difference between the group that buys 3 to 5 products per purchase and those who buy only one per purchase. The first group misses the courier 12.6% ($\Delta\mu=12.57$, $\sigma=27.9959$) less often than the second and the first group is 18.0% more likely to be willing to pay for same day delivery ($\Delta\mu=0.1801$, $\sigma=0.4352$). No explanation of this difference could be found. Finally, when multiple items are purchased with different lead times, there is a significant difference in how customer want the products to be delivered. People who buy more than 10 items per purchase answered “I do not care how the delivery arrives” between 26.4% and 42.9% less than all other groups. Since there is no significant difference in the separate but fast and combined but convenient group, it is unclear where the preference of this group goes to.

Education difference

When it comes to the conjoint model, low educated people value always on time delivery 34.7% more than high educated people ($\Delta\mu=-0.2375$, $\sigma=0.6535$). In the total model, this results in a 3.6% higher utility level on average. This indicates that higher educated people seem to be less bothered by products being too late. In addition to the conjoint model differences, higher educated people miss the courier 22.4% and 16.2% more often than low ($\Delta\mu=22.4172$, $\sigma=27.1678$) and middle educated ($\Delta\mu=16.1837$, $\sigma=29.3044$) people respectively. Also are higher educated people 13.3% and 16.0% more likely to be willing to pay for reallocation ($\Delta\mu=0.1332$, $\sigma=0.4585$) and a smaller delivery time window ($\Delta\mu=0.1605$, $\sigma=0.4639$) respectively compared to middle educated people. These are interesting results since the conjoint model’s differences seem to show that low educated people value reliability more, while more higher educated people would be willing to pay to get in control of their delivery by reallocation or smaller delivery time windows.

Table 46: Significant differences between different education groups

Education category	Compared to education category	Willing to pay for smaller time window	Willing to pay for reallocation	% of time missing courier
Low	High	0	0	-
Middle	High	-	-	-
High	Low	0	0	+
	Middle	+	+	+

Shopping behavior

Different shopping behaviors show different effects on some parts of the conjoint model according to bivariate spearman correlations. First of all, shopping last minute correlates negatively with the utility of a store at 15 minutes difference ($\rho=-0.084$, $p=0.039$). This means that on average, a “Likert step” more last minute shopping correlates with an, on average, 13.6% lower utility for location and a negative effect on total utility of 2.0%. This results indicate that people who need their product rather fast (i.e. they shop last minute), are less willing to take time to travel to a store. Besides shopping last minute, also following fashion trends has effect on the conjoint model. First of all, following fashion trends more correlates negatively with the importance of timeframe ($\rho=-0.093$, $p=0.022$). Furthermore, following fashion trends correlates negatively with pick-up point as a location ($\rho=-0.086$, $p=0.035$). Every “Likert step” increase in following trends decreases the pick-up point utility with 14.1% on average, which results in a 2.0% lower total utility. This indicates that those following trends rather have products to their home or to the store than in a pick-up point.

In addition, Table 47 shows significant correlations between shopping behavior and other delivery services. This shows that people buying last minute more and spending more than planned are more likely to be willing to accept a payment for all other delivery services. On the other hand, those who follow fashion trends more might not be willing to accept a payment for the services, but those who do are significantly willing to spend more. Furthermore, buying last minute, spending more than planned and follow fashion trends correlates positively with missing the courier, while thoroughly researching before purchase correlates negatively.

Table 47: Significant correlations between shopping behavior and delivery service attributes

	Willing to pay for same day	€ for same day delivery	Willing to pay for reallocation	€ for reallocation	Willing to pay for time window decrease	€ for time window decrease	% missing the courier
<i>Buying last minute (Likert)</i>	+	0	+	0	+	0	+
<i>Spending more than planned (Likert)</i>	+	0	+	0	+	0	+
<i>Thoroughly researching before purchase (Likert)</i>	0	0	0	0	0	0	-
<i>Following fashion trends (Likert)</i>	0	+	0	+	+	+	+

Synthesis

First of all, when having to make tradeoffs, there are only a few differences between groups. The conjoint only shows small differences for gender, education and shopping behavior. For the other services, it seems that there are especially a lot of differences regarding the amount of times groups miss the courier and whether they are willing to pay for a certain service or not. The amount they are willing to pay for the service does not differentiate often between groups.

Appendix J.4. Return

For return, the same approach as for delivery is used to see the differences between different groups. First the conjoint model differences are discussed, followed by the other services.

Gender difference

There are no differences found in the conjoint model for the two different genders. However, it is found that women return 4.0% more of their purchases compared to men ($\Delta\mu=-4.0030$, $p=0.033$). However, of those returns, men want to exchange 8.2% more ($\Delta\mu=8.2120$, $p=0.005$).

Age difference

The conjoint model shows one difference between age groups. The group of 60 years and older show a 32.3% higher utility for not having to do any administrative action for return compared to 18 to 29 year olds ($\Delta\mu=-0.1975$, $\sigma=0.5331$). The result is a total utility increase of, on average, 3.7% for the older group compared to the younger group for this level of convenience. Also the non-conjoint data shows a lot of differences in age groups. As Table 48 and Figure 90 show, younger people tend to return and exchange more. Also they purchase a bit more with the intent to return (i.e. purchase multiple different sizes or colors) and when they do, they value extra products with this delivery more.

Table 48: Significant differences for different age groups

Age category	Compared to age category	% returns	% exchange	% of purchases with intent to return	Appreciation for extra products
18-29	30-44	+	0	0	0
	45-59	+	+	0	0
	60+	+	+	+	+
30-44	18-29	-	0	0	0
	45-59	0	+	0	0
	60+	+	+	0	+
45-59	18-29	-	-	0	0
	30-44	0	-	0	0
	60+	+	0	0	0
60+	18-29	-	-	-	-
	30-44	-	-	0	-
	45-59	-	0	0	0

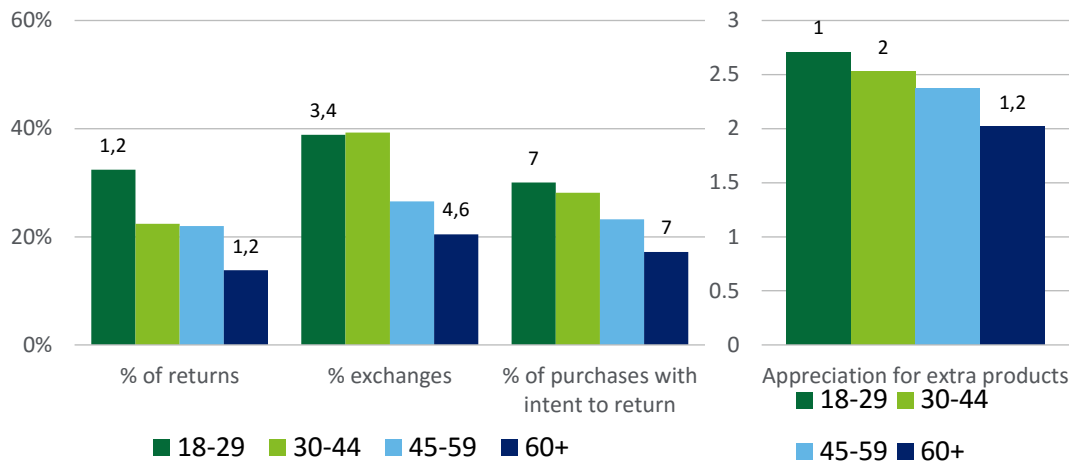


Figure 90: Means of return options for different age groups

Income difference

No differences in the conjoint model can be found for different income classes. Furthermore, only one difference is found in other return attributes: people with an income of more than €50K want to exchange 19.0% more of their returns compared to those who earn between €40K and €50K ($\Delta\mu=19.0466$, $\sigma=30.4399$).

Family situation difference

For the family situation, people who live with a partner without kids show a 69.4% higher utility for return picked up from home than people who live with a partner with kids ($\Delta\mu=0.2608$, $\sigma=0.8557$). This would result in, on average, a 10.4% higher total utility. For non-conjoint information, no significant differences were found.

Working situation differences

In the conjoint model, no significant differences were found for working situation. For other attributes, there are some differences in percentage of returns and exchanges as shown in Table 49.

Table 49: significant differences in return attributes for working situation

Working situation	Compared to working situation	% of returns	% of exchanges
> 32 hours	Not working	0	+
	Retired	+	+
< 20 hours	Study	-	0
	<20 hours	+	0
Study	Retired	+	0
	Not working	0	+
Study with job	Retired	+	+
	>32 hours	0	-
Not working	Study with job	0	-
	>32 hours	-	-
Retired	Study	-	0
	Study with job	-	-

Shopping spend difference

In the conjoint model, no significant differences were found for shopping spend. For other attributes, only two differences were found: people who spend between €10.- and €20.- return 9.4% less than those who spend between €50.- and €100.- ($\Delta\mu=-9.4178$, $\sigma=23.1943$). Also they purchase 13.0 less products with the intent to return ($\Delta\mu=-12.9553$, $\sigma=30.1262$).

Shopping time spend difference

In the conjoint model, no significant differences were found for shopping time spend. For other attributes, only the percentage of returns differed 10.0% between those who spend 15 to 30 hours and those who spend less than 5 hours, in favor of the first group ($\Delta\mu=9.9558$, $\sigma=25.4095$).

Online spending difference

In the conjoint model, both online money spend ($\rho=-0.101$, $p=0.013$) as online time spend ($\rho=-0.090$, $p=0.027$) correlates negatively with store location 5 minutes away, while they both correlate positively with store location 15 minutes away ($\rho=0.128$, $p=0.002$ and $\rho=0.139$, $p=0.001$ respectively). For the online money spend, there is also a positive correlation with the importance of reimbursement time ($\rho=0.097$, $p=0.017$), while for online time spend, there is a negative correlation with no action necessary for administrative tasks ($\rho=-0.086$, $p=0.035$). Overall, it seems like spending more online makes the person less picky (e.g. further away locations are less negative and less administrative tasks are less positive).

In addition to the conjoint model, there is a positive correlation for online money spend and time spend with percentage of returns, percentage exchanges and percentage purchases with intent to return.

Channel loyalty

Neither in the conjoint model as in the other attributes, differences were found.

Urban vs rural difference

Neither in the conjoint model as in the other attributes, differences were found.

Time planning difference

Time planning shows several differences in the conjoint model. First of all, people who are away flexible in the weekend are 19.6% less negative towards €3.95 return costs compared to people who are home often ($\Delta\mu=0.1359$, $\sigma=0.4076$), resulting in a 11.8% effect on total utility. Furthermore, having to register your return online has a significant difference between people who are away from home in office hours compared to those flexibly away at weekdays ($\Delta\mu=0.2576$, $\sigma=0.6375$). In this case, utility even switch from positive for the first group ($\mu=0.0509$, $\sigma=0.0558$) to negative for the second ($\mu=-0.2067$, $\sigma=0.0584$). Finally, having to do no administrative tasks has a 69,1% higher utility for those away from home flexibly in the weekdays compared to those away out of office hours ($\Delta\mu=0.2576$, $\sigma=0.4075$), resulting in a 7.8% higher total utility. Also those often at home have a 63.4% higher utility here compared to the away out of office hours group ($\Delta\mu=0.3035$, $\sigma=0.5374$) with a corresponding difference of, on average, 7.2% on total utility. Finally those away flexible in the week have a 37.9% higher utility for this attribute level than those away flexible times in the weekend ($\Delta\mu=0.2224$, $\sigma=0.6115$), resulting in a 4.3% higher total utility. Besides the conjoint model, there are some differences in return behavior. Those who are away in office hours return 9.3% and 10.8% more than people who are flexible away in the weekdays ($\Delta\mu=9.2723$, $\sigma=23.5328$) and those who are mostly at home ($\Delta\mu=10.7593$, $\sigma=24.8840$) respectively. Also do people who are away in office hours ($\Delta\mu=15.4896$, $\sigma=35.0938$) and those flexible away in the weekends ($\Delta\mu=11.8290$, $\sigma=33.6774$) show 15.5% and 11.8% more exchanges than those who are mostly at home as shown in Figure 91.

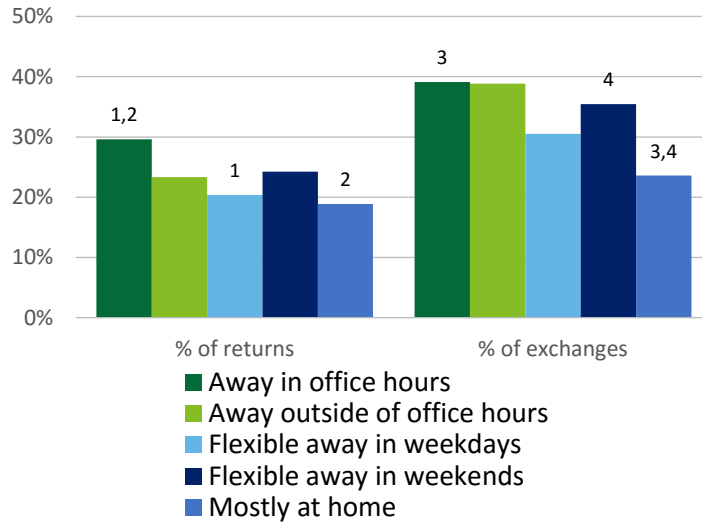


Figure 91: Means of return attributes based on time planning

Basket size difference

In the conjoint model, there are no significant differences based on the average basket size. For the other attributes, there are differences between a basket size of 1 and basket sizes of 2 to 5. It seems that people who buy a bit more tend to return more, exchange more and buy more with the intent to return. Also extra products can be appreciated a bit more.

Table 50: Significant differences between numbers of items per purchase

Items per purchase category	Compared to items per purchase category	% returns	% exchange	% of purchases with intent to return	Appreciation for extra products
1	2-3	0	-	-	0
	3-5	-	-	-	-
2-3	1	0	+	+	0
3-5	1	+	+	+	+

Education difference

For education level there is one difference in return utilities. Lower educated people show a 26.8% higher utility level for no administrative tasks necessary ($\Delta\mu=0.1740$, $\sigma=0.5594$), resulting in a 3.0% higher total utility if this service is offered for low educated people compared to high educated people. Besides conjoint information, higher educated people return 7.1% more than low educated people ($\Delta\mu=7.1066$, $\sigma=21.9109$) and the percentage of exchanges is 19.2% and 11.3% higher than for low ($\Delta\mu=19.1672$, $\sigma=21.9109$) and middle educated people ($\Delta\mu=11.3469$, $\sigma=33.8216$) respectively. This shows that higher educated people tend to engage in return activities more. This is interesting since lower educated people value fewer administrative tasks more.

Table 51: Significant differences between educational levels

Education category	Education category	% returns	% exchange
Low	Mid	0	0
	High	-	-
Mid	Low	0	0
	High	0	-
High	Low	+	+
	Mid	0	+

Shopping behavior difference

A bivariate spearman correlation shows that there is a correlation between buying last minute and the utility for a 14 day reimbursement time ($\rho=0.80$, $p=0.048$), a 28 day reimbursement time ($\rho=-0.80$, $p=0.048$), online registration for return ($\rho=0.90$, $p=0.027$), and no administration needed for return ($\rho=-0.91$, $p=0.025$). Since all less attractive attributes are being favored less negative and vice-versa, this indicates that people who shop last-minute more often are less picky when it comes to return services. This is also acknowledged by the negative correlations with the importance of location ($\rho=-0.113$, $p=0.005$) and convenience ($\rho=-0.81$, $p=0.045$). Interesting is also a negative correlation between thoroughly researching before purchasing and the importance of return costs ($\rho=-0.80$, $p=0.048$). It could be that people who thoroughly research think more before buying and therefore think return costs are less important: the probability that they buy something that is not right is smaller. In addition, as Table 52 shows, there are positive correlations between buying last minute and % of returns ($\rho=0.117$, $p=0.011$), % of exchanges ($\rho=0.130$, $p=0.005$), and % of purchases with intent to return ($\rho=0.095$, $p=0.039$). Also spending more than planned correlates positively with % of returns ($\rho=0.133$, $p=0.004$), % of exchanges ($\rho=0.121$, $p=0.009$), % of purchases with intent to return ($\rho=0.133$, $p=0.004$), and also with appreciation for extra products when return is certain ($\rho=0.175$, $p=0.000$). In conclusion, buying last minute has a lot of effect on return preferences for both the conjoint part as the non-conjoint part. In addition, spending more than planned has a lot of effect on the return behavior (i.e. non-conjoint data).

Table 52: Correlations between shopping behavior and return attributes

	% of returns	% of exchanges	% of purchases with intent to return	Appreciation for extra products
Buying last minute (Likert)	+	+	+	0
Spending more than planned (Likert)	+	+	+	+

Synthesis

As with delivery, the conjoint model is fairly robust and only a few differences were found between groups. However, when it comes to return behavior, there were a lot of differences. Especially the

percentage of returns and percentage of exchanges differed across a lot of groups. Since returns are a burden for a lot of companies, it is important to look at these differences.

Appendix K: Capability plan descriptions

Logistics

All movements between suppliers, warehouses, stores, and consumers are seen as logistics. These movements can be either downstream (forward logistics) or upstream (reverse logistics). Figure 92 shows the summary of the capability.

The **mission** of the capability is to increase the strategic components of channel integration by combining logistics for all channels, the agility of the supply chain by being flexible and agile in logistics, and eventually a seamless customer experience. Fulfillment should come from the most efficient location (central warehouse, local warehouse or stores) and be delivered at any location desired. So key of the logistics capability is to increase flexibility. However, besides flexibility, also timeframes allowed for delivery are getting narrower and there is demand for faster delivery. Besides faster delivery, also returns should be handled faster and brought back to useable stock faster to avoid forced markdowns.

Therefore, **insights** of inventory location, the location of the logistics fleet and the supply and demand profile is key. Also the details from outstanding orders and returns should be known for logistics to execute the right movements.

Integration with inventory control, order management and supply and demand is therefore important. In addition, also partner management, store management and warehouse management is necessary. The wholesaler stores, third party owned stores, pick-up point partners, own stores and the warehouses are the hubs logistics moves in between. Therefore, inadequate integration could create bottlenecks for logistics. Also 3PL partners are key for logistics because in practice, they execute the actual logistics. Also supply and demand planning needs to be integrated with logistics to ensure the most effective routing for logistics and distribution. Finally, finance is an important part for logistics when working internationally. Sound tax management could significantly reduce costs when working with international logistics.

To enable all this, the right **talents** should be in place. First, sound planning is important. The volatile situations needs good logistics planners who can easily maneuver in the flexible landscape. Furthermore, store and warehouse employees need the right incentives to put emphasis on logistics. Especially store associates, which are usually focused on sales, will need to be motivated the right way.

Furthermore, for the logistics to be this flexible, the **technology** of other capabilities comes together in logistics: inventory visibility software, a real time order management system and connected logistics systems.

On the **process** level, important components are continuous analysis of loadings (i.e. how to load the fleets with different volumes like online and store orders) and optimal routings is performed and these schemes should be communicated efficiently with the 3PLs. Furthermore, returns should be brought back to a-grade and brought back to stock fast.

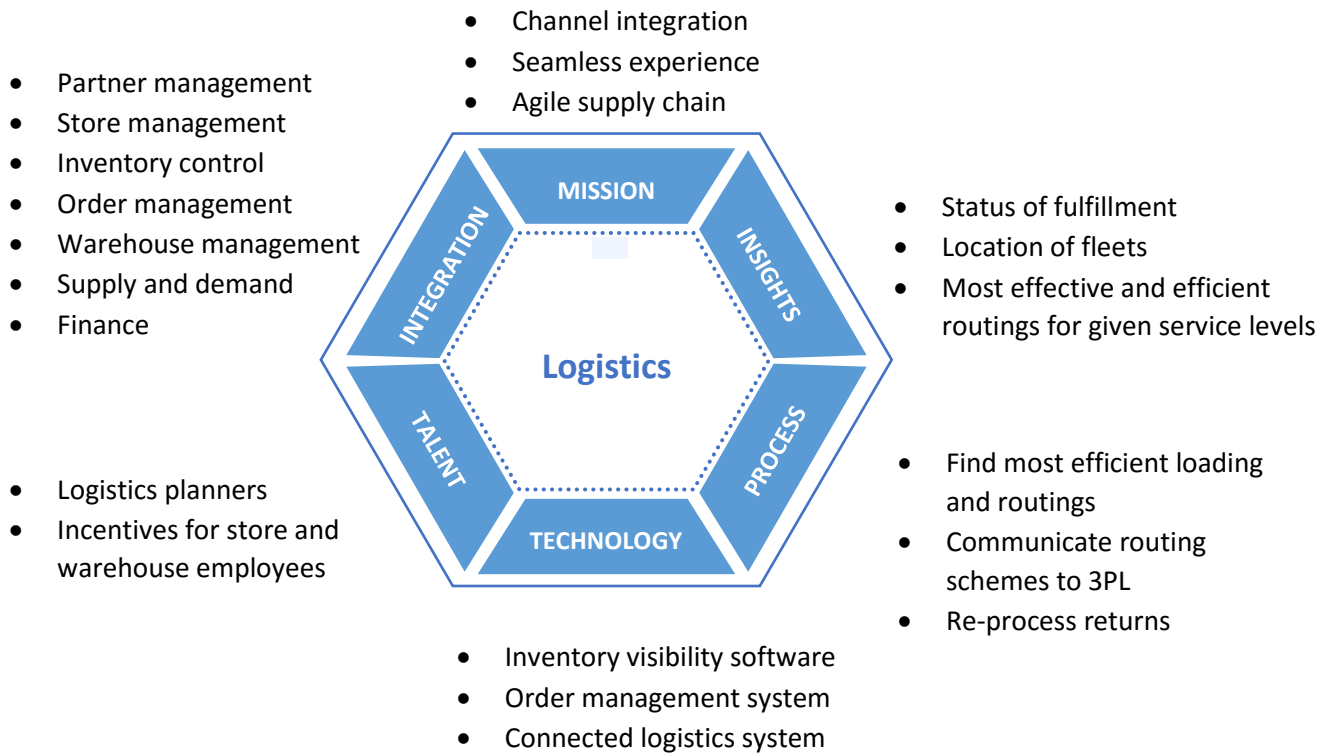


Figure 92: Capability details - Logistics

Partner management

As mentioned before, omnichannel cannot be reached on the individual firm’s level (Figure 93). Partners need to be introduced in the landscape in order to create a seamless omnichannel network.

Doing this helps to enable the **mission** of all strategic components. Channels can be truly integrated if wholesale and third party owned stores collaborate in the network, creating an even more seamless experience. A single customer view can be obtained by sharing consumer data on the network level instead of just the firm level. This means also buying intent can be improved if the sharing of relevant information increases the total persuasion partner of the network. These partners, together with 3PL partners, can increase total agility of the supply chain if the partnerships are managed well. Finally, since fashion firms are learning to become vertical retailers more, partnerships have to be managed since this could cannibalize on wholesale partners.

If managed right, **insights** are based on the extension of the company’s data to network data. So inventory and order visibility is extended from company level to network level and also demand and customer data provide relevant insights. From the 3PL perspective, positioning of the logistics fleet gives the opportunity to accurately determine what the smartest routing is. Since the partner management capability’s goal is to extend from firm to network, it integrates with all other capabilities. All capabilities will be aligned on the value chain level and, in the perfect situation, create one holistic network.

To be able to create this, **talent** necessary is based on cross-organizational teams and learning. This will leverage the potential of knowledge sharing and coordination in a holistic manner. Also the right incentives need to be in place, since cannibalization on the channel level will definitely occur. However, focus should be on enhancing the pie rather than dividing it.

Also **technology** is the unlock. On a firm level it was already argued that the IT systems are “spaghetti”. However, when extending to network thinking, multiple spaghetti pools need to be integrated. Therefore, the right connections need to be made to keep the systems as simple as possible, but still providing enough information.

To get the collaboration continuously running, **processes** should be in place to support this. First, ongoing communication is key since miscommunication or misperceptions could break the

collaboration. Furthermore, looking downstream, the demand of partner stores needs to be fulfilled on the best way possible. With shared inventory, order, and demand information there is a real-time view of necessary stocks and fulfillment can be done in a smart way. Finally, partners need to align operations and metrics (e.g. time windows for return should be equal when working in a network) to achieve the best way of working.

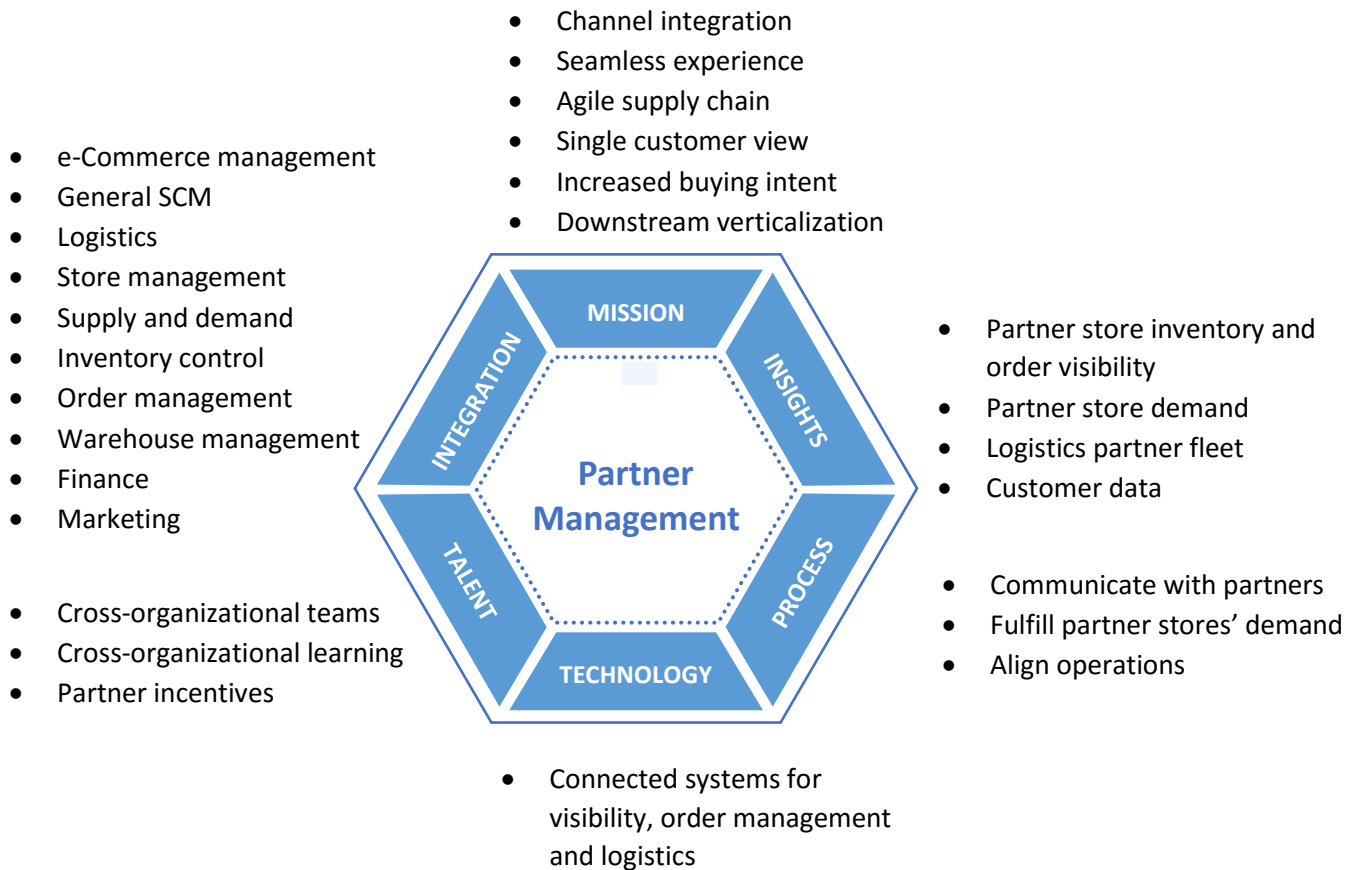


Figure 93: Capability details – Partner Management

Inventory control

Figure 94 shows the summary of the inventory control capability. Inventory control relates to all activities that monitors and processes inventory.

The **mission** is to enable channel integration by creating a single cross-channel inventory instead of separate channel stocks, enabling all channels to have “unlimited” supply of available inventory. This will also increase agility of the supply chain since less limitations are placed on the use of stock. It will also support the increased buying intent by increasing availability and as can be seen in chapter 5, availability does affect buying intent. Also downstream verticalization is supported by increasing possibilities for retail stores or the e-Commerce platform. All in all, inventory control can eventually improve the seamless experience by increased availability, shorter lead times due to better placed inventory and improved flexibility.

To get this working, **insights** in real time stock positions is necessary in combination with granular supply and demand levels. This will improve the positioning of stock as basis for improvement. Adding a single view on the inventory, where separate stocks transform in a larger pool, provides a flexible and strong inventory position to fulfill omnichannel.

Since inventory control encompasses all stocks, orders, demand and supply issues, **integration** with all supply chain capabilities is key. This way, all information can be used real time, cross-functional, cross-organizational and in the most effective way.

The challenge for inventory control is to get **technology** right. The current, separate data flows need to be combined and integrated in one holistic inventory system and needs to be accompanied by an order management system, where all information needs to be available real time.

Therefore, the **talent** of the right IT specialists need to be available in order to manage and maintain the systems. Also, with all the available data, business analyst should translate the data into information: what can be gained from all this inventory data?

To **process** everything, the input and output of the inventory: orders and stock fillings, should be monitored real time. Furthermore, inventory needs to be allocated to the right positioning, since there will be changes from the current situation.

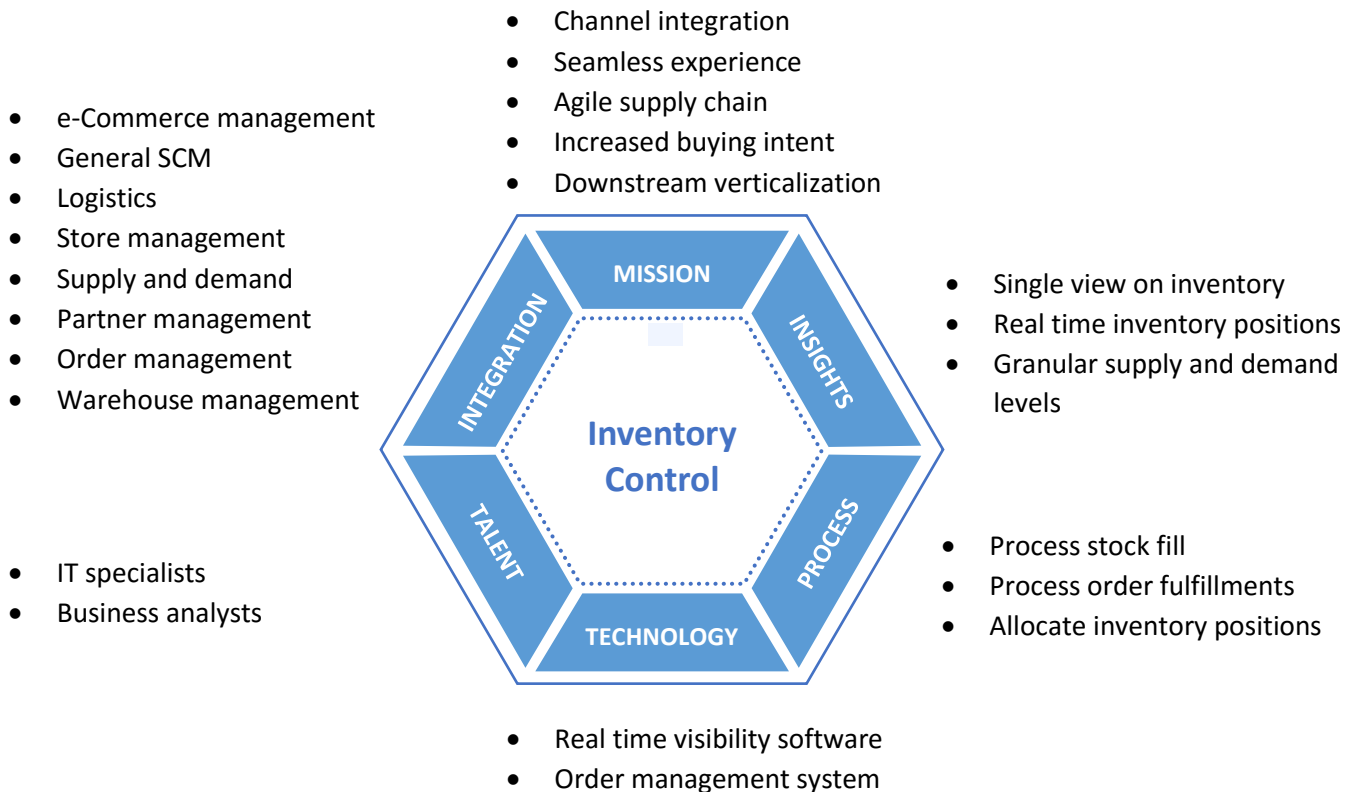


Figure 94: Capability details – Inventory control

Order management

Order management is the demand version of inventory control. Where inventory control focusses on the supply and making stock available for fulfillment, order management focusses on using the available inventory to actually fulfill orders in the most effective way and also taking back returned orders. It allocates inventory that will be used for fulfillment based on the information of logistics and inventory control. Figure 95 shows the hexagon for this capability.

Since it is the extension of inventory visibility towards the demand side, the strategic **mission** is the same. By fulfilling orders from the most effective way instead of the way that corresponds to the channel ordered from, channel integration is made easier. In addition, it makes the supply chain more agile by being able to be flexible in order fulfillment. Due to increased flexibility, speed, and availability, buying intend will increase. Also downstream verticalization is supported since the orders of retail stores or e-Commerce can be allocated in the best way possible. Again, the seamless experience will result of this convenience increase.

Again, order management should be **integrated** with all supply chain capabilities since it influences the entire supply chain. In addition, it should be integrated with finance, since payments are an important part of the order transaction (e.g. return reimbursement or payment for deliveries).

Eventually, **insights** in order statuses and returns statuses help allocating orders in the best way possible. For example, if too many orders come from one area, other stock positions can be used for non-priority fulfillments to deliver without losing the ability to fulfill fast in this particular area. Granular supply and demand levels also help in deciding where to ship from.

To build on these insights, **technology** is needed that provides real time visibility on the inventory and an order management system that executes decision making and actually manages the **processes** of order and return fulfillment and the allocation of this fulfillment.

Furthermore, **talents** are needed to maintain the systems necessary to execute all commands (IT specialists) and business analysts should provide understanding of the large amount of information to improve decision making.

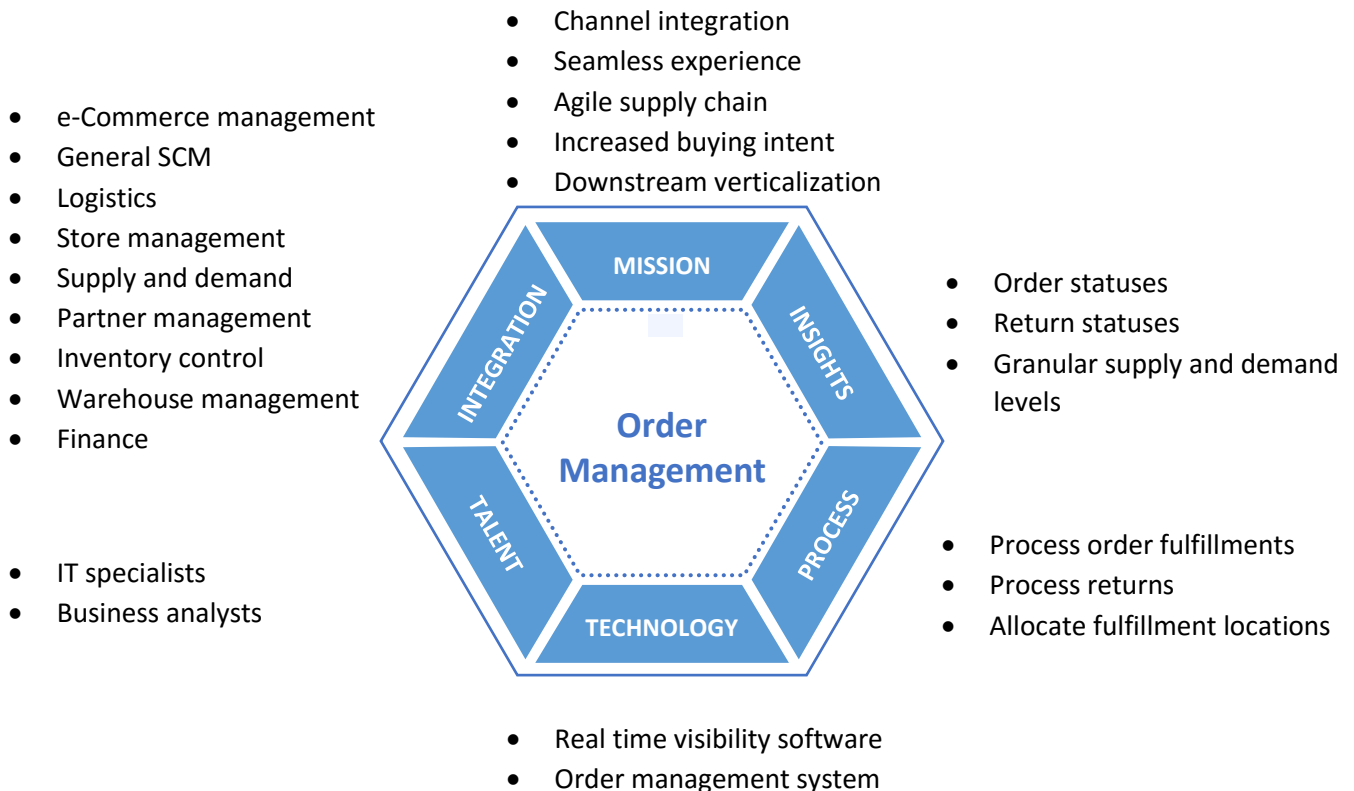


Figure 95: Capability details – Order management

Warehouse management

Warehouse management’s role is managing all aspects of the DCs. Its **mission** is to facilitate channel integration by creating a shared inventory platform where stocks of all channels can be fulfilled from. Ideally, this shared platform should include downstream partners. Improving agility of the supply chain is also supported, since a shared platform decreases fulfillment limitations, and if warehousing is performed more on the local level, choices of fulfillment also increase. This last step also helps downstream verticalization, because warehousing will be closer to the consumer which makes it easier to fulfill consumer demand. In the end, it will come back to improved seamless experience.

Insights provided by warehouse management are the inventory positions in the warehouses. Since logistics complexity increases due to shared inventory of online and offline orders (piece picking versus bulk), knowing how to design the internal inventory infrastructure enhances speed and flexibility. Also the priorities of orders can be used to further optimize warehouse operations (e.g. same day delivery orders should not come at the end of the processing list, but be prioritized).

To implement warehouse management into the organizational structure, it has to be **integrated** with the upstream logistics network to be able to handle the fillings (i.e. logistics, supply and demand and inventory control) and with the downstream network to get the orders to the

customer in the right manner (i.e. e-Commerce management, logistics, store management, supply and demand, partner management and order management). Warehouse management therefore functions as hub between supply and demand.

The right **talent** should oversee that the flow of goods is not hampered at warehouses and therefore, logistics specialists that know the implications of warehouse management should be engaged in the process. Also the right incentives for employees should be in place, so they are motivated to work efficient and avoid being the bottleneck of the process.

Technology of real time visibility and the order management gives insight in the expected workflow of the warehouses. Especially the visibility should be at a more granular level than for the entire logistics network in order to fulfill orders fast.

Processes for warehouse management entail the processing of orders and stock fillings to ensure that goods keep moving. Furthermore, designing the infrastructure within the warehouse to deliver optimal service levels is an important aspect.

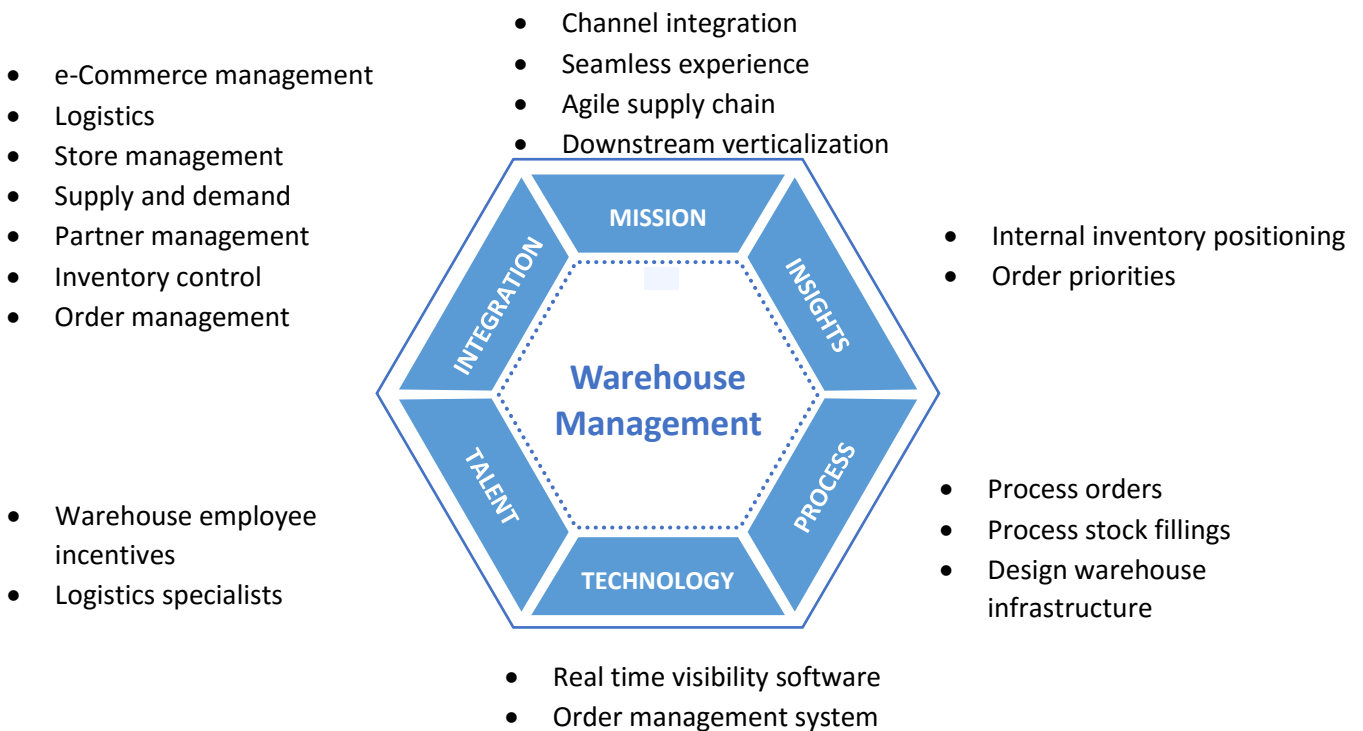


Figure 96: Capability details – Warehouse management

Store Management

Even though e-Commerce is growing, the store stays the forefront of the retailer (Figure 97). When omnichannel operations come into play, the store has to remodel significantly to make the strategy work. It will not merely be a sales channel of store stock anymore, but an integrated machine that funnels all possible stock from the retailer to the consumer (and back in case of a return) and funnels all possible data from the consumer to the retailer. Where previous capabilities were back-end processes that go in the supply chain, store management is the coupling point between these back-end processes and the consumer. It translates what has been done to added value for the customer.

Therefore, the store management enables all strategic aspects for omnichannel retailing in its **mission**. Channel integration is facilitated by managing in-store deliveries and returns and by ordering online in store. The supply chain is made more agile by using store inventory for home deliveries. Also downstream verticalization is supported, since the store of the brand are the most downstream part of the retailer. Manage the stores well and people will intent to buy more. Furthermore, by capturing data from the customer at the store and utilize data captured at other touchpoints, the single

customer view is supported as well. Eventually, again, all these aspects improve the seamless experience of the customer.

Although store management is mostly related to executing the information provided by other capabilities, it provides some **insights** by itself. Customer shopping behavior can be monitored, customer data can be utilized, and flows into the store from deliveries and returns can provide information on how to manage stores effectively. When these insights are managed well, the operations in store can be made more agile and effective.

Since the store is the final hub of the supply chain towards the customer, it should be well **integrated** with the other supply chain capabilities. As could be expected from a final hub, it is mainly influenced by other capabilities and it has itself less influence on the other capabilities. Therefore, integration of store management should be flexible and placed right into the way the retailer's other capabilities are designed.

To manage the store right, the right **talents** should be available. First of all, dedicated store management helps the execution of plans. If services needs to be enabled, the plans are great, but the store does not execute it well, the integration will not succeed. In addition, the sales associates should be well trained in omnichannel retailing. Their way of working is significantly different since the associates will not merely be selling clothes of the store, but become more all-round towards handling deliveries, managing data and provide a more personalized experience. Besides trainings, also the right incentives should be in place to motivate the sales associates to utilize their knowledge on omnichannel.

To assist the talents, **technology** can greatly improve omnichannel store management. The most important part is the order management system. Since majority of orders still comes from the store, the order management system should be easy to use. If the order management's input does not go well, the back-end processes related to the orders will also not be effective. In order for this to be effective, visibility of stock is needed. This includes the own store's stock, but for in case of out-of-stock scenarios, also other channel stocks are helpful. Finally, customer data software should be in place in order to manage all data that a customer leaves for the retailer to utilize.

The **processes** that are important are the processing of orders, returns and stock fillings in order to seamlessly provide fulfillment from the store. Therefore, also designing the store's infrastructure needs to be well arranged so all fulfillments can be done in an easy and flexible way. Finally, store management processes involve processing the data customers provide.

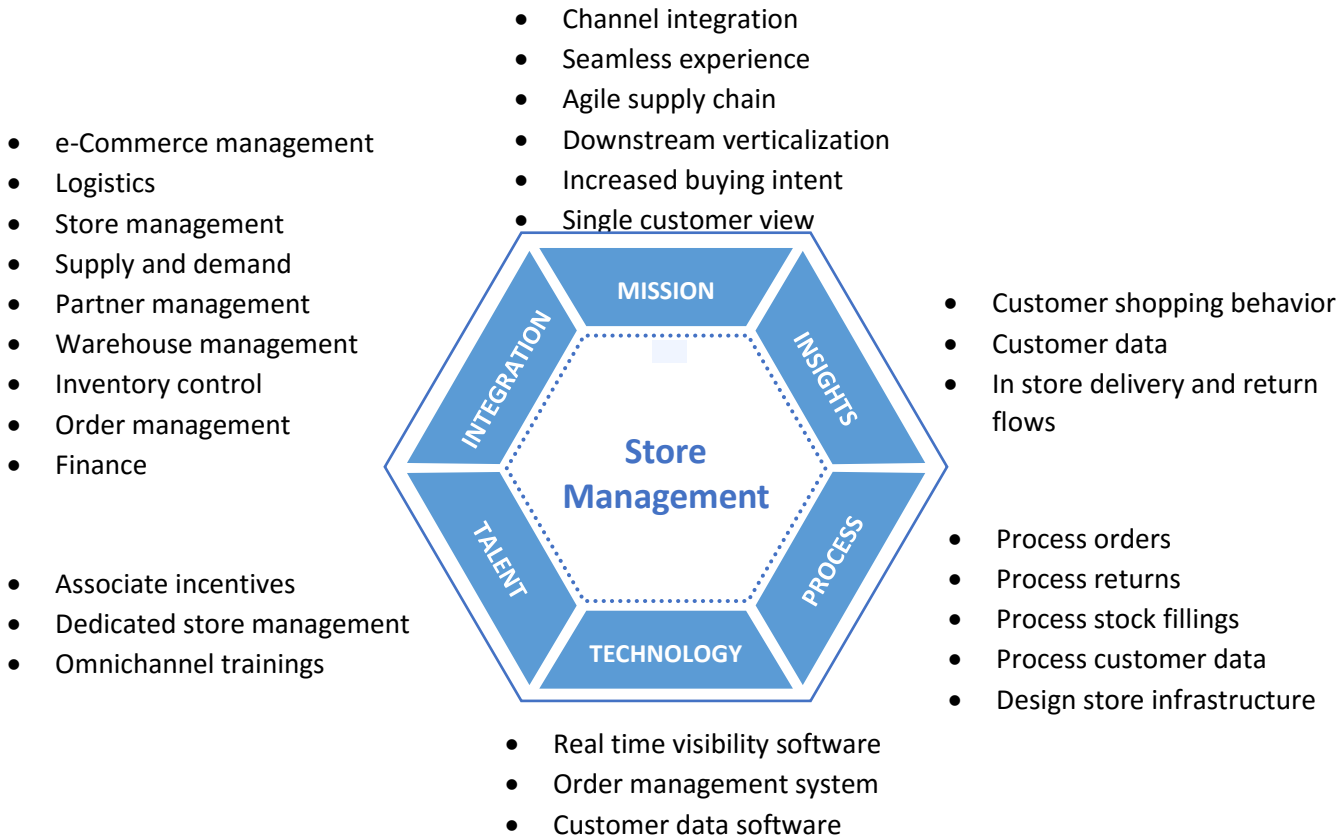


Figure 97: Capability details – Store management

Appendix L: Validity and reliability assessment

It is important that the quality of the research is decent and the shortcomings are known. The quality will be assessed based on validity and reliability.

Appendix L.1. Validity

Validity is an indication of how sound the research is and whether the findings truly represent the phenomenon that is claimed to be measured. It applies to both the design and the methods used in the research. Validity will be assessed on three levels: internal validity, external validity and construct validity (van Aken *et al.*, 2007).

To assess internal validity, a researcher should ask whether changes in the outcome could be attributed to alternative explanations not explored in the study. When it comes to the construct generation, the entire customer fulfillment journey and supply chain is captured, indicating that internal validity is high. However, when it comes to the relations between concepts, it is clear that not only the relationships in the model are related. For example, it is acknowledged that not only supply chain capabilities enable customer fulfillment services and not only customer fulfillment services increase customer satisfaction. However, since the study is not quantitative of nature and the effect sizes are not directly measured, this is not considered a problem (i.e. the effects investigated are present, but not solely).

External validity is related to the amount findings can be generalized towards a broader view. For example, if only one firm is investigated it is not certain whether the findings of that investigation are also applicable for other firms. However if a research towards ten firms produces the same findings, it seems more applicable for a broader segment (e.g. an industry sector). In this research, several actions are taken to improve external validity. First, the industry benchmark consisted of a large number of firms (n=57) from different fashion sub-sectors. Second, interviews are conducted with management of different fashion retail companies. This increases the external validity towards the fashion retail sector. The only missing segment in this fashion retail is the low-end segment and external validity here is lower. Finally, survey results are representative for the Dutch population in demographic aspects according to the '*Gouden standaard*', a Dutch mark that assesses whether demographic characteristics are within certain bandwidths. Overall, even though external validity is limited to fashion retail and the Dutch consumer, external validity is seen as high.

Construct validity regards the question whether the study has adequately measured the key concepts in the study. First of all, several constructs are identified in the study. These are omnichannel strategy, supply chain capabilities, and service quality. The omnichannel strategy is based on literature and interview results. Capabilities will be generated by previous literature and extended with data from interviews. Services will be generated in a similar fashion, but with an industry benchmark and a customer survey complementary to the interviews. Therefore, the construct validity of the constructs is decent. However, the constructs are not used often in combination with interviews or surveys. This makes the construction of questions for these methods less valid.

Appendix L.2. Reliability

Reliability is associated with the replicability of the study. A reliable study could be performed again by other researchers in the same way, under the same conditions and generate the same results. If this is the case, the findings will more easily be accepted as the truth. The types of reliability assessed will be reliability from the researcher, the instrument, the respondent and the situation (van Aken *et al.* 2007).

As researcher, one can be subjected to a bias. First a researcher can have a hot bias, which refers to the influence of interests, motivations and emotions (van Aken *et al.*, 2007). In this study, the researcher has only a little amount of hot bias. Due to the nature of the partner firm of the study (i.e. Deloitte), there is no need for a specific outcome. Deloitte's goal is to obtain independent results and therefore no bias in their study in order to increase the long-term value for their clients. Furthermore, by keeping an alive discussion with a variety of stakeholders, personal emotions are

minimized. Only the hot bias out of motivation could be important to consider. Due to the goal of the researcher (i.e. a high-grade graduation) it is important to keep in mind that the results of the study are more important than the grade. Weekly individual reflections on results and regular discussions with supervisors have helped to look as objectively as possible on results and methodologies to mitigate these motivational issues further. The second form of bias is cold bias, which refers to subjective influences of the researcher due to cognitive origin (van Aken *et al.*, 2007). To mitigate this form of bias, a larger amount of stakeholders will be included in discussions of the results (i.e. university mentors, Deloitte consultants, and retailer managers). If possible, consensus is tried to be reached to achieve reliable results.

It is not uncommon that different instruments yield different results. Therefore, it is important to consider this difference and to mitigate it (van Aken *et al.*, 2007). This study will use the concept of triangulation. Triangulation is the use of different sources of evidence (Yin, 2013). To obtain reliable results, the researcher will use an industry benchmark, interviews and a survey and all these methods are based on a literature study.

Different people have different views on situations. Therefore, a respondent can deliver only a part of the story or a story that benefits them. Therefore, it is important to consider this fact and mitigate the effect on the results of the study (van Aken *et al.*, 2007). For the interviews, this effect is mitigated by conducting interviews with managers of different firms. This gives a broader spectrum of viewpoints and increases respondent reliability. However, the amount of interviews and companies for interviews are questionable, decreasing reliability. For the survey, a random sample will be used and a large amount of respondents will be questioned. This mitigates a bias of a certain group of people and therefore increases respondent reliability.

The specific situation a research is conducted in can influence the results. For example, if an interviewee is tired after a long day of work, this could result in different answers. In most business problem solving projects, this form of reliability is mitigated by the fact that the researcher is inside of the organization for a longer period of time and is less influenced by situation-based results. In this study, the researcher works in a consultancy firm and addresses managers from fashion retailers at certain moments in time. Therefore, the situation could influence the results. In order to mitigate this problem, summaries of interview results are send to the interviewee to adapt and to complement where necessary. For the survey, the size of the survey makes it less likely a significant impact is done on survey results based on situational reliability. To be more certain, the dataset is thoroughly cleansed.