

Supply Chain Effects in Creation of Omnichannel Customer Experience in Grocery Retail

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Abstract

Online sales have changed the retail industry during the past decade, and the technological developments shape the business blending the digital and physical worlds together. Customers use different channels interchangeably during their buying process. The objective of the study is to identify and analyze the factors affecting this omnichannel customer experience in grocery retail, focusing in the supply chain effects. The empirical part searches for answers from the Finnish grocery industry.

The literature review develops an understanding on three domains in this research: omnichannel, grocery industry's distinct features, and supply chain characteristics in omnichannel grocery retail. The academia introduced omnichannel as a term about five years ago. Omnichannel retail means the different sales channels work seamlessly for the customer, and inside the company as well. Omnichannel and supply chain aspects in grocery retail are scarcely researched, since the earlier literature has had a stronger focus on customer motivations. Grocery retail is distinctive field in omnichannel retail due to perishability, low-margin and low-involvement products, frequency and volume of shopping and significance of the downstream supply chain operations. Order picking and delivery demand manual work are identified as the most critical parts of the supply chain. The literature review finishes by offering a framework for the research adapted from four academic research articles.

This study is conducted as a qualitative case research. As omnichannel is a new phenomenon in grocery retail especially, and no existing theories prevail, an inductive case study is a suitable method for theory building. Data is collected by interviews from Finnish online grocery professionals, as well as secondary sources like news articles, case studies, media announcements, websites etc. Data analysis aims at explanation building and validating the theoretical framework created from the literature.

The research confirmed the significance of the downstream supply chain operations. Order picking and delivery are the most critical aspects in grocery sales through online channels since they are additional steps in the supply chain process, and mostly conducted manually. Only the most developed omnichannel grocers are able to invest in automation technologies but all are streamlining their operations to find cost reductions through efficiencies. Another important aspect in omnichannel grocery retail is the consistency between all sales and media channels. To enable the omnichannel retail, though, the company must have their information supply chain in order. If the sales channels are not working seamlessly in the background, the customer experience can never become seamless, either. The Finnish grocers have improvements to make in their information supply chains but mostly in the consistency and coherence between the different media and sales channels.

Keywords omnichannel, grocery, retail, supply chain, case study

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Verkkokauppa on muuttanut vähittäiskaupan toimintaa viimeisen vuosikymmenen aikana ja teknologinen kehitys muokkaa liiketoimintaa edelleen sulauttaen digitaalisen ja fyysisen ympäristön yhteen. Asiakkaat käyttävät eri kanavia saumattomasti sekaisin ostoprosessinsa aikana. Tutkimuksen tarkoitus on löytää ja analysoida ne tekijät, jotka vaikuttavat ylikanavaiseseen asiakaskokemukseen päivittäistavarakaupassa, keskittyen erityisesti toimitusketjun tekijöihin. Empiirinen osuus etsii vastauksia Suomen päivittäistavaramarkkinasta.

Kirjallisuuskatsaus muodostaa ymmärryksen tämän tutkimuksen kolmesta tutkimusaiheesta: ylikanavaisuudesta, päivittäistavarakaupan erikoispiirteistä ja toimitusketjun ominaisuuksista ylikanavaisessa päivittäistavarakaupassa. Ylikanavaisuus terminä esiteltiin ensimmäisen kerran noin viisi vuotta sitten. Ylikanavaisuudella tarkoitetaan eri kanavien saumatonta käyttöä yhtäaikaaisesti tai erikseen sekä asiakkaan että yrityksen näkökulmasta. Ylikanavaisuutta tai toimitusketjuja päivittäistavarakaupassa ei ole juuri tutkittu, sillä aiempi kirjallisuus on keskittynyt paljolti asiakkaiden motivaatiotekijöihin. Päivittäistavarakauppa erottuu muista vähittäiskaupan aloista pilaantuvien ja matalakatteisten tuotteiden, ostosten tiheyden ja koon sekä toimitusketjun tärkeyden vuoksi. Keräily ja toimitus vaativat manuaalista työtä, ja ovat siksi toimitusketjun kriittisimmät osat. Kirjallisuuskatsaus päättyy neljästä artikkelista muodostettuun viitekehitykseen, jota käytetään myöhemmin tutkimuksessa.

Tämä tutkimus on tehty kvalitatiivisena tapaustutkimuksena. Päivittäistavarakaupan ylikanavaisuus on ilmiönä uusi, eikä vallalla olevia teorioita aiheesta ole. Siksi induktiivinen tapaustutkimus sopii teorian kehittämismetodiksi. Data on kerätty haastatteluista suomalaisten ruuan verkkokauppa-ammattilaisten kanssa, sekä toissijaisia lähteitä, kuten uutisia, tapaustutkimuksia, mediatiedotteita ja internetsivuja käyttäen. Data-analyysin tavoite on rakentaa selitystä ja vahvistaa teoreettista viitekehystä, joka luotiin kirjallisuuskatsauksen pohjalta.

Tutkimus vahvistaa toimitusketjuoperaatioiden merkityksen myös käytännössä. Keräily ja toimitus ovat kriittisimmät tekijät ruuan verkkomyynnissä, sillä ne ovat ylimääräisiä toimitusketjun osia ja pääosin manuaalisesti toteutettu. Vain kaikkein kehittyneimmät ylikanavaisen päivittäistavarakaupan yritykset investoivat automaatioteknologioihin, kun muut yritykset tehostavat operaatioitaan löytääkseen kustannussäästöjä tehokkuuden ansiosta. Toinen tärkeä seikka ylikanavaisessa päivittäistavarakaupassa on yhdenmukaisuus kaikkien myynti- ja mediakanavien välillä. Mahdollistaakseen ylikanavaisen vähittäiskaupan, yrityksen tietoketjun on toimittava sujuvasti. Mikäli myyntikanavien taustaprosessit eivät toimi, saumattomuus ei myöskään välity asiakaskokemukseen asti. Suomen päivittäistavarakaupoilla on parantamisen varaa tietoketjuissaan, mutta eniten myynti- ja mediakanavien välisessä yhdenmukaisuudessa.

Avainsanat omnichannel, grocery, retail, supply chain, case study

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1 Introduction

Multichannel definition depends where you sit on Supply chain, for customers its just shopping!
#Kauppa2016 @RetailAnalysis

(Uusi-Autti, 2015)

The previous statement was originally made by Liam Gilbert from IGD Retail Analysis at the Kauppa2016 seminar in Helsinki in October 2015. If not before, the seminar brought the terms *multichannel* and *omnichannel* to every Finnish retail professional's lips. By following the Twitter hashtag #kauppa2016, the professionals were clearly excited about the concrete examples and figures from Finland, the UK and France. Mobile usage in retail is rising while web browsing is decreasing, the click-and-collect model skyrockets over home deliveries, night is the new primetime for logistics, and the solutions by John Lewis in the UK are astonishingly innovative.

Grocery industry is facing the digitalization that has already re-shaped book, electronics and apparel retail. These other retail fields are ahead in the omnichannel retail strategy. Even though groceries are shopped most often, the field has not changed that rapidly. This study touches the reasons why grocery retail has been slower in adopting the online and other sales channels. Ever since the online shopping first started, the information systems have changed the retail logic worldwide, and logistics have increased and evolved. Online grocery sales have undoubtedly affected the logistics of the case companies. This research is planned to study the opposite: how can supply chain advance the omnichannel shopping?

Omnichannel is a new term following multichannel. Simplistically omnichannel means that the customer regards all the retailer's sales and marketing channels as one entity, and the shopping experience is seamless regardless of which channels the customer uses. Aside from food retail, other industries have already gone through massive changes in e- and m-commerce. Increasingly, users expect to have the same easy shopping experience while shopping for groceries as well. The online grocery sales have increased by 50-100% annually for the past few years, and the field is evolving rapidly. Large retailers, like John Lewis in the UK, are investing tens of millions into omnichannel management. Seven & I Holdings, running 7-Eleven stores have announced \$89 million investments for integrating in-store and online operations. Until now their stores have been able to carry 2800 SKUs but after the online integration, customers have 3m SKUs available (Pickard, 2015a). This rapid growth gives

reason and motivation to research the area, and personal interests lead the research topic towards the supply chain's role in the omnichannel retail.

Grocery retail market is very different from other retail industries and has characteristics that other industries, like electronics and apparel, don't. Perishability and maintaining the cold chain bring distinctive challenges into online sales and deliveries. Opposite to many other online stores' supply chains, selling groceries online actually increases the phases instead of removing middlemen. Logistics play an enormously large role in the success of online grocery sales, and is worth investigating. This study tries to identify the factors affecting the omnichannel customer experience, specifically the supply chain factors.

1.1 Research gap

So far grocery retail research has focused mostly on the motivations and typology of the customers and the supply chain side of the industry has been left to lesser attention. Earliest literature on the topic are case studies from France. The UK has passed France in the market size and the number of companies in the online grocery market, as well as in the academic research, since most case studies from the last 3-5 years are from the UK. Multichannel and omnichannel have appeared in the research topics in the recent years. Studies in the field discuss the organizational changes (Brynjolfsson, Hu, & Rahman, 2013; Ganesan, George, Jap, Palmatier, & Weitz, 2009), routing optimization (Cleophas & Ehmke, 2014; Ehmke & Mattfeld, 2012; Ferrucci, Bock, & Gendreau, 2013), and customer behavior (Grewal, Levy, & Kumar, 2009; Jayasankaraprasad & Kathyayani, 2014; Puccinelli et al., 2009). Studies combining the supply chain aspect with other retail fields have been conducted (Aubrey & Judge, 2012) but grocery retail focused studies are sparse. Since the omnichannel as a research topic is young, it is essential to try defining what omnichannel means in the grocery industry, but I simultaneously point out the specifics of grocery retail and the supply chain factors within the field. The fresh field of study offers a few interesting case examples to research. Therefore the research questions are formed as follows.

- How can supply chain management advance the seamless omnichannel shopping experience in the grocery industry?
 - What are the distinctive issues in omnichannel grocery retail? What new factors has omnichannel concept brought to retailers and how do they compare in grocery retail as opposed to other retail fields?

- How has introducing new sales channels changed grocery retailers’ supply chains? What other distinct changes in the organization can be identified since the adoption of the omnichannel concept?
- How have the Finnish online grocery retailers tackled the previously identified issues and developed their business compared to the global market leaders, and what shifts can be expected in the Finnish market in the future?

The first question broadly covers the main objective of the study but requires sub-questions to further narrow down the research objectives. The first sub-question includes the definition of omnichannel a seamless shopping experience, as well as a distinction between the grocery retail and other retail industries. The second sub-question handles the changes in supply chains which have been conducted to answer the omnichannel demand. By first analyzing the changes in the supply chain, it is possible to study the effects supply chains have in the omnichannel customer experience. Other changes in the organization are also relevant to create view on the resources a company has put in the creation of the omnichannel experience. The last sub-question is also related to the resource aspect. By answering this last question the research is able to create an understanding about the Finnish omnichannel grocery field and the stage of the omnichannel customer experience currently offered by the Finnish grocery retailers. The question also leads the research to discuss possible future developments based on the development of other geographical markets.

1.2 Structure of thesis

This section describes the structure of the thesis to familiarize the reader with the logic of the chapters. The research questions led the structure to be as follows. Chapter 2, the literature review, covers the theory around the research topic. The literature review tries to find answers to the research questions from earlier literature. The literature review divides the theory building into first defining omnichannel as a concept, then pinpointing the characteristics of grocery retail as opposed to other retail fields as well as offering a description of the geographical markets that are studied. Lastly, the supply chain characteristics of grocery retail are explored and finally a framework for the study is proposed. Chapter 3 then introduces the methodology of the study describing the nature and format of the research, data collection and data analysis methods. Chapter 4 gives a detailed view of the omnichannel grocery market in Finland, first introducing innovative examples in the field, mostly from the UK and the US. The representation of the Finnish market is based on both the interviews conducted for the

study as well as secondary data and personal experience. In chapter 5, the analysis chapter, the Finnish grocers and the state of the omnichannel market are analyzed using the framework created from the theory. The chapter ends with a suggestion for a reviewed framework, which is then discussed in chapter 6. Discussion also leads thinking forward and gives possible directions the future omnichannel grocery market might lead to. Chapter 7 concludes the thesis with theoretical and managerial implications, limitations of the study and suggestions for future research.

2 Literature review

This chapter aggregates the theory around the main concepts of this study and aims at answering the research questions based on previous literature around the topic. Review of existing theories starts by defining omnichannel as a concept, after which the concept is enriched to depict a wider strategy for customer experience. Next the grocery retail market is studied by its differences to other retail fields, its development from brick-and-mortar towards omnichannel, and by market-specific characteristics in Finland and the UK and the US, as they are the relevant markets for this research. Thirdly, the theories on supply chain operations of grocery industry are reviewed. The literature covers supply chain factors from traditional as well as omnichannel grocers' point of view, thus building on the literature already covered. Finally the established key theories around the topic of omnichannel grocery supply chains and retail customer experience are used to adapt a framework for the empirical part of this study.

2.1 Omnichannel retail

Omnichannel retail has been characterized as a concept, or as a seamless operation or customer experience. This chapter collects the academic research around omnichannel retailing to form a consensus on how to define omnichannel as a concept, and then leads the discussion away from the term itself, as researchers have also started shifting towards a customer experience point-of-view.

2.1.1 Defining omnichannel as a concept

McCormick et al. (McCormick et al., 2014) explain the development of different methods to market as a progress starting from pure play retail, moving through bricks and clicks and multichannel to finally omnichannel (figure 1). Often the terms multichannel and omnichannel are intermingled due to the digital world's and especially retailing's fast-paced nature. This literature review is aiming at separating the two concepts and finally to define omnichannel retail as a separate concept. Five to ten years ago there was a clear distinction between brick-and-mortar stores and online stores. The recent trend has led to the different sales channels to intertwine with each other, and the term multichannel started appearing in 2000's. According to Lazaris and Vrechlopoulos (Lazaris & Vrechopoulos, 2014) the new term, omnichannel, was first introduced in 2009, and academic literature on omnichannel retailing has started appearing since. During 2015 the amount of academic articles about omnichannel retailing has accelerated. However, the definition of omnichannel retail is still unclear to many. In such a

fast-paced industry, both business and academic views develop quickly. New theories might not have time to position in the respective field of study. Omnichannel as a concept is a new domain that still has many different meanings. It can be referred to as survival strategy (McCormick et al., 2014; Regalado, 2014), a singular seamless operation (McCormick et al., 2014) or it can mean a service designed for customers whenever and wherever (Fairchild, 2014). Omnichannel customer has developed from multichannel customer; while multichannel customer uses different sales channels in parallel, omnichannel customer uses them simultaneously (Lazaris & Vrechopoulos, 2014).

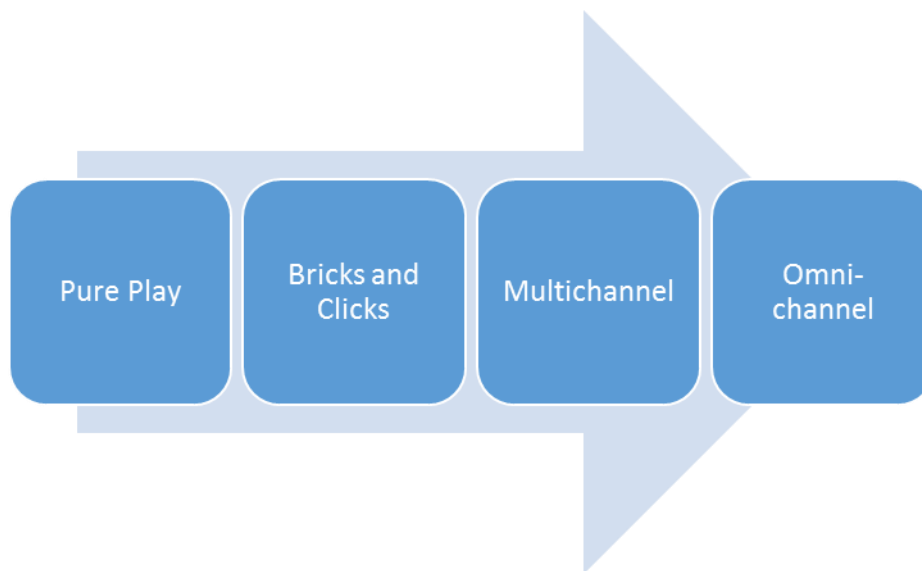


Figure 1. Omni-channel development (McCormick et al., 2014)

Multichannel means the customer uses various different channels to shop: online, brick-and-mortar, telephones, and catalogues (Ganesan et al., 2009; McCormick et al., 2014). Recent studies show the rise of mobile as a sales channel as well (Brynjolfsson et al., 2013). Many companies have made an observation that multichannel customers are often many times as valuable as customers using only one channel (Ganesan et al., 2009), and the figure is even higher with omnichannel customers due to their devotion to the specific company. As most researchers mentioned above stated, omnichannel is foremost a strategy, following multichannel integration. Once the multichannel capabilities are at place, the company can make strategic decision on their operations to lead the business towards an omnichannel actor. Omnichannel retailers have the opportunity to take the best practices from both brick-and-mortar and e-commerce worlds (Brynjolfsson et al., 2013). McCormick et al. suggest that traditional operations should be integrated with promotion, transaction information

management, product and pricing information management, information access, order fulfillment and customer service (McCormick et al., 2014).

Omnichannel customers may start their shopping process in one channel, move on to a next one and finish in a third (*The secrets to enable omnichannel retailing.*). This means that omnichannel customers use all or many available sales channels during their buying process. In fact, it has been studied that approximately 56 touchpoints to different channels can appear between the initial thought and the final purchase (McCormick et al., 2014). Many researchers have started referring to omnichannel retail as a seamless process for both the customer and the retailer (Lazaris & Vrechopoulos, 2014; McCormick et al., 2014; Rigby, 2011; Rigby, 2014). The digital and physical worlds are blending together, and there should not be any distinctions between them, either on the customer or the company's side (Rigby, 2014). As the challenges are in the channel integration, the goal of omnichannel development is in the creation of a seamless customer experience (Frazer & Stiehler, 2014).

An optimal omnichannel establishment enables customers to shop and retailers to interact with customers seamlessly through multiple channels: mobile applications, social media, retailers' websites and online stores, electronic coupons, game consoles, smart televisions and other networked appliances (Rigby, 2011). Mobile applications can also be seen as a valuable promotional channel, since they are not perceived as intrusive as traditional ads on mobile sites, for example. Additional tools or channels to improve the omnichannel methods are customer loyalty cards to identify customers and customize their service, electronic notice boards and price tags allowing dynamic pricing in the physical stores, sales personnel equipped with devices with various levels of information about stocks and delivery options etc., RFID tags, augmented reality tools like the Google glass to enhance the customer experience in stores (Brynjolfsson et al., 2013). Mobile devices and applications have a lot of potential yet to be discovered. Payment systems and location services offer the next possibilities for retailers to harness the mobile device usage of their customers (Regalado, 2014).

John Lewis is regarded as the omnichannel leader in the UK. They started the omnichannel journey in the early 2000's by forming an omnichannel strategy. After over 10 years they have finally reached the position they want to be in, and they still continue making enormous investments to omnichannel management and IT systems. For John Lewis, the development has been slow, as they are first-movers in the field. Now, there are suggestions on how to best achieve an omnichannel position. A white paper by Mulesoft (*The secrets to*

enable omnichannel retailing.) suggests a three-stage model: first equalize the customer experience across all channels, second link online shopping to the brick-and-mortar store, and third create delightful, personalized shopping experiences. How companies are approaching the development towards becoming an omnichannel company will be further discussed in the empirical part of this research. However, the importance of the customer experience is in the heart of the omnichannel development, as discussed below.

2.1.2 From omnichannel to customer experience

The discussion can be seen shifting from omnichannel thinking towards a seamless retail experience (Brynjolfsson et al., 2013; Lazaris & Vrechopoulos, 2014; Sakki, 2014). Lazaris and Vrechopoulos (2014) bring forth the thought that omnichannel retail discussion should be expanded to include customer relationship management, supply chain management, mobile commerce and pervasive retailing. Additionally, Rigby gave examples of companies who have made extensive successes by taking the customer experience, and customizations of the service, in the center of their business (Rigby, 2014). One critical success factor for an e-commerce company is an effective website experience that makes the browsing easy to use and navigate, functional and informative (Colla & Lapoule, 2012). Yet another viewpoint into customer experience suggests that local stores should be able to combine their online store, and exploit information, guidance, education and customer specific customization to create a local, intimate customer experience (Sakki, 2014). Different media, including traditional customer magazines, social media and blogs are in an important role in this process as well. All these authors agree that the view should be broader than a multichannel integration. The service should be based on the customer experience, while the system integrations are the enabling attribute. Puccinelli et al. studied the attributes to a customer experience and define a path the consumer goes through while shopping: need recognition, information search, evaluation, purchase, and finally postpurchase (Puccinelli et al., 2009). The key to retailing success is to understand one's customer and their customer experience. The retail customer experience is affected by both macro factors and firm controlled factors: promotion, price, merchandise, supply chain, and location (Grewal et al., 2009). To succeed, especially omnichannel retailers should look into being present in all of the phases, and to strategically manage all the factors within the company.

Authors have made no clear distinction whether or not omnichannel presence means that purchasing should be possible through all channel customers use. Even though purchasing is an important part of the experience, purchasing option in all channels is not an absolute

requirement for a company to embrace the omnichannel strategy. However, the seamless omnichannel experience requires a presence in all the channels customers use, be it any viable services or sales-promoting content to complete the customer experience online or in-store. This brings the omnichannel concept focus closer to marketing and away from traditional selling (Chaffey, 2015) and while a strong brand name and image contribute to better online sales (Agatz, Fleischmann, & van Nunen, 2008), marketing gets an even more important role. Marketing is not only important for creating the customer experience but also for the supply chain management and vice versa. Supply chain management experience to the customer is increasingly important (Grewal et al., 2009) and successful supply chain management requires excellent relationship management both inside and outside the organization (Kozlenkova, Hult, Lund, Mena, & Kekec, 2015). Peltola et al. (2015) studied the key factors in developing omnichannel customer experience in Finnish companies and introduced four factors: organization and culture, product information and pricing, systems and logistics, and customer communications (Peltola, Vainio, & Nieminen, 2015). This research tries to answer how the third factor, systems and logistics, can support the seamless omnichannel shopping experience. Since the close relations of all different divisions of a company are required, the other factors Peltola et al. (2015) identified are closely connected to the supply chain factor as well. This will also become evident when creating the theoretical framework for this study.

To summarize, omnichannel retailer provides customers with a seamless customer experience, since the omnichannel customer expects to be able to seamlessly use all different channels in all phases of the buying process. This strategy shifts the discussion from omnichannel towards a customer experience strategy, and simultaneously ties the company's internal actions more tightly together. The traditional selling is now even more dependent on marketing and supply chain factors. For clarity measures, in this study an omnichannel retailer is regarded as a retailer offering both physical and digital purchase options in addition to a presence in multiple different media channels.

2.2 Grocery retail market

Most of the omnichannel literature discussed in the previous section is focused on consumer goods such as apparel and electronics, since the change is not yet visible in the grocery retail market. Hence, most of the academic literature handles retail in general. As one of the research aims is to define the distinctive characteristics of omnichannel grocery retail, this chapter looks for the characteristics of grocery industry in general.

Food is a necessity for all humans which makes the grocery industry one of the biggest retail industries in the world. Purchasing is repetitive and the purchase involvement is often low, which differentiates grocery retail from other retail industries (Campo & Breugelmans, 2015; Keh & Shieh, 2001). This taken into account, it is ironic that the online channel is not as developed as it is within other industries, and many online grocers have terminated their business (Ramus & Niels, 2005). The unsuccessfulness of selling groceries online will become apparent when looking at the distinctive characteristics of groceries and the supply chain requirements of grocery business.

Grocery industry differs from other retail areas in many ways. In addition to customer motivations and frequent store visits, grocery industry differs from other industries in the time-sensitivity, perishability, “high-touch” aspect, as well as need for product comparison (Keh & Shieh, 2001). Also worth noting is that food items are very low-margin products, compared to electronics and apparel (Koster, 2002; Vanelander, Deketele, & Van Hove, 2013). Koster (2002) listed the following properties to also distinguish online order requirements of vulnerable food products from other consumer goods, like CDs, books and electronics: product quality, returns, delivery lead time and time accuracy, storage, handling and transport conditions as well as order size. Whereas an average online order consists of 1-3 items, an average online grocery order consists of 60-80 items (Fernie, Sparks, & McKinnon, 2010).

The European grocery customers value three basic aspects: price, comfort, and pleasure (Hento, 2013). Colla and Lapoule (Colla & Lapoule, 2012) also list the main reasons customer shop groceries online as convenience and time-saving. Since shopping is repetitive and sometimes even an inconvenience, the easiness of a known store and earlier experience drive customers to visit the same grocery stores to minimize risk and save effort (Hento, 2013). Online grocery customers minimize their physical effort (Colla & Lapoule, 2012). These factors drive the customers with limited time and capabilities to shop online, such as families with young children and the elderly (Colla & Lapoule, 2012). Thus, a clear distinction can be made between grocery and i.e. clothing shopping, where the motivations are very different. However, food is also a reflection of culture and for some shoppers, visiting the grocery store weekly can be a common family chore, going to the farmers’ market an invigorating experience, or fetching a breakfast baguette a distinctive national habit (Keh & Shieh, 2001).

2.2.1 From brick and mortar to omnichannel

Traditional grocery retailers are starting to realize the importance of introducing new sales channels to complement their brick-and-mortar business (Hübner, Kuhn, & Wollenburg, 2015). While adding complexity, new sales channels can also bring more opportunities for the supply chain and order fulfillment. Retailers can exploit the inventory in stores to fulfill an order, when shipping from a central warehouse would take longer. However, the differences between grocery and other industries are evident. Simply the order size limits the possibilities of dynamically changing the order fulfillment and dispatch location.

Ramus and Nielsen (2005) found out that the most valued aspects of online grocery stores are convenience, assortment and product information, enjoyment, social aspects, personal service, price/bargain/costs, and lastly, technical systems. The benefits omnichannel grocery services offer include ability to fill the shopping list over several days, sharing the shopping list with family members, comment on items, receive personal coupons, sort items by their nutritional information or special diets, order items for offered recipes, and use the same shopping list as basis for new orders (Scott & Scott, 2008). This kind of collaboration between family members can increase the convenience factor tremendously, no matter which channels they decide to make the purchase through. Campo and Breugelmans (2015) studied how the customers allocate their purchases between different channels. Grocery retailers may have rather big differences in assortment, price and promotions between brick and mortar and online stores. They found out that smaller online assortment decreases the purchases of majority of multichannel customers, and that lower prices and promotions attract customer to use the channel more profitable for them. (Campo & Breugelmans, 2015). In brick-and-mortar grocery stores customers value service, price levels and the appearance of the shelves (Breugelmans, Campo, & Gijsbrechts, 2007). Then again, the online grocery shopping experience is still new to many customers and thus the shopping process will evolve for years. Customers' strong habits that are difficult to change and their reluctance to pay the delivery fees might slow down the adoption of the new sales channels (Scott & Scott, 2008). Campo and Breugelmans (2015) combined earlier research to state three ways online grocery experience can change the consumer behavior: 1) *reduce the uncertainty and perceived risk of online purchases*, 2) *help to gain additional factual and choice-related knowledge*, and 3) *involve a learning process in which consumers adjust their evaluation and decision processes to the new store environment*. They indeed found out that shoppers with different experience levels value different aspects. This supports the idea that customers should be regarded

individually to offer the best possible service for them. With the help of individual login credentials, customer loyalty cards linked with the accounts and possible mobile engagement, the customer experiences could potentially change between customer groups to best fit the audience.

In 2001, the success factors for an online grocer were first-mover advantage, access to capital, strategic alliances, the right website, superior service, value-added information, warehouse/logistics structure and differentiation through niching (Keh & Shieh, 2001). In the same article, the potential pitfalls include delivery, technology and security as well as seeing, touching, and smelling products. Today, most of the success factors and pitfalls are still true, however, their emphasis may have changed. Now that multichannel sales have brought new challenges to grocery retailers, they face decisions where sales and distribution as well as marketing and after-sales are even more intertwined, which creates a trade-off between process integration and separation across multiple channels (Agatz et al., 2008). They also state that managing the entire portfolio, instead of channel separately, is the key to multichannel success.

2.2.2 Market-specific characteristics

This study focuses on the Finnish grocery market comparing the state of the industry to the most developed omnichannel markets, the UK and the US. While these markets are hugely different from Finland in the omnichannel grocery field, the infrastructure and society are relatively similar. Thus it is reasonable to mirror the most advanced markets to the Finnish grocery retail, and identify places of improvement. Differences in the omnichannel development stages will become apparent in this study, but mainly, the volumes, population density, and the number of companies in the grocery field distinguish the markets the most. Grocery store sales in the US were \$594,4 billion in 2014 (Statistics and facts on the food retail industry in the U.S.) and in the UK £177,5 billion, which accounts for 51,3% of all retail sales in 2014. IGD reports that online grocery sales in the UK account for £8,9 billion i.e. 5% of the total grocery sales in the UK. The UK is the most developed market in online and omnichannel grocery retail in Europe. Their online grocery sales started about 15 years ago, and now have reached the level of 5% of all grocery sales. Home deliveries are most popular but click-and-collect model is rising fast in popularity. The UK consumers are also using tablets increasingly often for grocery shopping (Henry, 2014).

In Finland the grocery sales add up to 16,7 billion euros in 2014 (*Finnish grocery trade 2015.2015*) of which less than 1% is generated by online sales. Interestingly, in 2001 the online

grocery sales were forecasted to rise up to 10-15% of total grocery sales by 2010 (Punakivi & Saranen, 2001) which has turned out drastically lower. Regulation of retail in Finland is very high from the OECD average, whereas the UK is just below the average. On scale 0-5 Finland's index is over 3, the OECD average is just above 2, locating the UK at index value of 2 (*Finnish grocery trade 2015*.2015). Finland is most regulated in the opening hours of shops and protection of existing firms, whereas the UK is less-competition friendly in large outlet special regulations. The OECD statistics cover the whole retail sector, and are not grocery retail specified. The regulation aspect is changing, though, as the Finnish parliament released the opening hour regulation for retail stores starting in 2016. Alcohol –related laws are still strict, though, and Sakki (2014), for example, states that releasing some regulations would benefit grocery retailers.

According to Finnish Grocery Trade Association's annual publication (2015), the average Finnish consumer visits grocery stores 3,3 times per week and the average shopping basket is worth about 22 euros. The Finnish grocery market is dominated by large market shops (200-399 m²), of which there were 1065 in the beginning of 2014. Next on the list of shop types by the amount of stores are specialty stores (910), and large supermarkets (621). By sales, large supermarkets are clearly the biggest shop type (6019 MEUR in 2014), followed by hypermarkets (4519 MEUR). By sales volume, special stores are left last in the list of shop types with 296 MEUR sales in 2014. The two largest chains hold a majority of the Finnish grocery market overall, S Group and K Group. S Group market share was 45,7% in 2014 and K Group 33,1%. However, K Group acquired Suomen Lähikauppa on November 18th 2015. Calculated with the market shares of 2014, K Group theoretically now holds 39,9% market share if the authorities approve the acquisition.

Sakki (2014) has studied Finnish retail and grocery markets for decades and points out the changes from 2000 until 2012. During this time period gross margins of grocery retailers have increased by 24% and other costs have risen by 61%. Even though the gross margins have risen notably, profits have not changed but stayed between 2-3,5% during the entire period. Where the other costs that result in the steady profit levels come from, can only be guessed by outsiders. He suggests rents, logistics, IT, energy prices or marketing operations might be reasons for the risen costs. In addition, loyalty programs and their development could be one big expense. Their importance is growing even higher with online integration. After all, both K and S groups have introduced mobile services that incorporate the loyalty program

membership as their main feature. The grocery retailers in all the markets in the scope of this study are discussed more in chapter 4.

2.3 Supply chains in the grocery market

Supply chain management (SCM) is essential to any business, and chapter 2.1.2 already pointed out supply chains' importance to the customer experience. Chaffey (2015) explains SCM as follows: *The coordination of all supply activities of an organization from its suppliers and partners to its customers*. He emphasizes, though, that SCM includes the information flows as well as material flows, and the information is still growing more and more important. The logistics of an omnichannel grocer are very close to those of traditional grocery store until the products reach the stores. This part of the supply chain is called upstream logistics. Due to the scope of this study, upstream supply chain is not covered, but the focus is on downstream supply chains, deliveries and store logistics that is. The importance of efficient downstream logistics is extremely high. In traditional grocery stores customers take care of the order picking, packing and delivery which saves the company 13% of total cost of sales (Hübner et al., 2015). Introducing online sales brings these steps in the downstream supply chain back to the company, adding costs and essentially making the online or mobile sales a service.

The *logistics mix* (Gustafsson, Jönson, Smith, & Sparks, 2006) includes components such as storage facilities, inventory, transportation, unitization and packaging, and communications. This logistics mix is composed before the time of multichannel retailing, and would now include order picking and last-mile delivery as additional aspects. What has not changed is the importance of the temperature-control. Gustafsson et al. (2006) write that temperature-controlled supply chains are more important than other retail supply chains due to their complexity which adds costs. As the logistics mix components increase in the temperature controlled supply chain, the possible complications and costs can see an increase as well.

Vanellander et al. (2013) divided the commonly used supply chains into two categories – deliveries from a pure player or a click-and-mortar. Pure player deliveries are then again divided into van delivery or a parcel delivery whereas click-and-mortar deliveries are van deliveries. They then analyzed the costs of the downstream supply chain using activity-based costing (ABC) and were able to identify the most important factors an online retailer has control over and can thus impact the outputs shown in figure 2.

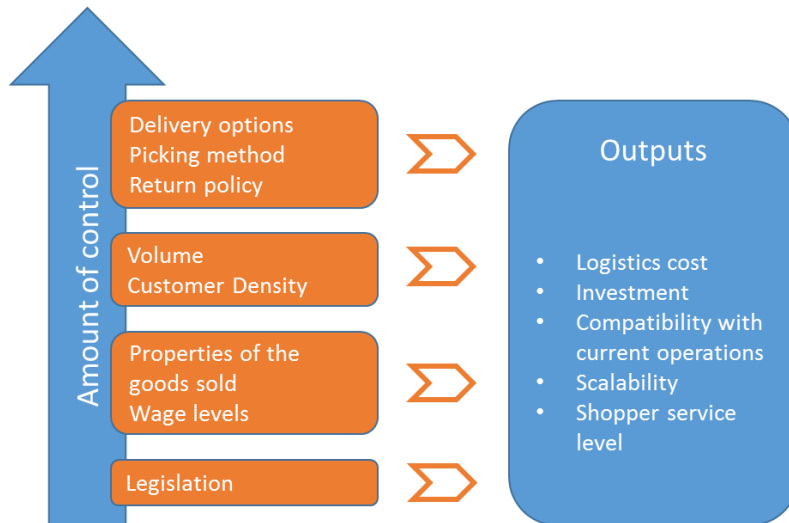


Figure 2. High level of e-commerce logistics (source: Vanelander et al., 2013)

The two most significant parts of the downstream supply chain are order picking and last-mile delivery, while also being the factors the company has most control over (Hübner et al., 2015; Vanelander et al., 2013). Often, since grocery retailers' core business is not product delivery, third party logistics providers are used to reach the customers in the omnichannel commerce and outsourcing the logistics operations often increases flexibility as well (Fairchild, 2014). As fresh food items differ from other retail fields, the type of packaging affects costs, convenience, customer value and communication (Gustafsson et al., 2006). Packaging is thus an important part of the supply chain entity and has cost effects in the order picking, for example. Order picking is the part not visible to the customer, and thus customers often do not realize it is often the most significant cost in the process. The picking cost depends on the picking system and productivity, which are dependent on the picking location and automation level (Hübner et al., 2015). Picking can be done in either brick-and-mortar stores, or in so called dark stores or dedicated warehouses (Colla & Lapoule, 2012; Hübner et al., 2015). When deciding on the order picking location, retailers have to make a trade-off between picking efficiency and investment (Scott & Scott, 2008; Vanelander et al., 2013). Picking inside a normal store is not efficient but doesn't require any additional investments. Normal supermarkets are not designed for the online order process, mainly because the layout of the store is planned to give the most amount of exposure for the normal customer (Koster, 2002). Dark stores are specialized warehouses that appear like normal stores, only without customers. Picking in a dark store or a specialized warehouse requires a big investment but makes the order picking much more efficient, and allows the layout to be optimized for e-commerce. Order picking is

very labor-intensive since the automation of a picking system requires vast investments. Picking vulnerable groceries on item level is a lot more complicated than other e-commerce applications like books.

Even more significant than the order picking is the last-mile delivery, as the cost of it might make up to 50% of the total logistics costs (Vanellander et al., 2013). The e-grocery business is mostly located around large cities and Vanellander et al. (2013) also point out that *customer density is especially critical for the cost of last-mile delivery*. Usually the last-mile delivery options are divided into two categories: home delivery and pick-up points, also called click-and-pick model (Agatz et al., 2008). More often used term in among grocery retailers is nowadays *click-and-collect*, which will also be used in this paper. The home deliveries can again be divided into attended and unattended deliveries (Kämäräinen & Punakivi, 2004). As figure 2 shows, companies have most power over the delivery options and the picking method. Companies should at the same time maximize the value of each delivery, and minimize the costs of the highly expensive last-mile. Packaging can have both positive and negative affects whether it is designed well or not: good design allows items to be picked easily and packed conveniently into transport vehicles (Gustafsson et al., 2006). As one solution to intensify the last-mile, online grocers could be selective in which order they accept to optimize the cheapest delivery routes (Cleophas & Ehmke, 2014).

While home delivery service is critical to the success of online grocery business (Punakivi & Saranen, 2001), so are service-oriented logistics (Colla & Lapoule, 2012). Multichannel sales can bring cost advantages, though, through economies of scale (Agatz et al., 2008) and the omni-customers are many times as profitable as normal customers. Delivery methods have an impact on the costs. In home delivery, the time window and lead-time from order placement to final delivery are the main tools companies use to control the costs. The longer the time window, the better the delivery routes can be optimized, and the longer the lead time, the better the order picking can be organized (Punakivi & Saranen, 2001). Agatz et al. (2008) calculated that by changing the time windows from a fully flexible unattended delivery to a 2-hour window, the costs could rise by a third. Another calculation by Campbell and Savelsberg (Campbell & Savelsbergh, 2005) states that expanding the time window from one to two hours, profits could rise by over 6%. Again, the grocer faces a trade-off between service and delivery cost. Supply chain decisions are most often trade-offs between the offered service and costs, either operational or investment-related.

Numerous concepts have been tried out for all the different delivery methods over time and around the globe, and companies continuously create new trials to find which methods work the best within their customer base. Perishability of certain food items causes the most significant differences and challenges to the grocery market as opposed to other retail industries, especially in the supply chain and last-mile delivery. The cold chain and the freshness of fruits and vegetables demands delivery vehicles both to the retail store and from store to customer, in case of e-commerce, to have separate cold compartments (Cagliano, De Marco, Rafele, Bragagnini, & Gobbato, 2015; Vanelslander et al., 2013). The last-mile delivery faces the biggest issues companies have to find a way around. The customer has to be home waiting for the delivery, or an alternative unattended delivery system is required. In Finland SOK has been active in different trials, and new solutions are promoted by others as well. In 1990's S group tried out a delivery model based on Streamline, a US online grocer. Their business model was unattended deliveries, where the groceries were left in a special box in the customers' yard (Punakivi & Saranen, 2001). 2000's was quiet in the online grocery business in Finland but since 2010 the K and S groups have launched their online stores, and other actors, such as Kauppahalli24, have appeared in the market as well. Unattended delivery is not common anymore (Scott & Scott, 2008), however, new ideas are still tried out. For example, NCC built service entrances to a Housing Fair apartment building, where every apartment has a service entrance that the resident manages, and can open remotely or give a code to the delivery service (NCC, 2015).

Click-and-collect model is increasing in popularity possibly due to the sense of freedom it gives to the customer. Even with specified time windows the customer is able to decide when to pick up the order, and the shopping trip can be combined with other errands (Colla & Lapoule, 2012). The motivations of online grocery shoppers were convenience and time-savings, which makes the rise of click-and-collect model interesting. As for the companies, however, click-and-collect model frees resources due to the avoided delivery.

Logistics capabilities can bring efficiency, effectiveness, differentiation and flexibility to the existing business (Fairchild, 2014). These different delivery methods are the most important logistics capabilities but as mentioned, supply chains are more than the material flows and logistics. Diversified, efficient and service-oriented logistics are a critical success factor for omnichannel retailers (Colla & Lapoule, 2012) which already takes the supply chains' significance further, and the service-orientation ties the customer experience to the supply chain function. The factor behind the efficient supply chains and website is a well-

functioning IT system. Many researchers emphasize the importance of IT systems in the supply chain entity (Chaffey, 2015; Hazen & Terry, 2012), since order processing, logistics management and delivery operations are tightly tied to the IT systems in use in each company. In fact, Chaffey compacts a definition for *information supply chain* (ISC) from earlier academic papers.

Information supply chain: An information-centric view of the supply chain which addresses the organizational and technological challenges of achieving technology-enabled supply chain management efficiency and effectiveness. (Chaffey, 2015)

With well-managed ISC, a company is able to do the right things the right way, and thus reach better results. Information asymmetry can lead to bullwhip effect (Chaffey, 2015). In addition to efficiency and effectiveness, Hazen and Terry (2012) also list resiliency as a key attribute that a right IT system can offer to the supply chain. Resiliency builds flexibility into the infrastructure, encourage differentiation of the products and helps in customer and supplier relationship management. Downside to IT systems is the possible risky and costly failure in the system integration (Hazen & Terry, 2012).

Legal aspects of the omnichannel supply chains have not been studied much. Notions of requirements on temperature-control, returns, and environmental factors considering delivery vehicles are found here and there but since the laws and requirements vary from country to country, it is difficult to assess the actual impact of legislation on omnichannel grocery retail. All in all, it is a factor that restricts companies and should be taken into account. While planning the supply chain system of an omnichannel grocer, the company should take various other aspects in mind, too. The options for order picking and delivery vary and the design of the omnichannel supply chain depends on the country (Hübner et al., 2015). What is the best system depends on one side the customers, the market size, the geographical distribution and their technology acceptance state, and on the other hand the existing supply chain operations.

2.4 Summary and framework for the research

Earlier in this chapter the basic concepts of omnichannel retail, characteristics of grocery market and supply chains in the grocery industry have been discussed. It is now clear that grocery retail differs a lot from other retail fields, and omnichannel operations require investments. Grocery shopping is frequent, the physical orders or shopping bags are large and heavy, and groceries are low-margin and low-involvement products. Sales through online channels lead to increased operating costs, since order picking and deliveries are added to the

downstream supply chain process. This aspect also distinguishes grocery from other retail fields where online sales can usually be carried out with fewer actors in the supply chain. The omnichannel concept and its development towards customer experience management forces the different divisions of a company to intertwine more tightly together, and co-operation is essential for the company's success. In addition to integrated functions, minimized downstream logistics' costs are vital to remain attractive and profitable.

Therefore, in order to provide final consumers with a valuable alternative option to grocery stores, the e-grocery business needs to improve purchase transactions and the physical distribution process, to use the electronic/mobile communications for more than simply placing orders, and to re-engineer the logistics process by connecting all SC members with real time information. (Cagliano et al., 2015)

Cagliano et al. (2015) sum up the requirements for a company to become an omnichannel company, and to be able to provide its customers a great customer experience. Purchase transactions, physical distribution process, communications are all visible to the customer, and important aspects in the customer experience. As important is the logistics process with real time information. Functional IT systems in the background are a big investment. On the contrary, omnichannel customers are proven to be more profitable than normal customers. Whether or not the investments are worth their cost is the main question omnichannel grocers face. To help with the decision-making, it is important to understand the different factors affecting the customer experience and their relation to each other. In the following paragraphs the most important academic articles are adapted to create a framework for the analysis of the empirical part of this research. The framework should work as a model for an optimal planning for a successful omnichannel grocery retailer, taking into account the seamless shopping experience customers require, supply chain requirements and trade-offs as well as the specific characteristics and challenges in grocery retail.

In creation of the framework four articles to the purpose were chosen as the basis for their fit to the research questions and fit to the topic. Grewal et al. (2009) created an organizing framework for customer experience management in retailing whereas Vanelander et al. (2013) discuss the supply chain decisions on a more concrete level. Hübner et al. (2015) offer a strategic framework that will also be used in the analysis of the supply chain factors.

Additionally, Puccinelli et al. (2009) consider the customer experience and the consumer decision process, thus covering the omnichannel aspect of this research. All these studies have been referred to earlier but this chapter offers a more thorough explanation of their frameworks as a basis of the model for this study.

As grocery business has developed from pure play through bricks-and-clicks and multichannel into omnichannel business (figure 1), and omnichannel thinking is shifting towards a seamless customer experience, Grewal et al. (Grewal et al., 2009) aptly created an organizing framework to point out the importance of customer experience in retail (figure 3). Consequently, Grewal et al. (2009) also analyzed the customer experience framework by Puccinelli et al. (2009) that is affected by the surrounding factors in their analysis. Every point of customer contact is important for retailers, and when new sales channels are introduced, retailers have to take care of the customer experience seamlessly throughout all channels. The framework explains the macro factors affecting the retail customer experience as well as the firm controlled factors (promotion, price, merchandise, supply chain, location) that can result into a superior retail customer experience. The retail metrics every company should follow are brand value, customer value, word-of-mouth and referral value, retention and acquisition, cross-buying and up-buying, multiple channels, and product returns. The scope of this thesis is not wide enough to gain insight on all the metrics, but is instead focused in multiple channels and brand value. Grewal et al. (2009) see the customer experience as a win-win strategy where careful customer experience management can lead into higher customer satisfaction, more frequent visits and finally higher profits. This organizing framework acts as the basis of the research framework developed for this study, and is further adapted by the other notable frameworks.

While Grewal et al. (2009) cover customer experience management in retail, Hübner et al. (2015) and Vanellander et al. (2013) position their frameworks within the logistics of e-commerce and omnichannel retailing. The characteristics proposed by Hübner et al. (2015) for order picking and last-mile delivery help in designing a logistics system, and they match the factors Vanellander et al. (2013) identified as the ones companies have the most control over. Additionally, order picking and last-mile delivery has been established as the most significant parts of the supply chain of an omnichannel company. Therefore these two supply chain aspects are given more emphasis on the research framework created for this study.

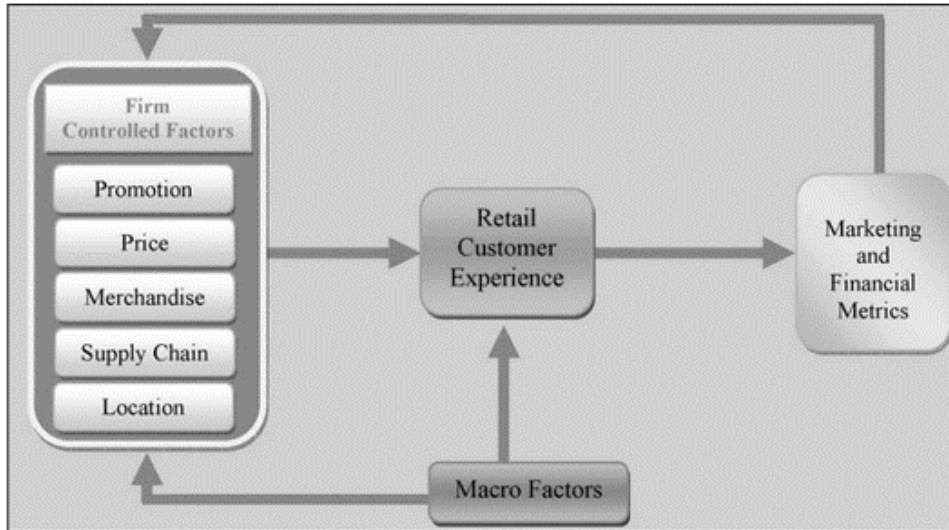


Figure 3. Retail customer experience organizing structure (Grewal et al., 2009)

Hübner et al.'s (2015) research paper offers a strategic planning framework for last mile fulfilment and distribution in omnichannel grocery retailing. They divide the omnichannel logistics into 1) back-end fulfilment, meaning order picking, and 2) last mile distribution, i.e. delivery. There are numerous options for how the supply chain can be organized which makes the planning of the supply chain operations a strategic optimization issue. Both Hübner et al. (2009) and Vanellander et al. (2013) acknowledge the trade-offs in the supply chain planning: the better the service level, the more expensive the logistics operations become. Service level consists of multiple attributes, including delivery windows, number of delivery options, delivery velocity (same day vs. next day), delivery area, assortment volume and product quality. Internal strategic decisions include investments (e.g. new fulfilment center or automation system), how well the omnichannel supply chain fits the current operations and whether or not it is scalable. These decisions can also be seen as the metrics feeding back information to the operative part of the company controlling the marketing and supply chain factors. Even though the framework by Hübner et al. (2009) collects the supply chain factors, or the SC network design parameters, into a comprehensive representation, not all of the factors are valid to grocery retail, such as returns. All of the options are not excluding others, either. A company could practice order picking both in-store and in a dedicated warehouse, where one option could be fully automated and the other manual. Similarly, a company could offer multiple delivery modes. The decisions are in the strategic decision, like pricing and investments in automated fulfillment centers.

Puccinelli et al. (Puccinelli et al., 2009) defined five phases in the consumer decision process: need recognition, information search, evaluation, purchase and post-purchase. To create a successful customer experience all the phases should be tied together seamlessly. Their framework depicts how different theoretical domains are experienced by customers in different stages (figure 4), i.e. what kind of role the consumer behavior plays in the different phases of the consumer decision process. Some of the specific elements become important in creating of the omnichannel customer experience. As goals, schema and information processing affect all stages of the buying process, retailers have to think how the environmental factors, or the macro factors in this research framework, affect the goals of the consumer, and also how the retailers can affect the need recognition during the buying process in-store or during online browsing. The online aspect should also be taken into account with the memory element: how does consumer’s short-term memory affect the decision process when information is available instantaneously online? In-store stimulus can influence involvement, affect, and atmospherics. The affective processing element is part of every phase in the decision process and it is important to understand how consumer’s mood might affect channel preferences, and what kind of product assortments and service is more engaging to customers. It is still unclear to researchers how the consistency between in-store atmosphere and digital channels affect consumer decisions but is an important domain to take into account in omnichannel retail.

	Need recognition	Information search	Evaluation	Purchase	Post-purchase
Goals, schema, and information processing	*	*	*	*	*
Memory		*	*		
Involvement	*	*	*		
Attitudes			*	*	*
Affect	*	*	*	*	*
Atmospherics			*	*	*
Attributions and choices			*	*	*

Figure 4. Consumer decision process (Puccinelli et al., 2009)

The above-explained frameworks are adapted into one model, basing it on top of Grewal et al.’s (2009) framework, an often cited academic study. Supply chains’ significance in the creation of the omnichannel customer experience and in the omnichannel grocery sales is proven by the previous literature, and thus is integrated strongly into the firm controlled factors in the framework (figure 5). The components from Hübner et al. (2009), Vanelslander et al. (2013) and Puccinelli et al. (2009) are integrated in the model as well. As in Grewal et

al.'s framework, the customer experience is in the middle of the structure, and is given more emphasis with the multi channels customers can move from one phase to another in their buying process. Additionally, as Cagliano et al. (2015), Chaffey (2015), and Hazen and Terry (2012) among others noted, information systems and real-time information among the supply chain members is essential, ISC component was added in the framework as well.

While the framework depicts the relationships between the different factors and the customer experience, companies setting up or managing omnichannel businesses should pay attention to some additional points. They should, firstly, define the key drivers for cost and service, then define a good structure for their supply chains and how the customer experience is taken into account in all phases of the buying process and lastly, prepare the supply chain to deal with inconveniences and opportunities risen from the macro factors. The key drivers of cost and service are essential in any further decision making, as they lead the strategic decisions for service level offering and investments.

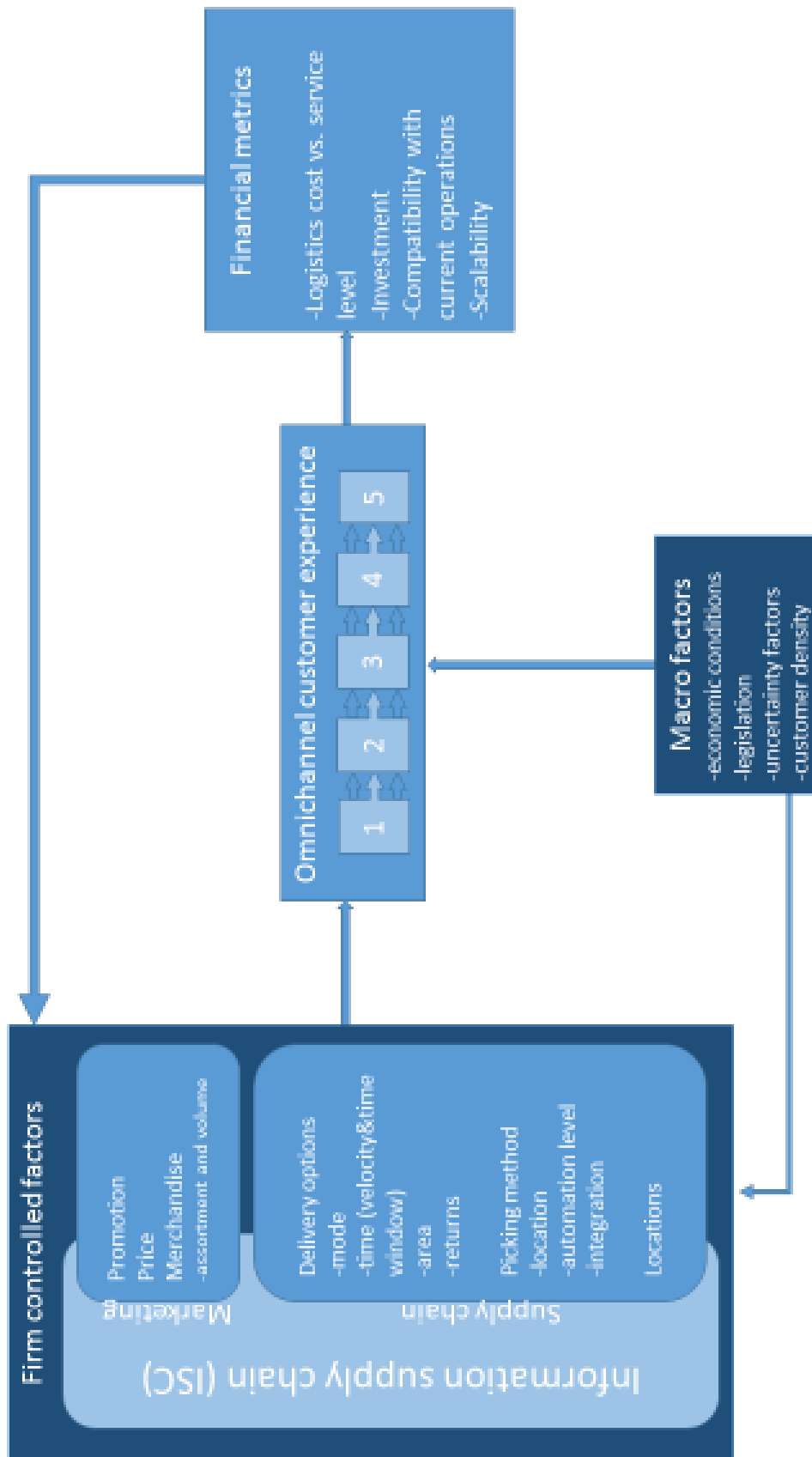


Figure 5. Framework for the study (adapted from Grewal et al. (2009), Vanellander et al. (2013), Hübner et al. (2009), Stritto and Schiraldi (2013) and Puccinelli et al. (2009))

3 Methodology

This study aims at recognizing the current effects and future trends in the growing market of omnichannel grocery retail. Phenomenon-driven research has no plausible existing theory and the research questions are broadly scoped (Eisenhardt & Graebner, 2007). As the literature review showed, the supply chain management in omnichannel grocery industry has not raised much attention yet, and is lacking the needed theory. This research is aiming at finding the key elements on how SCM can support the seamless shopping experience in the grocery industry and creating a framework or a model based on the findings and the understanding created during the design research process.

Omnichannel retail is a young field, especially in the grocery industry, with a limited amount of quantitative data and thus lead to a selection of a qualitative case study research approach. Case studies and qualitative research often go hand in hand (Eisenhardt, 1989) but another underlying reason for a qualitative approach is that the companies in the field are not able to, or find it difficult to specify how much different channels generate sales, for example, and that information is not readily available.

The nature of the research topic directed the research into a case study format. Case study is useful when trying to answer “why” or “how” questions and a preferred method when trying to explain a current circumstance and when the case is a contemporary phenomenon in its natural context (Benbasat, Goldstein, & Mead, 1987; Yin, 2009). Additionally, it can be said that case study employs multiple methods of data collections from one or more entities (Benbasat et al., 1987). As explained by Eisenhardt (1989), inductive case study research tries to understand dynamics in a single setting; however, it can include multiple case examples. Hence, the nature of this research is also inductive, thereby taking an instance and generalizing it into a theory. Yin (2009) points out the importance of theory building before the field study can begin. In this research, the framework is created with which the cases are evaluated and the theory developed further.

To answer the research questions formed based on previous knowledge and literature review, the case selection should be theoretical (Eisenhardt & Graebner, 2007). UK grocery retail market is leading in the e-grocery business worldwide, where the most developed solutions and most interesting examples can be found. UK omnichannel grocers were thus the subject for secondary data collection. For the empirical data collection the home market in Finland was a natural choice. Finland’s grocery market is interesting because of the two major

players hold over 85% market share (*Finnish grocery trade 2015*.2015). Therefore, it made sense to include all the players in the Finnish e-grocery market in the research.

3.1 Data collection and data analysis

Due to the nature of the case examples of this study, it is reasonable to combine primary and secondary materials. Based on the theory and the framework conducted from the previous literature, this study evaluates the actors in the field of omnichannel grocery retail: firstly the industry leaders with pioneering solutions, and secondly the actors in the Finnish e-grocery business. The industry leaders are analyzed by secondary material publicly available, such as case studies, news articles, etc. The Finnish market is studied with focused interviews from six e-grocery professionals, as well as available secondary material. According to Yin (2009), interviews are the one of the most important sources of case study data. Basing the qualitative research data on the previous literature support the theory building and gives validity to the data analysis (Eisenhardt, 1989).

After the decision to take all the Finnish e-grocery companies, i.e. companies that sell groceries online, into account in the data collection led to the phase of finding the interviewees, as unstructured interview was the selected data collection method. All the companies were approached by emails and phone calls. The most suitable people to interview were found by searching online for positions including “e-commerce”, “development” and “manager”. Not all company representatives contacted were available for an interview, and thus were excluded from the analysis. Some examples, however, are included from these companies as well, as can be noticed later on. The amount of professionals in the e-grocery business in Finland is surprisingly small, which caused some challenges in the sample size. In table 1 are listed the final interviewees and the interview dates. All interviews lasted about an hour, and the additional interview by phone lasted for about 15 minutes. Focused interviews last for a limited time, about an hour, with open-ended questions that are often pre-defined. With these types of questions, the interviewee has to be given neutral questions that they can answer with a fresh commentary. A focused interview can be executed to corroborate certain facts, which in this study is the aim with the framework created. All interviewees were given the interview topics and questions in advance, so they could prepare themselves as well as possible.

Table 1. Interview dates and interviewees

December 15, 2015	Eva Tenhunen	Ruoka.net	Managing Director
December 16, 2015	Jukka Ranua	HOK-Elanto (S group)	Development manager, e-commerce
December 16, 2015	Arhi Kivilahti	Ruokakesko (K group)	Director of Development
January 5, 2016	Matti Torniainen	SOK (S group)	E-commerce manager, online grocery retail
January 14, 2016	Veijo Heinonen	Kauppahalli24	Managing Director
Additional queries			
January 8, 2016	Sampo Suonsilta	Supermarket Trio (K group)	Retailer

The interviewees represent the Finnish e-grocery companies with representatives from the two largest actors, S group and K group, and two smaller companies, Ruoka.net and Kauppahalli24. Despite their size, S and K groups have only few people in charge of their online stores. After all, the online grocery sales do not account for much in the whole grocery retail sector, as discussed later on.

Interviews were conducted in two sets, formed by chance. The interview dates were set according to the interviewees' schedules, three of them were held in mid-December and the rest in January. Between the interviews, the questions could be revised to improve the insight that could be acquired during the interviews. Both the collected data as the literature were used to the revision of the interview questions. The overlapping of research phases gives an advantage for the researcher to flexibly edit the data collection and finally lead to theory building (Eisenhardt, 1989).

Unstructured interview was selected as an interview method because of its advantages in covering relatively new domains (Firmin, 2008). Interview topics were formed around the research question. Unstructured interview method allowed the articulate interviewees to freely explain their thoughts, while the researcher led the discussion into the wanted direction. First, the interviews focused on assessing the current state of the company: what different sales channels they have, what is the meaning of online sales to the company, how long have they been in multichannel business and how their online channel has developed. Secondly, the interviews tried to reflect where the field is going and what the upcoming trends in the Finnish e-grocery market are. Afterwards the interviews were transcribed on a content level to be able to find and evaluate the topics discussed in the data analysis.

Secondary data was collected by browsing the stores' online sites, following social media posts around the topic, searching for case studies and conference reports, and by following any links and references from the material already acquired. The different online and mobile services were used to create a first-hand experience of the usability and user experience of the services, even though the gathered view is not entirely objective.

As mentioned earlier, in a case study research the data collection and data analysis overlap. The inductive research method lead from individual observations to a generalization. The inductive method allowed the research framework and interview questions to evolve during the research process. This way the last interviews could go even deeper, as a certain level of understanding in the issues had been established by the interviews in December.

Eisenhardt (1989) said that data analysis is in the heart of creating theory from a case study. In the analysis this research combines and compares the framework created from previous literature to the industry leaders in the UK market and finally the Finnish e-grocery market. Analysis aims at *explanation building* (Yin, 2009), explaining the causal links within the phenomenon, and try to answer the questions *how* and *why*. The analyzing process works for explanatory case studies as this one. By the end of the analysis, the goal is to have been developed the framework into a new theory based on the findings from the case study.

3.2 Limitations

There are limitations to this research, as there is in most case study researches, both content and methodology related. In general, human errors and bias in information processing are common (Eisenhardt, 1989). In addition to the researcher-induced bias, interview as a source of evidence might drive towards bias due to poorly stated questions, response bias, and interviewee giving answers they think the interviewer wants to hear (Yin, 2009). Too early conclusions with limited data, ignorance of statistical data, dropping out or get overly influenced by discomfoting data are realistic problems researchers using qualitative data might cave in, which are not excluded from this research, either. Yin (2009) also points out the limitations in the lack of systematic approach in a case study research. Within this study, a clear limitation in the data collection is the amount of interview data. With such few interviews, one person's opinions get much higher valuation as they would in a larger sample, and the validity and generalizability might become an issue. However, generalization is only one way people gain knowledge, and drawing conclusions from a case study research can be well justified (Flyvbjerg, 2006)

4 Omnichannel grocery market – current state

Before further analysis, this chapter describes the current state of omnichannel grocery industry, both in Finland and elsewhere in the leading markets. This empirical chapter depicts the state of the omnichannel grocers' business with the help of the framework and to start pinpointing the current issues and possibilities the Finnish omnichannel grocers face. Their omnichannel services and current sales channels are explained and evaluated against each other as well as against the global market leaders. For long, France was the leader in online grocery business but lately the UK and US based companies have hurried past France in the development of new concepts. This chapter first discusses the forerunner concepts and omnichannel market leaders looking to explore the steps they have taken towards omnichannel retail and then thoroughly portray the omnichannel grocery market in Finland.

4.1 Omnichannel innovations from leading grocery retailers

Firstly, it is worthwhile to reason the selected examples in the analysis. Initial research started by searching different online grocers widely across the world. It soon became apparent that no material written in other languages than English and Finnish could be used because they would not offer enough information. Examples found for this analysis are those that have been written about by academia as well as consulting companies and the grocery retailers themselves. A valid notion about similar examples was brought up in one of the interviews. A. Kivilahti pointed out that certain trials of large grocery retailers can create a lot of attention, as Tesco's Home Plus virtual grocery store in South Korea, but often people talking about it might not know if they are still in use or not (personal communication, December 16, 2015). According to Kivilahti, the virtual store is not, and thus becomes a good example of the hype created around new concepts that might not be viable for a sustainable business in the long run.

2011 was the year multi-channel was brought to the grocery business in the UK, as mobile services were integrated with the other channels (Kivilahti, 2013). In the UK, there are about ten grocers that offer online purchases with varying delivery options. In the UK, the online grocery sales have existed for roughly 15 years but still, the market share of online groceries is about 5%. The online grocery business started with home deliveries. In France, Chronodrive introduced the click-and-collect as early as 2004, and France is still a leading market in drive-thru grocery stores. Click-and-collect method is growing more popular among omnichannel customers, in both grocery and other retail industries.

The main omnichannel grocery retailers in the UK are Tesco, Sainsbury's, Asda, Morrisons, Waitrose, and Ocado, which is the only dedicated online supermarket. All others offer both home delivery and click-and-collect delivery options except for Morrisons, Asda leading the network with over 600 click-and-collect locations (Pickard, 2015b). Asda, Walmart's UK based business, also promotes their automated collection points (Asda, 2016) and state their mission is to be the UK's most convenient online retailer. As Asda is striving towards being the online grocery leader, Tesco is using their market leader position in developing their online operations and fulfilment center to increase automation and create new processes to enhance efficiency. As of 2015, Tesco had extended their UK wide click-and-collect network to 260 locations, and had six dark stores around London. They are able to offer 1-hour delivery windows in 98% of the UK (Pickard, 2015b). The average UK omnichannel grocer offers both home delivery with different delivery time options and click-and-collect service. While the home delivery prices vary from £1 to £6, the click-and-collect service is often free of charge with some limitations to order size, for example. Most retailers also offer loyalty programs and annual passes for cheaper deliveries.

The following examples portray groundbreaking new ideas grocery retailers have tried out to develop their business towards omnichannel retailing. At this point, it is not relevant if the trials were successful or not, but this section tries to portray the steps that have been taken to develop the omnichannel grocery business. These examples are those that have been promoted somewhat largely, meaning they are the parts of the retailers' business visible to audience. Examples do not contain development undertakings made within the companies, like re-organizing the corporate structure or integrating new IT systems. The omnichannel grocers in the UK and the US are so much bigger in turnover and volumes, and in the investment capabilities that the innovations discussed here offer examples of the current state of the omnichannel grocery retail but are not viable in the Finnish market in a while at least.

Asda's automated pod created much attention upon its opening in the summer 2015. It is open 24 hours a day and was built to serve the click-and-collect customers in St. Helens, west of Manchester. Asda calls the pod fully automated, since it is robots that put together the final order from different temperature zones after the individual QR code is read at the kiosk (Souza, 2015b). Pre-ordered and paid shopping bags are available for the customer within a minute or less. The orders are picked and loaded to the pod by drivers who pick the groceries from nearby stores. Hence, the order picking process is automated only partially.

Virtual stores have also collected their share of buzz within the media and grocery retail professionals. Tesco Home Plus (Petit de Meurville, Kimberley Pham, & Trine, 2015) virtual store in South Korea is probably the most wide-spread example of a virtual store. This trial was followed by Ocado's similar solution in a London underground station, and Peapod in the US has also tried out the virtual store concept starting in fall 2012 (What your company can learn from tesco and peapod.2016). All of the grocers have a smart phone application with which the product codes are scanned on the virtual wall. The order is made online for a selected delivery window. This concept, started by Tesco in South Korea, is one of the first innovations combining the digital and physical aspects, i.e. a step towards a seamless customer experience. Even though not all of the virtual walls are not in use anymore, all three grocers expanded the virtual shop wall concept to multiple locations.

Tesco has acted as a pioneer in many ways. Through the Tesco Groceries mobile application customers could shop anywhere they want simply scanning a barcode of a product (King, 2010). They would buy it from Tesco and have the order delivered to their home. The application was launched for iPhone in 2010. Now, Tesco has different mobile apps for groceries, bank services, discovering new recipes, cooking with kids, etc (Tesco, 2016).

Mobile coupons and self-checkouts have also been in play for years implemented by various grocers all over the world. Mobile coupons allure customers to get to know the mobile services provided by the company and also to visit a local store. Tesco and Magnum united in summer 2015 in a campaign to send mobile coupons to customers who had downloaded the Magnum mPulse app (Magnum, 2015) and were close by a Tesco express store, identifying the customers with beacon technology. Self-checkouts can be executed by a mobile app like Walmart first tried (D'innocenzio, 2014) or with a store's own scanning device, like they executed their latest trial (Souza, 2015a). They both bring the digital possibilities to the physical store.

Dynamic delivery pricing has been introduced by Ocado in the UK and also by S group in Finland. The delivery windows in the rush hours and the most popular times are more expensive than those in the middle of the day. As has been established, the prices of delivery are a very strong driver in the customer decision-making process and the price control gives the companies the possibility to optimize the distribution more efficiently.

Tesco and Walmart are the largest grocery retailers in their respective markets, and they have the resources to try out new ideas and solutions. However, small and agile companies

have the ability to disrupt the business and as is discussed in the next chapter, a small company is behind the development of Finnish grocery retailing at S group and they are both willing and able to test out new inventions found from overseas markets. It is the bigger investments, like new distribution centers that smaller companies do not have the resources for, which might also be one of the reasons the small Finnish market is not more developed yet.

4.2 Finnish grocery retailers

The Finnish omnichannel grocery market is studied by interviews, secondary data and researcher's personal experience. Two major retail groups, the K and S group, dominate Finnish grocery retail market. S group (SOK) holds a market share of 45,7% whereas K group (Kesko) is the second largest with a market share of 33,1% (*Finnish grocery trade 2015.2015*). On November 18th 2015 Kesko, acquired Suomen Lähikauppa whose market share was 6,8%, raising Kesko's market share to a theoretical 39,9%. Next come Lidl, Tokmanni group, Stockmann, M-ketju, Minimani, and other small private companies. Distinctive characteristics to the Finnish grocery market are the concentration in the market and the customer loyalty programs, which have a strong presence in both K and S group activities. The market being concentrated can be seen in two ways: population concentration and market domination, since two retailers hold over 80% of the market. The population density in Finland is 18 people per sq. km of land area, whereas in the UK the same figure is 267 (Population density.2016) and European mean is 117 (Halonen, 2015). Of course, this is the average for the entire country, and capital area's average population density is as high as 1557 (Helsinki only is 2904 people/sq. km). The low population density affects the logistics, which will be discussed more thoroughly in chapter 5.1.2.

Not many of the retailers have engaged into online sales. K and S groups have both been in online grocery business in no more than 5 years now. Ruoka.net is the online grocery store longest in business in Finland and Kauppahalli24 started in fall 2012. Tokmanni and Verkkokauppa.com are interesting actors in the market since both of their main products are not grocery items but they have taken non-perishable items in their selection, such as pet food, food supplements, snacks and soft drinks. These are items that are often bought in large amounts and are heavy to carry home from the store by oneself, and also grocery items with higher margins than most others. These companies are not included in the main analysis, though, but are an interesting addition to the discussion.

As mentioned, regulation in Finland is very high compared to other countries in Europa, for example. Even though the opening hour regulations have now been released, popular age regulated products, tobacco and alcohol, are not sold through the online channels. The only exceptions are the click-and-collect orders where the sales personnel are able to verify the customer is of age. Other regulations concern the cold chain, product information and origin. Since the opening hour release in the beginning of 2016, retailers are now free to decide the opening hours for their stores. The impact on online sales is difficult to predict, since this is a unique situation globally.

The companies analyzed in more detail are K group, S group, Ruoka.net and Kaupphalli24, focusing in the largest ones. Ruoka.net and Kaupphalli24 are pure players and while they do offer additional elements to the analysis, only K and S groups are developing their grocery businesses towards omnichannel retailing. Table 2 shows the online grocery retailers' information about their total sales, physical stores, order picking and delivery prices and methods. In addition, the omnichannel factors, i.e. the different media channels are also listed in the table.

4.2.1 K group

Kesko was founded in 1940 and nowadays comprises of various fields of retail and is listed in Nasdaq Helsinki. In 2014 grocery trade originated 52% of Kesko's sales. The grocery division of K group is formed by Kesko corporation and K-retailers. Every grocery store in the K group is an individual store as a part of one of the chains within K group, K-citymarket, K-supermarket or K-market. Kesko was selected in the fifth place in the Global 100 Most Sustainable Corporations, ranking as the best grocery retailer.

K group's online sales are based on two concepts, one connected to the K-citymarket chain, and the other a retailer-driven concept. The online stores are found at ruoka.citymarket.fi and k-ruokakauppa.fi, respectively. Recently Kesko published a *K-ruoka* mobile application as part of a wider K-ruoka concept offering recipes, possibility to create a shopping list and share it with family members, find information on the closest stores, and personal promotions as well as promotions in the selected "home store". The service is tightly tied to the loyalty program *Plussa* and it retrieves the purchase data to be able to personalize the service. It is not, however, possible to make purchases through the application for the

Table 2. Online grocers in Finland

Name of company	K group	S group	Ruoka.net	Kauppahalli24
Online sales started	Retailer-driven in 2011 Citymarket in 2013	2010	1997	2012
No. of physical stores (2014)	929 (81 Citymarkets)	1020 (94 Prisma, 397 Alepas or Sales)	-	-
Turnover 2014	5532 MEUR (Citymarket 1984 MEUR)	7627 MEUR (Prisma 2441 MEUR, Alepa/Sale 1215)	0,35 MEUR	1,29 MEUR
Sales channels	Physical stores	Physical stores	Online only	Online only
	ruoka.citymarket.fi	Foodie website		
	k-ruokakauppa.fi (retailer-driven)	Foodie mobile app		
Mobile services	Mobile app (information, no purchases)	1) Foodie app (purchases, information and customer service) 2) <i>S-mobiili</i> (bonus balance and banking services)	-	-
Other media	-K-ruoka website and mobile app -Pirkka magazine -"Mitä tänään syötäisiin?" tv spot	-Yhteishyvä magazine	-Newsletters	-Newsletters
Delivery options and prices	Home delivery prices depend on delivering store Citymarket home delivery 9,90€, large orders for free Click and collect prices depend on store, large orders often for free	Home delivery: Prisma Kauppakassi 9,90-13,90 Alepa Kauppakassi 5,90-9,90 Cheaper for loyalty customers, vouchers available Click and collect: Prisma 2,90-6,90 (drive-in and pick up point in Prisma Kaari, lockers in P-Forum) Alepa 3,90 or 6,90 (pick-up at dark store)	9,90€ to the capital area, 14,90€ elsewhere in Finland, additional 9,90€ for orders under 55€	5,90€ in the capital area or 7,90€ elsewhere in Uusimaa province 4 pick-up spots with fixed times (1-4 times per week): 3,90€
Delivery area	Depends on delivering store (across Finland) Citymarket to most post codes in the capital area	Depends on delivering store (around largest cities)	Whole Finland excl. Lapland and archipelago	Capital area and some neighbouring counties
Delivery time windows for home delivery	Depends on store Citymarket: 2-3 h windows 9-21	Multiple options dynamically priced: 2-8h windows 7-21	Posti standard delivery times: 3 hours (12-15 or 17-19)	2 hours between 13-21
Payment methods	Card, payment upon delivery	Card, payment upon order or delivery	Paytrail (online banks or cards) upon order	Maksukaista (online banks, cards, instalment or invoice) upon order

time being. *K-ruoka* is a larger concept including a magazine, a website and related content in other media channel offering the same services complemented with further product information, videos and blogs around the topics of everyday life, food and lifestyle. Now *K-ruoka* channels draw customers towards K group in their first phases of the buying process,

need recognition, information search and evaluation. The buying process is not seamless until the end, though, since purchasing through the same channels is not possible.

K-citymarket online store offers the wide variety of a hypermarket with low prices for home delivery. The delivery windows are 2 or 3 hours with a fixed delivery price of 9,90€. As of January 2016, K-citymarket only delivers in the capital area, but since the delivery area is limited, they are able to offer same day deliveries. Same-day delivery orders have to be in by 9.00, and the deliveries start from noon onwards. The retailer-driven online store, k-ruokakauppa.fi, offers click-and-collect service through K-retailers' stores all across Finland, from small K-markets to massive K-citymarkets. Some of the K-retailers also offer home delivery, and K-citymarket Lahti Paavola, for example, tried out a crowdsourced home delivery service (PiggyBaggy, 2015). In January 2016, there are 14 K-markets, 28 K-supermarkets and 5 K-citymarkets who offer the online store service, and in 2016 the goal is to have 100 stores across Finland offering click-and-collect grocery shopping. What makes the retailer-driven online store confusing is that the delivery options and prices are controlled entirely by the retailer, and vary from store to store. The more stores there will be offering the service giving consumers more options, the more complex it becomes to both customers and K group to control the factors. Kesko as the central organization offers the framework for the retailers to be able to sell online. Kesko has the control over the information supply chain and somewhat over the marketing and supply chain factors, but they are also controlled by the individual retailers.

With a wide store network and somewhat perplexing online store formats, the K-ruoka mobile app is a one step closer to a seamless customer experience. In the app and on k-ruoka.fi website, the customer can browse online, make shopping lists, and share them. But to purchase the items on the list, the customer is still required to visit the store traditionally, or search for the items separately in the online store. The customer also need to register for all these services separately, which leads to customers having to type their information and the loyalty card number multiple times. This inconvenience is frustrating to the customers and might even end up repelling some customers from K group's services.

The interviewee from Kesko, Arhi Kivilahti, has a short history in the company but longer in research and consulting. While the different sales and media channels are controlled by Kesko corporation, the responsibilities in their management have been scattered. Now, Kivilahti has been recruited to develop the digital services at Ruokakesko, and according to him the different channels will be more unified in the future. For gaining a more hands-on view

on the online store business, a retailer, Sampo Suonsilta, was also contacted. Sampo Suonsilta started online sales in his K-supermarket Trio in the fall 2015, and while their online sales volume is still low, he believes in the growth and potential of the online sales channel.

As the delivery options differ between the two different online store concepts, so do the picking methods. Citymarket's online store orders are being picked in a warehouse in Hakkila, Vantaa (Kvist, 2014). This centralized warehouse is part of the logistics network of Kespro, a wholesaler as part of K group whose business is directed to horeca sector. Since the logistics are tied to an existing operational network, setting up the online channel downstream supply chain was not a risky investment. The online ordering system produces picking lists that are used for manual order picking. One employee can simultaneously pick multiple different orders. The product assortment matches an average K-citymarket assortment, and the orders are mainly normal shopping bags in the grocery field (Kvist, 2014). Kivilahti notes that the picking system is not the most modern, and says that improvements are being planned (A. Kivilahti, personal communication, December 16, 2015). Digitalization has huge potential for improving efficiency in order picking. Picking methods are not automated at all, but since the order picking is done in a separate fulfillment center, the efficiency is higher as it would be when picking in-store.

As the enabler, Kesko created the system as a basis for the retailer-driven online store. According to Kivilahti, to tempt more retailers to implement the service, a lot of improvements are needed, either to the IT system, in-store operations, order picking, or all of them. To be able to align the marketing and supply chain factors, the information supply chain has to work effectively first. The retailer-driven online concept has been active for about a year. Retailers who offer home deliveries in addition to the click-and-collect service have established their own delivery structures, often in co-operation with local delivery companies. For example, K-citymarket Paavola in Lahti had a crowdsourced delivery trial with an independent "PiggyBaggy" carpool for goods (PiggyBaggy, 2015). K-supermarket Koskituuli in Kuusankoski is working together with Ruokavaunu, a sole trader offering the delivery service with a specialized vehicle (Kesko, 2015c), and K-supermarket Trio in Lahti has outsourced both order picking and deliveries to Lahden kauppapalvelu ((Kesko, 2015d); S. Suonsilta, personal communication, January 8, 2016). Suonsilta also points out that most of their orders come through email or phone, not the online store. K group's retailer-driven online service is thus different from store to store, even though it might not seem so to the customer.

Upon the introduction of new sales channels, K group has not changed or introduced any new payment methods. Customers are not able to pay for the orders in advance but the transaction is made upon delivery, either on the parking lot of the store or when getting the groceries delivered to one's home. Cards are the only accepted payment method. Otherwise the online channels are very basic with only few or none additional characteristics differentiating K group's store from others. Delivery methods are also basic versions of the home delivery and click-and-collect with no major variations. K group has not engaged in any special trials, except for the individual retail stores', like the PiggyBaggy delivery.

K group is streamlining their food media presence (Kesko, 2015b). K-ruoka magazine available in stores, Pirkka magazine mailed to loyalty customers, and the TV program "Mitä tänään syötäisiin?" sponsored by K-ruoka will be re-thought and unified to better serve customers in meal and grocery shopping planning with relevant content and current recipes. Another future area of development for K group is the mobile services. Kivilahti explained that successful companies are those who can find existing needs but solve them better than competitors (A. Kivilahti, personal communication, December 16, 2015). Services to complement the in-store experience is what Kivilahti sees in the future, although there is no telling yet what they might be like. He sees possibilities in helping customers realise their needs or even create new ones. Since people are surprisingly sensitive to different stimuli, recipes in the store are already complementing the in-store experience. To identify the needs, provide information and complement the service while being delicate about not spamming the customer is a good goal but difficult to balance. Additionally, matching the print media, online presence, and the in-store experience is essential in the future to be able to keep the customer interested and essentially buy more. Kivilahti also brought forth importance of the coherence between different media and sales channels (A. Kivilahti, personal communication, December 16, 2015). The customer experience doesn't feel as seamless unless the channels are coherent in their functionality and appearance. In Kesko's strategy they define a goal to distinguish themselves from their competitors by quality and customer orientation and by bringing the best digital services in retail to the market (Kesko, 2016). Kivilahti does confirm that Kesko has started allocating resources to digital services and omnichannel business. Even though no specific figures are available, the annual report 2014 shows that IT investments were about 17% out of the total investments of 194 MEUR (Kesko, 2015e).

Within K group, there are now many different store concepts for different sized stores, two different online store concepts, multiple other websites and mobile services, and traditional

print media. Their offering is the omnichannel perspective is not aligned as well as it could be, but they are putting efforts in the developments of especially the digital channels. Based on the data gathered, it seems K group has a lot of work in both their information supply chain and the supply chain factors, picking and delivery, to improve the online sales channel efficiency. Coherence across the channels was perceived as an important factor for improvement by both primary and secondary data sources.

4.2.2 S group and Digital Foodie

S group is formed by the SOK corporation and regional co-operatives. Similarly to K group, the central organization, SOK, coordinates the operations across the country where local entities run the daily operations. As opposed to K group, S group consists of twenty independent regional co-operatives, not retailers, and the SOK corporation is owned by the co-operatives. Thus, the fundamentals of the two main grocery retailers in Finland are very different. Whereas K group is a listed corporation, S group is owned by the regional co-operatives which are owned by their members, the co-op members. The co-op members are normal consumers and some businesses. S group's purpose is to provide co-op members with competitive services and benefits profitably. As is known, listed companies' purpose is to create value to their shareholders. How the consumers view this difference, is difficult to assess, since many aspects of large grocery retail chains are similar to both groups. S group has different grocery store concepts from small stores to large hypermarkets as well as other retail areas. S group also went into financial business by opening the S bank in 2007 (S-Pankki, 2015).

The two interviewees from S group are Matti Torniainen and Jukka Ranua. Torniainen is currently e-commerce manager at SOK corporation and Ranua is the e-commerce development manager at Helsinki Co-operative Society Elanto (HOK-Elanto). HOK is the only co-operative with a designated e-commerce manager, while in other co-operatives the tasks are divided.

S group's grocery retail concepts vary from small convenience stores, Alepa's in the capital area and Sale's elsewhere in Finland, to supermarkets called S-market, to hypermarkets called Prisma. Other retail concepts and businesses SOK runs are ABC service stations with fuel sales, some of which feature an integrated grocery market, Sokos department stores and specialty stores, hardware stores, travel and hospitality businesses, as well as the S-bank (SOK, 2015). HOK-Elanto tried out online grocery sales in the 1990's already but the trial was

unsuccessful. In 2010, HOK-Elanto's Alepa stores started an online grocery service with Gastronomutti in the capital area. Gastronomutti controlled the online store, delivered the orders, Alepa personnel then picked the orders from one store and finally Gastronomutti picked them up and delivered to customers (J. Ranua, personal communication, December 16, 2015). During the 1,5 years Gastronomutti was HOK-Elanto's partner, the operations had extended from one to eight stores. However, as Ranua explained, HOK-Elanto's online grocery shopping changed "overnight" when S group started a strategic partnership with Digital Foodie in 2012. Digital Foodie is a company building an online grocery platform. Foodie's software is integrated into S groups systems and works as a separate website (foodie.fi) and mobile application (Foodie). Once the partnership with Digital Foodie started, the store network for order picking was first decreased to four, and later to only three Alepa stores. The online store concept with Alepa is called Alepa Kauppakassi which offered home delivery to the capital area. After some time, it was discovered that Alepa Kauppakassi's home delivery service was not enough, and the first click-and-collect service point was opened in Prisma Kaari. (J. Ranua, personal communication, December 16, 2015)

In Foodie, the customer can view the assortment of each S group store, find recipes and add the ingredients into a shopping list, share the list, check the opening hours of any store, give customer feedback as well as order food for home delivery or pick up. The contents can be customized by users' diets and other wishes. Due to the many features Foodie has, some users can get confused by which stores offer home delivery or pick-up service. As an example, it is possible to browse the website and create a shopping list with low Prisma prices but if the user is not in the delivery area of that Prisma upon ordering but in the Alepa Kauppakassi delivery area, the prices are based on Alepa's prices (Solla, 2015). Today, within the HOK-Elanto region, there are two concepts for online grocery sales, Alepa Kauppakassi and Prisma Kauppakassi. Both of these options offer home delivery and click-and-collect shopping but Alepa is oriented towards home deliveries and Prisma towards click-and-collect. Alepa Kauppakassi orders used to be picked up from couple Alepa stores around the capital area but as the volume kept growing 50-100% annually, the stores started having problems with stockouts. In one Alepa store, night-time order picking was tried out but the store capacity would not suffice that, either. In 2014 a dark store was opened in Hakkila, Vantaa to serve Alepa online orders. All the home deliveries in the area now come from the dark store, and there is also a pick-up point next to the facility. Prisma Kauppakassi service does the order picking in Prisma Kaari store. There they have the collection point inside the store, as well as

a drive-thru lane for picking up orders. The pick-up point has been physically expanded four times during the past three years. Home delivery is available inside a 3km radius from the store. In the fall 2015 a new pick-up location with temperature controlled lockers in the Forum parking garage in downtown Helsinki was also opened. The home deliveries within HOK area are carried out by a third-party provider, Kilon Osuusauto, with whom the partnership started simultaneously as with Digital Foodie. The appearance of the drivers is controlled by HOK, though, to match the desired service quality. As the operations and store and collection point network have developed, so has the order picking. When Foodie was first launched the order picking used to be done with pens and papers. Since then the printed out PDF's have changed into electronic devices, which has made the order picking more efficient. Within other co-operatives than HOK-Elanto, the order picking is done in normal stores and the delivery is carried out by Posti, the postal service of Finland (M. Torniainen, personal communication, January 5, 2016). Posti being the last-mile logistics partner brings differences to the packing of orders: Posti uses their thermal boxes in the normal delivery vehicles, whereas Kilon Osuusauto has specialized cars with thermal compartments. HOK-Elanto is the only co-operative that has advanced their online channels and omnichannel business. HOK actually has a history of many trials in the online grocery business. Alepa Kauppakassi had a pick-up box in the Helsinki airport from September 2014 (Foodie, 2014). The trial lasted for 6 months. In June 2015 Alepa was looking for volunteers in a specialized post box trial (Heiskanen, 2015). Customers would have a post box in front of their town house with different compartments for normal mail and food deliveries. Home deliveries have also been tried out to be carried out by normal taxis in the fall 2015. The delivery area covered 6 km radius from the Alepa dark store in Kartanokoski, Vantaa, and with the taxi delivery Alepa offered one-hour delivery windows for their customers instead of the normal 3-hour delivery window (Kaupan liitto, 2015). Ranua explained that HOK Elanto has been very active with the trials but since the business is growing continuously, they soon would have to structure the trials more carefully in the future. He believes, though, that trials are worth the effort, customers show what works for them and what doesn't (J. Ranua, personal communication, December 16, 2015).

The mobile purchasing, in addition to the online channel, became possible for S group's customers after Digital Foodie became their strategic partner in 2010. Digital Foodie provides S group with software for both the customer and the merchant side for customer interface, order picking and deliveries. In Finland, Digital Foodie is exclusively S group's partner but they are present in three other countries as well. Torniainen affirms that part of their competitive

advantage is the international experience Foodie has (M. Torniainen, personal communication, January 5, 2016). Foodie makes the shopping easy for the customer. All channels can be managed with one account and the registration is even possible with linking the account with the user's Facebook account. Nonetheless, Foodie does seem somewhat separate from S group's other online channels, which has probably caused the unawareness of all the services available through Foodie. By introducing Foodie, in addition to the new sales channels, S group got a channel for customer feedback and store and product information. Foodie is pre-eminent in their service repertoire even on an international level. Their software brings transparency and real-time views of customers' orders. The problem according to Ranua is that their normal customers don't know about the possibilities Foodie offers them, and additional challenge comes in the slow change of customer behavior. Both Ranua and Torniainen are positive that the development of the online channels will not depend on the amount of ideas, their colleagues are active in sharing news and examples they've encountered.

Biggest changes in S group's own operations have appeared in the order picking process, and making it more efficient is still one of the primary issues. The growing online sales have driven S group to build the dark store and the order collection point in Prisma Kaari, and hire personnel to run the daily business that is now worth as much as a large supermarket. However, this is the situation in the HOK-Elanto area since elsewhere in Finland the online business is still very small.

4.2.3 Kauppahalli24

Kauppahalli24 is a pure player online grocer founded in 2012. They have a strong philosophy for natural, fresh and local products. They are the largest independent grocery retailer in Finland. The business idea is to connect producers to customers directly to guarantee the freshness and minimize own inventory. The cycle between order placement and delivery is two days. After each day the orders are collected, and delivered to the producers who collect the items during the next day from the order placement. The following morning the items are transferred to the Kauppahalli24 fulfillment center and customer orders are put together from the deliveries from different producers. By afternoon all that day's deliveries have left the facility. Kauppahalli24 has only 8 employees, since all functions have been outsourced. The order picking is carried out by LTP, a logistics company specialized in temperature controlled grocery logistics, and the deliveries are outsourced to Posti. Kauppahalli24 offers 2 or 3 hour delivery windows between 13 and 21. Posti is able to offer even more accurate ½ hour delivery window that the customer is notified about in the morning of the delivery date. Deliveries are

available in the capital area and some neighboring counties. The normal delivery prices are 5,90€ or 7,90€ which are already in the low end of the spectrum in the Finnish online grocery market. In addition, they offer four different levels of VIP delivery passes that result in even more inexpensive deliveries.

Veijo Heinonen, the interviewee and managing director of Kauppahalli24 believes that click-and-collect will grow extensively in the coming years, and they as well have piloted the pick-up service. After having worked in the retail sector for 30 years or so, Heinonen how much resources are tied to the traditional grocery store and warehouses, and with this business model, they avoid both. Kauppahalli24's business model is unique in Finland. Their growth rate is similar to S group's, around 50% annually. In his own words, Heinonen hates warehouses and wants to avoid any costs related to the traditional stores. Kauppahalli24's model gives small local producers a possibility to sell their products. Before online grocery stores appeared that would not have been possible. Customer service is also extremely important for Kauppahalli24's business. On their website, customers can chat with an employee to help with ordering or any other issue at hand. When the customer service employees don't have active chats open they use the time to call the registered customers and ask how they like the service and if there are any suggestions for development. This channel has become an important source for ideas in addition to seminars Heinonen and others have visited and case examples from abroad.

Kauppahalli24 is only active online, and their site works well on different devices. However, since they don't have a physical store, they are not categorized as an omnichannel grocer by the definition in this research. A seamless and easy customer experience is the driving element in their business, which in some contexts could be seen as an omnichannel business. Hence, should the categorization be re-thought?

4.2.4 Ruoka.net

Ruoka.net is the oldest online grocery store in Finland working independently through their website, the only sales channel at the moment. It has been active in business since 1997. Ruoka.net's service is very straightforward: after registration customers can create a regular order base and even make fixed regular orders. Deliveries are made by Posti, with their offered delivery windows of 12-15 or 17-19. Ruoka.net offers their service across Finland, only excluding Lapland and the archipelago, which makes their service special and unique in Finland. The countrywide service started in 2013, as before Ruoka.net delivered to the capital

area only. Ruoka.net is an independent service provider with no own inventory. They pick the orders mainly from Metrotukku in Vantaa, but also other nearby stores depending on the supply. Eva Tenhunen, managing director and the interviewee from Ruoka.net, is the only full-time employee of the company. In addition, hourly workers are called in for order picking. Ruoka.net is thus a very different player than the K and S groups, but similar to Kauppahalli24. Ruoka.net's online store bases the products on Metrotukku's product information. Even though the ordering is not the most intuitive, it is rather easy, and there are multiple payment options available. As Tenhunen says, Ruoka.net is not competing with prices but as a service. A growing customer segment is adults ordering groceries for their parents who are not able to visit the store themselves anymore.

Omnichannel thinking is not present in Ruoka.net's business in such a way that other digital channels would be introduced. However, the customer experience is important. On a daily basis, orders are checked for anomalies, all wishes are fulfilled when possible, and some product samples are sometimes included in the deliveries. Personal service is what Ruoka.net holds as their advantage. Their challenges are in the visibility and awareness as well as the delivery. Some products they are not able to provide because of logistical issues, frozen food is only being delivered to the capital area due to lack of suitable thermos boxes, and fresh bread could not be delivered early enough in the morning to be in time with the first deliveries of the day. While the IT systems work well and finding partners is easy, finding the right customers for their products is the challenge that first requires a definition of the company's goals. With high service level and rather expensive prices as well as uneven demand and third-party delivery company create the trade-off decisions for Ruoka.net.

4.2.5 Other grocery retailers

Other actors in the grocery sector are traditional grocery retailers as well as other retailers adopting groceries in their assortment. Lidl is the third largest grocer in Finland with 148 stores around the country. They do not offer online purchasing but have digital services like electronic brochures, a mobile application with store locator and shopping list features, and a newsletter. They are also active in social media. Suomen Lähikauppa with their Siwa and Valintatalo stores deserves to be mentioned in this section as well. Similarly to Lidl, they do not sell groceries online but have a wide repertoire of additional services. They have integrated Posti and Matkahuolto parcel services, and they started delivering the online pharmacy orders made

through Yliopiston Apteekki website. Suomen Lähikauppa was acquired, and the future development of the store network and services will be interesting. Stockmann, the largest department store chain in Finland, positions at sixth largest grocer in Finland. Stockmann is known for their service and somewhat higher prices than other stores. They have been criticized for being late in the online store boom and they still do not sell grocery online. They do have a pre-order form on their website, and customers could pick up the orders at the store but the service is not convenient enough for regular grocery shopping. Tokmanni, Verkkokauppa.com and IKEA are similar in such a way that all of the three companies sell grocery items that are not perishable. IKEA Food's variety is not wide and their offering is only visible online, not available for purchase. Verkkokauppa.com and Tokmanni have beauty products, pet food and nutritional items in their assortment. While Lidl and IKEA do not sell groceries online, they both have a strong digital presence among their customers in different channels, and in that way promote the omnichannel thinking.

4.2.6 Comparison of Finnish grocers in the omnichannel environment

Now the Finnish online grocery market has been described through the main actors in the field. The two large retail groups' online services are relatively close to each other, and the smaller service providers also have similar characteristics between each other. Comparing the K and S groups, the common features are the widely spread physical store network which leads to a complete and ready logistics system already in place. Both of their online services are built on top of existing operations. The coherence between sales channels is not very developed, although Foodie's online and mobile channels on the same platform work seamlessly. K group has started the work to unify the media channels, but to unify all the digital channels takes time. The smaller actors, Kauppahalli24 and Ruoka.net, are pure players with no own inventory, and they have built their service on top of other grocery producers, retailers and wholesalers. Lastly, the other companies like Tokmanni and Verkkokauppa.com are adding non-perishable groceries to their offering and can take advantage of their existing operations. While there are aspects of omnichannel shopping present in the K and S groups' businesses especially, the operations are still quite separated into different channels. With no factual knowledge of the information supply chains within the companies, it is difficult to assess their readiness to adopt omnichannel strategy. Both K and S groups have increasing amount of data from both online usage and loyalty programs. Data usage thrives from the information supply chain, is a key to a coherent service and understanding of the customer buying process. The understanding

created during the research process, both companies are using the data to their best abilities currently.

What comes to the marketing and supply chain factors of the Finnish online grocers, there are a lot of similar aspects but also clear differences between the companies. Marketing factors are somewhat similar with both K and S groups. Kauppahalli24 and Ruoka.net have differences in their assortments and sales volumes. In April 2015, a private blogger made a comparison between these same four online grocers, dividing Alepa and Prisma into two options (Mättömestari, 2015). K group's retailer driven online store was not part of the comparison, only the K-Citymarket online store. Comparing two "shopping bags" (a fixed set of regular food items), Prisma Kauppakassi was declared the cheapest for the larger shopping bag, and Kauppahalli24 for the smaller shopping bag. Ruoka.net was clearly the most expensive out of the five options. The total prices included the delivery fees. Delivery fees differ, however, depending on the store, the location, length of the delivery window and the time of day of delivery. S group is the only grocer that takes the delivery time in account, and practice dynamic delivery pricing. K group's delivery costs are based on the location of the customer, as the retail stores offering home delivery have set different prices. Kauppahalli24 and Ruoka.net have lower delivery prices for the capital area, and somewhat higher prices for other delivery areas. S group's order picking and delivery allocation is the most developed. They have the help of Digital Foodie's software and use digital devices to streamline the process. They do offer different delivery time windows flexibly, and price them dynamically, as does Ocado in the UK, for example. Foodie's technology allows S group to scale up their omnichannel business, whereas K group's system and usability seems less developed for larger volumes.

In a wider perspective, the Finnish grocery retail logistics are digitally well developed. Kivilahti says that both K and S groups' central warehouses are exemplary, and that they have been benchmarked around the world. All interviewees affirmed that the online grocery market is geographically very polarized. 80% of S group's online sales and 70% of Ruoka.net's orders are from the capital area and the figure for K group's online sales are most likely the same. K group, S group, Kauppahalli24 and Ruoka.net has been selected as the case companies in this research, for they are the prevalent online grocers in Finland at the moment. However, only K and S groups have truly the potential to become omnichannel grocery retailers, as it is considered in this research. The term omnichannel describes a company that offers multiple different sales channels to the customer, and for now, the Finnish market only has two actors

in this category. Since this research lacks the insight inside the companies, it is not known how well the customer buying process is known within each company. For Ruoka.net and Kauppahalli24 it is easier with the single sales channel and closer customer relations, and K and S groups are able to exploit their data and customer insight based on surveys, for example. S group is the only company that has a truly mobile-based purchase channel, while most of the UK retailers have adopted all possible sales channel. S group's service also allows customers to edit their orders until the order picking starts. Torniainen says that their customer-centered focus in the business is one of their competitive advantages (M. Torniainen, personal communication, January 5, 2016).

Since Finland has such a tight network of physical stores, and the grocery shopping is a habit, and even a way to spend time with the family, large potential to develop the omnichannel aspect can be seen in the in-store experience. The examples from the UK and the US were tools to help streamline the purchasing process but no grocery retailer has introduced digital services, especially in-store, which would target the first three phases of the buying process: need recognition, information search and evaluation. Clearly, all stimuli help with strengthening the brand image but the actual customer engagement is often missing, at least in Finland. Overall, according to the interview, as well as secondary data, the improvements in the Finnish grocers' operations are still in the information supply chain and background processes, as well as channel coherence. Until the basics are working properly, the truly seamless omnichannel experience is not possible.

5 Analysis

This chapter analyses the Finnish grocery retailers through the framework established based on the literature. The framework is divided into blocks, and the relationships between the different components of the model are discussed in the summary section of this chapter. The analysis is trying to find answers to the research questions and develop the framework further to better fit the Finnish omnichannel environment. The different components of the research framework are firm controlled factors, macro factors, omnichannel customer experience, and financial metrics. The macro factors are the same for all companies doing business in the same area. Omnichannel customer experience can also be seen as the same for all companies, even though they might have their own customer bases. The differences between the companies can be found in their financial metrics, investment decisions, and how they manage the firm controlled factors.

5.1 Firm controlled factors

Firm controlled factors are the main source for a good omnichannel customer experience, even though macro factors might affect consumers' decision process. This chapter aims at analyzing the features of a good structure for a supply chain as well as the features vital to create a good omnichannel customer experience in all phases of the buying process.

5.1.1 Marketing

The firm controlled factors under marketing, promotion, price, merchandise assortment and volume, are an important part of creating the customer experience. Defining what marketing means is outside the scope of this study, however, the well-known marketing mix, or 4P model, is present: price, promotion, product and place can all be found in the firm controlled factors, products as merchandise and place as location in the supply chain set of factors.

All of the marketing factors can be tightly tied with all the elements of Puccinelli et al.'s (2009) consumer decision process: goals and information processing, memory, involvement, attitudes, affect, atmospherics, and attributions and choices (figure 4). Promotion is vital in the first phases especially: in-store and online communication can affect the goals of the consumer in the need recognition phase, information search phase and the memory element should be well managed together to invite new customers, and in-store activities increase the involvement which might lead to the purchase phase. Both Tenhunen and Ranua talked about the awareness of their available services. The potential customers haven't necessarily found

their way to the services, be it online shopping or Foodie's other features. Then again, Kivilahti stresses the importance of a unified appearance of a certain brand moving from one channel or media to another. For now, K group has various different media to control.

Personally I'm interested in how retail sector has done the print media, not advertisements but magazines, Pirkka, Yhteishyvä, Stockmann's Premier and Alko's own. - - Ruokapirkka looks a lot more like Ruokakesko as k-ruoka.fi does. - - When the digital side is being done, it's either a digital edition (of a magazine) or a basic website.

Kivilahti's point is that people are used to perceive a magazine, the physical store, or the brand in one way, and that the new digital channels are not in line with this perception. Innovative use of multimedia can be seen in some luxury brands' digital presence, but should be generally taken into use. S group is using two brands in their omnichannel solution, Prisma and Alepa. Ranua noted that the pick-up point in Forum parking garage in Downtown Helsinki is using Prisma brand. Earlier trial at the Helsinki airport was under Alepa brand, as an Alepa store already existed at the airport. With the Prisma brand, they are able to offer a wider assortment with lower prices, as discussed below. Even though Ruoka.net only has their website, the personal touch aims at providing solid customer service. A consistent brand from channel to channel could impact *affect* and *atmospherics* especially which, in turn, are present in all the consumer decision process phases.

Price in grocery retail is again different than in other retail sectors. Groceries are very low margin products and the large chains have adopted the "everyday low price" philosophy started by Walmart (A. Kivilahti, personal communication, December 16, 2015). Since 2015 K and S groups have started price reductions to match the prevalent market conditions, and to answer the competition, of course. Price aspect in some omnichannel grocers brings additional complexity. The Foodie example showed the difficulties the complex online system brings. When a customer is able to make the shopping list with Prisma's assortment and prices but upon ordering, the delivery location changes the products to match Alepa's available products and their prices. The price evaluation made by Mättömestari showed Prisma had the lowest prices, but unfortunately they're not available for everyone for home delivery. Similar confusion is likely to happen in K group's online channels as well. In case the customer hasn't selected the right store for delivery, the assortment and prices might not be viewed correctly. Consumer expectations of omnichannel grocery retail have not been researched, and Tenhunen wonders how the idea that everything is cheaper online came to be. It is easily true for other retail sectors that products could be sold for less directly from the warehouse which reduces

the amount of manual work and supply chain middlemen. With grocery retail it is contradictory, and the manual work increases as the store personnel handle tasks that used to be done by the customers. Since the products are delivered into the stores, dark stores or warehouses, the upstream supply chain doesn't shorten. Online sales increase the phases in the process. Then again, since the customer motivations for online grocery shopping are driven by time-saving and convenience (Colla & Lapoule, 2012), price might not be the dominant attribute in the customer's purchasing decision but the customer might value other marketing or supply chain factors more.

Price and promotion are important factors, but most misgivings by consumers are related to the merchandise, predominantly product quality. Both Tenhunen and Ranua wonder why customers think products sold online are not the same quality they could pick from the store themselves. Tenhunen told of one potential customer from Oulu who wouldn't believe the items are fresh if they are distributed from Vantaa, when most likely the same items they buy from the local store have been transferred through Vantaa as well. In Ranua's understanding the frequent online customers are satisfied but customers who have not yet purchased through online channels have their doubts about the freshness of the fruits and vegetables, for example. It is a challenge for the companies to grow their customer base if they can't get the message through that the items are at least the same quality as in-store. This is an interesting notion that did not come up in the literature, and should be included in the factors to consider while creating the customer experience.

To summarize the meaning of marketing factors in the creation of the omnichannel customer experience, price, promotion and product are all significant. However, even more important is the coherence of the different channels, and the ability to use them seamlessly. As ease of use, time-savings and convenience are the major motivations for customer to select a grocery retailer, the user experience of one's services has to be coherent, true to the brand of the company, and user-friendly. Selling groceries online is fundamentally an additional service to customers to increase their convenience. Therefore, the coherent brand image should be added to the firm controlled factors.

5.1.2 Supply chain

Introducing online sales has brought new steps in the selling process for companies. Ranua explained that order picking, packing and delivery that have been part of the customers' shopping process are now taken back to the store personnel, thus increasing the manual work.

This confirms the literature that suggested order picking and delivery are the most critical parts of the supply chain in omnichannel grocery business. When asking about the greatest challenges related to setting up new sales channels, interviewees gave very different answers. Ranua said the process efficiency is ultimately the biggest challenge, and even more so with the expensive manual labor with Finnish wage levels. Efficiency of supply chain operations is exceedingly important for an omnichannel grocer's success.

Order picking

Order picking requires the most manual labor in the process. Three aspects identified by Hübner et al. (2009) affect the order picking factor: location, automation level and integration. Picking location is an essential investment decision. Picking efficiency varies substantially whether it is done in-store, in a separate fulfillment center or in a centralized warehouse. The volume of the orders should remain high enough for the company to make the investment decision for a new fulfillment facility. Mostly, the order picking in Finland is being done in-store, only Alepa Kauppakassi and Citymarket's online stores have separate dark stores or fulfillment centers. Even these dark stores rely on the current supply chain planned with the physical stores in mind, leading to no room for improvements in the material flow.

Assortment variety also affects the supply chain decision: if products from local producers are taken into the assortment, how often should the deliveries to the warehouses be made. Inventory turnover in the physical stores and dark stores are not the same, thus shouldn't the material flows be, either. Picking integration decisions can validate such supply chain decisions. If the picking is decided to integrate with other regular store activities, the layout and incoming material flow should be optimized to fit both the online orders and the store demand. The general model seems to be that stores are held in their original formats, and the picking is done as a separate operation in all the stores around Finland. Only Kauppakassi24 has created a model that doesn't have the inventory turnover issue, since their deliveries come directly from the suppliers. Ruoka.net also doesn't have their own warehouse, but is still a service built over the in-store logistics of other grocery wholesalers and retailers.

The possible level of picking automation in grocery retail is controversial. Even Asda's automated pod requires manual work to bring the groceries in the pod lockers. The automation is calculated to save resources, but if it will ever be profitable to invest in a system delicate enough to handle fresh fruits and vegetables, will be a future topic of interest. Realistic solutions for today's order picking are those that make the manual picking as easy as possible.

Easy-to-use picking orders, functioning layout of the store or warehouse, location information to help with the routing in the store or warehouse. S group has adopted most of these already with the help from Digital Foodie, and is currently the only grocer in Finland using electronic devices to help with the order picking. K group and others are still using printed out lists but developing their systems. As said, Kivilahti believes that order picking has the most potential for increased efficiency with the help of digitalization. Tenhunen also saw the potential of robotics in the order picking, as the store area can't grow wider, it has to grow higher. To reach to the highest shelves requires automation. As long as the online sales maintain the level they are at in the UK, or new automation innovations don't appear, order picking will be the most expensive part of the supply chain process. As will be discussed next, delivery automation is much more tangible since new solutions are introduced continuously. Grocery picking systems, though, are still nonexistent, and even the most developed grocers haven't found a solution to replace the expensive manual labor.

Delivery

Delivery options include mode, velocity and time window, area and returns (Hübner et al., 2015). Essentially, there are two options for delivery modes: home delivery or click-and-collect. All other delivery solutions are variations of the two (J. Ranua, personal communication, December 16, 2015). In Kivilahti's opinion, Finland is not a very good home delivery market but the infrastructure and public services create a good foundation for click-and-collect service. Opinions on the meaning of click-and-collect trend vary. Heinonen from Kauppahalli24 believes that within ten years the customer could pick up their groceries basically anywhere whereas Tenhunen from Ruoka.net does not see the value in click-and-collect service. The trend in the UK is rising fast, thus the same could be happening in Finland as well. Home deliveries are still more popular than click-and-collect purchases, but click-and-collect is becoming more popular in all retail industries. Click-and-collect option has positive effects for both the customer and the company. It generally costs less than home deliveries due to decreased labor and vehicle costs, and the customer can choose the pick-up time themselves, albeit they have to do it within a certain time window. The price for click-and-collect is cheaper for the customer which also directs the behavior towards click-and-collect model.

Delivery time window is a double-barreled question. Ranua explains that HOK used to offer basic delivery windows 9-12,13-16 and sometimes 17-20 for their home deliveries. They later realized there was a need for narrowing the time windows, and now a message is sent to the customer when the delivery vehicle leaves from the distribution center which specifies an

hour long time window. Interestingly, they have also started offering even wider delivery windows with a slightly lower price, and the volume is moving towards the cheaper but longer time windows. The price effect is surprisingly strong, Ranua admits. Simultaneously, wider windows give the companies better possibilities for optimizing the deliveries and find savings that way. Similarly to delivery time window, also the delivery velocity is a controversial topic. Researches show the demand for same-day delivery but the value from the expedited service is not realized, according to most professionals. HOK does have same-day delivery slots available for orders made by 9.00. Tenhunen says same-day deliveries would be possible but she doesn't see the value in offering them. However, any additional option, narrower time windows, and faster deliveries are an increase in the service level. This aspect is one of the trade-off decisions omnichannel grocers face.

Delivery area is also a factor that results in a trade-off decision between service level and cost. The wider the delivery area, the more scattered the delivery routes will be which increases the costs of the home deliveries. Ruoka.net is the only retailer offering service country-wide, thus improving their service offering. They use an existing logistics network of Posti, so the wide delivery area doesn't affect the costs. Prisma Kauppakassi only delivers within 3 kilometers from the Kaari store but they focus the inputs in the click-and-collect service.

In the grocery sales, returns are not relevant, and thus are not discussed more in this research. All the companies interviewed told that any notices of defects in the delivered groceries are handled with courtesy and often compensated.

Delivery options within the framework have been verified to increase service level. The following factors are not mentioned in the framework but are worth discussing. Third-party logistics providers do not affect the service level but might have cost effects to the retailer. Delivery prices affect both customer experience and the retailer's costs. All Finnish online grocers rely on third party logistics providers. Often the relationship is tight and the grocery retailer affects the appearance strongly, as is the case with HOK-Elanto and Kilon Osuusauto. Other S group's co-operatives as well as Kauphalli24 and Ruoka.net have partnered with Posti. Tenhunen from Ruoka.net told she had discussed with other country-wide logistics providers but no other could offer temperature-controlled deliveries. Though, she told they are fortunate with Posti, as they have the same drivers almost every day, and have received positive customer feedback for it as well. Price effect on delivery options is an interesting domain itself, and deserves further studies. Click-and-collect model is rising in popularity around the world,

and some think it is because of less expensive or even free of charge service. Even though the average sale per customer is a lot higher through the online channels, and the delivery cost is only a fraction of the price of the shopping bag, it still has a difference.

As a summary, every additional delivery option increases the service level provided by the grocers but also increases the costs of the service. Balancing the trade-off is essential in the success of the omnichannel grocer. The more efficiently additional options can be added, the better for the business. Foodie offers optimized routing which improves the delivery efficiency of S group's orders. Additional delivery and pick-up methods also add flexibility for customers. However, the different trials by S group haven't created enough of demand to be continued. Both Torniainen and Ranua explained that they are not short of ideas but oft find new possible delivery methods.

Idea is that no one knows what's coming, you just have to be awake and try different options.
(J. Ranua, personal communication, December 16, 2015)

Physical locations

Locations of stores, fulfillment centers and central warehouses are all-important to minimize logistics costs and maximize customer flow. Majority of the online sales are concentrated in the capital area. The cause-and-effect relation is unknown but on one hand the customer density is especially critical for the last-mile delivery, and on the other hand, companies have set higher delivery prices for the sparsely inhabited areas. As to the click-and-collect model, the pick-up locations are becoming increasingly important as well. As they are more easily set up, they might become a separating factor for the different grocers in Finland. Prisma's collection point in Forum parking garage is the first of its kind and its success will be assessed later. In case similar collection boxes are to increase, the meaning of the location of the physical store could be re-evaluated. In the UK the click-and-collect service is rising in popularity but there are no studies of their meaning to the physical stores yet. The closest grocery store is in every consumers' smart phone. However, the volumes of omnichannel grocery shopping is probably never growing as high to affect the meaning of the physical stores drastically.

5.1.3 Information supply chain

Interviews brought up the importance of well-functioning information systems and the use of data, backing up the view of Chaffey (2015). They have a key role in creating the omnichannel experience, as the literature already showed. The information supply chain can be seen to cover two main areas: a real-time view for all parts of the supply chain and different divisions of a

company as well as usage of customer data. The data usage was not covered in the literature as much as it came up in the empirical research. As noted earlier, one of the characteristics of the Finnish grocery market are the comprehensive loyalty programs.

Information systems can mean many different software for different purposes. The important part of the information supply chain is to integrate the systems to work seamlessly together and to offer a seamless user experience in the different channels they control. The bigger the company, the more systems they have, and the more difficult it is to integrate them together. K group's challenge is to improve their background systems, both the technical and operational. Kivilahti says there is a lot to be done to improve the entirety of the operations, to enable the online sales system and to get more retailers and especially more large retailers to join the online store network. Improvements should first focus in the order picking whether it's by information systems, their integration, or the way the order picking is done. At K group, the information supply chain requires fundamental improvements. At S group, the systems seem to work together well, and Digital Foodie's software has been integrated with the existing systems. Ranua points out that their technical systems do not support the operations 100%, nor will they, and Tornainen believes that all the actors in Finland have work to do with their background processes. Overall, the need for manual labor will remain for at least order picking in the future as well.

Customer data should be used to better understand the customer, their habits, the customer path between different channels, and the buying process in general. S group gets their customer data from Foodie's user accounts and purchase history, web browsing and cookies, as well as the loyalty program data. For now, the loyalty data is not being used together with the other data, but they are starting to learn how it could be exploited (J. Ranua, personal communication, December 16, 2015; M. Tornainen, personal communication, January 5, 2016). The amount of data available is extensive, and it takes practice to know how to use it and how to find the right questions and answers to benefit the business. K group's loyalty customer data is used a lot, but Kivilahti says it could be used even better. They also have extensive amount of data, which is an advantage in the Finnish grocery market. In K group's online channels the consumers is directed to sign in, while in the mobile app it is mandatory to sign in with the loyalty card number. They have various ways in which to use the transactions data, data from online browsing and cookies and to link this information with the right customer data. Differently from S group, K group is using their loyalty program data more extensively already. All the interviewees from S and K groups believe that understanding the customer is

very important and that data usage is the key. Data usage as a background process is not a visible factor for customers, so this aspect is not relevant to the framework. However, it is vital that the companies continue learning their customers' buying processes to improve the factors affecting the customer experience.

5.2 Macro factors

Macro factors can affect the omnichannel customer experience both directly and indirectly through the firm controlled factors. Macro factors have a direct impact on the goals of the customer in the consumer decision process, and thus affect all its phases. Economics conditions, for example, can affect consumer behavior drastically.

While the economic condition and the general economic environment affect the customer (Grewal et al., 2009), legislation, among other factors, has an indirect impact on the omnichannel customer experience through the grocery retailer. One clear outcome of the legislation in Finland is the inability to sell age-controlled items, alcohol and tobacco products, online. None of the interviewees could say how and how much this affects the sales but all identified the issue. Heinonen pointed out the absurdity of the laws regarding alcohol sales. In his opinion the online grocer could be even stricter in controlling the age limit, since all users have to register with their name and age and the delivery person can match the registered information with an identification upon delivery (V. Heinonen, personal communication, January 14, 2016). On the other hand, legislation might have unforeseen effects. France might have been the first widespread online grocery market because of their legislation. Kivilahti pointed out that because in France it is rather difficult to found a store, entrepreneurs saw it easier to set up a warehouse with a pick-up option which led to a boom in click-and-collect drive-in service.

Legislation affects the city logistics making the last-mile more complex or expensive by traffic regulations or congestion pricing (Vanelander et al., 2013). All interviewees also mentioned the temperature-control aspect and product information demand as restricting factors. However, even though they restrict the online sales, they are not seen as a problem but as a necessary regulation for customer safety. The interviewees admitted legislation affects their businesses but they couldn't say how or how much.

Literature pointed out the importance for supply chain's preparedness for inconveniences or opportunities. Uncertainty factor is also one possible reason all Finnish online grocers have outsourced the delivery. As discussed in the literature review, deliveries are mostly condensed

into the large cities due to population density and costs of van deliveries. Even though Ruoka.net offers home delivery outside the biggest cities, the primary market is still located in the most densely populated areas. This phenomenon probably stems from the types of people living in different areas, and is related to technology acceptance model and the population composition, as well as delivery price control. Population density and habits linked with the tight store network all affect in the way the Finnish people are used to going grocery shopping. With the tight store network in Finland Kesko's acquisition of Suomen Lähikauppa increased the discussion about the amount of stores. It is being debated how many Siwa and Valintatalo stores will be closed or if they are converted into Kesko's retailer model (Palojärvi, 2015). Heinonen guessed half of the 650 stores that moved to Kesko's possession will be closed. How the store network's density will affect online sales and omnichannel operations can be evaluated years from now. Cause-and-effect relations might also be difficult to assess but the nature of the traditional convenience store will change nonetheless, as the digital services and omnichannel strategies evolve (V. Heinonen, personal communication, January 14, 2016).

5.3 Omnichannel customer experience

Omnichannel customer experience could simplistically be described as a possibility for the customer to use any channel of their choice, any time, for every phase of the buying process, need recognition, information search, evaluation, purchase and post-purchase. Both the firm controlled factors as well as macro factors affect the customer experience, and the end result of the customer experience leads into the financial success of the company and its ability to invest and develop their business.

Customers do not see a difference between the different sales channels. The framework shows the many channels a customer can move from one phase to the next in their buying process (figure 5). While the omnichannel services evolve, the customer paths of different customer segments are another important domain to research and understand. Until the process can be developed further it is vital to understand the need for seamless shopping experience for the omnichannel customer who might have up to 56 touch points until the final purchase (McCormick et al., 2014). Fortunately, this understanding is well comprehended by the interviewees in K and S groups, and according to them also seen within the corporations. The challenges to develop the business to answer the customer expectations are the omnichannel environment as a whole, the awareness of the customers and misgivings of the online world. The professionalism and abilities the traditional grocery retailers have should be transferred to

the online channels and omnichannel business (A. Kivilahti, personal communication, December 16, 2015). The topic is present within the case companies, even though the term omnichannel isn't often used, and many employees from different departments work towards developing the business towards an omnichannel company. At Ruokakesko the employees perceive multichannel to include information sharing, inspiration and recipes (A. Kivilahti, personal communication, December 16, 2015). Kivilahti described that often people talk about simply online business, not multichannel or omnichannel, although it is a common understanding that the channel is not relevant to the customer. The terms in the everyday work might even be misleading. At S group, Foodie has had a prominent role in the omnichannel business development. Foodie is available through any device and combines the store information and customer communication. The in-store presence of Foodie and online channel of S group is insignificant, though, and to the customer switching channels might not seem seamless or coherent. As it has been pointed out, the awareness of the customers – or the lack of it – is one of the greatest weaknesses, even though S group's services are most developed in the Finnish omnichannel grocery market. Foodie is a tool for both customers, the store personnel, and delivery staff. Due to a well-functioning ISC, S group is able to offer multiple delivery options which increases the service level and thus customer experience.

Next steps at K group are affiliated with improving the patronage in other domains than purchasing itself, focusing on mobile solutions in the short term. The aim is at luring the customer into their channels right away and offering enough inspirational content to keep them in that channel, or within the company's other channels (A.Kivilahti, personal communication, December 16, 2015). Omnichannel customers are the most profitable customers for any retail company, hence putting resources into omnichannel development is justified. The company atmosphere, ISC, marketing and supply chain factors should be aligned with each other and with the prevalent macro factors. Combining this company environment with a thorough understanding of channel-independent customer behavior creates the basis for an explicit omnichannel customer experience. What comes to the different channels, mobile services are not fully developed yet in Finland. In the coming years, a lot of mobile applications and other solutions can be expected to be introduced in stores to complement the in-store experience. Mobile scanning could help in queueing, beacons could be utilized for smart promotions, and location services could help with in-store navigation. As mentioned earlier, these kind of solution to complement the in-store experience haven't been introduced, but the existing services only affect the purchasing process itself. The possibilities are vast, and growing all the

while. Beacons, as a trendy example, can enable a lot of different solutions but for now, there are none in use that truly bring value-added for retailers. New technologies also have restrictions – e.g. some beacon-enabled features are only usable with iPhones and with Bluetooth turned on and that excludes a lot of potential customers. The important aspect, again, in all omnichannel development is to learn what customers want and fill their needs (Puccinelli et al., 2009). Kivilahti noted, that creating new, undiscovered needs is also tempting, and gave an example of the iPad. Upon the launch, only few consumers understood the potential and their need to an additional mobile device but it didn't take long until the customer need reached the large audience. Ranua and Torniainen told that Foodie has had a mobile focus from the very beginning of their co-operation. The integration between stores and digital services is small, though, limited to product and store information and customer service. With their functional platform, Foodie has a lot potential for new solutions. Torniainen explained that they have been looking into location-based services that could positively affect both in the customer side, and the order picking process.

When, according to Heinonen, an average family uses 8-9 hours per week for grocery shopping, convenience is a significant factor. Torniainen amplifies that easiness has to be in the center of attention when developing new digital services. A good omnichannel customer experience is easy and convenient, and a lot of factors affect these attributes, as this chapter has shown. Price is a strong attribute in everything in customers' point of view, and its price is affected by both the firm controlled factors, as well as macro factors, such as taxes, through the company and its operations. Smart shopping and price awareness are increasing, which is a sign customers are even more aware of the services they want to use and presumably of which kind of services they want to use.

5.4 Financial metrics

The investment decisions have been discussed in the supply chain chapter. Since in Finland the order picking happens mostly within the normal brick-and-mortar stores, a separate warehousing aspect is not that relevant at the moment. Also, logistics mainly run as they would without the online ordering system and the existing two dark stores are not that different from the brick and mortar stores, either. They are part of the wholesaler's delivery system, and are more or less run as a normal store would be, except only without customers. The question is, then, how much does the volume have to grow in order for the companies to make bigger investments. For that, none of the interviewees could answer directly, and the future of this

field is difficult to predict. The trend is rising, though, and there is potential for growth, but as mentioned earlier, the forecasts of the online grocery sales have gone dramatically wrong before (Punakivi & Saranen, 2001). K and S groups are putting efforts and resources in the development of the omnichannel business, even though the share of online sales is still low. The omnichannel grocers should plan their operations with the scalability aspect in mind as the theory and framework show. Since the online ordering systems of K and S groups are now built on top of the existing operations, the fit to the existing business aspect is good. In case of a dramatic growth, the companies should be able to make agile decisions in the scalability of their service, although the agility of the service decreases the bigger the system grows. S group can again be seen with an advantage, since they have partnered with a small and agile company with an international network. Planning the future investments also requires good understanding of the key drivers of cost and service.

5.5 Summary

As the firm controlled factors have the most effect on the customer experience, it is important that company's all divisions take the consumer buying process into account in all phases and in all channels. Basing the decisions on a company's chosen strategy, the optimal supply chain structure differs between the companies. In Finland, all grocers have decided to outsource the last-mile deliveries, while picking methods and their outsourcing strategies differ. One of the objectives of the study was to compare the overseas examples with the Finnish grocery retailers and the Finnish market, which hasn't been addressed yet. Until now, none of the omnichannel innovations from abroad haven't been introduced or tried in Finland, except for the dynamic delivery pricing. Although different mobile solutions are available, they don't have any additional features as their online counterparts. Virtual shopping walls or self-scanning and checkouts using own mobile devices have not reached the Finnish market. To increase the automation level requires investments which are not realistic in the Finnish grocery market due to low volumes as of now. However, the infrastructure and consumers are technology-oriented. The growth of online sales has been strong ever since the online channel was introduced but the companies are not ready to make too risky investments. Marketing factors in the framework showed the significance of a brand and coherence between sales channels. Additionally, new digital solutions can help in the promotion aspect and increase customer involvement in the first phases of the buying process especially. Improving the marketing factor is costly to any

company, and thus the tradeoff between the cost and potentially achieved service level should be estimated carefully.

Data usage is becoming an important tool for understanding the consumer buying process. By understanding the process, it can better be taken into account when developing the omnichannel experience. There is not much research in the area of switching channels, and the Finnish omnichannel grocers are in an opportune situation in the attempt to find the repetitive patterns of different customer segments. These patterns provide the ground for customer engagement and could help in the strategic investment decision as well. Since supply chain is the most critical part of the omnichannel business, the supply chain costs determine the profitability of the service. The customer path could lead to unforeseen habits, and understanding them could further help in optimizing the supply chain costs and finally improved profitability.

The factors affecting the profitability the most, though, are order picking and delivery that require manual labor. Possibilities to automate these additional supply chain phases are being explored by S and K groups continuously. They monitor and benchmark the UK and other markets, visit seminars and conferences to learn about new technologies and case examples, and follow the academia. However, for an investment in new automation technology or robotics requires such higher volumes that they will not be relevant to the Finnish grocers. Digital and technological advances can help in streamlining these parts of the supply chain. Any services helping the order picking staff to do their task faster, is a step towards savings in logistics costs. In contrast, the more options customers are offered in orders and deliveries, the service level increases but the complexity and costs increase as well. The goal should not be to become the absolute leader in the omnichannel solutions, but to become the market leader using omnichannel approach to satisfy the customer needs. It's difficult to calculate the service level of the omnichannel coherence aspect, and the usability of the different services, although they are in significant aspects in the seamless customer experience.

Taking all the summarized points into account, the Finnish market generally has to improve the information supply chain and coherence between all sales and media channels to improve the omnichannel customer experience and grow the market. Data usage is one potential area of information supply chain improvements, and can offer valuable information into the customer buying process as well. However, it can be seen as a background process touching the different layers of the firm controlled factors. A small but relevant aspect of the marketing factors, and merchandise is the quality of the products, and in the supply chain the

use of a 3PL in delivery or even order picking might affect the omnichannel experience. Hence, the framework used for the study is introduced by some minor changes (figure 6). Boyer and Hult's study confirms these areas of importance in the customers' behavioral intentions. Customers value e-business quality, product quality as well as service quality. All of these factors affect the online accessibility and attitude towards internet ordering (Boyer & Hult, 2005). In this research we can compare e-business quality as the information supply chain, product quality relates to the operations needed to keep the products fresh until delivery, and lastly, the service quality comes to the coherent marketing factor.

The additions made to the framework are underlining the importance of the seamlessness and the coherence of the omnichannel service towards the customer. All the factors the firm has control over, should be viewed through the brand image. As the ease of use and convenience are the major motivations of consumers, the coherence is helpful in that way also. The structure of the supply chain, and the use of 3PL affects mostly the costs but the offered supply chain options are an important part of the customer experience as well. As written before, selling groceries online is fundamentally an additional service to customers to increase their convenience. This framework takes into account the most important aspects the firm should manage strategically to win the omnichannel competition.

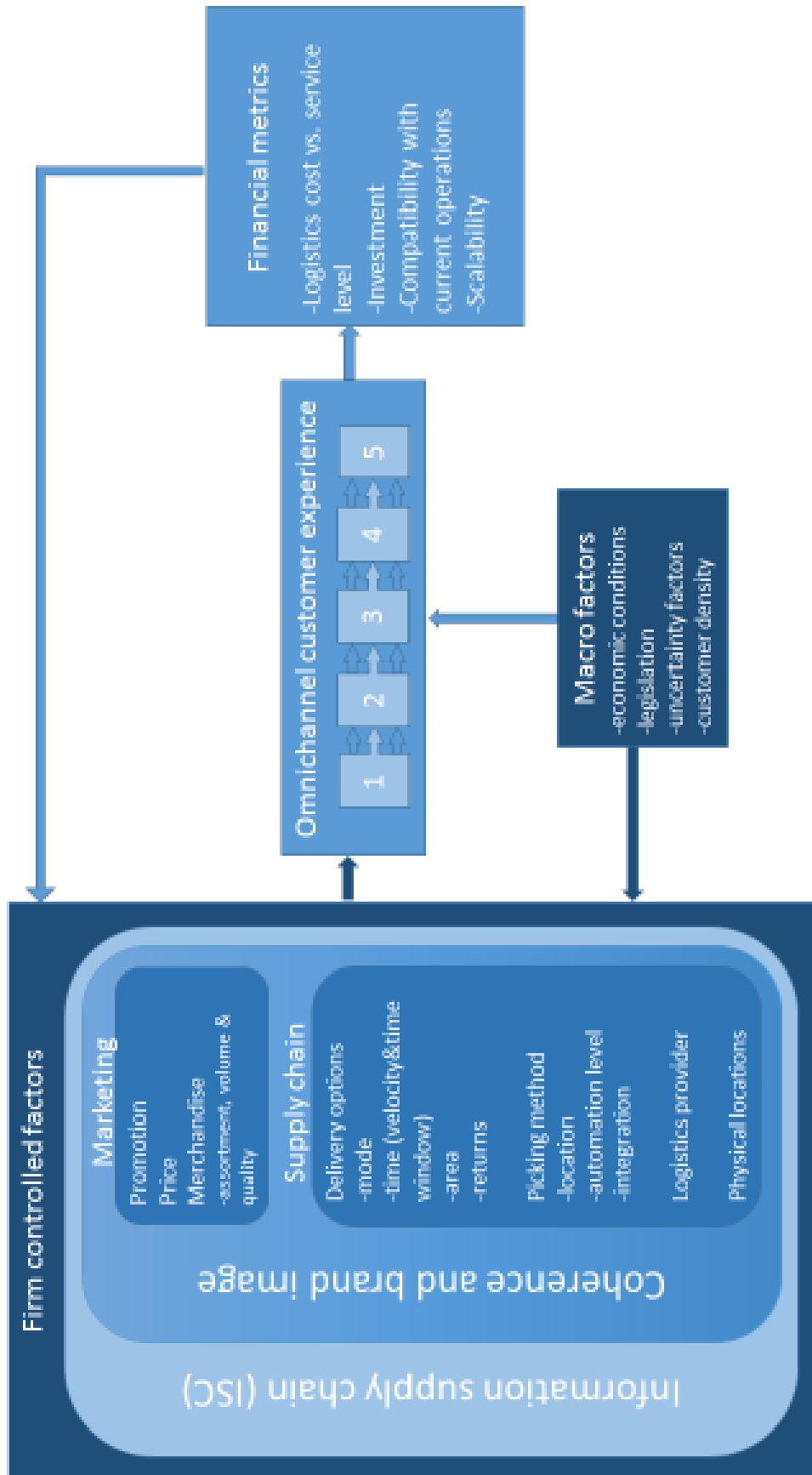


Figure 6. Reviewed framework

6 Discussion

The Finnish omnichannel grocery retail is still very new and even though the sales grow 50-100% per year in the large retailers' online channels, it is difficult to say what the market looks like in 5 or 10 years. In England the online share of grocery retail after 15 years of business is only 5%. Ranua guessed Finland might reach the same percentage. But whether it is profitable to invest in the background systems and the supply chain to be able to adopt more customers is up to the companies. To reach a genuinely seamless shopping experience requires solid information supply chain and a good understanding of customers. Kivilahti pointed out that the online channel will never be used by everyone, but there are users for each channel, and as long as the customers are kept happy with the channels of their choice, it is worthwhile to maintain the good service within all channels.

K group's strategy seeks growth from the grocery market, with an emphasis in convenience stores. By the Suomen Lähikauppa acquisition K group is able to develop the availability, quality and competitive prices of the convenience store services more easily (Kesko, 2015a). They put efforts in digital services and good market locations. With the development towards omnichannel retail, the questions of what truly is a good market location and how customers use the different channels becomes relevant. Currently huge shopping centers are being built in and around Helsinki, and the grocery stores offer click-and-collect from the grocery stores' parking lots. In the UK, enormous collection points are built next to highways and transportation hubs for convenience reasons. Heinonen believes that within 10 years people also in Helsinki can decide whichever location around the city to pick up their grocery shoppings. Will the grocery retailers or third-party providers build temperature-controlled pick-up points? How long will they wait to make the investments? Collection points might not be the solution for maximized convenience for the customer. Some customers might value virtual shopping walls or a well-functioning mobile app more. When customers base their channel and store selection on convenience, is the best option the convenience store closest to home or is it the city's hypermarket delivering on the doorstep? In grocery shopping the difference might not be as big as if the customer is looking to purchase a new handbag, for example. The best possible omnichannel customer experience is customer-specific – for some it might be a small local store that shows their collection on their website and the customer wants the in-store involvement of touching and feeling the product before the purchase decision. For another customer the best option is to browse through Amazon and end up ordering the bag from an Australian online store for their competitive pricing and exquisite

customer service. However, grocery trends seem to be focusing on the local than global supply. Groceries' characteristics and consumers' awareness of environmental and health factors drive them to favor local producers.

Specialization of online grocers is one possible direction. Specialization could mean that grocers focus in one product category or type only. For local small producers it could mean a focused delivery area. Digital possibilities enable even small actors to engage customers with a great omnichannel customer experience. With well-functioning information supply chain, and a targeted mix of firm controlled factors, any grocery retailer can reach a good omnichannel customer experience. Tenhunen knows that since Ruoka.net is primarily a service, why they shouldn't embrace it instead of competing with the dominating grocery chains. Improving the service doesn't need much. Tenhunen gave an example: since they sell tea, they could easily offer the customer to purchase a tea pot as well. Product promotions such as the example and wider assortment changes their focus, and they might develop the business to a more specialized store. IKEA and Verkkokauppa.com are opposite examples. They grow their assortment as well sending a message that it is not necessary to buy all groceries from a transitional grocery retailer. They change the business product line by product line as do the organic produce resellers. Ruokaasuomesta.fi sells produce and meat directly from the producer to the customer.

As the retailer side evolves, the supply chain options need to change as well. The two basic models, home delivery and click-and-collect, remain, but new innovations are introduced continuously that can offer variations to the two basic delivery models. Amazon started the hype with their first delivery drone announcement in December 2013 (Amazon prime air.2015). Since then Google has talked about a similar project, Project Wing (X (incubator).2016), Amazon has announced an improved drone model, and Starship Technologies revealed their self-driving delivery robot vehicle (Starship Technologies, 2015). In Finland, Posti organized a media event for their drone delivery trial to Suomenlinna fortress outside Helsinki (Posti, 2015). Even though all of these technological advancements have collected more media attention than success, undoubtedly they are becoming more common. Automation in both deliveries and order picking is developing fast. Groceries bring additional challenges, though, as has been established in this study. The shopping bags are heavy and temperature-control difficult. In Finland the weather in wintertime brings an additional difficulty factor for automated deliveries. Developing supply chain methods bring efficiency, nonetheless, and in a way improve the omnichannel customer experience.

Now, K and S groups' online channel is basically a catalogue of the traditional stores' products in a virtual form. Will the way of how we see a grocery store change? Kauppahalli24's business model is breaking the traditional model already. Heinonen believes in a future where specialty retailers for cheese, meat and bread, for example, capture part of the market. Online channels provide an extraordinary opportunity for small retailers to reach their customers, even though large grocery chains would not take their products in their assortments. In case these smaller retailers accumulate, the market shifts towards specialty stores who offer easiness and convenient way to purchase specialty products. What is the role of an omnichannel grocer in the future, then? Should omnichannel as a term be re-evaluated, or replaced? Is an omnichannel grocer a large enough retailer who can run all the possible sales channels, or is it a retailer who can offer an easy and seamless customer experience in the channels they have chosen?

7 Conclusions

This research has shown that omnichannel grocery retail has a relatively small share in the market, both globally and in the Finnish market. However, grocery retailers are investing in omnichannel business increasingly, and the meaning of omnichannel customers is clear, they bring in many times more revenue than the regular brick-and-mortar customer. Since the field is new for researchers, and the supply chain aspect of the omnichannel grocery industry hasn't been studied much, this study looked for ways in which supply chain can advance omnichannel customer experience in grocery industry. The original research questions were:

- How can supply chain management advance the seamless omnichannel shopping experience in the grocery industry?
 - What are the distinctive issues in omnichannel grocery retail? What new factors has omnichannel concept brought to retailers and how do they compare in grocery retail as opposed to other retail fields?
 - How has introducing new sales channels changed grocery retailers' supply chains? What other distinct changes in the organization can be identified since the adoption of the omnichannel concept?
- How have the Finnish online grocery retailers tackled the previously identified issues and developed their business compared to the global market leaders, and what shifts can be expected in the Finnish market in the future?

Answering the main research questions requires understanding of the sub-questions. The distinctive issues in omnichannel grocery retail were first studied from earlier literature diving the topic into three domains, omnichannel as a concept, grocery market, and the supply chains in grocery retail. Focus on supply chains was valid since the importance of supply chain management in omnichannel retail had been established in the early stages of the literature review. For the omnichannel customer the channel is irrelevant but they expect to find information and purchase items whenever and wherever. Selling groceries in other channel than the traditional stores even in the most developed market, the UK, adds up to 5-8% of the whole market and in Finland the online sales of groceries are less than 1% of the total 16 billion euros annually. This small but fast growing field induces supply chain investments the more it continues to grow. Online grocery business in Finland is built on top of the existing operations which means compromises are have to be made. However, dark stores have been opened and the field keeps developing as all the grocers have identified the omnichannel customer needs.

Grocery retail's characteristics, perishability, low-margin products, low consumer involvement and frequent purchases make the omnichannel management differ from other retail industries. Same innovative solutions are not necessarily viable in the grocery industry, since the physical size of orders is often larger as in other omnichannel shopping and thus affects the last-mile distribution. Implementing new sales channels starts with creating the information system for online sales, which is the most important factor in scaling up the omnichannel business. New jobs have also been created for developing and managing the online stores, although the number of dedicated online store and digital service managers is low in Finland. Out of the Finnish grocers S group has performed the best in introducing multiple sales channels, online and mobile while simultaneously providing other digital services to their customers. Investments in the supply chain have been made by both K and S groups since the volume grew too high for the individual stores' capacity. In the UK, dark stores and fulfillment centers are being built by all large grocery retailers. Following the development in the UK, automation and mobile solutions are the next development trends in Finland as well while companies build their service offerings. Moreover, consistency throughout the different channels is essential part of the future developments, if not even the most important. New services have been established and promoted but a seamless information search, evaluation, and purchasing is not a reality as of yet. Channels should be of a unified brand and work seamlessly together to really create value added to the customer.

Returning to the main research question, supply chain decisions are part of the strategic choices the grocery retailer makes. Supply chain can be seen as the logistical part, fulfillment, in-store logistics, order picking and deliveries, or as a larger entity including the information supply chain. The information supply chain is the essential base for any company to start building their omnichannel offering. Exploiting data gathered from online channels and loyalty programs should lead the understanding of the customer path into development of the omnichannel experience. As Finland is still behind in the omnichannel grocery market, the innovations abroad give examples for the Finnish grocers on what works and what doesn't. Order picking and delivery options have direct impacts in the costs and the service level offered to the customer, and they will remain the most critical parts of the process. As long as automation technologies can't replace the manual work, omnichannel grocers have to find other ways to streamline the downstream supply chain operations.

7.1 Theoretical implications

This study builds on earlier theories in grocery retail and combines different domains for a more holistic view of the factors affecting the omnichannel grocery customer experience. Since not many studies have had a supply chain focused view in the creation of customer experience, this study enters a rarely studied field. The framework created combines theories from customer behavior, supply chains in grocery retail as well as a new omnichannel research domain thus being able to create a unique setting for the research. Through the course of the study, the importance of supply chain efficiencies and the information systems as part of the supply chain became more evident. The reviewed framework offers a new model for analyzing omnichannel grocers' businesses and potential for success in the creation of omnichannel customer experience.

7.2 Managerial implications

It is evident that this study cannot offer one right solution for a grocery retailer to develop their omnichannel customer experience. The customer behavior is customer-specific and company strategy should lead the investment decisions to finally lead to the supply chain decisions and offered service level. This study offers a framework for understanding the entirety of company's decisions on the overall success. To plan a well-structured supply chain, managers have to understand the customer behavior and all the phases of the customer buying process. Data brought in by the different digital channels is in an important role in the creation of this understanding. In contrast, to offer the best possible customer experience, managers have to make strategic decisions over the supply chain options and control all the factors affecting the omnichannel experience. The parts of the supply chain process that require manual labor will be the bottlenecks of the service, and should be carefully controlled. Technological innovations can bring advancements in the supply chain process and thus cost savings but the investment decision is one of the most important trade-off decisions managers face in the omnichannel grocery retail development.

7.3 Limitations and suggestions for further research

As most studies, this research also has its limitations. The research methodology's limitations were discussed in chapter 3, this part discusses other limitations to the topic and provides suggestions for further research in the light of the research gaps that are left to be covered. The research approach was partly restricted by the position of the researcher. As an independent

person not tied to any of the companies, the amount of internal data was limited and led the research methods to their final form. However, as the interviewees also noted, they are only now starting to learn how to use the data, a quantitative approach could thus be viable in the near future. Another slight conflict is in the benchmarking, since the data from the companies abroad is secondary, and only the Finnish companies could be analyzed more in-depth. Also, the selection of the companies for benchmarking was led by the popularity their trials have collected in the media and different consulting companies. Although researchers have stated the UK and the US are the most developed markets, the Asian companies were excluded due to practical reasons, like language barrier.

As mentioned in the research gap, the customer motivations are widely researched. However, one possible future research topic could handle the research question of this research but in the customer point of view. How the amount and quality of supply chain options offered affect their omnichannel experience, and how much the experienced service level differs when moving across channels. Additionally, the relationship between a possible third party logistics provider and delivery costs and achieved service level is an interesting domain, since in Finland all the deliveries are outsourced. With the complexity that omnichannel shopping brings, it would be interesting to try analyzing how much an additional sales channel affects total sales, and on the other hand, how much does it affect the operations? In other words, new research topics can be found in the relationships of the different boxes if the framework designed in this paper. Moreover, some trends that can't be explained by the omnichannel professional could require academic viewpoints to understand the quickly evolving phenomena. Such an example is the rise of the click-and-collect model. If the earlier studied customer motivations do not explain the popularity of the model, then what does? The few coming years will already show which way the omnichannel market is moving. Finally, the mix of the omnichannel and pure player grocers' developments, the customers and their customer paths across the available channels, as well as the academic attention this area will receive will eventually determine whether omnichannel is an actively used term in the future as well or if the focus will move towards customer experience.

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