

Increasing consumer retention by innovation-based concept design

for digital grocer Crisp



Notes to the reader

- All rights for the photography used in this Master thesis belong to Crisp.
- All appendices that support parts of the Master thesis are confidential.

Master thesis

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Preface

This Master thesis is the deliverable of my graduation project in collaboration with Crisp, the online supermarket for fresh groceries. All my design skills are coming together in this project.

Starting at the TU Delft, I did not envision ending with a Master degree on the Faculty of Industrial Design Engineering. My dream was to become an architect. But during my Bachelor Architecture, I realized there was more than buildings I wanted to design. I was always curious for other creative processes, strategic thinking and user interactions with products and services. When bridging towards Strategic Product Design, a whole new design world opened up for me which fitted my ambitions. Still, I am very glad that I got to combine two creative perspectives from both great faculties.

During the process of searching for a graduation topic, it was already clear from the beginning I wanted to combine my passion for food, my interest in the retail industry and my curiosity for innovation in digital environments. When Erik Jan tipped me on looking into Crisp, it caught my attention straight away. Not only was I inspired by the vision of Crisp, making local food more accessible for everyone, but also their straight forward communication and colorful branding stood out.

Before starting this journey I did not specifically aim to conduct my research at a start-up company. However, it was such an exciting and challenging experience! I would like to thank Caesar for the guidance during my graduation at Crisp. Your view on designing for start-ups is very interesting and you got me thinking after every conversation. Because you have obtained the same Master degree, it was helpful that you knew what I was up to. Your support in setting up and conducting all the consumer interviews was very valuable. I hope to see Crisp grow even more in the future!

Also, I want to thank Sijia for being my mentor during the research project. Your help was very clear and insightful. Sometimes it was not that inspiring and dynamic to conduct almost the whole research from home, but you were always available to have an (online) chat. Next to being open, you were also genuinely interested in how I was feeling during my graduation.

Thirdly, I want to thank Erik Jan for the supervision during the research project. I would have not expected to like qualitative research, but you helped changing my perspective. Also, by being critical and honest, especially during the grounded theory development, the conclusions were brought to a higher level which I am thankful for. Thank you for bringing Crisp on my radar.

Above all, I really appreciated the clear guidance from the whole committee during the project, although we couldn't meet in person.

Lastly, I would like to thank my fellow SPD students for helping me with the inspiring ideas during the brainstorming session. I would like to thank my roommates for motivating me while graduating from home and complimenting me for my positivity. And I would like to thank Paul, my mom and dad and my sisters for the supportive words and the confidence.

Enjoy reading!

Leoni Halkes

Executive summary

Crisp is an online supermarket for fresh and high-quality food. By using an app, customers can order groceries which are delivered to your house throughout the Netherlands. One of the most important goals for Crisp as a start-up is to grow. Growing as a company is necessary to make their online grocery store competitive. Crisp desires controlled growth, where their operations scale simultaneously with their customer base.

The framework for start-up growth from McClure (2007) is used for this research. The challenge Crisp faces is to optimize consumer retention, which can be explained by comparing the acquisition rate and the churn rate. To grow the customer base, which results in company growth, retention needs to be increased.

To stay competitive in the online supermarket environment, Crisp needs to continuously innovate. According to Schumpeter (1949), who published the first academic ideas about innovation, companies have to continuously introduce 'new combinations' in their product design to remain profitable.

Hence, the following main research question is addressed. **How to increase the retention of digital grocer Crisp through innovation-based concept design?**

By internal and external analysis, search areas, or innovation themes, were concluded. From analyzing the company, consumer and collaborators internally and the competitors and context externally, four search areas were defined: transparency, 'doing good', engagement and personalization. These trends that relate to the online shopping industry could be interesting for Crisp for the development of a new innovation for their application.

The search areas were used as a basis for the qualitative consumer research. Interviews were held with the goal to define what search area would be most interesting for

product development. Thirteen consumer interviews were conducted, testing four hypotheses matching the search areas. By coding the interviews, categorizing and defining the relationships between the code groups, a grounded theory was developed.

The grounded theory entails the general model for online shopping that serves as a conclusion from the qualitative research. This model, which is an iteration of multiple integrative diagrams, defines the process a Crisp customer goes through while online shopping, and served as a basis for design brief formulation and product development.

According to the conclusion of the qualitative research, the following five elements were described as focus points within the design brief: creative, personal, transparent, convenient and informative.

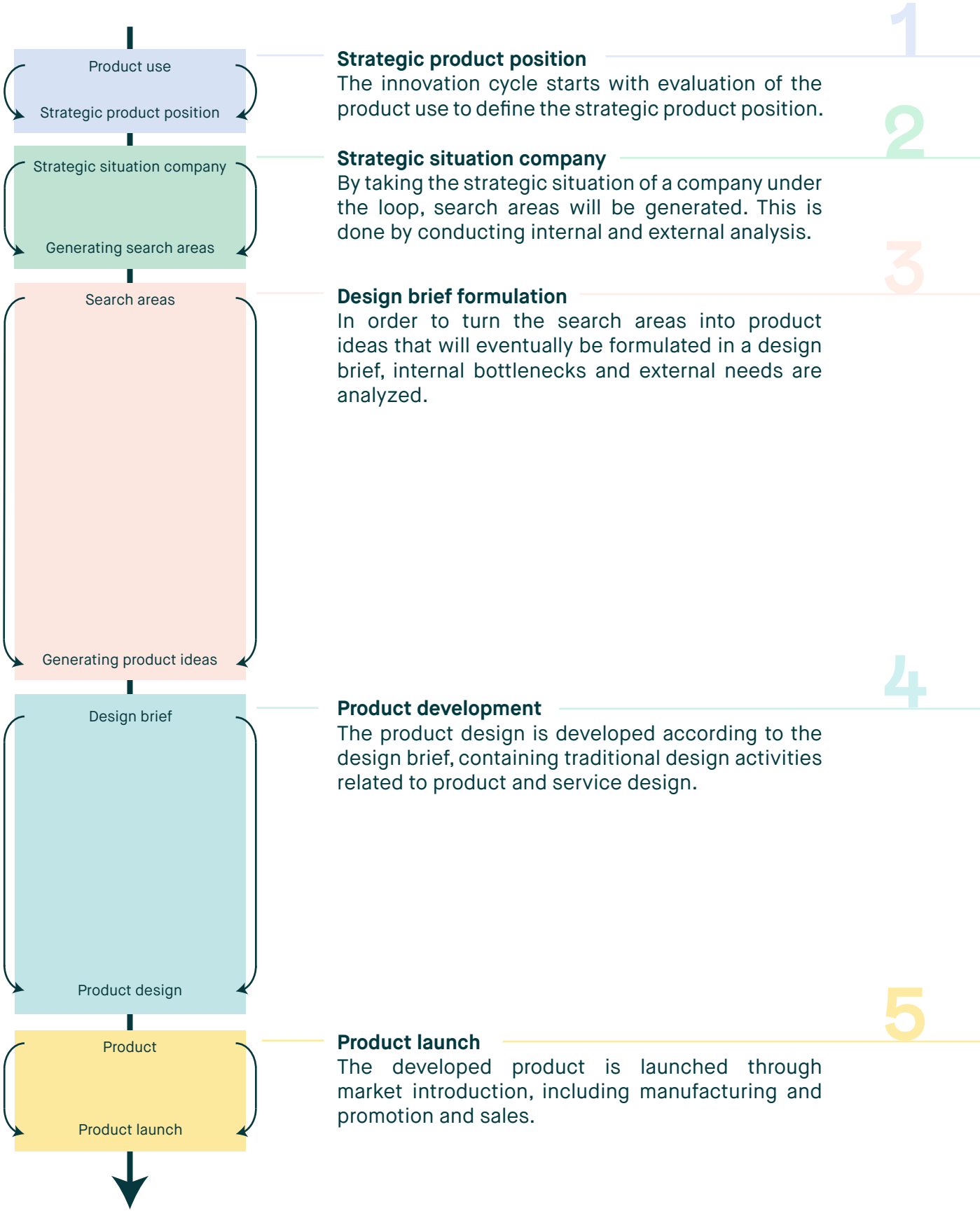
Afterwards, through a brainstorming session, many selection rounds, critical discussions and design iterations, a concept design was developed for the application. The 'weekly planning' is an integration of customers weekly planning of recipes in the Crisp app. It offers more personal convenience, it unburdens customers in a smart way and it is an easier guidance through shopping.

As this concept is designed from direct consumer needs following from extensive consumer research, it could contribute to an increase of retention. Also, a first concept validation round is held amongst online shoppers where retention is positively validated.

Lastly, conducting an A/B experiment is advised for Crisp to measure retention after the 'weekly planning' is launched. Acquisition and churn rates should be measured so the retention rate can be calculated. Also, consumer satisfaction, habit and experience and service quality can be measured to define the increase of retention in the real app context.

Report structure

The report is structured according to the product innovation process by Buijs (2012).



Reading guide

A few basic design principles are used within this Master thesis to guide the reader through the whole report.

Before the start of each chapter, a short introduction will be given and the content will be described. Each chapter has its own supportive color, according to the colors give to the phases in the product innovation process by Buijs (2012). The rest of the reading elements are explained below.

Titles

Section titles on top of the page are bold and supported by a pastel toned line in the chapter's theme color.

Subtitles

Subtitles appear in a smaller font type and in a darker tone of the chapter's theme color.

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Body text is written in a lighter font type and appears in a seaweed color, close to black.

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To stress words or to indicate subsections, bold letters are used in the body text.



Figure x: Title (source)

A color palette existing of three or four different tones in the chapter's theme color are used for figures.

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To summarize sections or subsections, a seaweed colored block with a white font is used.

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1. Strategic product position





The first chapter will give an introduction to the research that is conducted. Within the first stage of the product innovation process, the strategic product position will become clear by describing the product and its context. Also the problem will be revealed in this chapter, and the research question and solution space will be described.

Content

- 1.1 E/m-commerce
- 1.2 Product innovation process
- 1.3 Strategic product position Crisp
- 1.4 Solution space



1.1 E/m-commerce retailers

Technical developments are changing the way we do groceries. These developments will have a lot of consequences for the future of the food sector.

E-commerce has been a driving force in retail the past few years (Askew, 2018). E-commerce, which stands for electronic commerce, is known as buying and selling done over the Internet (Quora, 2018). The shopping is usually done by the help of a laptop or desktop. E-commerce grocers are currently taking market share from traditional physical supermarkets. Because of these technological innovations, shoppers' expectations have changed and therefore food retailers need to innovate to meet those expectations, according to Toby Pickard, Head of Insight, Innovation and Futures at Insight Group IGD (Askew, 2018). Besides the innovation of traditional retailers, also a lot of new initiatives arise caused by this trend. Crisp is one of these initiatives.

Crisp is a startup supermarket that exists because of this movement from offline to online shopping, which will be explained in more detail in the following chapters.

Together with the EFMI Business School, a report was set up that shows the trends that will appear in the Dutch grocery sector in 2030 (Belderok, Einwachter, Van Aalst, Winkelman & Veul, 2019). The Dutch grocery sector will go through disruptive changes in the coming ten years. To define the most important trends within this ten-year scope, a survey amongst 150 Dutch executives is held about the food industry (Belderok et al., 2019). Four main trend categories were defined, and specific trends were selected. An overview is shown in the table below (figure 1).

The **first trend** is defined as demographic transition. The demand for certain products and services will be heavily influenced by the rise of a new consumer generation: Millennials and Generation Z.





Trend	Trend selection	Trend description
Demographic transition 	1. New consumers 2. Aging population 3. Smaller households 4. Urbanization	Rise of new generation of consumers (millennials, gen z) Increase in the share of elderly in Dutch society Increase in single-person households Increase in population and importance of the city area
Changing consumer habits 	5. Personalization 6. Convenience 7. Health 8. Transparency	Increase in demand for personalized products and services Increase in demand for convenient products and services Increase in importance of health and vitality Increase in demand for transparency and sustainable products
Digitalizing world 	9. E/m-commerce 10. Big data 11. Smart stores 12. Smart homes	Increase in online grocery sales through laptops and phones Increase in use of consumer data for marketing and sales Increase in use of smart and connected devices in stores Increase in use of smart home appliances
Technological (r)evolution 	13. Cashless stores 14. In-store robotics 15. Drone delivery 16. Self-driving cars	Use of cashless store concepts with automated payment Use of in-store robotics for inventory management and service Use of drones for home-delivery of groceries Use of autonomous vehicles in grocery logistics

Figure 1: Trend overview of in-depth food industry interviews (Belderok et al., 2019)

But on the other hand, CBS estimates that one quarter of Dutch inhabitants will be aged over 65 years in 2030 (CBS, 2018). This means that our population is growing older. These factors are important to anticipate upon when it comes to meeting the demands of the potential consumer.

The **second trend** within the food industry is the changing habits of the consumer. Consumers are longing for personalization and demand more convenience, because of their busy lifestyles. Also, digitalization is a driver which could have an impact on the increasing demand for personalization and convenience. Besides this, consumers are focusing more and more on topics such as sustainability and health. These preferences could change the offering of products and services within the food industry.

The **third trend** that is uncovered is a digitalizing world. The number of "online" devices is still growing, which makes it possible to gather more data from consumers which is used to identify needs. This data could also be used to target consumers more specifically. This rising number of "online" devices also contributes to the increase in online grocery sales. Through the increase of smart home applications, a better consumer understanding is provided as it is made possible to gather and analyze data in people's houses.

The **fourth trend** defined contributes to the technological evolution, and focusses on the innovation of supermarket stores and processes through technology. However, this trend is left out of scope, as this research project focusses on companies within e-commerce, and therefore not on physical grocery stores within the food industry. Also, the trend selection entails innovation in a wider timeframe, which might take longer to be implemented by a company and adopted by consumers. In the context of this project, where a startup is analyzed, trends that have a shorter time frame are focused upon.

In figure 2 all trends are displayed on a matrix which shows the timing of impact on the horizontal axis and the degree of impact on the vertical axis, used to uncover their importance. As the research by Belderok et al. (2019) is done within a ten-year scope, it is not relevant to consider the trends that focus on the long-term. Also, trends that have medium impact will be left out of scope, as it is desired to make high impact by introducing a new innovation. Looking at the upper-left quadrant of the graph, it is clearly shown that e/m-commerce is the trend that has the highest impact on a medium term. Therefore, it can be assumed that within the food industry, companies will stay competitive entering the market as an e-commerce retailer on a short-term basis. This conclusion confirms that Crisp has entered the market based on an important rising trend and developed a good competitive advantage amongst current traditional food retailers.

In this trend impact graph, a new definition alongside e-commerce arises. M-commerce, which is defined as mobile commerce, means the use of your mobile device while shopping (Quora, 2018). People will be able to do transactions everywhere they go when being able to use the internet. In their research, Quora (2018) mentioned a few new opportunities of m-commerce compared to e-commerce. The reach of mobile commerce will be wider than e-commerce, as potential customers can be reached almost everywhere. Also, transactions will increase in convenience, as they can be done by a few taps on the screen. Through m-commerce, retailers will be able to track customers with GPS, which can be used for personalization. And at last, security within m-commerce is further improved. It will not only be possible to use multi-channel authentication as used in e-commerce, but also biometric authentication is offered, via face ID or fingerprints.

Trend impact

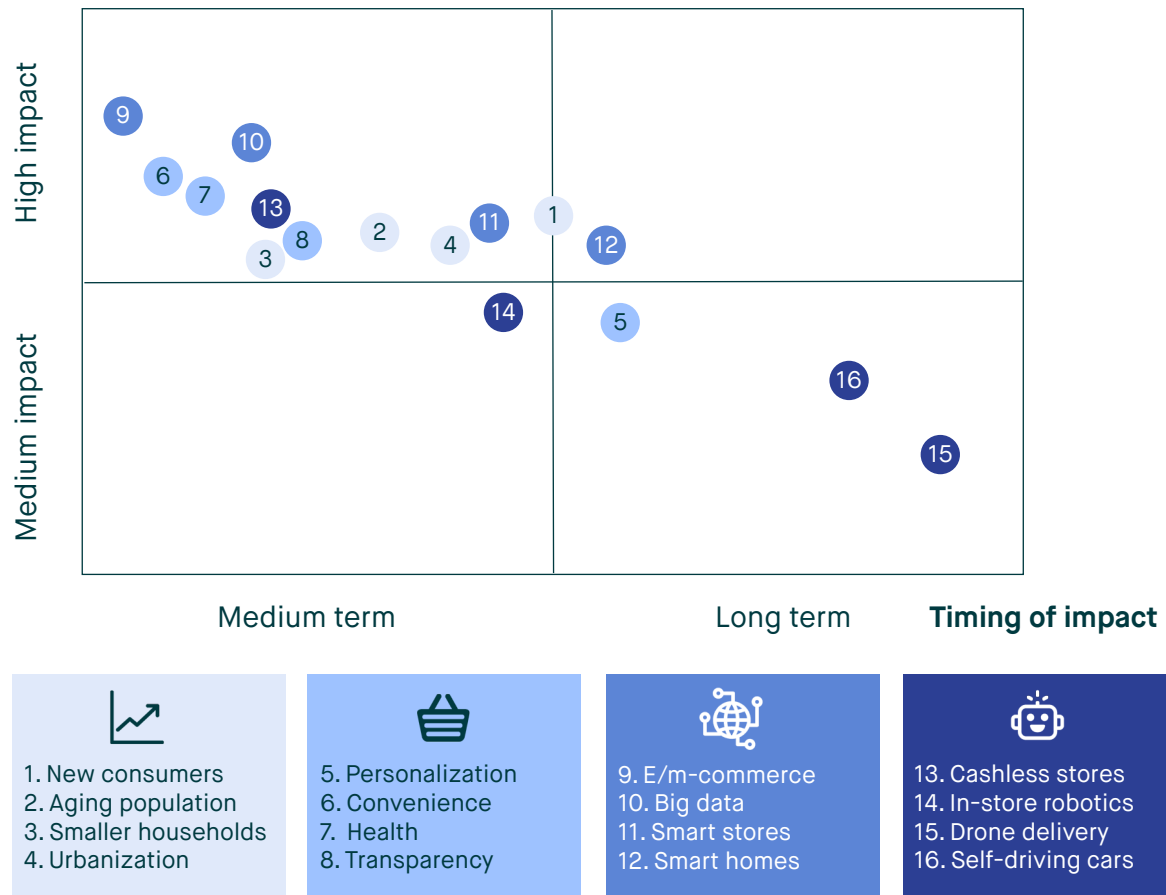


Figure 2: Trend impact overview of in-depth food industry interviews (Belderok et al., 2019)

Besides all these opportunities developed through technology which make it possible to grocery shop online, also hurdles are revealed in research. In the consumer's mind, online shopping is not yet the most convenient option when it comes to doing groceries (Caine & Paratore, 2019). Digital grocers have an opportunity to make sure higher levels of convenience are reached through online grocery shopping to convince consumers.

Crisp, as a digital grocer for fresh food products, can use this opportunity and innovate according to consumer needs.

It is inevitable to mention that the world is going through a digital transformation. This transformation is changing consumer habits and their demand and preferences for products and services in the food industry. E-commerce and m-commerce have been a disruptive force in grocery retailing, but what is next?

In the **second stage**, the strategy is formulated, and the future business situation is determined. An internal (company) analysis for Crisp is done to identify strengths and core competences and uncover their weaknesses. Also, an external (context) analysis is done to identify opportunities and threats. In the external analysis not only the innovations are uncovered, but also the competitive environment is analyzed. Combining these analyses, the **strategic situation** is determined and search areas for Crisp are defined, which are the basis of the hypotheses for the third stage.

In the **third stage** of the product innovation process, the search areas which are formulated as hypotheses are tested with the consumer. Through extensive customer research as well as simple prototype testing with the consumer, the search areas can be validated and iterated upon. The interviewing of users will serve as an external needs analysis described by Buijs (2012), whereas the prototype testing will serve as an internal analysis of the bottlenecks. Through this extensive consumer analysis, the search areas are turned into ideas which are used as a basis for the **design brief formulation** for product innovation in the application of Crisp.

In the **fourth stage** of the product innovation process, the development of the product or service for Crisp is done. All elements of the product should be designed and explained within this phase. Also, the technology supporting the design should be developed in this stage. In most cases it results in working prototypes and technical documents. For this research project, technical documents for the application of Crisp are left out of scope due to the narrow time frame of the research project and the lack of experience in application programming. Working prototypes for the concept will be provided, which will illustrate the **product development** of the concept design.

Lastly, in the **fifth stage** of the product innovation process, the product is introduced to the market. Usually, a launch campaign for the product or service is designed in this phase, which includes a strategy on how to promote and distribute the new or innovated product. For this research project, the concept will be validated first in this stage, to ensure the concept design will fit the consumer needs that were identified. Recommendations for **product launch** will be described for Crisp, combined with advice on how to develop and implement this concept design further. Analyzing the product in use after launching it could be the first step of the product innovation process again, as it is a circular process.

In this project, innovations that fit both the customers' needs, and the company's vision are researched. By following design methods, prototypes according to these innovations are built to validate amongst customers and gain experience in application design. Extensive consumer interviewing will be used to uncover the most relevant innovation for the customer of Crisp. In the end, a concept design for digital grocer Crisp is developed that can be implemented in the application fitting most relevant innovations within e/m-commerce retailers in the coming years. The deliverable will consist of a combination of an extensive user research and analysis of customers in an online shopping environment. Next to this, a product-service design for the mobile application of Crisp will be developed, matching the conclusions of the qualitative user research and the company strategy. To conclude, the proposed advice on product will describe how Crisp could implement and develop this new innovation in the application further.

1.3 Strategic product position

In order to define the strategic product position of the company, the product use is evaluated and the problems according to the product are revealed.

The context of this project lies within e/m-commerce retailers, further specified as online supermarkets. Crisp is an online supermarket who delivers fresh groceries to households. The digital grocer Crisp has a convenient application where you can easily order your fresh groceries, delivered home throughout every part of the Netherlands. As a start-up only existing for one year, Crisp has to keep up with innovation and win terrain within the big and highly competitive landscape of current grocery ordering possibilities. With their unique vision on convenience of application usage and freshness of the products itself, they distinguish themselves from other (online) supermarkets. But the market around them is developing fast. The world is digitizing, which is changing consumer habits and their demand and preferences for products and services in the food industry. What innovations are important to implement in the coming years? And how can Crisp stay competitive?

For the scope of this project, it is important to closely research innovations that could be implemented in the following two years. No bigger timeframe is used to reduce the risk of building something that is not likely to be adopted by current customers. In line with this, it is also important to gather early customer feedback on prototypes, to minimize the risk of building something irrelevant.

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Crisp desires controlled growth as a startup, to remain competitive in the supermarket landscape. To structure this growth, the AARRR framework, also known as Pirate Metrics for Startup Growth, is used (McClure, 2007). It is used to set some metric goals for startups, also called Key Performance Indicators (KPI's). The metrics measure a company's growth in an effective and simple way. The five-step framework is also used to gain better understanding of your customers. An illustration of the framework is shown (figure 4).

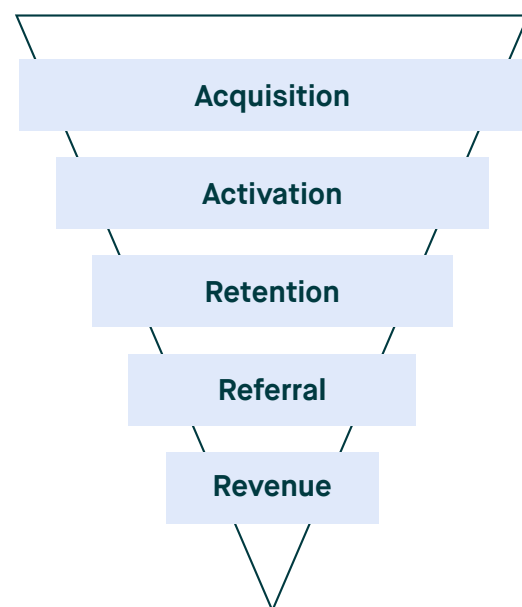


Figure 4: AARRR framework; Pirate Metrics for Startup Growth (McClure, 2007)

The first A in the AARRR framework stands for **acquisition**. The acquisition metric describes how users find you and eventually become a customer. The three most important things to take into account when choosing your acquisition platforms are to consider which channel generates the most traffic, which channel has the highest customer conversion and which channel has the lowest acquisition costs.

The second A in the framework stands for **activation**. Activation is explained as being the first experience the user has with the product or service. The user has to have the so called “Aha Moment” and realize the value the product or service has. To get users to this moment as quickly as possible, the onboarding process has to fit the specific target group and has to be enjoyable as well.

The first R in the framework is known as **retention**. This means the number of customers you retain using your product or service. Within the context of e-commerce this means not only the customers who purchase something once but keep coming back to make new orders. If many customers are not returning, your product or service might not have a good market fit. This metric will show start-up growth when the customer churn rate (which is the opposite of customer retention) is lower than the customer acquisition rate. It has been calculated that acquiring a new customer is five to twenty-five times more expensive than to retain an existing customer (Gallo, 2014).

The second-last R stands for **referral**. Referral is all about turning your customers into your advocates. To reach growth, a referral program could work more effectively than other marketing strategies, as relatives that promote a product or service are more likely to be believed. There are two metrics you should take into account. The first one is Net Promoter Score (NPS), which measures how willing customers are to recommend

your product or service. The second one is the Viral Coefficient. This coefficient explains how many users will refer a new customer to a company.

The last R in the funnel stands for **revenue**. If the other parts of the framework are functioning well, some revenue is already reached. The best way to increase revenue is by increasing the customer lifetime value (CLV), which is the sum of revenue you earn per customer during their lifetime as a customer at your company. Next to this, it is important to decrease customer acquisition costs (CAC), which is the sum of money you spend on acquiring the customer. A good ratio for growth is 3:1, describing CLV to CAC (McClure, 2007).

To relate this framework to the strategic product position of Crisp, it is important to take into account the controlled or step by step growth that they desire. The growth needs to be kept between certain barriers, where Crisp can keep control over their product and service.

Problem statement

By using the AARRR framework, growth can be measured, and companies can be optimized. According to observations, there are challenges that Crisp as an online grocer faces.

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One of the challenges is to optimize the retention. This means that the number of customers returning to Crisp after placing an order can be increased. Customers may have forgotten about Crisp, they may find Crisp too expensive or the assortment may not cover all their daily groceries.

Broadening or changing the assortment or acquisition of customers is left out of scope for this research. The challenge of increasing retention will be the focus of this project. Combining the need for maximizing consumer retention and the necessity to innovate, the main question of this research arises.

How to increase the retention of digital grocer Crisp through innovation-based concept design?

In this thesis, through extensive consumer research, it is discovered why consumers retain to Crisp and what innovation should be implemented in the application to stimulate this amongst consumers. During consumer research, current Crisp customers are investigated, which are mostly families.

It could be interesting to take a closer look into other target groups and uncover their reasons for not using a digital grocer, and specifically Crisp, yet. Also, information could be collected on non-returning Crisp customers, and their potential reasons for choosing another grocer. It is important that the concept design fits all current and potential consumers to try to enhance retention.

When formulating the problem statement, it can be concluded that retention can be increased in order for Crisp to grow as a startup. Looking at the five-step framework for startup growth, it can be concluded that marketing activities could have influence on retention and realize growth. But next to this, also the product design of the application could have high influence on the retention. As mentioned earlier, step by step growth should be taken into account when increasing consumer retention.

For setting up the research project, the project brief document, which was elaborated on during the kick-off, and a planning and Gantt chart have been developed. These documents are used as a guidance through this research (appendix 1, 2 and 3).

How to increase the retention of digital grocer Crisp through innovation-based concept design?

1.4 Solution space

By structuring this research and its main question in more detail, a clear solution space is defined as demarcation for this research project. Two focus points for the solution space are, as defined in the research question, innovation-based concept design and consumer retention.

Innovation based concept design

To introduce an innovation-based concept design, first more understanding is gathered about what innovation actually is and why Crisp needs to innovate.

Schumpeter (1949) published the first academic ideas about innovation. He introduced innovation as 'carrying through of new combinations'. Various phenomena fall under these new combinations. The context of 'product innovation' can be further defined as the 'introduction of a new good'. Entrepreneurs, who are the actors who get these ideas of new combinations, have to constantly look for 'new combinations' to make sure the company remains profitable.

To discover what types of innovation are out there, Verganti's view on innovation (2009) is researched. Roberto Verganti (2009) introduced a new innovation dimension, which could contribute making the managing of innovations easier. Verganti uses 'meaning' to describe innovation, as some innovations are not technologically advanced, but can be perceived as radical by users. There are three categories of innovation, as Verganti (2009) states, shown in figure 5.

There are innovations coming from users in the market, which are called Market Pull innovations. Also, there are innovations developed through technologies, called Technology Push. And lastly, Design-driven innovations are explained as 'radical innovations based on the introduction of a new meaning for the product or service'.

During the conduction of the internal and external analyses, all three types of innovation are researched and taken into consideration for the development of the search areas and in the end the formulation of the design brief.

These three innovations are further specified as innovations that have incremental or radical change when it comes to technology, as well as incremental or radical change when it comes to meaning. It will be researched whether Crisp needs to focus on implementing incremental or radical innovation in order to increase retention.

Introducing an innovation-based concept design can lead towards a meaningful change in the application of Crisp. Users will be exposed to this new combination in the application and will see new options for a better situation, which they will hopefully adopt for future daily use (Buijs, 2012).

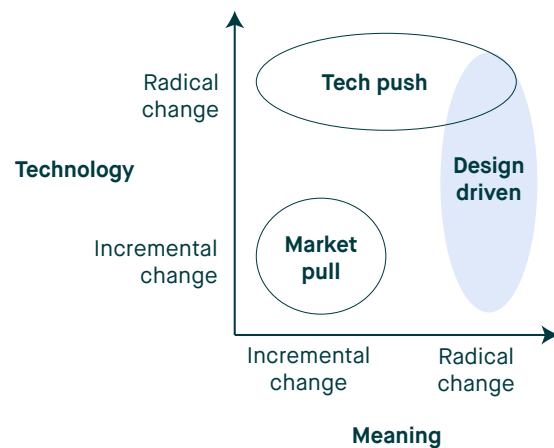


Figure 5: Verganti's view on innovation (Verganti, 2009)

Retention

As already explained earlier, retention is a rate that measures how many customers keep on using your product or service and therefore remain part of the customer base of the company. A more detailed overview of retention is shown in the figure below (figure 6).

It is important to find a good product-market fit to make sure that consumers keep returning to purchase at your company. Retention is a good focus point for Crisp as, already mentioned above, it is less expensive to ensure consumer retention than targeting a new customer (Gallo, 2014). This adds value to growing as a company. If the churn rate of the consumers is lower than the acquisition rate, then the customer base is growing and therefore retention is increased. This directly means that startup growth as a result.

The goal of this research project is to investigate how Crisp can increase consumer retention. During this research, deeper understanding is gained in what innovation the application will need in order to make sure consumers return to purchase their groceries at Crisp.

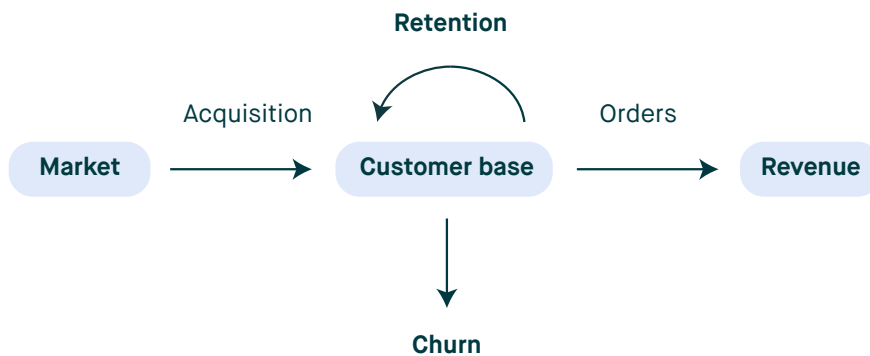


Figure 6: Customer lifecycle (McClure, 2007)

2. Strategic situation





In the second chapter the strategic situation of Crisp as a company is uncovered. By conducting an internal (company) analysis and an external (context) analysis strengths and opportunities are defined, which are concluded in the final search areas. The conclusion of these search areas are the start of the design brief direction.

Content

- 2.1 Introduction
- 2.2 Internal analysis
- 2.3 External analysis
- 2.4 Search areas

2.1 Introduction

For defining the strategic situation of the product, which is in this case the application of Crisp, internal and external analyses are conducted. To cover all elements of these analyses, the 5C analysis method is used (Kinnison, 2020). This method is used to make designers evaluate the most important factors of the business and analyze the environment in which the company operates (Kinnison, 2020). It is useful to get focus on the most important parts of the company and identify opportunities. The 5C model entails the five key "C's", where each one is representing an element within (internal) or outside (external) of the company. The following five elements are evaluated.

2.2 Internal analysis

- 2.2.1 Company
- 2.2.2 Consumer
- 2.2.3 Collaborators

2.3 External analysis

- 2.3.1 Competitors
- 2.3.2 Context

The conclusions of the internal analysis will shape the strengths and weaknesses of Crisp. The conclusions of the external analysis will sum up opportunities and threats coming from the environment around Crisp. These strengths, weaknesses, opportunities and threats will be evaluated and will finally result in the most important search areas for product innovation within the application of Crisp. These search areas will be tested and validated in the next chapter through extensive qualitative consumer research, in order to formulate the design brief for new product development for Crisp.

2.2 Internal analysis

In order to define the strengths and weaknesses of Crisp, internal analysis is conducted where the company, consumer and collaborators are researched.

2.2.1 Company

Crisp is a company that delivers fresh and high-quality groceries to any household in the Netherlands. When you order your groceries before ten o'clock in the evening, your products will be delivered to your house the next day from six o'clock. By delivering fresh and local groceries to customers' households through an application, Crisp creates the feeling of a farmer's market on your phone.

Local food

The co-founders of Crisp are aware that the global food system is under pressure. In order to change the system, they believe that local food needs to be more accessible for everyone. Therefore, most of the products of Crisp are sourced locally. There is not one definition that explains 'local food'. Most commonly it is explained as 'food that has been produced in the locality of the consumer' (Edwards-Jones, 2010). Public definitions of local suggest that it includes all food produced in a 50 kilometers radius of where the consumer lives (Institute of Grocery Distribution, 2006).

Offering almost only local food within the application, Crisp tries to ensure that the food supply chain is made shorter and therefore more sustainable. According to Edwards-Jones (2010), most of the time food is transported from its production location to the process points, sale points and lastly consumption points. As Crisp is an online supermarket where food products are sold through an app, the transportation to a selling point is not necessary as there are no physical stores. Besides the advantage of skipping one transportation location in

the supply chain, also the routes, referred to as 'food miles' (Edwards-Jones, 2010), are reduced, as the production locations of local products are closer to the distribution center of Crisp.

Next to this, the advantage of local products is that it allows Crisp to have closer contact with suppliers, and create a strong relationship. This makes sure Crisp can be honest about product ingredients and production methods of their products, as they gather all this information directly from their suppliers. This will be further explained in the collaborator's analysis.

The application

The application is the key element of Crisp and therefore its design and development are of great importance. The application is developed in house, which makes the design very flexible and easily adjustable.

Within the application design, the products and supplier information play an important role. Storytelling is used to provide customers with details of both product and supplier. The technology behind the application tries to make shopping for users as easy as possible, especially by supporting repeat shopping.

The product philosophy is clearly shown within the app by making sure users can make their choices quicker and easier. Crisp believes that customers have limited time to shop and have busy (family) lives. To develop only the necessary features and to offer a narrow but strong and high-quality assortment, the choices for consumers are made easier. Because Crisp has a strong relationship with suppliers, as mentioned earlier, they are extremely transparent about the origin of the products. This is also clearly shown in the application through photography and descriptive text.

Technology

Technology is at the core of everything that Crisp does. Crisp has an inhouse technology team that is responsible for the programming of the app, but also for their back-logistics software which contains all the information about their users and the assortment.

Each element of the business of Crisp is technology supported and is very important for achieving the right consumer experience. This is clearly integrated in their back-logistics as the software is not only very user-friendly for employees, but also focuses mostly on achieving high customer satisfaction. The elements of the back-logistics are all supported by one big database. No external tools are used to store any other data.

Confidential

Confidential

Figure 7: Overview of the front and back logistics, driven their own developed engine (Crisp figure)

Brand identity

The unique selling point of Crisp is that they offer high convenience, through home delivery, and high-quality, through a selection of the best local assortment. They would like to be compared to going to the farmers market, where all fresh products are collected from several suppliers, only then in the e-commerce context. This means that they are on the crossroads of the movement of retail towards online and the demand for more sustainable and fresh products.

In a few months Crisp built their platform with 1200 products from over 360 suppliers. They built up a team with experts in the industries of food, technology, marketing and operations. They designed a warehouse and operational system where from they deliver throughout the entire Netherlands with a one-hour delivery slot.

The visual identity of Crisp is designed with graphical elements of fresh fruits, vegetables or other ingredients. In this way they can create a brand identity that follows the season. This matches their vision and adapts to the availability of products. With clear photography of products and suppliers they want to stress the freshness of the food and relationships they have.



Image: Electric Crisp bus



Image: Suppliers of Weerribben (dairy products)

2.2.2 Consumer

To identify what type of consumers Crisp wants to target, information was gained internally within Crisp in teams such as Branding, Marketing and Product. As Crisp is very user-centered, they set out a clear consumer profile to explain what target audience they want to reach with their service.

Most important about the target group is that Crisp is for people who get excited about food. Most of their customers are women between 30 and 45 years old, with a partner and with one child or multiple children. To specify the profile a bit further, a persona of a Crisp client is described below.

Persona

Marieke is 34 years old and has a husband and two children, a boy aged three and girl aged one. She works parttime as a recruitment manager and lives in Amstelveen.

She searches for convenience in her daily groceries. She has to, because otherwise she can't combine her job, family and social life.

She does not necessarily always has her life well organized, but she does always know where to find Crisp.

She knows what is good when it comes to food, knows what she likes to cook, what she surprises friends with and what she can feed her family with. Of course, she also tries new things every once in a while.

She finds her own balance in price and quality. On average, she knows what milk and a bag of apples cost and how they should taste. Also, she can estimate when it is worth paying more for quality.



Image: Persona of the typical Crisp consumer

She does use cooking books sometimes to get inspired or searches for tips online. Also, she likes to go out for dinner but prefers inviting friends over and cook herself.

She thinks about what she buys, loves to be inspired and wants to be taken seriously.

Of course, once in a while she does her groceries at other supermarkets, but knows that Crisp offers better quality, and likes the feeling of doing good while doing groceries.

Later on, in the extensive consumer research and analysis, more will be uncovered about the consumer of Crisp; what they value, how they shop and how they prefer to use the app.

2.2.3 Collaborators

The most important collaborator that contributes to the business of Crisp is the supplier. Crisp chooses their suppliers locally, which has multiple advantages. They are selected by harvesting and producing their foods in the Netherlands. Lots of additional ingredients are added to foods to make sure they can travel longer distances. The advantage of Crisp's local suppliers is that the products only have to travel a short distance and therefore don't need so many additives. Also, Crisp is able to order through cross-dock because of the relationship with and the locality of the suppliers. Cross-dock means they will order products from the direct demand of the consumer, meaning they only have very small stock.

Compared to other supermarkets, the products that need to travel to Crisp's customers go almost directly from farm to fork. In the supply chain of the current supermarkets, food needs to come from further, which means it needs to be shipped first and afterwards transported to the distribution center (figure 8.1). At Crisp, this step of shipping is overcome as the products can travel to the distribution center directly (figure 8.2). This saves a lot of time, which bears opportunities for a more flexible and adaptive way of supplying products to Crisp.

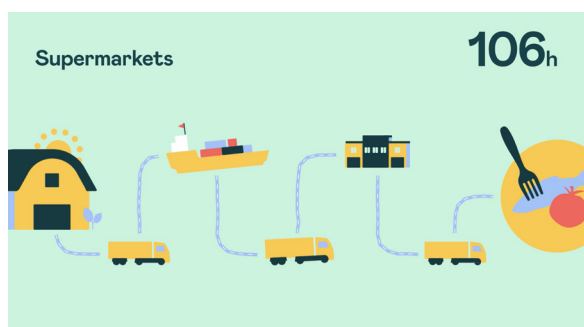


Figure 8.1: Traditional supply chain (Crisp figure)

From an interview with an assortment expert within Crisp, information was obtained on what criteria are set for suppliers of products. To become a collaborator of Crisp, suppliers have to fit a clearly identified sourcing strategy.

The following four focus points have to be met to become a collaborator at Crisp:

1. Distinctive in taste and experience
2. Convenient and straight forward
3. Good food without a fuss
4. Accessible prices & healthy margins

All products in the assortment of Crisp are based on the above-mentioned sourcing vision, which results in a narrow but high-quality assortment.

When collaborators meet the above-mentioned strategy, a list of criteria is discussed internally in which they investigate whether the supplier matches Crisp. Some factors of this criteria list are for example: perception of taste, origin, season, availability and packaging. Also, the assortment team values a good communication and collaboration with their suppliers. To illustrate what kind of collaborators, or suppliers, Crisp wants to attract, four personas of suppliers are described on the next page.

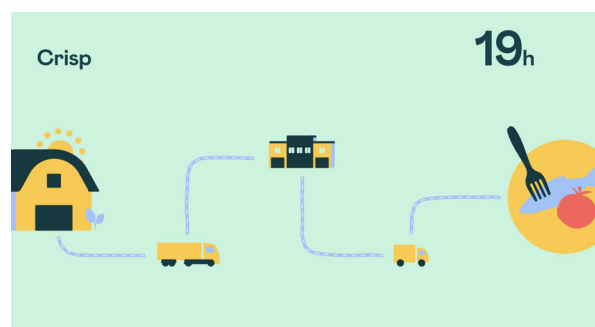


Figure 8.2: Crisp supply chain (Crisp figure)



'Visrokerij Meij' (Amsterdam)

'Visrokerij Meij' carefully salt its fish and smokes it with real wood the old-fashioned way, which creates a smoky taste that is subtle and unique.

Brandt & Levie (Amsterdam)

'Brandt & Levie's' goal is to inspire you to eat better meat. Three chefs discovered their shared passion: making the most delicious sausages from sustainable meat.

MisAmores by Constanze (Amsterdam)

Every Sunday, Constanze helped her Italian grandmother knead the pasta dough. Years later, she started her own cooking studio in the Pijp.

Bakker Hartog (Volendam)

Whole wheat flour has been grinded in their own mill for over 100 years. This flour is the basis for the whole wheat bread in which only natural raw materials are processed.

From the internal company, consumer and collaborators analysis, several strenghts and weaknesses can be interpreted.

Strengths

- Crisp offers high-quality, fresh and local food and a "taste experience".
- They have a lot of inhouse knowledge with employees coming from several big retail firms.
- Their company is built on the crossroads between convenience (online) and sustainability (fresh products).
- Crisp has a strong brand identity, shown in graphical elements and photography.

- They are flexible in terms of technology and user (experience) design as everything is developed inhouse.
- Crisp has a direct feedback loop through customer service, where customers give input on products and design.

Weaknesses

- The assortment could be too exclusive to reach the mass.
- They have high minimum order value and relatively high delivery costs.
- Crisp is not extremely flexible in their delivery yet.
- You have to stay home a certain time in order to receive your groceries.

2.3 External analysis

In order to define the opportunities and threats in the environment, external analysis is conducted where the competitors and context of Crisp are researched.

2.3.1 Competitors

It is nowadays rare for a company to maintain long-lasting advantage (Gunther McGrath, 2013). To stay ahead of competition, according to Gunther McGrath (2013) companies need to constantly develop new strategic initiatives, building many transient competitive advantages at the same time. All those temporary advantages as a whole can keep making sure a company can stay competitive in the long run.

In order to define the competitive advantage of Crisp as a startup, it is important to define what a startup actually is. According to Ries (2011) a startup is “a human institution designed to deliver a new product or service under conditions of extreme uncertainty”. An important thing to stress is that startups are surrounded with uncertain environments. In order to build those many transient competitive advantages, Crisp needs to innovate continuously.

A competitor analysis is necessary because a company can't effectively compete when they don't know their competition. When Crisp wants to differentiate from other businesses, they need to analyze what the competition already does.

Direct competitors are physical or online supermarkets, such as Picnic, AH and Ekoplaza, but also local markets or specialty food stores serve the same purposes.

Indirect competitors of Crisp that can be looked into are for example Marley Spoon and Hello Fresh. These company's also sell food, but provide another service compared to a supermarket.

To analyze the competition further, two methods are used: the strategy wheel and the competition axis.

Strategy wheel

A strategy wheel is a clear visual representation of the company's competitive advantage (Van Boeijen, Daalhuizen, Zijlstra & Van Der Schoor, 2013). It represents a company's competencies and how they score on each competence. It is applied in the beginning of the process of new product development to define what the company's strategic strengths are. These factors are also measured for competitors, to create a clear understanding of the strategic strengths of the company in comparison to its competitors.

To compare competitors of Crisp, the website Booschappenspot.nl was used to decide on factors and analyze data of supermarkets in the Netherlands. In figure 9, the strategy wheels the main competitors are shown.

From the strategy wheels can be concluded that the assortment of other online players is bigger and broader. These supermarkets are 'one stop shops', meaning they want to include as much in their assortment as possible to meet all daily consumers' needs. Crisp on the other hand, focusses more on quality and therefore the assortment is kept more narrow, as not every product meets their quality criteria. Also, looking at the wheels it can be shown that others score higher on delivery costs, which means they deliver to your house for a lower price.

When it comes to convenience, Crisp scores very high. The focus of their application development is user-centered, which strengthens the ease of use. Also, looking at speed, they have a high score compared to the competition, as Crisp claims to deliver groceries the next day after six o'clock. Lastly, the quality of Crisp is higher compared to competitors, as this is one of their main focus points.

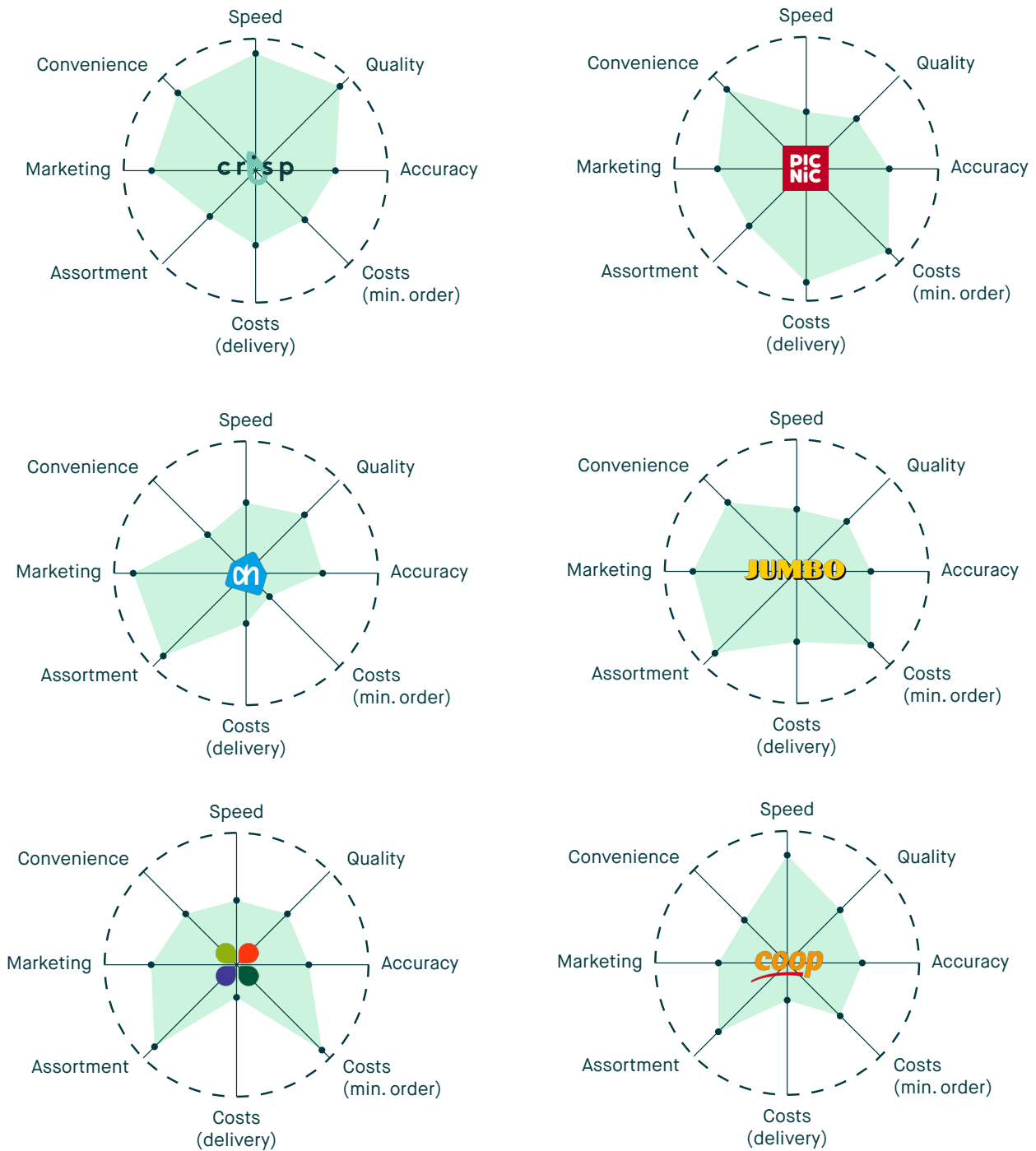


Figure 9: Strategy wheels of Crisp and its main competitors (own figure)

Competition axis

The competition axis is also known as a perceptual map and helps you to identify the position of the competitors in relation to your own business (Athuraliya, 2020). Two determinant attributes need to be selected, which are serving as the axis the competitors are compared on. These attributes need to be important aspects of the companies that consumers base their decisions on. By rating the main competitors of Crisp, you will end up with an assigned place on the grid for each competitor. This grid, or this competition axis, will give a quick overview on where each competitor stands compared to one another.

To map the competition, attributes were chosen to define whether the supermarket sells online or offline and whether the supermarket has a broad (and therefore more standard) or a high-quality assortment. From the earlier conclusions, researched during the strategy wheels, emerged that most competitors have broader assortments and do not specifically focus on quality. The ones who do so, act mostly in offline environments. Therefore, Crisp is in a unique position selling a high-quality assortment online. This focus can potentially be used to extrapolate and can contribute to increase retention.

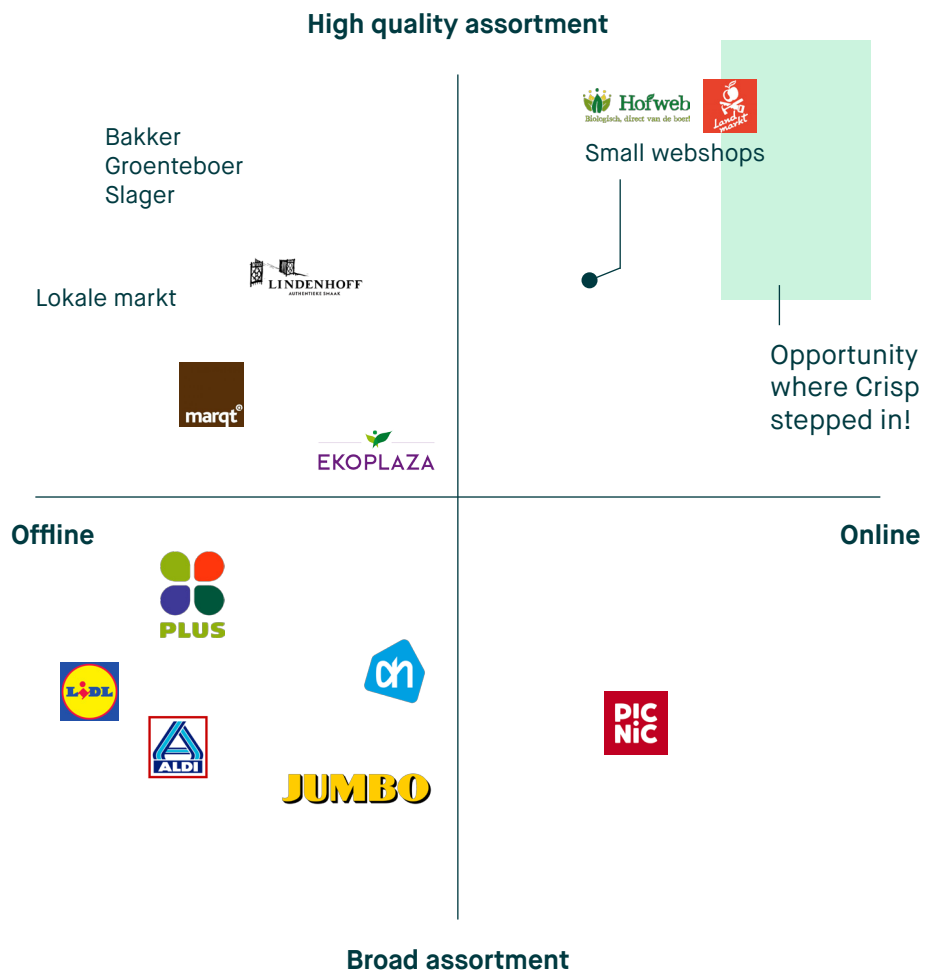


Figure 10: Competition axis of (online) supermarkets (own figure)

2.3.2 Context

Within the context analysis it is investigated which trends will be relevant to innovate upon in the application. The trends will be gathered, categorized and selected according to several creative methods. In the end, they can be used as opportunities for the search areas that need to be defined.

Researched by the founders of Crisp, food is a category within retail where most money is spent on yearly. Although a lot of profit is earned from this industry, still a very small percentage of the products in this sector are sold online. This means many opportunities lie within the movement of this business towards online. That is why trend analysis is conducted in an online context in order to find important trends for Crisp to pursue.

Trend research combines intuitive observations from the designer and strategic scanning of the environment (Simonse, 2017). Through design research, designers uncover trends that are made by people. Some designers only rely on their intuition, but it is encouraged to back this intuition up by sources before calling an observation a trend (Simonse, 2017). Therefore, two techniques are used to gather trends: strategic trend scanning and creative trend research.

Strategic trend scanning

Strategists introduced 'environmental scanning', which means: "the systematic scanning of an organization's business environment for relevant information" (Aguilar, 1967). This technique is also called 'strategic trend scanning'. The goal of this method is that businesses do not miss out on signs from possible changes in the environment. A popular technique to craft trends is the DESTEP method. Trends within Demographic, Ecological, Social, Technological, Economic and Political contexts are gathered and researched, all

being part of the Macro environment (Van Vliet, 2010). These aspects can influence the organization and might have an effect on Crisp. Also, these insights could be used to prepare for changes in the environment. Therefore, it is important to conduct a DESTEP analysis and gather insights from Crisp's external environment.

As a conclusion of the strategic trend scanning technique, a shortlist of trends derived from the DESTEP analysis that could have an effect on the food e-commerce business that Crisp operates in is shown. The most important trends have been selected as focus points for the online supermarket environment. The full list of trends that has been gathered can be found in the appendix (appendix 4).

- D** Around 68% of the elderly (75+) are online.
- D** The Netherlands is a unique testing ground for smart mobility solutions.
- E** Increase in profit in the food sector.
- E** The younger the shopper, the more they are willing to pay for delivery.
- S** Instore shopping remains important and experience is the key.
- S** Dutch shoppers have strong bias towards A-brands.
- T** DIY AI: AI is made available to non-experts.
- T** Personal profiling of consumers by analyzing their social profiles will change marketing.
- E** The Netherlands has smaller material footprint and is recycling more than EU average.
- P** Climate and health care are the most important political themes for Dutch inhabitants.

Creative trend research

Besides strategic trend scanning, there are other techniques used in order to gather trends which can be relevant to consider for Crisp. The second method used to immerse in trends is 'creative trend research'.

Creative trend research is defined as: “the act of understanding in combining and unifying the isolated data of sensation into a recognizable whole of a trend” (Simonse, 2017). By capturing visual and textual signs and scanning areas of interest, designers use intuition and perform creative research to define how people do their jobs and live their lives (Tovey, 1997). It is inevitable to mention that this is a very relevant source for product innovation and new product development for Crisp.

In figure 11, four techniques for creative trend research are presented. The framework is based on intuition and synthesis. Intuition helps the researcher to conceive a new trend, bringing together sensed or memorized information (Simonse, 2017). In this creative trend research, only memorized intuition is used to create trends, as sensed intuition usually is done over a longer period of time. The two methods that, besides the DESTEP analysis already conducted, are used to collect trends are Trend Topics and Trend Patterns.

Trend Topics technique

The Trend Topics technique relies on visuals, which are clustered and thematized in the identified trends.

First the visual information is captured, and afterwards the trend topics are created. A decision grid is used for prioritizing and rating the trend topics in order to drop, park or pursue them (Simonse & Hultink, 2017). The grid can be used to make strategic decisions for which trend to select and implement in the application of Crisp. Trend topics are rated on their impact on the user and on their innovation urgency.

For the Trend Topics technique, a step by step approach is used to gather trends. In the first step, trends are captured on the internet, where innovative images of the supermarket industry are gathered. In the second step, trend topics are created by clustering images that have similar elements. The clusters are arranged and placed on the decision grid. Five trends that have highest impact on user value and have a highest innovation capability fit are selected.

- Virtual walls
- Future shopping (e.g. voice feedback and smart scanning)
- Autonomous pick up points
- Experience stores
- Refined warehouse logistics

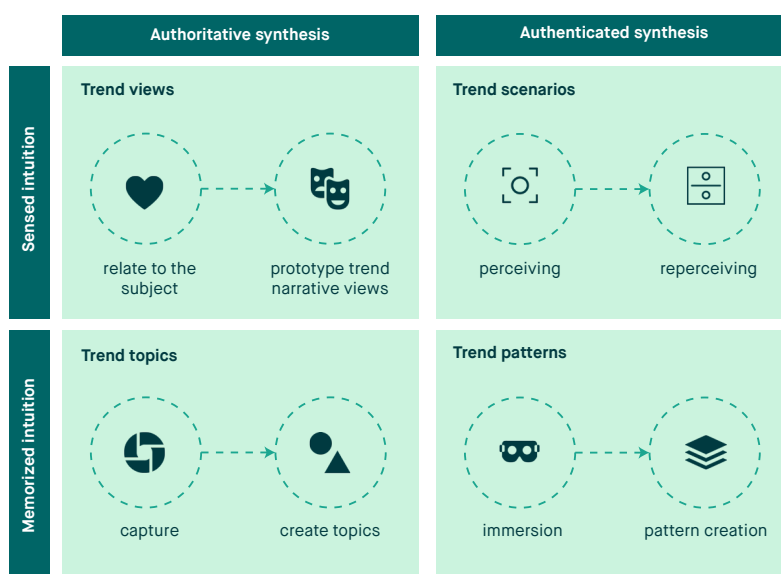


Figure 11: Creative trend research overview (Simonse, 2017)

The full Trend Topic activity and the visual clusters that were made can be found in the appendix (appendix 5).

Trend Patterns technique

The Trend Patterns technique includes an intensive immersion in the context or the area of interest and the synthesis of creating trend patterns from these different pieces of evidence (Simonse, 2017). According to trend researcher Caspersen (2016), trend research is based on memories of earlier experiences. By immersion, these memories could be triggered and eventually trend patterns can be recognized.

First, a mind-map is made of the area of interest to collect everything that is known about the topic. Afterwards, several online platforms are used to immerse in trends that have a relation to online grocery shopping retailers.

In the appendix, a longlist is documented of all the conclusions drawn from the immersion phase (appendix 6).

After immersing in the field of online supermarkets, the patterns are created. Pieces of information are linked, clusters are mapped and finally, trends are identified. There are four main trends uncovered in all the data that was gathered.

- Personalization: smart marketing & AI shopping convenience
- Doing good: food forward & food for good
- Engagement: immersive contacts & foodies for foodies
- Transparency: shortening the chain & information is key

A full overview of the Trend Pattern technique and the patterns that have been identified can also be found in appendix 6.

From the external context and competitor analysis, several opportunities and threats can be interpreted.

Opportunities

- Orders can be personalized or regulated to reach more convenience.
- Consumers can be inspired about what to eat by Crisp, as they are food experts.
- The online environment of Crisp can be enhanced with physical experiences.
- Routing, and therefore delivery, towards clients can be optimized.
- The relationship with the local supplier could be stressed for more engagement.
- Crisp can be more transparent about the (ingredients of) products.

- 'Doing good' can be a bigger focus point, meaning contribution to a better environment by ordering Crisp has great chances.

Threats

- Crisp could lose consumers to other supermarkets that offer broader assortment and cheaper products.
- Crisp is not a one-stop-shop.
- Suppliers are not in contract to only sell at Crisp, which could cause them to sell their products to the competitors.
- The highly competitive environment of the food retail industry is something to keep an eye on.

2.4 Search areas

In order to conclude the most important search areas for new product innovation for Crisp, all strengths, weaknesses, opportunities and threats coming from both the internal and external analysis are brought together in a SWOT diagram (appendix 7). Four main themes, that can be linked to the patterns uncovered in the trend analysis, are concluded as the search areas for new product development for the application of Crisp.

Looking at these search areas in more detail, evidence was found in the separate analyses that were conducted, proving that these innovations are not only promising opportunities to grasp, but also match the company's strengths. Qualitative research techniques will show which of these four search areas or innovations will fit the consumer best. For every search area a hypothesis will be developed which will be evaluated and tested with the consumers of Crisp. In the next chapter, consumer research and analysis uncovers which innovation is most promising to develop at Crisp.

Transparency

- Being more transparent about the products and stress the relationship with suppliers is an opportunity.
- Nowadays, information is key. By shortening the chain, the food industry can be more sure about the product information that is given.
- Food miles or production processes can be explained more in the application as Crisp has all this information from suppliers already.
- Due to the online environment Crisp is operating in, they have the possibility to be very transparent through their application.

Engagement

- Enhancing the online environment with a physical experience is an opportunity.
- Foodies can inspire other foodies and offer human experiences to give consumers a reason to stick with Crisp.
- Relationships between suppliers and Crisp can be shown in deeper detail.
- As most of their competitors with a high-quality assortment also have physical locations, it could be interesting to research this need.

Doing good

- Opportunities for focus on 'doing good', as company's vision and assortments fits perfectly.
- Every player in the food industry realizes that we are moving towards better businesses. Crisp can touch upon this more.
- High quality and good food without a fuss are aims for the assortment of Crisp, which is something they can optimize.
- As the products of Crisp are very local compared to competitors, they can try to make consumers retain through this.

Personalization

- Personalizing and regulating orders or optimizing client routing to reach more convenience are opportunities.
- By gaining deeper consumer understanding, targeting can be done more specifically.
- Products can be sourced even more locally to make sure consumers feel more personally attached to Crisp.
- To improve convenience, Crisp could try to enhance a personal relation with the consumer by offering personalized experiences.

Search areas



Transparency



Engagement

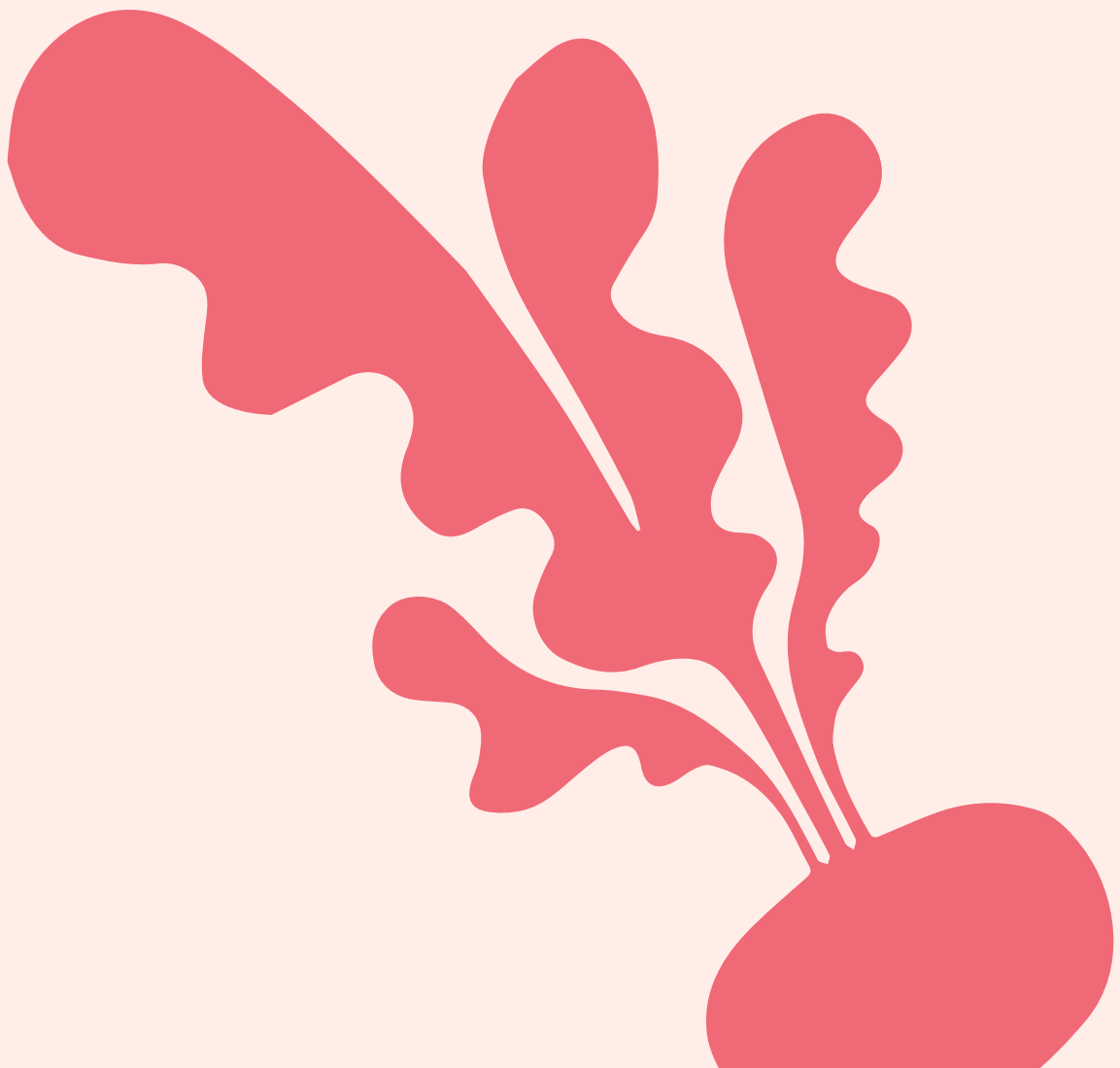


Doing good



Personalization

3. Design brief formulation





In this third chapter, extensive consumer research will be performed by conducting interviews. Deeper understanding will be gathered about the online shopping process and the Crisp consumer in specific. The search areas defined in the previous chapter will be tested, and during analysis of the interviews a grounded theory will be developed which will define most important factors of online shopping. This grounded theory will be used as a basis for design brief formulation.

Content

- 3.1 Introduction
- 3.2 Qualitative consumer research
- 3.3 Grounded theory
- 3.4 Design brief

3.1 Introduction

In this phase, the search areas that were concluded from the internal and external analyses in the previous chapter are tested and validated through extensive consumer research. This consumer research is done through using qualitative interviewing techniques next to quick prototype testing. First, some more literature is provided on consumer adoption as a background for the consumer research. Understanding consumer adoption of new technologies and innovations will most likely contribute to increase consumer retention of the digital grocer Crisp.

Consumer adoption

In a research of GfK on the future of e-commerce (GfK, 2017) it is concluded that currently non-users do not expect to buy groceries online in the future. They find it hard that they cannot see the groceries, find it more fun to shop in store or never even thought of doing grocery shopping online. Also, current non-users believe that it is not convenient to stay home for the grocery delivery.

But when the current trend of active consumers keeps growing the same way, it will grow towards 6% in 2020. This means that the traditional physical supermarkets will make a loss. More and more leading consumers find traditional stores less important, and don't find physical shops an important factor while consuming. With this perspective on doing groceries, leading consumers can inspire a lot of other potential consumers to act similar.

As mentioned earlier, a few trends have a direct effect on users. Caused by demographic transition, older people are educated to buy online more and more. This means the target group is getting bigger. Consumer habits change as they are for example more influenced by social media platforms online. And through digitalization it is made possible to pay mobile. All these factors have a positive effect on the increase

and rise of online grocery shopping.

When looking at Rogers (1962) research, it is clearly proved that only a small amount of people will adopt innovation immediately. In figure 12, a bell curve is shown, which illustrates five stages of adopting a new innovation. This illustration is known as the 'technology adoption curve', derived from Roger's theory on 'diffusion of innovation'.

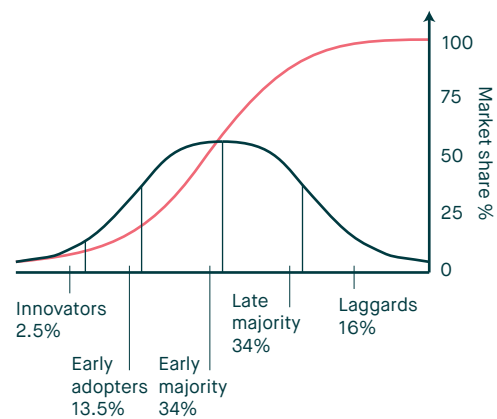


Figure 12: Technology adoption curve (Rogers, 1962)

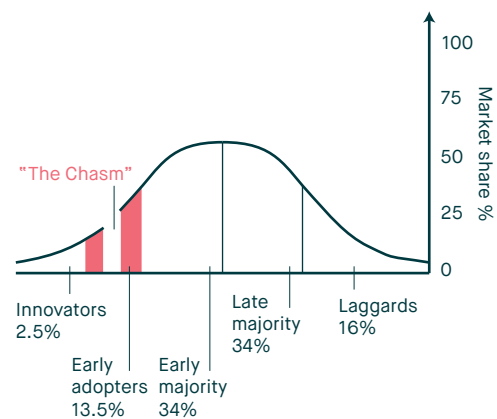


Figure 13: Technology adoption cycle (Moore, 2002)

When we take a closer look into the technology adoption cycle, we see that Moore (2002) elaborates further on the model of Rogers (1962). He stresses “the chasm” that occurs between the early adopters’ stage and the early majority stage (Moore, 2002). According to Moore it is important to cross that “chasm” in order to make sure your new product is accepted (figure 13). For an early startup it is still very relevant and important to look at the early adopters closely, as this is still the audience they need to convince. Therefore, this model is used as a base for the consumer adoption of the new product innovation at Crisp.

As Moore (2002) stated it is very important to take a close look to the early adopters as these are the consumers that need to be convinced of your service first, qualitative research is conducted amongst Crisp consumers who are ordering their weekly groceries at Crisp. In the next chapter it is further explained what needs to be researched amongst these Crisp customers and what other potential target groups will be interviewed to gain more information on the design brief.

3.2 Qualitative consumer research

In order to understand the consumer, qualitative consumer research is used. This method helps the researcher to understand what people say and do and it helps to understand the social and cultural context of the consumer (Myers, 2009). By qualitative research methods, the researcher has the benefit to emerge in the context that decisions and actions take place. As for this research project it is important to understand the consumer's motivations, reasons and actions for retaining or not retaining to grocery shop at Crisp in an in-depth way, qualitative research is the most effective method (Myers, 2009).

Goal of the consumer research

In order to come up with a design that enhances the retention, consumer research is done to understand the deeper meaning of their (online) shopping process. By using interviewing techniques, it is researched what innovation could suit for new product development. The main research question for this qualitative research is formulated.

What innovation could add value to the grocery shopping experience of Crisp, integrated in the application, to enhance retention?

To describe the preparations, set-up and process of the interviews that were conducted during the consumer research, the following is discussed in more detail.

- 3.2.1 Sample
- 3.2.2 Method
- 3.2.3 Hypotheses
- 3.2.4 Prototype
- 3.2.5 Process

3.2.1 Sample

The selection of the interviewee sample is an important component for qualitative research design (Robinson, 2013). Robinson (2013) describes a four-step approach towards sampling for interview-based qualitative research. First, a sample universe needs to be defined. Secondly the researcher needs to decide on a sample size. Afterwards a sample strategy will be selected. And lastly the sample needs to be sourced.

Defining a sample universe

First, the totality of persons, also called study population, needs to be defined. This is done by deciding on homogeneity or heterogeneity and setting criteria for inclusion and exclusion. For this study, a heterogeneous sample was chosen, as commonalities that will be found while analyzing are more likely to be generalized (Robinson, 2013). For sampling, attention should be paid to the variation in demographic and geographical parameters of the sample.

Deciding on sample size

Usually, instead of a fixed number, a sample size range is given, having a minimum and maximum (Robinson, 2013). For this study the minimum of the sample size was set at 8 participants, and the maximum was set at 15 participants.

Selecting a sample strategy

For this project, a purposive sampling strategy is used to ensure that particular categories of cases were included in the final sample (Robinson, 2013). This strategy is used because it is assumed that the certain different categories of grocery shoppers will have a different perspective on the topic that is researched. But besides starting with a specific sample, also theoretical sampling is used as a strategy.

In order to develop Grounded Theory from the research, the sample evolved during the research to build in extra heterogeneity (Strauss, 1987).

Sourcing sample

After deciding on the sample universe, the sample size and the sample strategy, the researcher needs to source the participants. It is important to watch out for self-selection bias (Costigan & Cox, 2001), meaning that participants do need to fit the criteria set in defining the sample universe. Participants who joined the study from within Crisp were recruited from the customer database and were asked by email. Other categories of cases that participated to the study were recruited via own (second line) network and also asked to join the study by email.

Eventually, according to the theory of Robinson (2013), the following four groups of participants were selected for the qualitative study.

- Retaining Crisp customers
- Non-retaining Crisp customers
- Non-Crisp customers (online)
- Non-Crisp customers (offline)

The Crisp customers that are interviewed are selected from the several segments where Crisp divided their customers amongst. The categories are based on the different stages a customer can go through. Therefore, it is called Customer Lifecycle Management (CLM). In figure 14, the CLM for Crisp customers is shown. The four sample groups and their consumer behavior are explained in more detail below.

Retaining customers

Confidential

Confidential

Figure 14: CLM overview at Crisp (Crisp figure)

Confidential

Non-retaining customers

Confidential

Non-Crisp customers (online)

In order to make comparison to the behavior of clients that online grocery shop at Crisp, customers who shop at another online grocery shop are also interviewed. To compare the customer of Crisp with a direct competitor also delivering groceries home by ordering through an online app, knowledge on retention can be gathered. By gaining insights on the behavior and reasons for retention at another online supermarket, competition is analyzed and understood which can be potentially used in new product development for Crisp.

Non-Crisp customers (offline)

The last customer group that is analyzed consists of people who do not have an online shopping routine yet, but still shop at their traditional supermarket. To get a complete overview of all possible contexts of customers, these 'traditional shoppers' are taken into account as well. It is valuable to understand why they don't grocery shop online yet, and what innovation could potentially convince them to do so in the future.

In each category, to reach a heterogenous sample, a spread is made into different geographical locations. This to make sure that conclusions can be drawn no matter where people live. Customers are interviewed living in Amsterdam, in other big cities, but also customers living outside the city in a village are interviewed. Next to this, variation in demographic parameters, different life stages and family compositions are considered. By analyzing several user contexts, the risk of developing an irrelevant innovation is reduced.

3.2.2 Method

The path of expression (figure 15) is a common method used during interviews. It is a process of reasoning about a topic, moving from the present, through memories in the past, to the future dreams (Sanders & Stappers, 2012). It guides the time course of a creative process. The method helps to let the interviewee be aware of what happens in the present (1), then to recall and reflect on the past (2), which supports the person to think of the underlying layers of their thoughts (3). This method makes the interviewee explore their aspirations for the future more easily (4), which can be of good use to develop a new product innovation for Crisp.

The interview is structured according to this method. First, some more general questions are asked to get more information on the profile of the user. Afterwards, the current (online) grocery shopping process of the consumer is elaborated on. Followed up by some questions about how this grocery shopping process went when the interviewee was younger. This to hopefully make sure that the interviewee can argue their future vision about grocery shopping more easily. This vision on the future, which is guided by four hypotheses matching the search areas uncovered earlier, can be used to define what innovations Crisp should implement in the application to enhance retention.

The specific questions can be found in the attached interview guide file shown in the appendix (appendix 8). The included hypotheses in this interview guide that are to be validated during the consumer interviews are explained in more detail in the coming paragraphs.

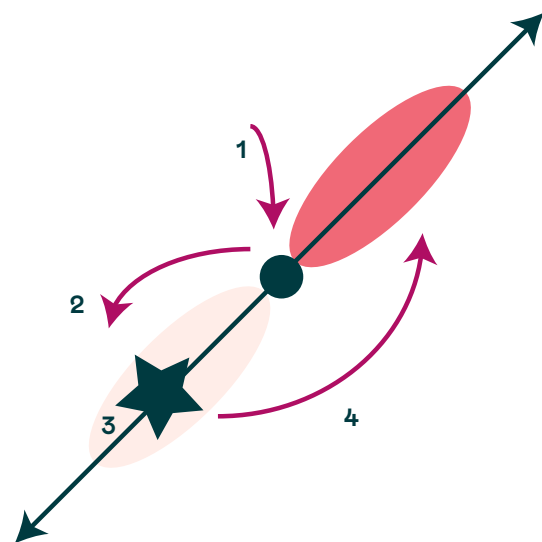


Figure 15: The path of expression (Sanders & Stappers, 2012)

3.2.3 Hypotheses

Through the conclusion of the internal and external analyses conducted in the previous chapter, four main search areas are constructed which are defined in four hypotheses that are validated during the consumer research. To define the underlying meaning of the developed hypotheses for the search areas, the Five Times Why theory of Sakichi Toyoda is used (Mulder, 2012). This LEAN analysis tool helps to define the deeper meaning of a problem or situation. To ask the question 'why?' five times after each other, you can define the real cause of the certain problem or situation step by step. Related to this research, this theory is used to clearly formulate the innovation theme and understand the motivations, reasons and actions of consumers regarding these hypotheses.

After formulating the hypotheses in more detail, it is described how the search area can be tested within a prototype. Afterwards these four potential prototypes, belonging to four different hypotheses are evaluated and concluded is what can be designed to be tested with the consumer in the qualitative research phase to gain more feedback on the functional aspects of the application in relation to consumer retention.

Hypothesis 1: transparency

Customers would like to know more details about where the products come from and what specific ingredients are used in order to have more detailed information of what they consume and feed their families.

- Why? Customers want to be more aware of food possibilities and consider their local and global options.
- Why? Customers don't trust all the information they are given about food.
- Why? Product information is ruined by big global producers who don't give all the information about the products or

don't give trustworthy information.

- Why? Big global producers have such a large scale, with a lot of different steps within the supply chain of a product, which is the reason for losing information about products.
- Why? Big scale supermarkets make it impossible to give information about products. Small scale supermarkets like Crisp can take advantage of this.

Reformulated hypothesis

Customers have mistrust in the product information that is provided to them. That is why consumers want Crisp to be transparent about their products (ingredients, origin, production methods, etc.). By building a close relationship with suppliers, and showing a lot about this relationship in the application to customers, they can be ensured that Crisp provides them with trustworthy information about their products.

Potential prototype

A sticker with a (QR) code can be put on the product so that customers can scan this sticker in order to have more information about the product. Here they can find all the ingredients, origin, production methods and information about the supplier. Also, it could be made possible to show a map where the supplier is situated, and where all other suppliers Crisp has relationships with are located. In the end, there can also be a button where it is possible to reach service, assortment expert or the supplier with a question about the product if the customer has any.

Hypothesis 2: engagement

Consumers would like to be more engaged with supermarkets in order to improve the grocery shopping experience. A physical environment could add value to an online supermarket like Crisp.

- Why? Human experiences will make Crisp customers' more attached.

- Why? Crisp employees inspiring consumers (foodies for foodies) could have a positive effect on consumer behavior and returning to order groceries at Crisp.
- Why? Inspiring others in an offline environment will offer more possibilities than online.
- Why? The digital world has a lot of restrictions when it comes to 'experience'.
- Why? To reach a real human attachment with a consumer online is very difficult.

Reformulated hypothesis

Consumers have difficulties with being just as attached to an online supermarket as an offline supermarket, because they miss the human contact. Therefore, there is a need for engaging in an offline environment where Crisp employees could inspire consumers with for example recipes, grocery shopping tips or other food experiences.

Potential prototype

Within the application, consumers can be triggered by favorite products or recipes from Crisp employees. But these triggers aren't enough. When there is more need for 'real' human experiences, the application can inspire consumers to join cooking workshops and other food events. In addition to this, even 'virtual walls' can be developed where consumers can 'physically order' groceries on several city locations.

Hypothesis 3: 'doing good'

In order to be more conscious about food, Crisp has to help their customers to make better choices which contribute to a more sustainable environment.

- Why? Customers can't make these choices themselves and Crisp is an expert.
- Why? Customers think they are eco-friendlier than they really are.
- Why? This means the customers are more likely to act towards a better image

than to actually 'do good', because they don't really know what 'doing good' is.

- Why? 'Doing good' is difficult and not an easy option.
- Why? Doing better for the environment is not only difficult but also a political topic which is hard to understand. (Vegetarian vs. Biological: What is really better for our environment)

Reformulated hypothesis

Customers find it hard to know what 'doing good' really means. Crisp is more aware of this and can help consumers by giving suggestions that imply better choices for our environment. Crisp customers seek not only for a 'good image' when it comes to being environmentally friendly, but they want to make the best choice in terms of sustainability.

Potential prototype

In this theme, a link to the transparency theme can be made when it comes to designing a prototype for the application. When Crisp wants to be more transparent about their product information, also focus could lie on providing consumers with possibilities to make better choices. Important is that Crisp doesn't like to be a box ticker when it comes to 'keurmerken', so this should be avoided.

Hypothesis 4: personalization

Consumers would like to have a more personalized shopping experience in the application of Crisp. Products can be targeted more personally, delivery slots can be adjusted to consumers preferences and even voice feedback could help consumers personally to provide them with the right groceries.

- Why? Because consumers appreciate when brands like Crisp have a deeper understanding of their needs.
- Why? Consumers want more convenience and Crisp can help by making good use of consumer data.
- Why? Consumers want Crisp to make

choices for them in order to reach a high convenience level.

- Why? Crisp can build trust and build a relationship with their consumers by offering the right choices for them, which will increase retention.
- Why? Consumers would be open to have this 'relationship'. The personal relationship could be built with the supplier, producer, service or other people who add value to the consumer.

Reformulated hypothesis

Customers have a need for a more personal approach from supermarkets. In order to be the number one supermarket for the consumer, Crisp has to gain trust by building a relationship. This personal relationship can be built through supplier, producer, service provider, etc. In this way, Crisp will gain trust from customers which can be used in Crisps' advantage to improve convenience.

Potential prototype

Building a relationship with the customer can be linked to the engagement topic. The same approach can be used as for prototyping 'engagement', by improving the human experience online (in the application) and offline (in a physical setting).

By evaluating all the hypotheses and the potential prototypes that could be designed for gathering functional feedback from respondents, a conclusion is drawn from what prototype should be designed in the next paragraph.

3.2.4 Prototype

Next to the developed interview guide for qualitative consumer research with questions that need to uncover consumers needs when it comes to innovation for grocery shopping, also a prototype is developed. By asking questions about an actual application prototype, consumers are asked to give functional feedback on what would and wouldn't work in the app.

As stated already, four search areas were concluded from the internal and external analysis, whereas four ideas for the development of a prototype were generated from. When iterating on and conceptualizing these ideas, a lot of overlap was found in potential prototypes for the search areas. Therefore, the search areas were paired up: engagement and personalization, and transparency and 'doing good'. Two prototypes were initially sketched out. Sketches of the iterations on the interview prototype can be found in the appendix (appendix 9).

Prototype 1: Human experience to build a relationship

In the first prototype the two search areas engagement and personalization were combined. The prototype could consist of a real human experience, where a relationship and engagement with the customer is stimulated. This could have various forms as already mentioned earlier, like for example events to share recipes, or a grocery ordering 'virtual wall' in the city center. Both ideas could be facilitated in the app.

Prototype 2: Product information extension to build trust

In the second prototype the search areas transparency and 'doing good' were combined. For both search areas ideas were generated on showing more information of products in the application about origin, production method or ingredients. In

this way, by providing more information, consumers will have more trust in their supermarket. The prototype should show this extra information of products in an infographic way, so that it is interesting for the consumer to learn more about.

After discussing and validating these two prototypes internally within Crisp, it is chosen to pursue development for validating the second prototype. In terms of research possibilities, the second prototype is a more realistic option to develop and validate with consumers. Therefore, a mock-up for the second prototype is designed. Some screens of the mock-up are shown in figure 16. This figure illustrates the design of the information that could be provided to the customer about a product in an infographic format. The whole prototype can be found in the appendix (appendix 9).

3.2.5 Process

The interviewing process that was held is described in more detail. Elaboration is done on the planning of the interviews, the involvement of the sample, the software that was used, the usage of the interview guide and other presentation tooling that was used to guide the interviewees during the interview.

Planning

Planning the interviews started early in the process, to make sure the arrangement of the sample wasn't causing any trouble or delay during the project. When planning the interviews, an email to a group of retaining Crisp customers and some non-retaining Crisp customers was sent to customers that matched the requirements of the interviewee sample. As these interviews were conducted during the moment that COVID-19 spread



Figure 16: Mock-ups of the interview prototype shown to customers (own figure)

throughout the Netherlands, the interviewing process was held online completely instead of inviting customers over at the Crisp office in Amsterdam.

As described earlier in the sampling strategy, Crisp customers were targeted from the customer database. To schedule the interviews a tool named Calendly was used in an email to customers so that they could schedule the interview at a suitable time. This planning tool was not only a convenient way to make sure all interviewees were scheduled accordingly and linked to personal agendas, it also reassured the willingness of interviewees to contribute.

Evolvement of the sample

At the first mailing already five clients that order at Crisp on a weekly basis replied to contribute to the interviews, together with two non-retaining customers. Whereafter, while during already starting with these first seven interviews, the sample evolved by adding two customers who shop at physical supermarkets, two customers who shop at another online supermarket and competitor of Crisp, and two extra retaining Crisp customers. The four interviewees that were targeted outside Crisp were emailed personally. These supermarket shoppers were selected from own (second line) network and matched the target group and the other sample requirements. The two extra retaining customers from Crisp were targeted to ensure this sample was big enough to draw conclusions from. As retaining customers have a lot of experience with Crisp, they can show interesting insights on either new innovation as well as consumer retention. These so called 'early adopters' can give guidance to what is needed for customers to retain. An overview of the final sample and a summary of the participants profiles is attached to the appendix (appendix 10).

Software

As already described, the interviews had to

take place online. For the interpretation of the answers of customers, it was important to find a software where you could either hear (audio) and see (video) the customer. The software of Google Meet was used to conduct all thirteen interviews. A link was sent to the interviewees by email, which they could open in the browser of their laptop or desktop. Overall, the software that was used was quite stable and during the process there were no extreme failures which interrupted the interviews. Concluded can be that the interviewees were quite at ease using the software and it felt like having natural conversations online.

Interview guide

As mentioned earlier, an extensive interview guide was used to structure the interviews (appendix 8). The interview consisted of two main parts: validation of the hypotheses and feedback on the prototype. During the first part, where the hypotheses were tested through four themes, it was important to follow the guide closely to obtain equal results from interviewees. During the second part, where feedback was gathered on a mock-up of a first prototype, the approach was more loose. In the end, the feedback gathered on the prototype was only used to get more feeling and experience in app design. The parts of the transcripts where elaboration was done on the prototype were not used, and therefore also not coded, during the analysis of the consumer interviews and were only used for design purposes in the product development phase.

The interview guide was pretested with two respondents in advance of the interview. Questions that had closed endings were left out, and questions that were unclear were reformulated. In the appendix you will also find a scanned version of the interview guide where comments were placed next to the questions during the pretest and during the interviews (appendix 11). As a lot of interviews were held, the interview guide developed during the process and became

better and more concise towards the end of the interviewing process. Although, sometimes during the conversations with interviewees it was hard to stick to the guide. In the end the four search areas offered enough guidance to obtain equal results in terms of quality and duration of the interview.

Other presentation tooling

While conducting the interviews online via video call, a printed version of the interview guide was used as a guidance through the interview. The second part of the interview, where a prototype was evaluated, was done by means of a presentation. The slides of the presentation were shown to the interviewee through the shared screen option of Google Meet. Within these slides, the mockups of the prototype were shown, where the interviewee should base their responses on. The slides that were used to obtain feedback on the prototype, as mentioned already above, are shown in the appendix (appendix 9).

All interviews were audio recorded. After conducting all interviews, the audio records were transcribed one by one. All the transcripts of the interviews are shown in the appendix (appendix 12).

Qualitative consumer research question

What innovation could add value to the grocery shopping experience of Crisp, integrated in the application, to enhance retention?

Sample universe and size

Heterogenous sample, with variation in demographic and geographical parameters. Total sample of thirteen participants split into four different sample groups.

Sample strategy

Purposive and theoretical sampling.

Interviewing method

The path of expression was used to set up the interview guide, followed up by prototype testing for functional feedback.

Hypotheses

Four hypotheses were set up according to the four search areas (transparency, doing good, engagement and personalization) to be validated during the interviews.

Process

Interviews conducted online via video calls.

3.3 Grounded theory

After planning, conducting and transcribing all the qualitative interviews, analysis of the interviews was done by means of developing a grounded theory. First, some background of what the grounded theory entails is explained, whereafter it is clearly described how the interviews were coded, analyzed and grouped in order to develop the grounded theory. This grounded theory will eventually generate a narrative, following the needs of the customers, and will be used as a design brief for new product development.

When explaining grounded theory briefly, it can be stated that it involves the generation of categories and their dimensions, and the relationships between them. The process of data collection and conceptualization of this data is ended when categories and the relationships between them are 'saturated'. By saturation is meant that new data does not add to the developed theory (Charmaz, 2006; Glaser & Strauss, 1967; Strauss & Corbin, 1998).

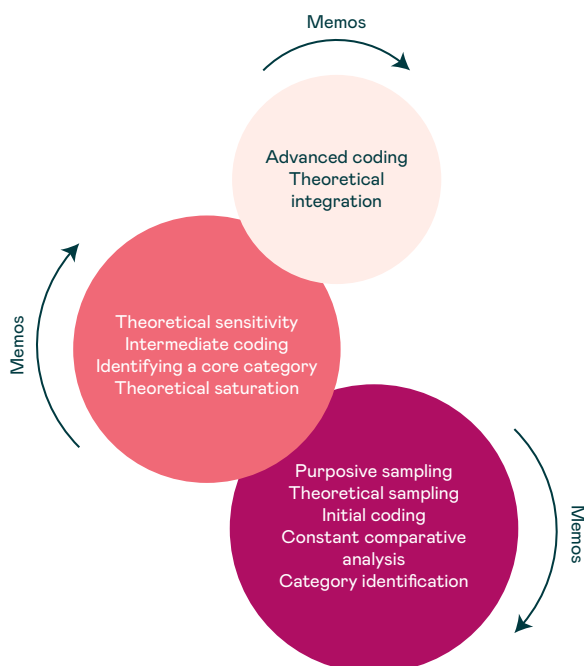


Figure 17: Grounded theory methods (Charmaz, 2006; Glaser & Strauss, 1967; Strauss & Corbin, 1998)

Initial or open coding is usually the first step of data analysis when developing a grounded theory (Birks & Mills, 2015). Initial or open coding can be explained as identification of important words or groups of words in the data that are labelled with words which are the so called 'codes'. Also 'in vivo codes' are used, which means that the important words or groups of words are themselves used as the label (Birks & Mills, 2015). In figure 17 an overview is given of several methods that are used during the development of a grounded theory. In the coming paragraphs, a few of these methods will be used and explained in further detail.

This section is split up in the following elements to describe how the grounded theory evolved.

- 3.3.1 Coding process
- 3.3.2 Categorizing
- 3.3.3 Integration
- 3.3.4 Qualitative review
- 3.3.5 Grounded theory
- 3.3.6 The storyline
- 3.3.7 Conclusion

3.3.1 Coding process

For coding the interview transcripts, the software of Atlas.ti was used to keep overview of the thirteen conducted interviews and the assigned labels. First, eight interview transcripts were coded (two from each sample group). Per interview transcript, relevant pieces were labelled while reading through the transcripts carefully. Besides the labels that were kept in Atlas.ti, a separate document of memo's was kept during the whole coding process for thoughts, impressions and ideas that popped up during coding (appendix 13).

A full overview of the coding and categorizing process is shown in figure 18.

Figure 18: Coding and categorizing process (own figure)



- 1 Conducted 13 interviews
- 2 Coding 8 interviews line-by-line
- 3 Make code groups (20 < codes/group)

While labeling codes to the first eight interviews, attention was paid to relevant words, expressions or pieces of sentence (Bryman, 2016; Brinkmann & Kvale, 2014). The following was understood by relevant.

- Repeated words or expressions
- Surprising phrases
- Things that interviewees stated as important
- When an expression is read elsewhere
- When it reminds of an existing theory/ concept
- Other expressions that are found relevant

While coding, it was important to be open-minded. Also, with keeping the end goal in mind, it was important to aim for conceptualization of underlying patterns. During coding, focus was to be unbiased, stay close to the transcripts and code plenty.

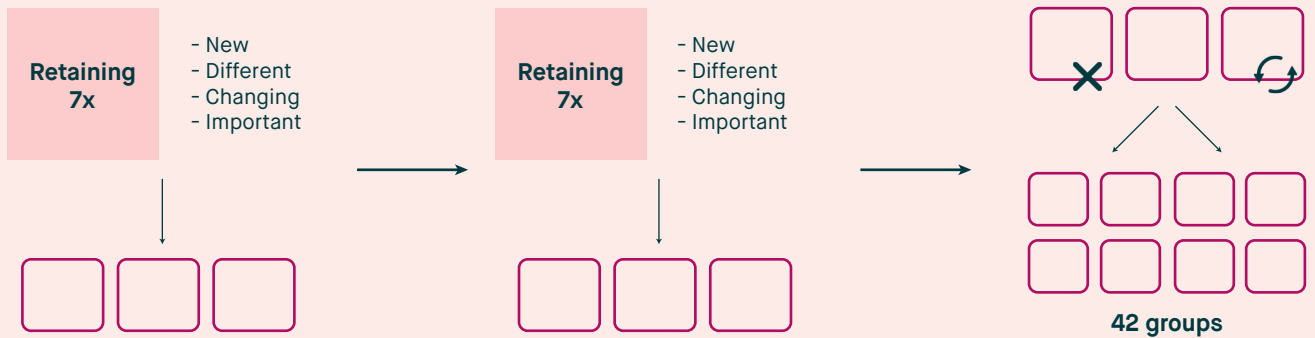
First eight interviews were read sentence by sentence and were coded with a high level of detail. Initial or open coding was used as a first step in data analysis, where it was important to use the first interpretations of the data.

3.3.1 Categorizing

After a first round of coding, codes that were used as labels were categorized into code groups. The categorization of the data is the second step towards developing a grounded theory.

After looking through the codes that were generated when coding the first eight interviews, the categorization started at the first sample group of two non-retaining Crisp customers. In total 22 code groups were generated when categorizing the codes. In vivo codes were not included in this process. As all interviews were conducted in Dutch it might confuse, and translations might cause wrong conclusions. In the end, in vivo codes can be used as extra quotations.

Also a few codes within these interviews stood out as being too different, causing them to be left out from categories. Already from this first round of categorizing the data, it can be concluded that some code groups are substantially larger than others. Later in the process, code groups will be evaluated



- 4** Code three more and group
- 5** Code last two and group
- 6** Remove, split and organize groups

by their size and could possibly be split up in new and more specific code groups.

In total, twenty-two code groups were generated after categorizing the codes labelled to the interviews of the non-retaining Crisp customers.

1. Application upsides
2. Aspects of a store
3. Assortment specification
4. Binding factors
5. Brand assets
6. Choosing products
7. Cooking behavior
8. Creativity in the kitchen
9. Dinner decisions
10. Food characteristics
11. Interviewees ideas
12. Nostalgic traditions
13. Online shopping experience
14. Part of the planning
15. Personal approach
16. Personal information
17. Reasons for store visits
18. Shopping behavior
19. Stimulates online shopping
20. Sustainability associations
21. Thresholds online shopping
22. Types of food

Three code groups that were quite large and could be split up in more specific groups later in the process.

1. Choosing products
2. Food characteristics
3. Stimulates online shopping

For the second part of the first round of categorizing, the codes from the two transcripts of the retaining Crisp customers were categorized. Almost all codes fit into the already existing twenty-two code groups. Only one of the code groups (food characteristics) was split up into two more specific code groups, as the codes within the code group had a lot of variation. The code group was split into two groups that were named 'product specifications' and 'opinions on food characteristics'.

The process of adding codes to code groups continued. When analyzing new and different codes, a code group was added, and when a code group became too big it was split into two or three more specific code groups.

When all codes (except for the irrelevant ones) we added to the code groups, the coded transcripts of the third (two non-Crisp offline customers) and the fourth (two non-Crisp online customers) sample groups were analyzed and categorized. The codes of these four interview transcripts were categorized in the same way as already described above. While categorizing, noticed was that categories that contained more codes than twenty were relatively big and should be split up in two or even three more specific code groups. After looking at all the code groups critically, the codes from the first eight interviews resulted in thirty-eight code groups with a maximum of twenty codes per group.

To continue the process, there were still 5 interviews from the sample group 'retaining Crisp customers' that were not coded yet. Decided was that first three respondents of this sample were coded, to avoid an overload and irrelevant coding. For coding these three interviews, another coding strategy was applied than for the first eight interviews. Very detailed line by line coding was not necessary for this second phase of coding. Only words or groups of words were coded when they appeared to be new, different, changing or stated as very important by the interviewee.

When roughly coding these three interviews and only coding new information, it was noticed that codes became more specific and more explanatory. Naturally, this is more convenient as these codes are categorized easier.

When coding these three interviews was finished, the codes were added to the existing code groups. The final two interviews from the sample group of 'retaining Crisp customers' were coded according to the same strategy, whereafter these codes were also added to the existing code groups. After a critical analysis of the code groups, where codes that did not match the group

were removed and code groups that were too large were split up, a total of around 600 codes were categorized in forty-two final code groups.

The final code groups, or so-called families, are listed below.

1. Application upsides
2. Aspects of a store
3. Assortment specification
4. Attributes of choosing products
5. Audience influences dinner decisions
6. Binding factors
7. Brand assets
8. Competitive advantage Crisp
9. Cooking behavior
10. Corona related
11. Creativity in the kitchen
12. Critical notes
13. Evoked feelings
14. Inspiration for dinner decisions
15. Interviewees ideas: app
16. Interviewees ideas: assortment
17. Interviewees ideas: community
18. Interviewees ideas: delivery
19. Interviewees ideas: educational
20. Negative drivers to online shop
21. Nostalgic traditions
22. Online shopping experience
23. Opinion on food characteristics
24. Part of the planning
25. Personal approach
26. Personal information
27. Planning failure
28. Planning related to products
29. Positive stimulation online shopping
30. Pricing of products
31. Product specifications
32. Reasons for store visits
33. Relevant product info when choosing
34. Shopping behavior
35. Shopping pitfalls
36. Shopping strategies
37. Sustainability associations
38. The activity of cooking
39. Thresholds online shopping
40. Types of customers
41. Types of food
42. What comes to the table

In order to continue to structure the data, the code groups were categorized in bigger groups, called super families. All code groups we put on separate post-it's to make sure there was good overview in the categorizing process. Eventually, after analysis and critical selection, the process ended with categorization of the forty-two code groups or families into seven super families.

The final super families that were made in the end of the categorizing process are listed below.

1. Who is the customer?
2. The food product itself
3. Reasoning behind store selection
4. How to go about the shopping process
5. Influential factors of choosing products
6. The store and the brand
7. Interviewee input and ideas

The final codebook containing all codes, code groups or families and super families can be found in the appendix (appendix 14).

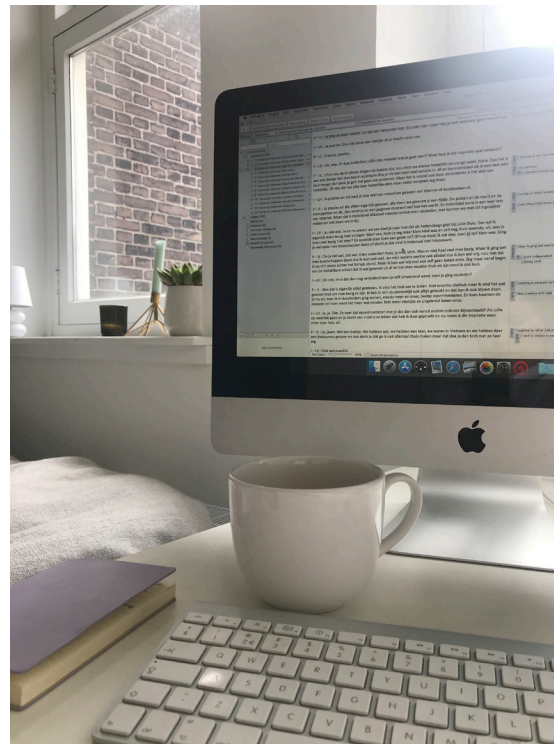


Image: Coding process in Atlas.ti (own image)

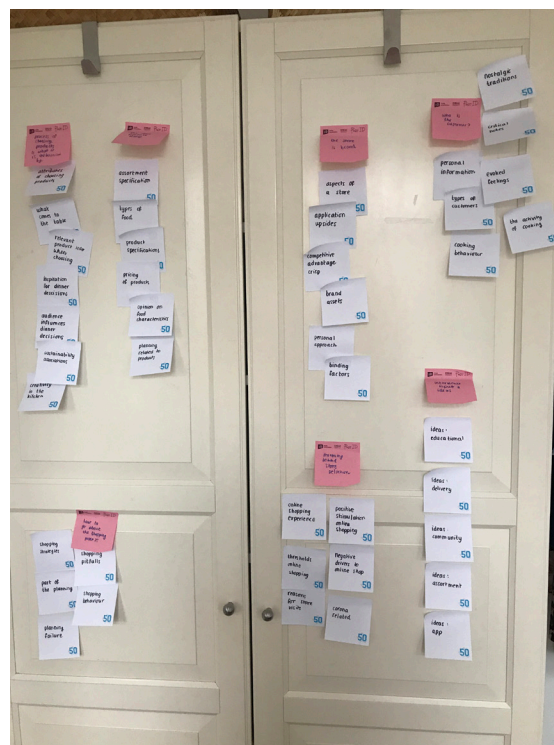


Image: Categorizing code groups (own image)

3.3.3 Integration

After following the first two stages of open and selective coding and after categorizing all these codes, the third and most critical step in developing a grounded theory needs to be performed. By the third stage is meant to think about the relationship between the categories (Urquhart, 2012). To define relationships between the super families, taking the online grocery shopping process in mind, Spradley (1979) offers a simple set of theoretical codes which are listed below. Naturally, these theoretical codes serve as an example, but do not necessarily need to be used in specific.

- Is a kind of
- Is part of/a place in
- Is a way
- Is used for
- Is a reason for, is a stage of
- Is a result/cause of, is a place for
- Is a characteristic of

In order to create a good overview of the relationships between the categories, an integrative diagram is developed. According to the terminology from Strauss (1987) this diagram is explained as a visual device that furthers cumulative integration. A few rules of thumb are described by Strauss (1987) that help by the development of an integrative diagram.

1. An integrative diagram is supposed to give a clear picture of the data, which would otherwise just be scattered information.
2. An integrative diagram should give direction to the research.
3. Integrative diagrams need to have a relationship with written memo's during research.
4. There is not one true integrative diagram, but each one should incorporate the preceding one.

5. It is important to not have numerous diagrams, but only draw another diagram if the ones already existing don't incorporate all knowledge.

Given the theoretical codes by Spradley (1979), that can be used to identify relationships and the rules of thumb that have been developed by Strauss (1987), an integrative diagram was designed (figure 19). In the appendix the other integrative diagrams that have been developed and were iterated upon can be found (appendix 15).

3.3.4 Qualitative review

According to Pratt (2009) there is lack of an accepted template for writing up the findings in the review of inductive qualitative research. Inductive qualitative research meaning the generation of new theory emerging from the data. Therefore, according to his previous qualitative studies conducted, he suggests the following for a qualitative review with high quality.

First, it is important to pay attention to what to include in your methods section. It is advised to why the research is needed, if you are building new or elaborating on theory, your reasons for the certain context, and the way you got from your data to your findings.

Secondly, show your data in a smart and organized way. Either in the body of your paper and in tables through "power quotes" and "proof quotes" (Pratt, 2009).

It is suggested to use figures to organize your thinking for clarification, and to show how you moved from raw data to theoretical constructs to represent that data.

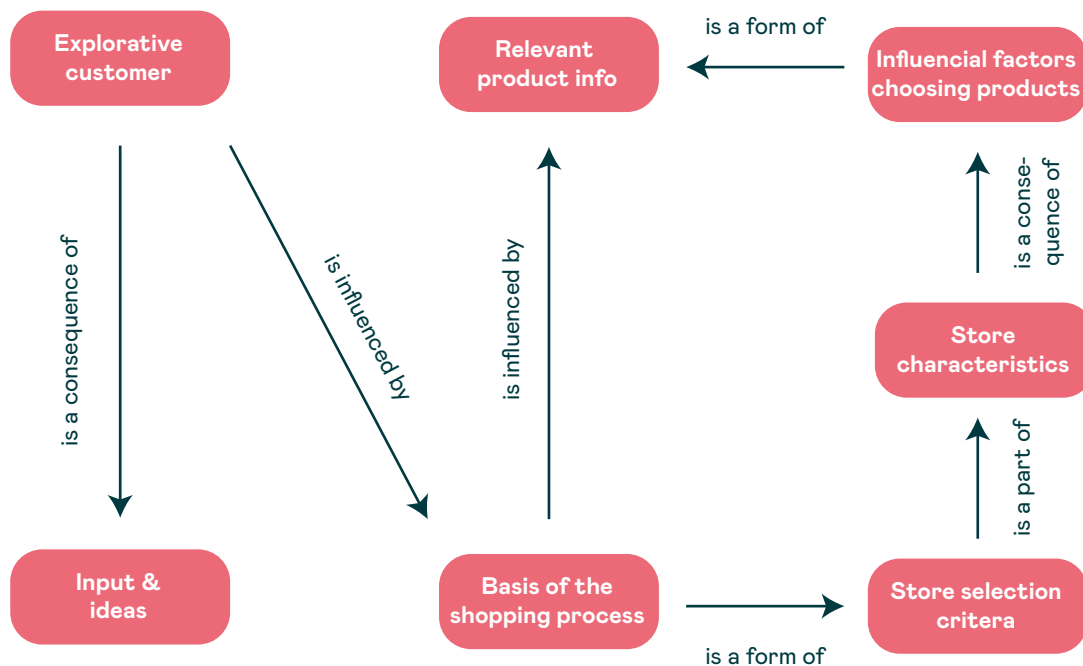


Figure 19: Final integrative diagram (own figure)

To make the conclusions understandable, create a coherent story about a figure that organizes your findings by describing the themes and explain how those fit together.

And lastly, you might want to consider to model another author who consistently publishes qualitative papers and whose style you like, as they have probably become better in writing up a qualitative review. According to this last point Pratt mentions for writing up qualitative research, for this project a paper for modelling was used as an example of organizing the data and getting more meaning out of it.

Following the structure of Kester, Griffin, Hultink, and Lauche (2011), first in the final integrative diagram it was researched which codes were most grounded in the super families. This was done to get more sense of what the super families entailed and to understand better how Crisp customers shop. Afterwards, this knowledge was used to iterate on the integrative diagrams and to develop a model of these seven

theoretical categories (or super families). This model was developed with keeping the grocery shopping process of the customer in mind, whereafter the model was named 'general model for online shopping', all done according to the structure of Kester et al. (2011).

Furthermore, for each theoretical category a table was set out explaining the meaning of that category by defining the most grounded constructs they contain. The tables specified the constructs by giving their definition and a proof quote to back this up with raw data. Also, for every construct, a link to the existing literature was made. At last there was set out a column to explain why this construct, in this context for Crisp, differentiates from existing literature. In this last column, critical analysis was done on reasons why online shopping at Crisp is different from a customer perspective. This last column is important for developing the design brief, which is done by writing a narrative.

3.3.5 Grounded theory

As a basis for the grounded theory, which is concluded as the general model for online shopping model, the integrative diagram was used. The general model eventually developed was an iteration on the integrative diagrams (appendix 15), further defining the relationships between the super families and the families also shown in the images on the left. In the model you see six columns of the super families that were defined earlier in the categorizing process. Eventually, the two super families 'who is the customer?', which is specified as 'explorative customer' and 'the store and the brand', which is specified as 'store characteristics' were combined in one theoretical construct being 'influential factors shopping process'. This, which will be explained in more detail, is the fundament and the start of the online shopping model. Further on, the other five theoretical constructs followed directly from the super families mapped in the integrative diagram. The names were sometimes adjusted to make it more specific for Crisp.

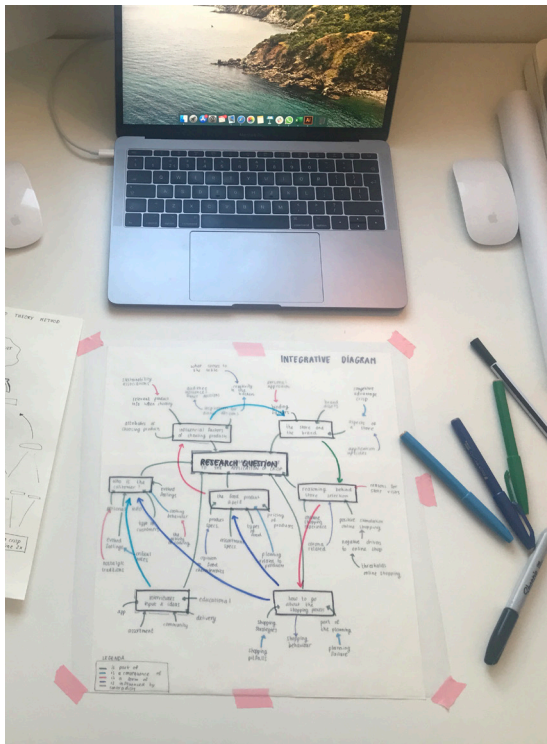


Image: Theory integration (own image)

The general model for online shopping is the grounded theory developed from qualitative research and is shown in figure 20.

The tables following the general model for online shopping elaborate further on the theoretical constructs. Following the approach of Kester et al. (2011), all the theoretical constructs or super families, and the constructs or code groups that belong to these are further explained in more detail.

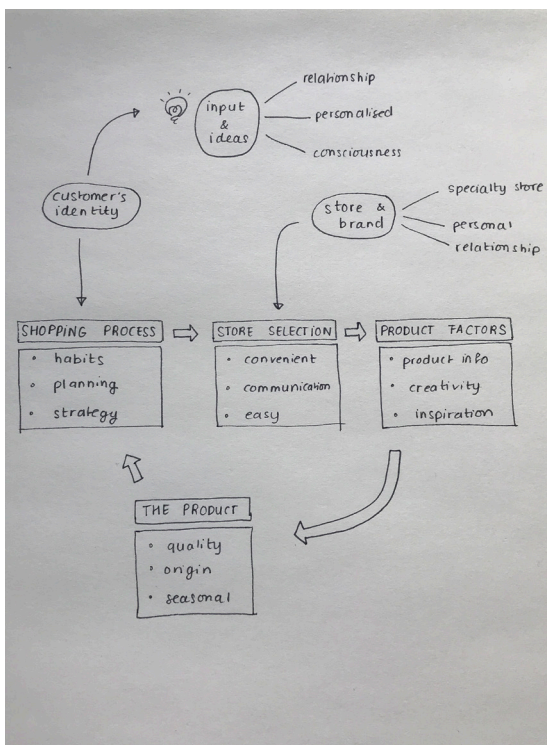


Image: From diagram into process (own image)

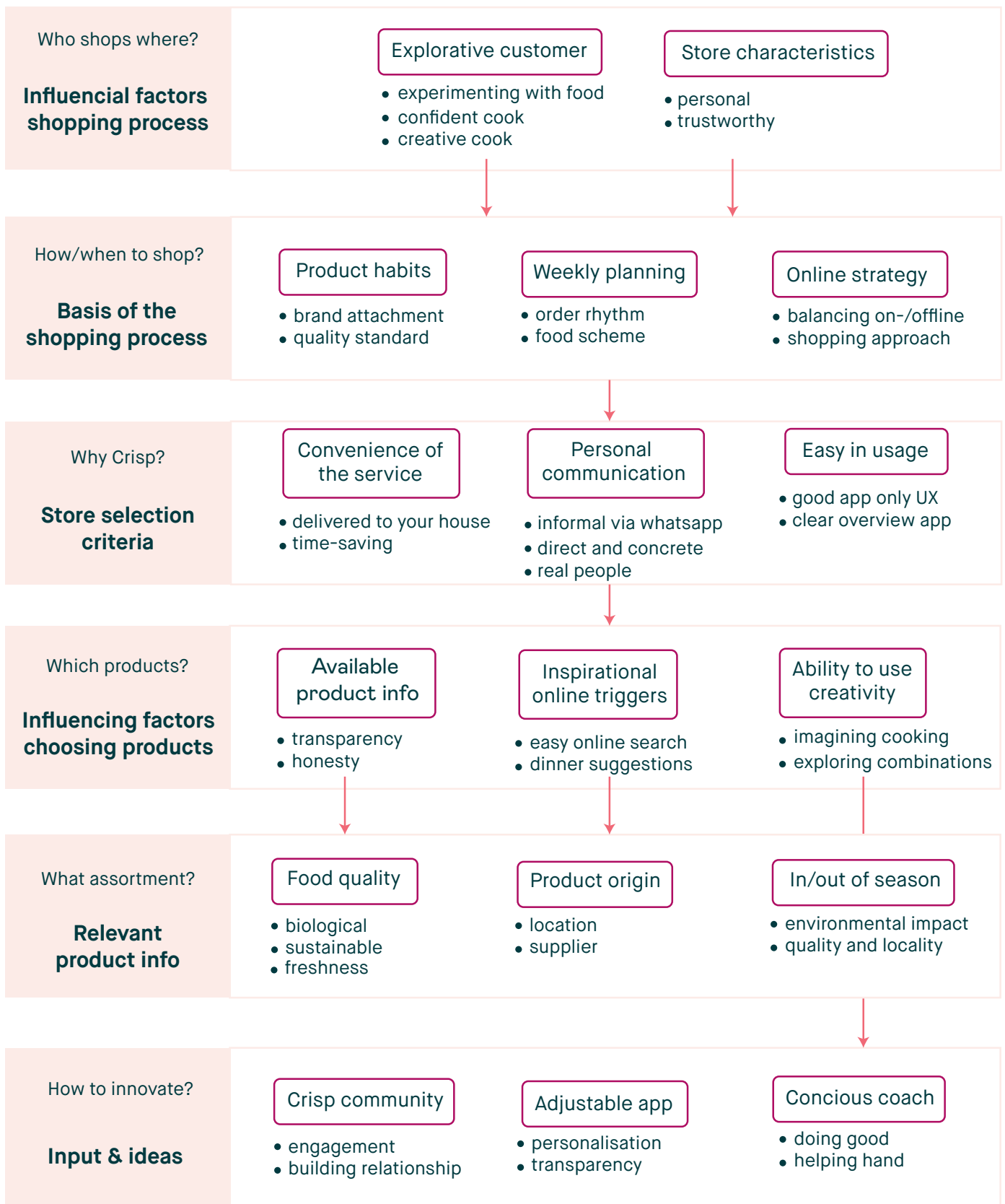


Figure 20: The general model for online shopping (own figure)

Tabel 1. Influential factors shopping process

Construct	Explorative customer	Crisp characteristics
Definition	Crisps' explorative customers are experimental and try out new things often. They are creative when it comes to cooking and they are confident in the kitchen.	The supermarket Crisp characterizes itself as convenient, delivering to your house, and serving fresh and qualitative products. They convey as personal and trustworthy.
Proof quote	Confidential	
Link to existing literature	Explorative customers, according to glocalities segments, value creativity and have free mindsets (Tasnic, 2019)	Trust has always played a big role in customer motivation of purchasing food (Giampietri, Verneau, Del Giudice, Carfora & Finco, 2018)
Differentiation from literature	Besides creative customers usually being very explorative and wanting to experience new things, Crisp empowers their customers to be a confident cook and be in control of their groceries and dinner decisions.	Building trust is usually a goal for increasing the intention to buy. For Crisp they of course want to increase selling, but also want to convey a message of quality food and do this in a personal manner, providing information on their partnerships with local suppliers.

Table 1. Influential factors shopping process

As already mentioned, the first theoretical construct 'influential factors shopping process' exists of two earlier defined super families. These two super families (constructs) are further defined as 'explorative customer' and 'Crisp characteristics'.

Explorative customer

From analysis of the interviews it is uncovered that Crisp customers are very explorative in the process of (online) shopping. Also, comparing the data gathered from Crisp customers with the non-Crisp sample groups, this has been confirmed. In literature has been written that explorative

customers value creativity and have very free mindsets (Tasnic, 2019). Next to this, for Crisp customers it can be concluded that they are also very confident and in control of their shopping decisions, which is not always the case for people with free minded characteristics.

Crisp characteristics

By further defining the original super family 'the store and the brand' into Crisp characteristics, this general model is adjusted to the context of Crisp more specifically. The unique characteristics of Crisp are big influential factors and reasons for choosing Crisp as a preferred supermarket. One of their main unique selling points is that they

are a very trustworthy supermarket, caused by being transparent about their products and suppliers. According to Giampietri et al. (2018), trust has always played a big role in the consumer motivation of purchasing food. For Crisp, it is not only about the intention to buy. With their only supermarket, focusing on local and seasonal food, they want to convey a message and stimulate to eat food with a higher quality that is produced nearby.

Table 2. Basis of the shopping process

The theoretical construct 'basis of the shopping process' is originated from the super family 'how to go about the shopping process'. When further defining the general model for online shopping, there were three most important constructs uncovered from the data that count for most of the customers when they are shopping groceries online: product habits, weekly planning and online strategy.

Product habits

Crisp customers, probably like many other types of customers when it comes to grocery shopping, have certain product habits. Specifically, for Crisp customers it can be concluded that it is not the brand that is most important, but they do have a preferred quality standard for products. This will become clearer when explaining the theoretical construct of 'relevant product info'. In literature it is found that the purchase of food is usually a habitual activity, where quality, price and product attributes influence consumer behavior (Stávková et al., 2008). Different in this context is that in fact for Crisp customers, price does not necessarily influence product habits.

Weekly planning

When ordering online, customers have to stick to a certain planning, as ordering forces them to plan their groceries in advance. At Crisp, most customers have an ordering rhythm of ordering twice a week. Morganosky and Cude (2000) tell that reasons for grocery shopping stated

by consumers are for example a more peaceful experience, easier comparison and facilitating planning. As customers at Crisp are attached to delivery slots and times, their weekly planning has to evolve around this. Naturally, this differs a lot per consumer on to what extend their groceries and lives around this are planned, but always some sort of planning is present.

Online strategy

Customers do grocery shopping online according to a certain strategy: what products are bought online and what products do customers still visit grocery shops for? According to Rohm and Swaminathan (2004), motives for online shopping might be convenience, information seeking or social interaction. From these motives it already becomes clear that some might fit better to motives for visiting traditional physical supermarkets, such as social interaction. Crisp customers in specific mention that convenience and the provided information about products in the app are two important motives why they shop at Crisp. Other motives described by Rohm and Swaminathan (2004) such as variety seeking could be something Crisp could pay more attention to.

Table 2. Basis of the shopping process

Construct	Product habits	Weekly planning	Online strategy
Definition	For an online shopping process, customers act according to habitual behavior when it comes to buying products. They need to fulfil their wishes when it comes to certain favorite brands or a preferred quality standard.	Customers who order at Crisp usually stick to a certain order rhythm (two times a week) that they plan on their preferred days to receive the orders. Several customers also have a weekly food scheme, where they plan their dinners and order accordingly.	Customers are shopping according to a certain strategy, where they decide what products are bought online and why, and what products they still visit the supermarket or specialty stores for.
Proof quote	Confidential		
Link to existing literature	The purchase of food is a habitual activity, which doesn't depend on customers income, place of living or the connection to a certain social group. (Stávková, Prudilová, Toufarová & Nagyová, 2008)	Reasons for grocery shopping online stated by consumers in an early stage are for example: greater accuracy, a more peaceful experience, easier comparison shopping, better ability to monitor total spending and facilitating planning. (Morganosky & Cude, 2000)	Several motives for online shopping might be; shopping convenience, information seeking, social interaction or shopping as a recreational experience. But also the tendency to seek variety and desirability of immediate possession could be motives for online shopping. (Rohm & Swaminathan, 2004)
Differentiation from literature	Also, quality, price and product attributes have a high influence on consumer behavior. But for the standard Crisp customer, price does not really seem to influence their product habits or basis of the shopping process. This conclusion is drawn from for example specialty stores which they visit often.	As grocery shopping at Crisp is an online service, it is made easier for customers to stick to a certain planning, as customers are attached to delivery slots and times. What needs to be added to this, is that the way groceries are planned strongly depends on the type of customer. Some customers stick to a weekly scheme, others only stick to delivery slots. But some sort of planning is always included.	Stated in literature, some specific motives are more explanatory for online shopping rather than physical shopping. For example, shopping convenience and information seeking are two things that are clearly stated by consumers. But the other motives are also worth diving into, such as the tendency of seeking variety. Crisp could vary more within their platform.

Table 3. Store selection criteria

Construct	Convenience of the service	Personal communication	Ease of use
Definition	Reasons for selecting Crisp as a preferred supermarket could refer to the convenience of the service as being time-saving due to the home delivery of your grocery products.	An important criterion for customers for selecting Crisp is the personal communication of the platform. They use Whatsapp as an informal communication tool, where they act proactive and communicate through actual human beings.	Another important criterion for choosing Crisp as a supermarket is the ease of use integrated in their platform. It is a very well-structured app where customers point out to have a good user experience and good overview of well photographed products.
Proof quote	Confidential		
Link to existing literature	Time and effort savings are considered to be part of the overall shopping convenience construct. (Rohm & Swaminathan, 2004)	Underlying motives for shopping, like social interaction, have not changed due to the online context. (Rohm & Swaminathan, 2004)	Customer satisfaction with online shopping is a very strong predictor of users' continuous intention. (Hsu, Yen, Chiu, & Chang, 2006)
Differentiation from literature	Crisp, just like most of the other grocery shopping services who deliver to your house, is growing as they try to focus on convenience within their platform, which is a very important factor to make sure customers keep on online shopping.	While other online grocers tempt to use chatbots or other regulated communication tools, Crisp really tries to emphasize the need for social interaction in an online environment by focusing on real human contact via Whatsapp through their service employees.	Not only new customers' need to be acquired, but online platforms need to maintain high-quality to increase users' satisfaction and retain their customer base. At Crisp, they really value a clear and well thought user experience in their platform, and continuously use feedback from customers to keep innovating.

Table 3. Store selection criteria

In the third table that is developed to explain the general model of online shopping, the super family 'reasoning behind store selection' was described as 'story selection criteria'. After defining who the customer is, what kind of grocery store Crisp is and what the basis of the shopping process entails, the general model explains from the customer data three selection criteria for choosing Crisp: convenience of the service, personal communication and ease of use.

Convenience of the service

Crisp as a grocery store is in the eyes of the customers offering a convenient service, as it is time and effort saving compared to doing groceries in traditional supermarkets. Rohn & Swaminathan (2004) explain that time and effort saving is something that is very common to be mentioned about online shopping convenience. Convenience is something that Crisp focusses on a lot and is also something they should ensure when they keep on growing.

Personal communication

In their communication towards customers, Crisp is very informal by communicating via Whatsapp and very personal as customers are having a conversation with real people. This makes Crisp very accessible for customers. Rohn & Swaminathan (2004) write that people still seek for social interaction when shopping online. Crisp is in a way different from other online grocery stores out there as they anticipate on this need for social interaction directly, focusing on personal communication through their service employees.

Ease of use

Overall, when analyzing the data, it was found out that the customers have a very good user experience while shopping online at Crisp. Products are photographed well, and the app is well structured and easy to use. According Hsu et al. (2006), customer satisfaction with online shopping is a very

important indicator for predicting the user's intention to continue using to shop at Crisp. To ensure this customer satisfaction, Crisp continuously uses direct customer feedback to keep innovating and improving their user experience in the app.

Table 4. Influencing factors choosing products

Following the general model, after selecting Crisp as their preferred supermarket according to several criteria, there are a few factors that influence what products customers will choose. The three most important factors according to customers for selecting a product in the app are: available product information, customers ability to use creativity and inspirational online triggers.

Available product information

When analyzing customer data from the interviews, noticed is that Crisp customers value transparency of communication about available product information, and they are keen on the honesty about where products come from. Wognum et al. (2011) mention four approaches for being transparent about the supply chain of food products. Crisp has the advantage that they can be very transparent about their food supply chains as they have good connections with their local suppliers, but there is always room for more and clearer information.

Ability to use creativity

The shopping process of customers is affected by the ability to imagine what to cook with certain products or the ability to think of new combinations. When customers don't have this ability, they will more easily fall into habitual behavior as mentioned earlier. Creative customers are always eager to experience new things according to Tasnic (2019). As Crisp's customers are very explorative and creative, they will be able to and open to exploring new combinations. This is something that Crisp can stimulate to encourage customers to do so.

Table 4. Influencing factors choosing products

Construct	Available product info	Ability to use creativity	Inspiration online triggers
Definition	When choosing products, customers look at available information that is given about the product. Specifically, at Crisp customers value the transparency of communication, and the honesty about the origin of the products.	While shopping, the ability to use creativity of the customer plays a role when buying products. Whether they can imagine what to cook with products or whether they are able to think of new combinations affects their shopping behavior.	As Crisp is an application, the online environment can also trigger customers to choose certain products. It is very easy to search for certain products for customers, as well as very easy for Crisp to suggest certain product combinations.
Proof quote	Confidential		
Link to existing literature	There are four common approaches for transparency (related to sustainability) in the supply chain of food products, which are environmental reporting, lifecycle assessment, labelling and traceability systems. (Wognum, Bremmers, Trienekens, van der Vorst, & Bloemhof, 2011)	Creative and explorative consumers see broadening their horizons as an important means of self-expression. They are always eager to experience new things. (Tasnic, 2019)	Online environments can provide significant benefits both to B2C commerce, such as lower transaction costs and easier penetration of markets. Internet marketing, based on the interactive nature of the medium, is also important to agro-food business. (Baourakis, Kourgiantakis, & Migdalas, 2002)
Differentiation from literature	As Crisp has short supply chains and good connections with suppliers, transparency about their products is already quite high. Customers also experience this transparency but would like to know even more about origin and production methods. The four transparency approaches can be used to test whether there is room for improvement.	Because the customer of Crisp is able to use a lot of creativity to explore new combinations for their dinner decisions, Crisp needs to pay attention they don't act like all the regular supermarkets. It is possible to suggest recipes, but when they fall into the pattern of general supermarkets too much, it won't stimulate the customers creativity.	Advantages of Crisp already being in an online environment is that it is easy for them to suggest certain products or recipes using internet marketing strategies. Of course, balance need to be found in promoting certain products or letting people explore products themselves.

Inspirational online triggers

Crisp is a grocery store acting in the online environment. Therefore, they have the advantage that they can trigger customers with certain products or combinations. Online environments can be helped by internet marketing, which can serve as an interactive medium to target customers in the right way (Baourakis et al., 2002). Crisp can implement these online marketing strategies even more but, has to find balance in inspiring customers or letting customers explore themselves.

Table 5. Relevant product info

The previous last step in the online shopping process is looking more specifically into what type of products a certain grocery store offers. Therefore, the theoretical construct was called 'relevant product info', evolving from the super family 'the food product itself'. For Crisp customers, the three most important aspects of a product are food quality, product origin and the season.

Food quality

Remarkable from analysis of the customer data was that food quality was found extremely important by all Crisp customers. Talking about quality, they referred mostly to biological, sustainable and fresh products. Also, Stávková et al. (2008) mention that food quality is one of the most important factors influencing consumer behavior when purchasing food. Within the marketing strategy of Crisp, quality is already one of their main pillars, as it is one of the unique selling points their online grocery store is based upon.

Product origin

Crisp customers are very interested in knowing where the products they buy come from, usually judging on location and supplier. Giampietri et al. (2018) did research on SFSC (Short Food Supply Chains), concluding that the shorter the supply chain, the trustworthy the information about the origin is as the communication between

producer and consumer is almost direct. Crisp has an advantage of being in close contact with their suppliers due to their locality. Nevertheless, communication can always be improved and made more direct.

In/out of season

Lastly, consumers would like to be informed and helped to cook and eat more seasonal products. Tobler et al. (2011) wrote that consumers' willingness to eat more seasonal is mostly because the products have better taste, and when consumers believe eating more seasonal is better for the environment this willingness increases. Sometimes the problem is that customers need more incentive to eat more in season. Crisp tries to help consumers eating more in season and educate customers by for example informing them when products are out of season in a certain period of time.

Table 5. Relevant product info

Construct	Food quality	Product origin	In/out of season
Definition	Consumers have several opinions on what product quality is to them, referring mostly to biological, sustainability and freshness.	Consumers find it very important and valuable to know where the product comes from. Important factors to evaluate this are for example location and supplier.	Consumers have (growing) interest in cooking with seasonal products and would like to be informed when it is best to consume these products to for example reduce their environmental impact.
Proof quote	Confidential		
Link to existing literature	One of the most decisive factors influencing consumer behavior when purchasing food is quality. (Stávková et al., 2008)	Trust can be established and reinforced through SFSCs' (Short Food Supply Chains) direct communication between producers and consumers who facilitate the information change. (Giampietri et al., 2018)	Overall, the better taste argument was the strongest motive for consumers' willingness to eat seasonal fruits and vegetables. Participants who are convinced that eating seasonal fruits and vegetables is better for the environment are more likely to consider it. (Tobler, Visschers, & Siegrist, 2011)
Differentiation from literature	As Crisp within their marketing strategy is already focusing a lot on extrapolating the quality of their products, they are ahead of their competitors in that sense. Although there is always room for providing more information of products that could contribute to stressing the high quality.	Crisp enhances the transferring of as much information as possible about the product origin and the production methods, as they have an advantage of being in close contact with their suppliers due to the SFSC. Still opportunities lie within improving the communication about product origin and make it even more direct.	However, not always the consideration of buying seasonal fruits and vegetables is taken into action. While seasonal food only requires small dietary changes. Consumers need another incentive, where Crisp can step in. They already focus their assortment on seasonal fruit, which makes it easier for consumers to take consideration into action

Table 6. Input and ideas

Construct	Crisp community	Adjustable app	Conscious coach
Definition	A few ideas coming from customers fall under building a (better) relationship with the grocery store, through for example engaging a community. Crisp is a very specific concept and customers who deliberately choose for this concept all look for the same thing: a convenient service with high quality fresh food.	Other ideas focus on a more personalized experience in the application through specific settings or delivery slots. People find it important that Crisp is flexible in their personal opinions and choices when it comes to food and feel that there is room for this expression.	Other input is related to supermarkets playing a bigger role in the consciousness of the consumer as being a coach in acting more sustainable. Crisp can act as a helping hand fighting food waste or giving advice in making the right sustainable choices.
Proof quote	Confidential		
Link to existing literature	Customers demand recommendation by other users and a direct conversation and interaction with others. (Leitner & Grechenig, 2009)	Online environments offer the capability of delivering specific information tailored to the needs of the customer. (Rohm & Swaminathan, 2004)	When consumers are more involved in food and have prevention-oriented motives (Higgins, 1997) (safety and responsibility) are more likely to make sustainable food choices. (De Boer, Hoogland, & Boersema, 2007)
Differentiation from literature	Online shopping communities combine many of the demands of customers. It allows customers to collaborate and get advice. For Crisp it could be an opportunity to satisfy consumers more within their online grocery shopping platform, and therefore achieve a higher retention rate.	As online environments are capable of adjusting to personal needs and Crisp is flexible in designing their own environment, there are opportunities in the field of personalizing the application to specific customer needs. It is important to take a close look to their desires throughout the whole shopping process.	Crisp could take upon the task to make customers even more involved in food, by providing them a helping hand to make the right choices. When food involvement is stimulated, people who already have prevention-oriented motives, and therefore avoid food that is dangerous for our environment, more conscious choices are made.

Table 6. Input and ideas

In the last step of the general model for online shopping, consumers mentioned ways in which Crisp, or the e-commerce retail landscape as a whole, can innovate. As the research question aimed to uncover what innovation was needed to make sure customers retain, these answers were explicitly analyzed and categorized. Three main directions were found: Crisp community, adjustable app and conscious coach.

Crisp community

Some customers mentioned that, as Crisp is a very specific concept where people are looking for a convenient service on the one hand with high quality fresh foods on the other hand, it almost feels like a community. Literature says that customers would like recommendations from other users and would be open to have direct conversations with other users (Leitner & Grechenig, 2009). Communities can combine these wants and needs of customers and stimulate collaboration and interaction. If this will raise consumer satisfaction, it could potentially increase retention.

Adjustable app

Crisp customers mention that they have needs to have a more personalized experience in the app. Offline environments have the advantage that they can deliver specific information personalized for any consumer (Rohm & Swaminathan, 2004). Crisp is very flexible in design their app and can therefore grasp the opportunity to personalizing the application to specific consumer needs.

Conscious coach

Lastly, some consumer data tells that customers have a need for a helping hand when it comes to for example fighting food waste or making more sustainable choices in food products. Consumers who have prevention-oriented motives are more likely to choose for sustainable food products

(Higgins, 1997; De Boer et al., 2007). Crisp can help customers being more involved in food and stimulate making more conscious choices, as they have a lot of knowledge and expertise in the food sector.

Conclusion tables

By specifically describing each construct belonging to a theoretical construct, finding a proof quote in the raw data, linking it to the literature that is already existing and analyzing why for the context of Crisp this might differentiate, data has been reviewed in-depth. The general model for online shopping that has been developed according to data analysis can, with the help of a narrative, serve as a basis for the design brief matching the consumer profile of Crisp.

3.3.6 The storyline

Although the storyline technique was not originally a specific method in Glaser and Strauss' (1967) work on grounded theory, it is something that Strauss developed together with Corbin (1990). Strauss and Corbin (1990) define story as a 'descriptive narrative about the central phenomenon of the study'. They define storyline as the 'conceptualization of the story ... the core category'. Storylines are used to construct and convey a grounded theory.

A number of strategies ensure that the storyline is a literal reflection of the data in which it is grounded. The following guiding principles are used for writing the storyline.

T – Theory takes precedence

A – Allows for variation

L – Limit gaps

E – Evidence is grounded

S – Style is appropriate

The following storyline to describe the grounded theory that is developed in the general model for online shopping is written.

Crisp is an online grocery store which attracts explorative customers who are usually confident and creative cooks. Through the eyes of the consumer, Crisp is a grocery store which is personal and trustworthy. This customer profile and the characteristics of Crisp influence the shopping process.

At the basis of most Crisp customer shopping processes lie certain habits, a planning and a shopping strategy. Product habits decide what they shop at Crisp, a (weekly) planning decides how often they shop, and an online strategy decides why they shop.

Consumers have their specific reasons for choosing Crisp as their online grocery store. They find Crisp convenient, they value the personal communication and they find the application easy to use.

Within Crisp, there are certain factors influencing the products that are chosen. For most customers these are the product information that is available, the ability to use their creativity in the process and the inspirational triggers that are offered to them in the application.

When they are looking at the product information that is available, customers find it important to discover the quality of the product, the origin of the product and the season of the product.

In relation to the ability of interviewed customers to think creatively, ideas arise for improving the (online) grocery shopping process. A few ideas fall under building a (better) relationship with the grocery store through a community. Other ideas focus on a more personalized experience through an adjustable app where Crisp will act even more transparent. Lastly, some input is related to supermarkets playing a bigger role in the consciousness of the consumer as being a coach in acting more sustainable.

3.3.7 Conclusion

To conclude the grounded theory, the customer profile is defined according to the data gathered and analyzed during the qualitative consumer research. Also, in order to formulate the design brief that is not only focused on the consumer perspective, the company vision of Crisp is summarized.

Crisp customer profile

In order to design the right product innovation, the Crisp customer is further defined according to 'glocalities' segments in comparison to customer sample groups that were interviewed. This is done for further understanding of the target group that should eventually match the design brief. Tasnic (2019) divided the world population into five consumer segments and put them on an axis (figure 21), which are the following.

- Creatives: Open-minded idealists who value personal development and culture.
- Challengers: Competitive workers with a fascination for money, risk, and adventure.
- Achievers: Entrepreneurial networkers who value relatives and community.
- Conservatives: Family people who value tradition, etiquette and an organized life.
- Socializers: Structure seekers who enjoy entertainment, freedom and family values.

The horizontal axis shows the extent to which people are open to change and innovation, while the vertical axis shows the extent to which people value freedom and independence. Looking deeper into the consumer data and the findings from the interviews, the sample groups can be divided amongst the different consumer segments. In order to conclude which sample group belongs to which consumer segment, the sample was roughly divided after conduction the interviews.

- Creatives: Retaining and non-retaining Crisp customers
- Challengers: Non-Crisp online customers
- Conservatives: Non-Crisp offline customers

To conclude from a consumer perspective combining the literature on 'glocalities' (Tasnic, 2019) and the learnings from the customer profile during the interviews, Crisp clients need a product that lets them explore and be free. They are eager to experience new things and look beyond their immediate environment. They are open to connect and allow the exchange of culture and ideas.

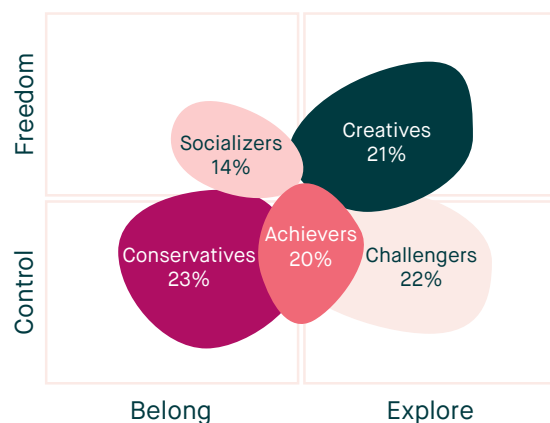


Figure 21: Glocalities segments (Tasnic, 2019)

Vision of Crisp

As already described earlier in the company analysis, Crisp has a clear vision and direction for their business. It is important to take their strategy into account when formulating the design brief, as this, together with the extensive consumer analysis, will help building sustainable competitive advantage.

Competitive advantage is constantly moving and must be developed continuously.

Sustainable competitive advantage is reached through designing something that is not standard and not easy to be imitated. Crisp summarizes two main pillars of their strategy, contributing to making local food more accessible for everyone.

- 'Beter eten': quality food that is fair and local
- 'Lekker geregeld': within a easy application deliver to your house

Also, within Crisp there are four key values formulated where they act upon.

- 'Passion for food': for better food
- 'Connection': between each other and the environment
- 'Responsibility': through involvement
- 'Courage': dare to do

To conclude from a business perspective, the new product innovation for Crisp should be different and not easily to be copied by other supermarkets and must be in line with their vision and values.

Coding & categorizing

First, 8 interviews were coded initially and categorized in 38 code groups. Whereafter intermediate coding was done for 3 more interviews. These codes were added to the existing code groups. Lastly, two interviews were advanced coded and these codes were also added to the existing groups. Code groups were split, organized and removed and the process ended with 42 code groups organized in 7 super families.

General model for online shopping

The theory of Pratt (2009) was used to write

up the qualitative review. The integrative diagram that was developed by defining the relationships between the super families was used as a basis for the general model for online shopping. This general model is supported and explained by 6 tables, containing the 17 most grounded constructs.

Storyline

As a conclusion, a storyline was developed explaining the design brief. The customer profile, the vision of Crisp and the grounded theory developed in the general model is the basis for the design brief.

3.4 Design brief

The design brief will serve as an accessible summary of the developed grounded theory and the storyline that belongs to the theory. Naturally, the design brief should also match the customer profile and the vision of Crisp and should give guidance to what new product innovation should be introduced in the application.

In the last row of the tables that specify the constructs where the general model was built from, the differentiation from existing literature is described. This differentiation explains specific elements of Crisp through the eyes of the customer. Within these explanations, challenges, opportunities, focus points and more, are pointed out. From writing these explanations down, analyzing them and categorizing them, five themes can be uncovered. These themes, which can be linked back to what has been found when researching potential innovations, are used to formulate the design brief.

Creative: Empowering explorative customers by stimulating their creativity.

Personal: Gaining trust by communicating through real social interactions


Transparent: Providing product information through close supplier contact.

Convenient: Enhancing ease of use of the service by being time and effort saving.


Informative: Transfer the quality, origin and season of the product through design.

In the next phase of the product innovation process of Buijs (2012), the new innovation for the product is developed according to the concluded design brief. A brainstorming session was held, whereafter the most promising concept was selected. A list of requirements was developed and potential cases and customer journeys for the concept were set out. Lastly, the concept for the application of Crisp is designed and clearly explained in the next chapter.


Design brief




Creative




Personal



Transparent



Convenient



Informative

4. Product development



In this following chapter, creative sessions are held to develop a concept matching the design brief that was concluded from the qualitative consumer research. The innovation matching the consumers needs is implemented in the application. A prototype will show the concept design and will be explained clearly.

Content

- 4.1 Brainstorm and selection
- 4.2 List of requirements
- 4.3 Concept design



4.1 Brainstorm and selection

Taken the design brief and focusing on the aim to increase retention with product design, a brainstorming session was held that provided multiple ideas on how to increase retention for the customer of Crisp based on the grounded theory developed. Afterwards, with discussions with the product team from Crisp internally, the most promising ideas were selected until ending up with one final concept.

4.1.1 Brainstorm

All challenges, focus points and opportunities that are uncovered from the interviews are used as a starting point for idea generation within the brainstorming session. Again, a close look has been taken to the last row in the tables that explain the general model for online shopping. Using the explanations of the differentiation from literature, 'how to's' were generated. A 'how to' is used for idea generation and reformulate challenges in many different ways (Tassoul, 2006). It helps the brainstorm team to generate ideas more easily. To use the in-depth review from the consumer interviews as much as possible, a 'how to' was generated for each construct, which are in total seventeen. Below you can find the 'how to's' that were used in the brainstorm.

1. How to empower customers?
2. How to increase trust?
3. How to influence habits?
4. How to incorporate planning?
5. How to seek for variety?
6. How to socially interact?
7. How to maintain user satisfaction?
8. How to keep convenience high?
9. How to be transparent?
10. How to explore new combinations?
11. How to trigger customers?
12. How to show quality?
13. How to communicate origin?
14. How to make information actionable?
15. How to recommend products?

16. How to personally adjust?
17. How to stimulate involvement?

Preparation

In total four other students from the Master Strategic Product Design were asked to join the brainstorming session. Enough paper, post-its and fine liners and markers were provided. Also, an agenda was set up and together with some standard brainstorming rules, which will be described later, hang on the wall so that the participants had a good overview of the session. A time estimation was made per activity, so the participants had an overview of the duration of the different elements of the session.

Agenda

1. Introduction (10 min.)
 - a. Warming-up
 - b. Rules & problem statement
2. 'How to's' (25 min.)
 - a. Generating design ideas
 - b. Cluster ideas
3. Ideation (30 min.)
 - a. Generate concepts
 - b. Present concepts
4. Ranking (15 min.)
 - a. C-box

Process

First, a warm-up was held before the actual brainstorming session begun. Everyone was assigned a 'bad idea', like for example itching perfume, poisoned toothpaste or squared tires. The timer was set on two minutes for everyone to write down advantages of the bad idea and prepare a small pitch to sell the product. By doing this exercise, the brainstorming team was warmed up to think creatively, pitch an idea and use drawing skills.

After this warm-up, the rules and the problem statement were explained to the brainstorming team. The rules that were explained were familiar to the brainstorming

team, as all SPD students have experience with brainstorming.

To clarify, the following rules were set before the session.

- Criticism is postponed
- 'Freewheeling' is welcomed
- 1+1=3
- Quantity is wanted

After explaining the rules, the problem statement was described to the brainstorming team. They have been told that the retention from customers at a certain company is too low. The goal is to grow the customer base by reducing the churn and maximizing the number of customers to stick to the company's service. Later on, the brainstorming team will be told in more detail what the actual company is and what service they provide. This to make sure there are no boundaries in the creative ideation process.

Every member of the brainstorming team got assigned 3 to 4 'how to's'. A close look was taken at the combinations of the 'how to's' for each team member, to make sure they were different compared to each other. Every 'how to' was written down on one A3 paper and every team member received a stack of post its and black fine liners and markers. For each 'how to', five minutes were assigned to generate as many ideas on separate post it's as possible. The brainstorming team was asked to think creatively, leaving the context free to own interpretation. The full overview of all the ideas generated for each 'how to' can be found in the appendix (appendix 16).

After generating ideas on every 'how to', the team members were asked to switch one place so that they were facing other participants ideas. First, the team members were given some time to read through the ideas of one of the other participants. Secondly, the team members had to select four pairs of ideas that could suit as a basis for a concept for an online supermarket.

For idea selection, it was mentioned that the concept should suit Crisp, whereafter the context of Crisp was explained briefly. The brainstorming team was told that the ideas selected as a pair could not originate from the same how to. It was stimulated to think creatively and make surprising but promising combinations.

When the team members finished making the combinations of post it's, it was time to start the ideation phase. Participants were specifically told that the concepts they were generating should fit the online supermarket Crisp. The timer was set to 5 minutes per post-it combination, where each team member had to work out four concepts on pieces of A4 paper. Preferably, the concept should have a title, a drawing and some explanatory texts. All the concepts that were generated during the session can be found in the appendix (appendix 17).

When these rounds of concept generation were finished, each team member had to present their four concepts. In their short presentations they had to elaborate a bit further on what their concepts entailed. Very creative and surprising concepts were developed, which is a valuable conclusion for the eventual concept design. During the presentation, the facilitator wrote down every title of the concept on a separate post-it in preparation for the last step of the brainstorming session.

For deciding what concepts should be taken into consideration for product development, the C-box matrix was used as a tool to rank the concepts. By making a C-box with the brainstorming team, discussion can be opened on the developed concepts (Tassoul, 2006). Also, it enhances the understanding of the solution space for Crisp. The x-axis represented the level of impact on the consumer and the y-axis represented the level of effort for Crisp. For all 20 concepts generated, a short discussion was held within the team of where to place the idea

on the matrix. Continuous comparison of ideas led to the matrix shown in appendix 18. The ideas that have high impact, but low effort could potentially suit for product innovation for Crisp to increase customer retention. In the selection phase, this is further discussed.

4.1.2 Selection

After the brainstorming session, eight ideas that were rated to have high impact on the consumer and cost low or medium effort were selected from the C-box matrix. In order to make consumers retain with the development of a new innovation, high user impact is desired. Reasons for selection of concepts in the quadrant with low or medium effort for Crisp were that concepts that cost high effort were overall extremely innovative compared to what is currently the product portfolio of Crisp or included physical experiences. The eight selected concepts from the C-box were worked out further in order to uncover what three concepts could

suit the application of Crisp best. From these three concepts, one concept should be selected for product development.

First selection round

The main goal of the first selection round was to make sure that the eight concepts were narrowed down to three concepts. First, the eight ideas were analyzed, whereafter the ideas were conceptualized for the application of Crisp. For every concept, a new A4 paper was used to make drawings of how the application could facilitate the concept and descriptive texts to elaborate on the concept further. The two 'how to's' where the idea originated from accompanied the concept, to stress what underlying value the concept tried to reinforce. An overview of these eight concept can be found in the appendix (appendix 18).

When these eight ideas were worked out, evaluation of the concepts was needed to end up with a selection of three concepts.

During defining what the eight concepts could look like in the application, and analyzing their matching 'how to's' and thus

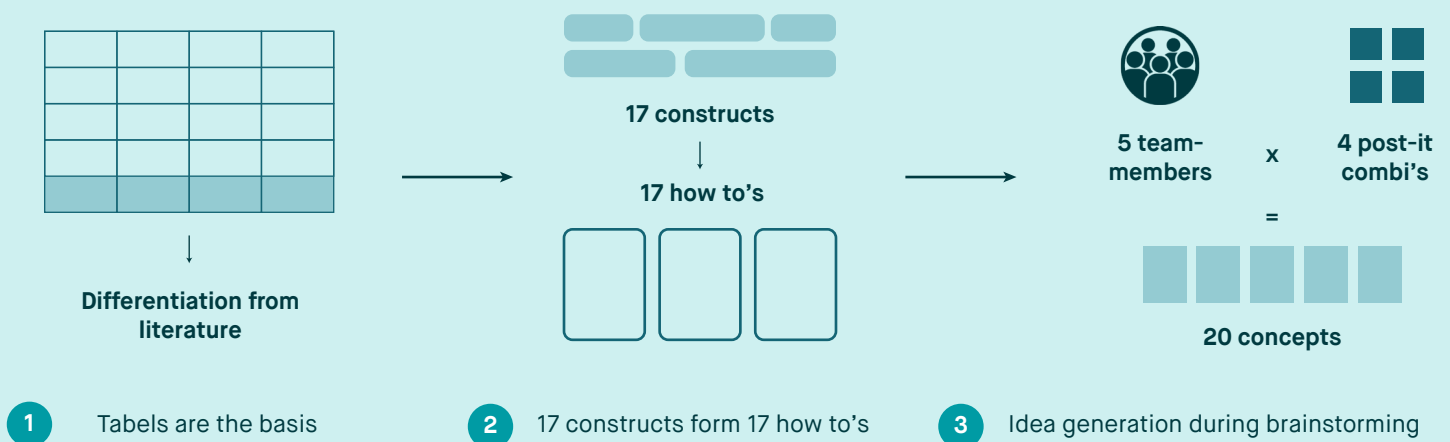


Figure 22: Brainstorming and selection process (own figure)

constructs, it was already concluded that for example concepts that value the ability to use creativity, have to do with the product origin and that focus on the characteristics of Crisp were the ones who appeared most in the high impact cluster. But also, ideas which focus more on the ease of use of Crisp and on planning and communication were expected to have a lot of impact.

In order to select three from the eight developed concepts, critical discussions were held with the product designer at Crisp to define what concepts should be focused on. For every of the eight concepts, the idea was presented and explained, whereafter during the discussions, advantages and disadvantages of the ideas were reviewed. Within Crisp, these critical discussions are used to evaluate new ideas and innovations for the application. The following criteria for judging the ideas were used during the evaluation.

- How promising/impactful is the idea?
- How much priority has this idea for Crisp?
- Will the idea increase customer retention?
- Is the idea scalable?

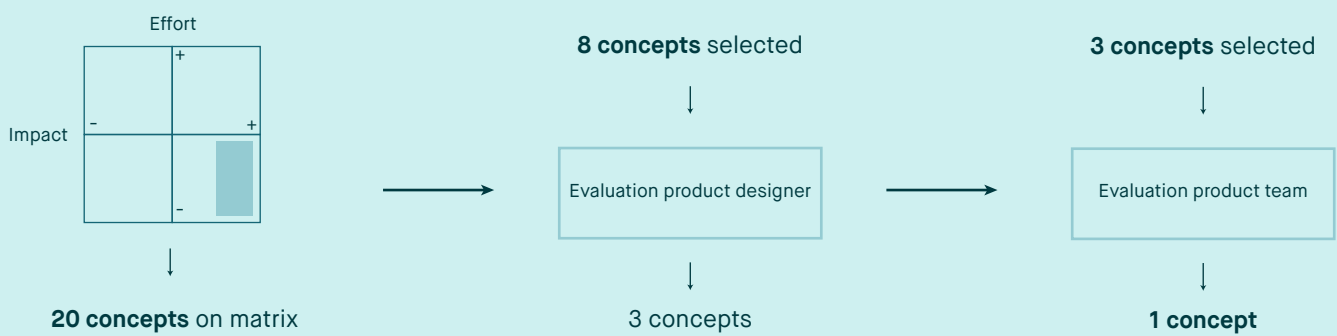
Using these criteria and discussing the advantages and disadvantages, the following three concepts were selected for further iteration.

1. Smart grocery list: personal and convenient planning for customers
2. 'De schijf van crisp': to encourage good and healthy food based on customer profile
3. Pinterest@Crisp: using food photography to stimulate exploration

Second selection round

Another round of critical discussion was held, this time with the head of product and one of the co-founders who is CTO at Crisp, to bring the three selected concepts down to one. Being responsible for the product (the application) of Crisp, their opinion on which concept is most promising for product development is highly valued.

The sketches of the three developed concepts were presented to head of product and the CTO and their opinions and feedback led to the decision for one concept: the 'smart grocery list' (concept 1), further developed as 'weekly planning'.



4 First selection C-box

5 Second selection product team

6 Final selection product team

4.2 List of requirements

In order to have a clear goal in mind when developing the new product innovation, a few requirements for the design of the application are set. These requirements can serve as guidelines when developing the concept in a prototype.

In general, for Crisp, by developing the concept of 'weekly planning' within their application, the following goals should be reached by introducing this innovation.

- Integration of customers weekly planning within the app
- Unburdening consumers in a smart way
- More personal convenience when grocery shopping
- Easier guidance through shopping by using the concept
- Facilitating possibilities for social interaction

For setting a list of requirements for product development, a division is made between functional requirements and value proposition requirements. Functional requirements relate more to what technical aspects are required in order to design this concept. Value proposition requirements touch upon what the concept should entail in order to make sure customers retain, following from the conclusions of the qualitative consumer research.

Value proposition requirements

- It should smartly unburden customers in doing their weekly grocery planning, contributing to convenience.
- It should be personally adjustable for customers' wants and needs.
- It should be easy to use and add up to a good app only experience.
- And it could enhance social interaction within consumers personal environment by sharing the weekly planning with for example family or friends.

Functional requirements

- It should be a more dynamic way of placing products in time: now the shopping basket is static.
- Should function more as a reminder than as an in between way of adding products to basket. So current shopping is primary to this concept.
- It should help in planning what to eat in advance, like a 'light weight' grocery list.
- And it should help when to eat certain products when you ordered them, like a 'light weight' agenda function that organizes your weekly groceries.
- There could be an option to make a note on a planned dinner you will have, like a reminder.
- It should help you to save products for later, like a wish list.
- It should be able to be shared within the family, via for example email or Whatsapp.
- It should be stimulating the explorative customers and their creativity.
- There should be clear entry point(s) for the 'weekly planning' in the app.
- It should be possible to keep an overview in the 'weekly planning' of what is already ordered or what still needs to be put into the basket.

All these requirements, developed according to what is learnt during the qualitative consumer research, brainstorming session and discussions with the product team, should be taken into account when designing the concept 'weekly planning'.

4.3 Concept design

For the concept, further elaboration is done to explain why the 'weekly planning' concept matches the conclusions of the general model, the design brief and the list of requirements evolving from the extensive customer research. Afterwards, the concept case will be described, the journey through the concept explained and the design itself will be presented. Lastly, it will be described how this concept matches the innovation sweet spot and why this concept contributes to retention.

This section is split up in the following elements to describe the concept design.

- 4.3.1 'Weekly planning'
- 4.3.2 Concept case
- 4.3.3 Concept design
- 4.3.4 Sweet spot
- 4.3.5 Retention

4.3.1 'Weekly planning'

How and when customers shop at Crisp depends on a weekly planning, as concluded in the general model for online shopping. When shopping at online supermarkets, planning is even more necessary than offline, as online shoppers have to take into account delivery slots and minimal order value. When this certain order rhythm has been integrated in the planning and scheme of the customer, grocery shopping will be a time and effort saving task. According to the interviews, customers have a need for structure when it comes to grocery shopping online. While shopping, they are already considering and planning what to eat on which day. Therefore, this concept will be a contribution and integration of the planning task that comes with online grocery shopping.

When looking back to what has been concluded within the design brief, focus of this concept mostly lies on personalization,

convenience and creativity. The concept is personal, as is it is possible for consumers to adjust the planning to their own wants and needs. The concept is convenient, as it helps customers do their groceries in a more structured way. And the concept is creative, as customers can be inspired while planning and can use their explorative mindsets to use the 'weekly planning'. Transparency and information, which are also concluded in the design brief, have less focus within this concept. Nevertheless, these could be integrated in a later stage of the product development, for example by providing customers with more seasonal and local product suggestions and recipes to plan during a certain month.

Lastly, a list of requirements has been set up according to the concept of 'weekly planning'. It is important to keep these requirements, in addition to the above mentioned about the customer research, in mind when designing and developing the 'weekly planning' concept. When the concept will meet these requirements and conclusions stated in the general model and the design brief, it will meet the direct wants and needs of the Crisp customer and will therefore potentially contribute to retention.

4.3.2 Concept case

There are a lot of opportunities for Crisp that evolve around the integration of a weekly planning for customers in their app. There is currently nothing integrated in the app with a planning element where you can keep what you would like to eat at which day. There is no timeline or weekly scheme integrated which you can use to plan what you want to order.

As there are multiple opportunities and possibilities for the design of a concept for 'weekly planning' in the application of Crisp, the specific case that is worked out for this

project is described. Naturally, this concept case can serve as a first step in product design of a 'weekly planning' and can be part of a rollout that should be developed further within the application.

Context

For the prototype design of the 'weekly planning' for your groceries within the app, the case that is worked out is the planning of your weekly recipes. 'Recipes for now' is a brand-new feature within Crisp, where it is made possible to order a bundle of groceries within a recipe (figure 23).

Customers can adjust the ingredients of the recipes to their wishes, where after they can easily order the whole recipe in one click. The new feature is visually appealing, combining beautiful recipe photography and a clear overview of the ingredients a recipe contains. On top of this, preparation instructions for the recipe are provided in the app, which you can consult

through a 'cooking mode'. Combining a 'weekly planning' with ordering recipes can contribute to the stickiness of the planning and could contribute to increase retention as an integration in consumers' daily life.

Recipes can serve as a good starting point for the development of 'weekly planning' for customers. Working out this case for this concept has two main advantages. It is most likely that it already crossed the customers mind 'when' they want to consume the recipe while ordering it, so the concept makes it more convenient to also directly save these thoughts in a planning. And, it is most likely that people will only consume one recipe a day, which ensures the concept can be kept simple and most importantly serve as an overview.

Customer journey

For specifying the concept case further, we look at two types of customer journeys.



Figure 23: Mock-ups of the new recipe feature at Crisp (Crisp figures)

1. Planning your recipes during shopping at Crisp.
2. Sharing and consulting your planning after shopping at Crisp.

Furthermore, for these two customer journeys there are several scenarios designed for the prototype of 'weekly planning' for Crisp. These scenarios will be elaborated on when explaining the concept design.

To elaborate a little bit more on the journeys, it is important to keep in mind that the concept can be used in two different moments in time looking at the shopping process of the consumer. It can either be used during shopping and after shopping. During shopping, it should be possible to plan your recipes, to view what you have planned in a planning overview and to change this during shopping. After shopping it should be possible to view and change the planning you made, and it should also be possible to share this planning within for example your family or household.

Design principles

To design and develop this concept case, a few design principles must be kept in mind for the 'weekly planning' for customers in the application. These design principles are focus points to make sure the design is both easy to use and visually appealing. Standard design principles used for mobile user experience design are hierarchy, proximity, contrast and balance (The Interaction Design Foundation, 2020). In line with these principles, focus points that are specific for the 'weekly planning' for Crisp are set out.

- Entry points of the 'weekly planning' are explored
- Various calendar possibilities are researched
- The possible cases of a recipe are thought through
- Hierarchy of elements in the application is of importance
- The concept should match the visual style of Crisp

Rationale for the concept design

While online shopping, customers must plan their groceries a few days ahead due to delivery and minimum order value. From consumer research is concluded that planning is the basis of online grocery shopping. Therefore, this concept introduces an integration of customers weekly planning of recipes in the Crisp app. By quickly selecting a day for the recipe you would like to order while shopping, overview will be kept in a simple planning. Only minimal effort from the consumer will be required, which makes it convenient and personal!

The 'weekly planning'

- Unburdens in a smart way
- Offers more personal convenience
- Is an easier guidance through shopping
- Could enhance social interaction

By scanning the QR code, the prototype of the weekly planning can be reviewed.



4.3.3 Concept design

According to the two customer journeys that were explained, some more specific scenarios have been developed. These scenarios were used to uncover all moments the customer would want to use the planning.

Detailed prototype designs are confidential and are therefore not included in this Master thesis. A simplified overview of the prototype is shown in figure 24.

Scenario 1 - consult empty planning

First, when the consumer did not use the planning concept yet, it is already possible to view your planning. It will give the consumer instructions to start planning from the recipe listing page. This scenario is the start for the consumer to get inspired to order and plan recipes.

Scenario 2 - add to plan

In the second scenario, it is time to start planning. Planning is done from a recipe, which can be selected from the recipe listing page shown in the previous scenario. The planning should be an easy and straight forward activity which should not stand in the way of the primary shopping process. Therefore, it is chosen to use the small calendar icon as an entry point for the planning from the detail page. In this way, it remains an optional activity, just like the 'heart icon' which can be used to mark your favorite recipes.

Scenario 3 - consulting planning

In the third scenario, it should be possible for consumers to consult their planning while they are ordering and planning their recipes. Chosen is to make the calendar icon filled again, to imply there are recipes planned. Consumers can consult their planning and keep overview of which days recipes are planned during the week. While shopping recipes at Crisp, this can be a

clear guidance to help customers make sure they have planned dinner for their families or households every day of the week. This unburdens families in their busy lives.

Scenario 4 - share planning

In the fourth scenario, the journey of sharing a recipe is designed. Within the design brief was concluded that consumers find it interesting possible social interaction interesting when online shopping. Combining a sharing function with a recipe, planning is not only very personal for consumers but also contributes to convenience. When you already want to let your family know what is planned for dinner that evening, because someone can already start cooking, it is done on a few simple clicks. As a link will be provided in the message, the person you share your recipe with will be guided to the recipe in the app and can start in the 'cooking mode' straight away.

Scenario 5 - 'bijna in huis'

For scenario five, we look at the customer journey when the recipes have been ordered and planned by the consumer. Besides the possibility to view the weekly planning overview with the list of dates according to the correct week number, it will also be possible to have a short overview of what recipes you have currently home and what recipes you have ordered but still need to be delivered. At Crisp, it is already a functionality that an overview of what recipes you currently have home is shown, but it does not indicate which date or in what order. This is something the consumer can manipulate with the planning.

Scenario 6 - 'nu in huis'

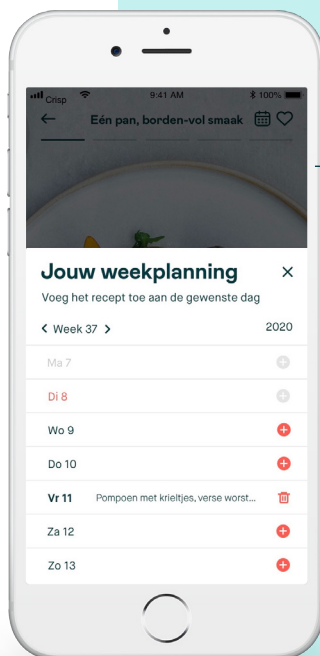
Lastly, for scenario six, a design is made where consumers have their recipe that they have ordered and planned delivered home. In this last scenario, the consumer should be able to see what recipe is planned on which day when it is delivered to their house. Also, it should be easy to consult the recipe and view the cooking instructions.

Detail page 1

On the detail page of a recipe, the calendar icon is shown again to plan.



2 Bottom-panel



Pressing the calendar icon, it will be possible to select a day in the planning.

Overview 3

Customers can keep overview of planned recipes that are ordered.

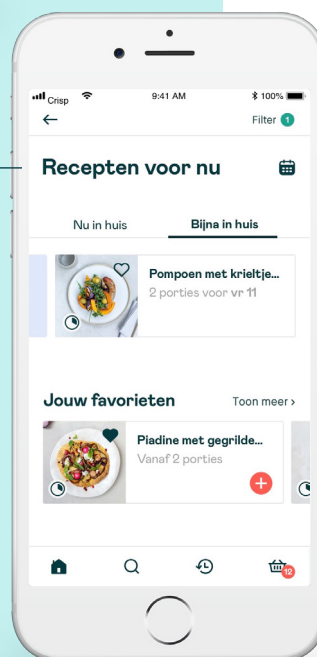


Figure 24: Simplified prototype overview (own figure)

4.3.4 Sweet spot

The ideal innovation process is finding balance in desirability, feasibility and viability. According to this IDEO model (2009) shown in figure 25, the innovation sweet spot is reached when reaching the balance between human, business and technology. When you miss one of these elements, you risk the idea is irrelevant, costly or impossible to develop. The 'weekly planning' concept is explained according to this terminology, which will elaborate on why the development of this concept according to the product innovation process of Buijs (2012) has reached this innovation sweet spot (figure 26).

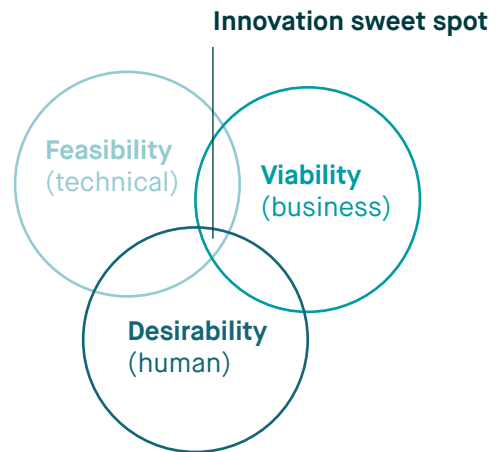


Figure 25: Innovation sweet spot (IDEO, 2009)



Figure 26: Innovation sweet spot for 'weekly planning' concept (own figure)

4.3.5 Retention

To conclude the product development chapter, elaboration is done on the concept design and the potential of the 'weekly planning' to increase consumer retention. During analysis of the data of the qualitative consumer research, the importance of consumer satisfaction as a motivational factor to continue using online shopping was already described (Hsu et al., 2006). Satisfaction with prior use is one of the main drivers of consumer retention in the online shopping environment.

But not only satisfaction to prior use with the online shopping service of Crisp or the 'weekly planning' will drive consumers to retain. Also, habit and experience are driving forces for consumers during online shopping (Khalifa & Liu, 2007). Several studies have already shown that retention can be achieved where habit exists, and is therefore important for repeated purchases of consumers (Quinn & Wood, 2005). When comparing habit to satisfaction, satisfaction sometimes does not lead to returning to a store when there is no habit formed for the consumer (Khalifa & Liu, 2007).

Next to this, prior shopping experience is stated as an important indicator for consumer retention, as prior shopping experience is one of the most important ingredients for habit formation (Triandis, 1971). Therefore, it is important to not only take into account the consumer satisfaction of prior use but also the habit and experience with online shopping, and in this case the 'weekly planning' in specific.

The concept developed has to contribute to consumer satisfaction and habit and experience. As the 'weekly planning' stimulates repeated usage by introducing a convenient way to get overview of the recipes you order at Crisp every week, it contributes to the habit and experience and therefore the increase of retention.

By further researching the potential of the 'weekly planning' concept to increase retention, it was found that measuring consumers perceptions of service quality also relate to retention (Zeithaml, Berry & Parasuraman, 1996). If service quality relates to consumer retention, then evidence can be found in the consumer behavior (Zeithaml et al., 1996). To measure service quality, the developed multiple-item scale SERVQUAL can be used (Parasuraman, Berry & Zeithaml, 1991). When measuring the determinants of perceived service quality of the consumer, online shopping behavior and thus the retention of the consumer at Crisp can be concluded.

To prove that consumers are satisfied with prior use, to positively validate habit and experience and to measure perceived service quality, an experiment should be set up. This experiment is described in the next chapter within the section 'product launch' and will elaborate further on what should be measured to conclude retention is increased by this concept. To get first insights on the potential of the 'weekly planning' to increase retention, concept validation is done amongst a few respondents and is described in the next section.

5. Product launch



In the previous to last chapter it will be explained what is needed to launch this product. Normally, market introduction is done, accompanied by a marketing strategy and plans for promotion and distribution. As this research project introduces a concept design, advice is given for Crisp on how this concept design should be developed further. First, concept validation is done to test whether the concept meets the design brief and could increase retention. Secondly, an experiment is described for Crisp to test and validate this concept in their context.

Content

- 5.1 Concept validation
- 5.2 Product launch



5.1 Concept validation

In order to check whether the 'weekly planning' concept that has been designed for the application of Crisp matches the design brief and to measure whether the concept contributes to retention, concept validation is set up. A quantitative research was set-up with a questionnaire containing questions that were all rated on a 7-point Likert scale.

People were asked to fill in questions according to a prototype shown in a short movie (appendix 19). The goal was to test three main elements during the validation, explained below. In total, twenty-three responses were gathered from a sample group of people who order groceries online or combine online shopping with visiting a physical supermarket. Some information was gathered from the sample group, shown in figure 27.

Planning concept

In order to check if what has been designed is understood, respondents were asked if they would know how the concept would work when seeing the short video of the prototype. Also, to check whether what has been designed was clear in usage, respondents were asked if they would know how to use the concept when seeing the

short video. These two questions were to measure the functionalities of the 'weekly planning' in general.

Design brief

Also, six questions were asked to measure whether the concept contributed to the developed design brief according to user research. Two questions validated whether or not the creativity of the respondent was triggered by this concept. Also, two questions were asked about whether or not their service felt personalized when reviewing the designed prototype. And lastly two questions were asked about the ease of use of the prototype when showing the short video, which contributed to convenience concluded in the design brief.

Retention

The third element that was validated during the short research was retention. Four questions were asked that had a contribution to retention. For example, consumers were asked if they would return to this supermarket for using the 'weekly planning' if they were a client. Also, they were asked if they would recommend the 'weekly planning' to others if they already were a client.

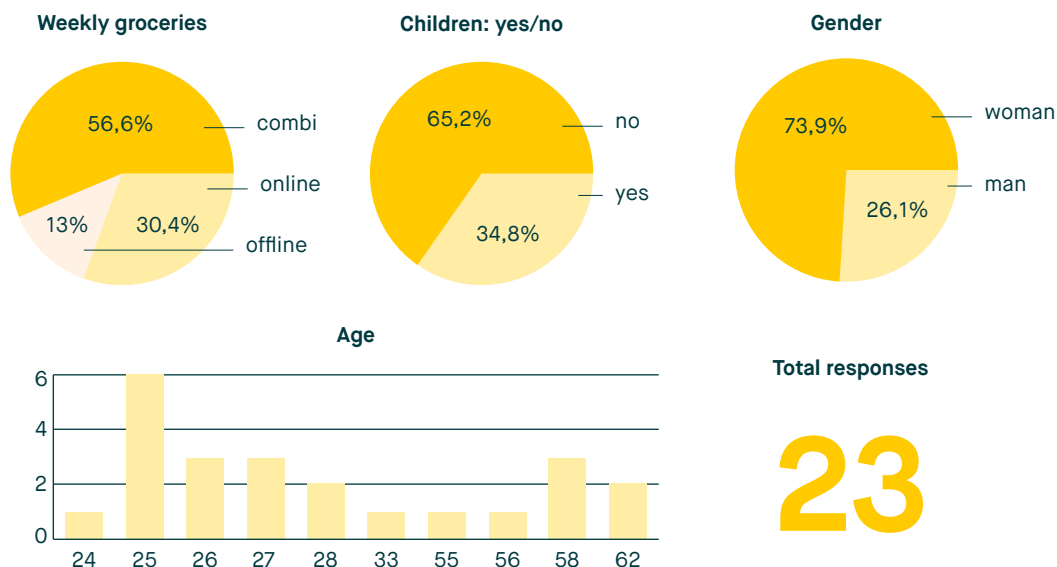


Figure 27: Sample group summary concept validation (own figure)

All was tested hypothetically, as the sample group of online shoppers based their answers on a prototype video, not on real usage of the 'weekly planning' over a period of time. On the experiment that Crisp could conduct in a real context is elaborated in the next section.

Results analysis

The responses that were gathered were analyzed on the three different elements that were measured. Conclusions of the validation are described.

Overall, it can be concluded that people understand quite well how the weekly planning works from seeing the video (figure 28). Also, most people know from seeing the video how they should use the weekly planning. This means that it can be concluded that the concept is clear for customers and respondents understand how to use it.



Figure 28: Graph 1 (validation, own figure)

Secondly, respondents relatively feel that their creativity is stimulated. Also, people are quite curious. From the results can be concluded that the 'weekly planning' is quite creative, but there is definitely room for more iteration.

Looking into the results of personalization of the 'weekly planning', respondents give various answers. They do not strongly feel the service is personalized. But looking at the second question about personalization, respondents do feel that they have the

possibility to adjust the 'weekly planning' to their own needs (figure 29). This, on the other hand, is a positive contribution to the personal element of the 'weekly planning'.

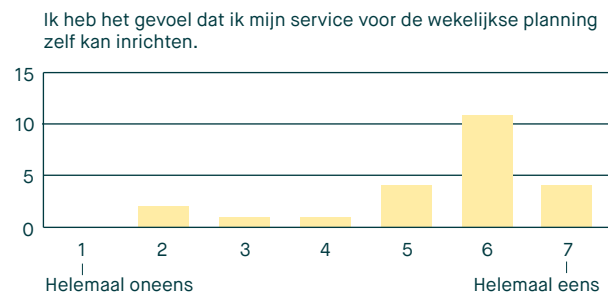


Figure 29: Graph 2 (validation, own figure)

From measuring convenience, the following can be concluded. Overall, respondents did not think using the 'weekly planning' costs a lot of effort. Also, consumers relatively thought the 'weekly planning' concept is not very time-consuming. In terms of convenience, the concept scored quite high amongst respondents.

Lastly, the potential of the 'weekly planning' to increase retention was measured. First, almost all respondents could appreciate using the 'weekly planning' concept. Secondly, more than half of the respondents would come back to this online supermarket because of using the 'weekly planning'. And finally, a significant number of respondents would recommend this planning to someone else (figure 30). As earlier mentioned, referral increases company growth (McClure, 2007). Therefore, this positive validation is already a contribution to increasing retention.



Figure 30: Graph 3 (validation, own figure)

5.2 Product launch

The last step in the product innovation process of Buijs (2012) is described as the product launch. For this research project, the concept design is not introduced to the market and not realized in the mobile application of Crisp yet. Therefore, within this section, it is explained what experiment could be conducted by Crisp when introducing this concept to the market and how the actual increase of consumer retention can be measured. As mentioned by Buijs (2012), analyzing the product in use in its context could be the start of a new product innovation process, as it's circular.

In order to set-up an experiment and measure retention of consumers when using the 'weekly planning', first it has to be described what type of consumer retention is desired by Crisp.

Type of retention

As already analyzed during researching the strategic situation of Crisp, Crisp wants to offer a high-quality assortment with local food options. Therefore, their assortment is narrower. This means customers still visit other supermarkets next to grocery shopping at Crisp as well to satisfy all their daily needs, either online or offline, which is also concluded from qualitative consumer research. For consumer retention can therefore be concluded that it is not one of the goals of Crisp to be the only supermarkets consumers use.

Crisp has set up a customer lifecycle that explains the stages a customer goes through, as explained already in the qualitative research section. They find a 'retaining customer' a good customer in their behavior.

When consumers are already retaining customers or become retaining customers during the experiment, and most importantly, they stay a retaining at Crisp using the 'weekly planning', the goal of increasing retention will be reached. To conclude,

Crisp desires loyal customers, but is aware their consumers seek for variety in grocery shopping.

Duration of retention

Also, it is relevant to write about the duration that is desired for consumers to retain while using the 'weekly planning' at Crisp. It can be a conclusion that retention is increased after running the experiment, but it is important for the company growth of Crisp that they retain customers for a longer period of time. Also, the period retention is measured in should be taken into account. For example, in the current context of COVID-19 an increase in retention can be measured, while in normal context consumer behavior might be different.

Measuring retention

For setting up the experiment for Crisp, it is important to research how retention can be measured. In marketing, behavioral loyalty, also known as retention of the brand, can be measured in several ways (East, Gendall, Hammond & Lomax, 2005). For grocery shopping, where customers may use several brands or supermarkets, researchers use share-of-category expenditure to measure customer loyalty (East et al., 2005). But also, portfolio size, meaning the number of brands used in a certain period of time, is a way of measuring retention.

These indicators measure retention for Crisp in comparison with other supermarkets. When looking at Crisp internally, McClure's (2007) theory of retention can be followed. He states it is important to evaluate the churn rate in comparison to the acquisition rate. Next to these metrics, also consumer satisfaction, habit and experience and perceived service quality can be measured prior to use and after a period of use to evaluate retention for the 'weekly planning' concept.

Experiment set-up

A controlled experiment is set-up for Crisp to check whether, after implementation of the feature, the 'weekly planning' concept will increase consumer retention.

The research methodology that will be used is A/B testing, meaning a randomized experiment with two variants, A and B (Ries,2011). This methodology is often used in marketing but can also be used during product development.

During the A/B test, two versions of the app are compared to determine the performance and for this specific case measure retention. The A version of the app is the normal version which all customers have, also called the control group. Within the B version of the app, the 'weekly planning' concept is launched, which we can name the variation group (figure 36).

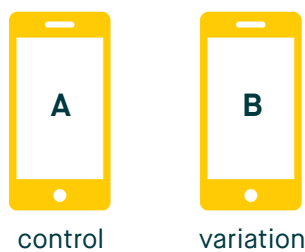


Figure 36: A/B experiment set-up (own figure)

Within a first test, a randomized group of 100 people can be sampled in the control group as well as in the variation group. Later, the sample groups can be expanded when necessary.

Confidential

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Figure 37: Customer lifecycle (Crisp figure)

When the sample groups are chosen and their current stage in the customer lifecycle is defined, it is time to generate a hypothesis. As this 'weekly planning' concept is designed to enhance retention, it will be hypothesized that the variation group B will have a higher consumer retention rate at the end of the experiment compared to the control group A.

Looking at what was researched about measuring retention, it is decided to first measure the retention internally within Crisp. When conducting a bigger research amongst users in a later stage, it is possible to investigate the consumer behavior by measuring their loyalty to Crisp in comparison to other supermarkets they use online and offline to do their groceries.

For this experiment, some elements are listed that can be measured.

- Acquisition and churn rate per customer.
- Satisfaction, habit and experience and service quality.

As mentioned already in the first chapter, retention is increased when the churn rate is lower than the acquisition rate. When doing so for A and B, the retention rates can be calculated and compared. Same counts for comparing satisfaction, service quality habit and experience prior to and after use.

Lastly, customer life cycle stages should be analyzed. When in group B a significantly higher number of customers are a retaining customer in comparison to control group A, it can be concluded that retention is increased by the 'weekly planning'.

6. Conclusion





Within the sixth and final chapter of this Master thesis, the conclusion is written. Also, recommendations for Crisp are given for further use of this research and the designed concept. Next to this, some limitations of research are described. Lastly, a process and personal reflection will elaborate on the project and on my personal ambitions and learnings.

Content

- 6.1 Conclusion
- 6.2 Recommendations
- 6.3 Limitations
- 6.4 Reflection

6.1 Conclusion

This research aims to increase the retention at Crisp through an innovation-based concept design. The following can be concluded in relation to the main research question of this Master thesis.

Research was done on what innovation in the online shopping environment could be interesting for Crisp to implement. Four search areas were concluded from internal and external analyses, being transparency, 'doing good', engagement and personalization. These four innovation themes were hypothesized and validated during consumer interviews. Extensive qualitative research and analysis led towards the generation of a grounded theory.

The general model for online shopping developed for Crisp is a conclusion from the consumer research. It is a direct translation of the explorative and creative Crisp customer and a description of what they value during online shopping. This general model for online shopping is used as a basis for design brief formulation and eventually for product development.

Following the design brief, stating the concept should be creative, personal, transparent, convenient and informative, the 'weekly planning' for the application was developed. This concept is an integration of consumers weekly planning of recipes in the application of Crisp. It unburdens customers in a smart way, it offers more personal convenience and it guides customers through the shopping process.

The 'weekly planning' is feasible to implement within the app, as a working prototype was developed, meaning the technology is in place. The concept is viable, as it contributes to convenience and ease of use which are the core values of Crisp, and tries to enhance retention as it stimulates repeated usage. And above all, the 'weekly planning' is desirable as the concept is built upon extensive user research, matching the

Crisp target audience. It fits the planning behavior customers have during online shopping. By balancing feasibility, viability and desirability within the 'weekly planning', the innovation sweet spot is reached.

The qualitative consumer research that was conducted contributes to the increase of retention through the 'weekly planning' concept design. As the product development follows from the direct consumer needs, it enhances repeated purchase and therefore increases retention.

Next to this, first validations show that the 'weekly planning' has potential to increase retention. Respondents find the planning personal, easy to use and would recommend the planning to others. Recommendation of the service, as concluded by McClure (2007), could have positive influence on retention.

It would be very valuable for Crisp to evaluate and measure the retention after launching the 'weekly planning' in the application. Within a control group and variation group, acquisition and churn rates need to be measured and compared. This will provide results on the increase of the retention rate of the 'weekly planning' compared to the control group. Next to this, another method to record an increase in retention is evaluation of the lifecycle of consumers. When the 'weekly planning' causes more consumers to retain as a regular consumer, retention is increased. Lastly, elements that can be measured amongst consumers to evaluate whether retention is increased by the 'weekly planning' are consumer satisfaction, habit and experience and service quality. When these factors are significantly higher after a period of using the 'weekly planning' than prior to use, retention has increased.

By analyzing this experiment, a new product innovation process can be started as it is circular, and continuous innovation is necessary for Crisp to realize growth and remain competitive.

6.2 Recommendations

Based on the results of this research project, there are several recommendations for Crisp.

First, elaboration is done on the outcome of the qualitative consumer research. This extensive user research and analysis was concluded in 'the general model for online shopping', and specifically developed for Crisp customers. This model contains various valuable insights, and not only clearly describes the consumer profile but also expresses their habits and thoughts during grocery shopping. It is recommended to use this model for next iterations on the prototype of the 'weekly planning', but to also use this model for new product innovation within the application of Crisp.

Secondly, the model can not only be used for design and validation within the Crisp application, it can also be used as an iterative model to gain deeper understanding of the consumer. By continuously developing the model through qualitative research amongst Crisp consumers and using other designers' perspectives, the grounded theory and thus the model developed will reach a higher quality. As written by Glaser and Strauss (1967), theoretical sensitivity causes the researcher to be the sum of what they have experienced. More experienced researchers have higher theoretical sensitivity, which makes analytical possibilities increase and, in its turn, could improve the general model for online shopping for Crisp. Therefore, it is recommended to use other designers' and researchers' perspectives to iterate on the general model for online shopping.

Thirdly, regarding the concept itself, no experience was gained in previous research projects on application design. It is therefore strongly recommended to iterate on the design of the 'weekly planning'. Although basic design principles of application design were researched and functional feedback from the qualitative consumer research on the first prototype was processed in the

design as much as possible, it is advised to iterate on the design further within the product team of Crisp. This could improve the design and can contribute to the adoption of the 'weekly planning' for their consumers and therefore the increase of consumer retention.

Lastly, it is recommended to run an experiment to measure the retention of the consumers after the concept is launched. As described already, the experiment could entail measuring retention rates quantitatively. By calculation of the retention through measuring the acquisition rate and the churn rate, the increase of retention can be validated. Also, consumer satisfaction, habit and experience and service quality amongst consumers can be measured to quantify an increase in retention. By conducting this quantitative experiment, direct results in measurements can prove the increase of retention.

To conclude this section, it is recommended to iterate on the design of the 'weekly planning' within the product team before launching it in the application. After launching the 'weekly planning', it is recommended to conduct a quantitative experiment to measure the increase of retention by the 'weekly planning'. Next to this, it is recommended to use the 'general model for online shopping' as a basis for new product innovations. The general model can be improved by conducting more qualitative research and by developing the model further and integrating perspectives from other researchers and designers.

6.3 Limitations

The limitations that should be taken into account for this research project are described in this section.

Due to the intelligent lockdown of the Dutch government to reduce the spread of COVID-19, the qualitative research was conducted fully online. Although consumer interviews were conducted via video calling, which comes close to having a face-to-face conversation, there were some limitations. Emotions of the user during interviews were not always clear. Missing these valuable cues, that could have been used for further probes, could have had impact on the quality of the consumer research and analysis.

Although conduction of online interviews was more efficient than meeting the interviewees in person, as geographic relocation was overcome, this could also have a negative effect on the quality of the qualitative research. The willingness of respondents to participate could have been lower as the targeted sample groups could have felt uncomfortable with having an interview online. Also, participants could have had less focus as they were responding from their own environment. Within the first lockdown period participants' disturbance of standard habits could have had a negative effect on the behavior of respondents towards participating in an interview. Being in their own environment could have, on the other hand, also contributed positively to the quality of the interviews, as respondents could have felt more secure and confident in their own contexts compared to when being in the Crisp office, and therefore answering questions could have been easier for them.

Also, as an effect of COVID-19, the shopping experience at Crisp was not always optimal. As more consumers were in need of ordering their groceries online, as it was advised to stay home as much as possible, it was a busy period for Crisp. This caused delivery slots to be full and products to be out of stock. For consumers already ordering at Crisp,

this could have been a user experience with a lower quality compared to the standard grocery shopping experience at Crisp, which could have had a negative effect on the quality of the consumer research.

Another limitation of this research was that, caused by the qualitative research approach, currently no measurements support the potential increase of consumer retention through the 'weekly planning'. Although first validations of the concept prove the potential increase in retention of the concept, no real data can support these statements. Therefore, as already mentioned in the recommendations, it is advised to conduct a quantitative experiment to prove the results.

Finally, some limitations are described for the concept design that was developed. Due to time constraints, it was not possible to dive deeper into the complexity of the concept design. The customer journeys and the scenarios that are worked out are representative to describe the basis and the working principles of the 'weekly planning', but there is more to be designed. For example, nudges that suggest planning your recipes can be implemented in the checkout, and an integration of the 'weekly planning' within other elements in the application, such as the inspiration pages and the product categories, can be developed. Currently, only scenarios are worked out for planning recipes as a minimum viable product.

Despite conducting a short research on design principles for apps, limited knowledge of application design could be applied in the concept. That is also why, as mentioned in the recommendations, iterations within the product team of Crisp are recommended to further develop the concept before product launch.

6.4 Reflection

To end this Master thesis, a reflection is given on the process of this research project and a personal reflection is given on the learning ambitions and experience.

6.4.1 Process

A critical evaluation was done on the product innovation process of Buijs (2012), used as a guideline for the development of a new product innovation for Crisp. This seemed like a logical framework to use, as it was concluded that Crisp needs continuous innovation to stay competitive and increase consumer retention. Although the five step framework of Buijs (2012) was a good fit for this research, another look was taken to the theory of Verganti (2009), described shortly already in the solution space.

In my opinion, in contrast to Buijs (2012), the approach of Verganti (2009) does not specifically seem to focus on an innovation process as a whole, but focusses more on the radicality of the innovation itself. Earlier mentioned in the solution space, it should be researched if Crisp needs incremental or radical innovation to increase retention. By clearly following the product innovation process by Buijs (2012), this question seems to be unanswered. Nevertheless, I do believe it remains valuable to use this categorization of innovations by Verganti (2009) as a guideline for new product development. By reflecting on the process, and speculating about other outcomes, it would have been interesting to see whether the involvement of the theory of Verganti (2009) would have resulted in another perspective on innovation.

When reflecting on radical or incremental innovation, and the development of either of these in the application of Crisp, the article by Kester et al. (2011) is consulted. Kester et al. (2011) state it is a challenge to make effective new product development decisions and not easy to find balance between incremental

and radical innovations, and therefore have a balanced product portfolio. Therefore, not only it is important to evaluate the impact of this innovation in the app, but also evaluate the impact of this innovation on the product portfolio as a whole.

Combining these reflections and looking back on the project, I would have found it interesting to discover more about incremental and radical innovations and their relation in a product portfolio. Further research could be conducted on the impact of a balanced product portfolio on the increase of consumer retention.

6.4.2 Personal

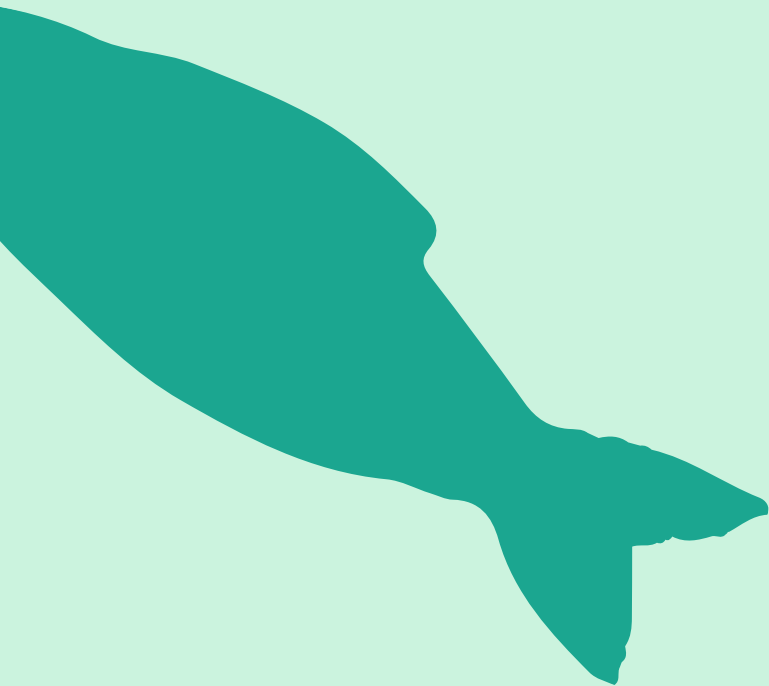
In this reflection, I would also like to elaborate on my personal ambitions.

One of my main ambitions was improving my interviewing skills. Although this process was fully online, I noticed improving my approach towards the interviewee with every conversation. Before this graduation project, I always found it hard to obtain the correct information from users during interviews. As for now, I not only find it fun to strive for good output, but also the quality of consumer data has improved extremely.

Next to this, another skill I wanted to improve was gaining more experience in application design. During the design and development of the concept, I enjoyed working with the tools and programs provided by Crisp. It was challenging, though very satisfying to play with this app design and I am proud of the results.

I was happy to develop qualitative research skills and gather more practical experience in a digital environment, and I am glad to conclude that this research had a contribution to discovering what I value as a designer. It has been a great journey!

7. References





References that are used within this Master thesis are split up in two sections. First, the references within the body text are listed. Second, the references of the tables describing the general model for online shopping are written.

Content

7.1 References in body text

7.2 References in tables



7.1 References in body text

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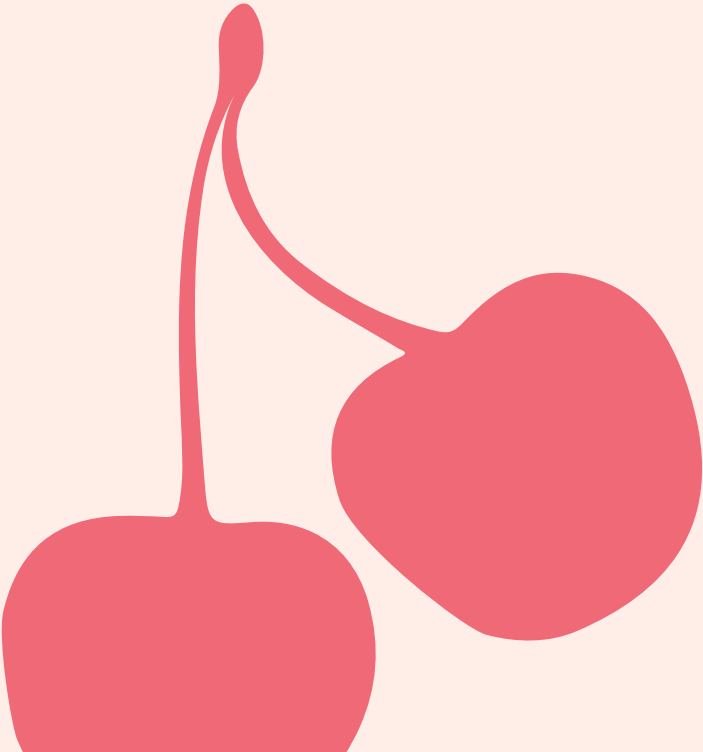
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8. Appendices





The following appendices have been documented to support the Master thesis.

Content

- 8.1 Project brief
- 8.2 Project planning
- 8.3 Gantt chart
- 8.4 DESTEP analysis
- 8.5 Trend Topics analysis
- 8.6 Trend Patterns analysis
- 8.7 SWOT analysis
- 8.8 Interview guide
- 8.9 Interview prototype
- 8.10 Interview sample profiles
- 8.11 Interview guide (scanned)
- 8.12 Interview transcripts
- 8.13 Interview memo's
- 8.14 Final codebook
- 8.15 Integrative diagrams
- 8.16 How to's
- 8.17 Brainstorming concepts
- 8.18 Concept selection
- 9.19 Concept validation

None of the appendices are attached to this Master thesis as they include confidential information. Except for the project brief, which is a mandatory deliverable.



8.1 Project brief



Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF
To be filled in by the chair of the supervisory team.

chair _____ date _____ signature _____

CHECK STUDY PROGRESS
To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 6 EC YES all 1st year master courses passed
Of which, taking the conditional requirements into account, can be part of the exam programme 6 EC NO missing 1st year master courses are:

List of electives obtained before the third semester without approval of the BoE
()

()

name _____ date 25.2.2020 signature CB

FORMAL APPROVAL GRADUATION PROJECT
To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks?
- Does the composition of the supervisory team comply with the regulations and fit the assignment?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

- planning is 3 weeks too long

comments

name Hultink date 19-02-2020 signature [Signature]
mv moyn 2-3-20 [Signature]

IDE TU Delft - E&SA Department /// Graduation project brief & study overview /// 2018-01 v30

Page 2 of 7

Initials & Name L Halkes Student number 4280326

Title of Project Innovation based concept design for digital grocer Crisp

Innovation based concept design for digital grocer Crisp project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 03 - 02 - 2020 23 - 10 - 2020 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

The context of this project lies within e-commerce retailers, further specified as on-line supermarkets. Crisp is a digital grocer who delivers fresh groceries directly from producer to households. The on-line supermarket Crisp has a convenient application where you can easily order your fresh groceries, delivered home throughout the Netherlands. As a start-up, only existing for one year, Crisp has to keep up with innovation and win terrain within the big and highly competitive landscape of current grocery ordering possibilities. With their unique vision on convenience of application usage and freshness of the products itself, they are different than others already out there. But the market around them is developing fast. The world is digitalizing, which is changing consumer habits and their demand and preferences for products and services in the food industry. What innovations are important to implement the coming two years? E-commerce itself has been a disruptive force in grocery retailing, but what is next?

The most important stakeholder involved in the project is the consumer of Crisp. Their opinion is highly valued and analyzed in order to adjust the service to their wants and needs. Through an iterative design process, consumer interviewing and product development are used alternately. To design in line with the customers opinion, this project is going to make use of start-up techniques that provide this research with continuous customer feedback in already an early stage of the project. Crisp consumers appreciate convenience and value fresh products with a high quality. These unique selling points of Crisp could be made more transparent towards the customer, by applying certain branding techniques within the application design. Also opportunities lie for example in personalization of orders for consumers. Currently consumers are able to order their food before 22:00 and the order will be delivered the next day after 18:00. A lot of opportunities still lie in the tracking of the products, and therefore creating more consumer engagement. Through trend research and interviewing techniques, most important opportunities and innovation possibilities will be uncovered and analyzed.

Another important group of stakeholders are the suppliers. The assortment of Crisp has a high quality, usually products have a good story and they are produced locally. To maintain these key aspects of their vision, Crisp has to be in close contact with their suppliers and has to sustain relationships to make sure they can control these values. By making sure these products are delivered directly from the supplier to the consumer, the supply chain is kept as short as possible and consumer attachment with the product and transparency about the process is ensured. When upscaling their business, a lot of opportunities lie within their geographical spread. As Crisp currently only has one distribution hub in Amsterdam, the local products still need to be collected there in order to be distributed. It is most needed to consider geographical factors when innovating in e-commerce retailing. It is important that within this innovation based concept either consumer and supplier are carefully researched and analyzed to design a concept that fits. As mentioned above, optimization of the traceability and data of the products is also a big opportunity within the context of suppliers. Also, through Crisps' ambitious vision and high demand of freshness, the supply chain technology they use could be looked into as a factor of improvement.

As Crisp has their own technical development department, technically no limitations are foreseen. A limitation that could occur is lack of financial support, as Crisp is still a company that is growing towards a scale-up. Within this project it is important to keep an eye on the business model to make sure the project is most realizable.

space available for images / figures on next page

Personal Project Brief - IDE Master Graduation

introduction (continued); space for images

Zo werkt Crisp

<p>Voor 22:00</p> 	<p>Vanaf 04:00</p> 	<p>Vanaf 18:00</p> 
<p>Kies je boodschappen</p> <ul style="list-style-type: none"> • Alleen van de beste makers en telers, dus altijd goed • Bestel vanaf €35 • Morgen in huis, waar je ook woont 	<p>Wij gaan aan de slag</p> <ul style="list-style-type: none"> • Wij bestellen pas als jij bestelt, dus we hebben geen onnodige voorraad • Dat maakt ons net zo betaalbaar als een "gewone" supermarkt • En je boodschappen zijn altijd erg vers 	<p>Bezorgd wanneer jij wilt</p> <ul style="list-style-type: none"> • We houden je precies op de hoogte van de bezorging • Elke doordeweekse avond tussen 18:00 en 22:00 uur • €2,95 bezorgkosten en vanaf €75 gratis!

image / figure 1: A summary of how Crisp as a service works

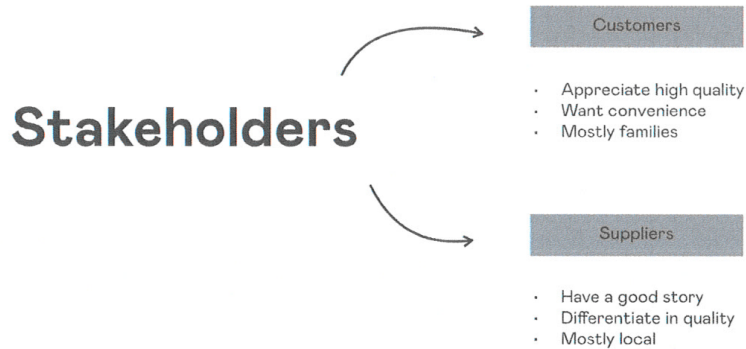


image / figure 2: Main stakeholders and their characteristics

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

The scope of this project is that it is important to closely research innovations that could be implemented in the following two years. No bigger time-frame is used to reduce the risk of building something that is not likely to be adopted by current customers. In line with this, it is also important to gather early customer feedback on prototypes, to keep the risk of building something irrelevant as low as possible.

As a company, Crisp faces two main problems. The first problem is that the average order value (AOV) per customer is still too low. This means the current customers order too less per visit, and implies that Crisp is not the only supermarket where their customers do groceries. Within this project it is researched what strategy or innovation in addition to the current application assets could make sure AOV is increased. The second problem is that the retention is too low. This means that the amount of customers returning to Crisp after placing orders is not high enough. Customers may have forgotten about Crisp, they may find Crisp too expensive or the assortment may not cover all their daily groceries. Through extensive consumer research it is discovered what innovation should be implemented in the application to solve these two problems.

Most of current Crisp customers are families. It could be interesting to take a closer look into other target groups and uncover their reasons for not using a digital grocer, and specifically Crisp, yet. Also information could be collected on non returning customers, and their potential reasons for choosing another grocer. It is important that the concept design fits all current consumers to increase AOV but also target new consumers and try to enhance retention.

To increase AOV and retention and to solve these two problems, the assortment could be made bigger or more diverse. For the sake of this project, the solution space only lies within innovation of the application. This means that no further specific research is done on providing customers with a different assortment.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

In this project, innovations that fit both the customers needs and the company's vision are researched. By following start-up methods, early prototypes according to these innovations are built to validate amongst clients and iterate the design. In the end, a concept design for the digital grocer Crisp is made that can be implemented in the application fitting most relevant innovation(s) within e-commerce retailers in the coming two years.

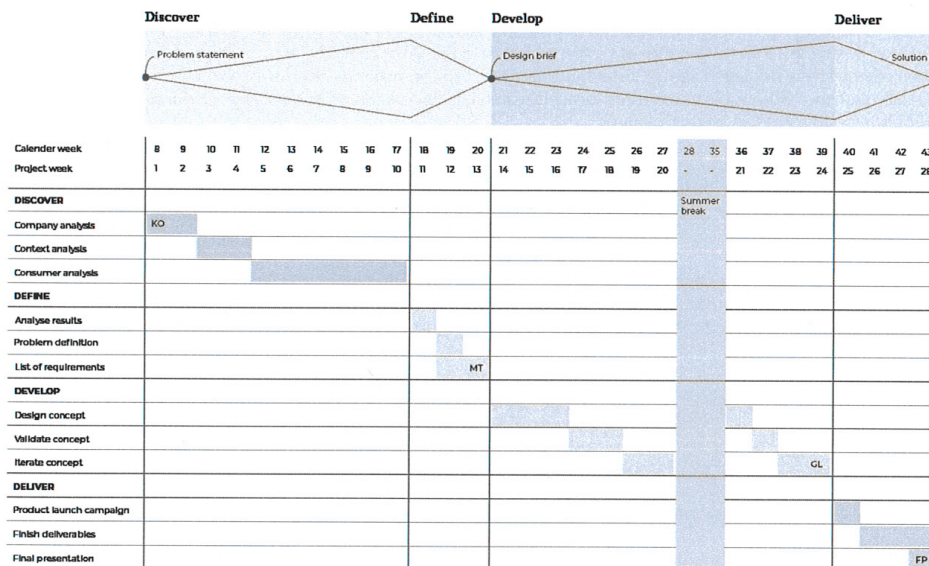
After performing analysis, being mainly consumer focused, and analyzing these results, most important innovations that Crisp should implement will be uncovered. These innovations will be the base of new product development within their existing application. By being in close touch with the product design and technical development department within Crisp, possibilities for innovations in the application will be matched with results derived from the research. In the end, a concept design for the application will be delivered which combines a strategic perspective on the direction Crisp should head to maintain relevance and a product-service combination design of the new feature in the application. To conclude the deliverables and to illustrate the concept design, a product launch campaign is developed which describes how Crisp should market this new innovation.



Personal Project Brief - IDE Master Graduation

PLANNING AND APPROACH **
 Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 3 - 2 - 2020 23 - 10 - 2020 end date



The planning is based on the Double Diamond model which is shown in the image above (Design Council, 2005). This model helps designers to structure the design process. The two diamonds stand for firstly thinking more widely and deeply (divergent thinking) and then taking more focused action (convergent thinking). This framework helps to innovate and work as effectively as possible.

In the discover phase of the project, focus lies on analyzing the consumer. Within the vision of Crisp, it is very important that the design will seamlessly fit the consumers needs. This consumer analysis will be build up of 'build, measure, learn' loops, where prototypes will be tested with consumers. After this phase, the design brief will be defined and the results of the discovery phase will be analyzed. The problem definition is going to be formulated and the list of requirements for the new product development is made. A summary of these first two phases will be presented in the mid-term presentation.

Afterwards, in the development phase, the concept for the application is designed, and validated and iterated on. The summer break of two months (where I will leave for a project in South-East Asia, further explained in extra comments below) will follow. With a fresh perspective on the design after the summer break, the last iteration will be made and the green light presentation will be prepared. The final weeks before the presentation, a product launch campaign will be developed to give Crisp all the information they need to potentially market the new innovation. After this, all the deliverables will be finished and preparation is done for the graduation ceremony.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

When starting to look for graduation topics, I knew that I would be interested to write a strategy for a company within the food industry. This is an industry I haven't performed big projects in yet but was something very high on my priority list. Food, and especially the way we consume it, is a daily life activity which occupies a lot of our time. Therefore I find it very interesting to analyze these processes and discover how innovation is possible in these rituals to make these processes not only more efficient and convenient but also a greater experience and more fun. If buying, preparing and eating food is such a time-consuming activity, why should we not continuously look for the best way to do it?

Besides this motivation, in the preparation phase of this project, I started to gain interest in writing this strategy for a start-up. As start-ups usually have an in-house technology team which is closely aligned with the product team and strategy team, I expected to realize more and quicker impact in product development in a start-up than in a big corporate firm. Crisp is the company who got on board with me to start this challenge of implementing exciting innovation(s) in their product design.

I want to prove my consumer analysis and trend research competences to come up with a well thought and coherent concept design for Crisp's application. These are skills I developed through projects within the Master that I would love to use and develop further. My organizational and structuring competences, which I developed during extra-curricular activities, could be of good use during concluding results from these analysis. Also these competences could be of use during managing my own project. At last I would like to use my critical mindset in this project to dig deeper and get to the bottom of finding out what fits the user's needs when it comes digital grocery shopping.

In line with my motivation of writing my research thesis as a graduate intern at a company, there are several learning ambitions I would like to develop which are start-up related. I want to learn the tools and methods start-ups usually use to design their products and concepts. The design process of start-ups is usually quicker and allows for a lot of validation from customers. I would like to experience these methods in a working environment. In addition to this, I would like to further develop my interviewing skills and find a way on how to get the most information out of customers. It would also be interesting to learn more about application development and on what level I could be included in the specific design of features in the application that are derived from the analysis. Also I would find it interesting to experience not only the specific design of the on-line supermarket application in detail, but also learn more about how the strategy of such companies is built up and where innovation plays a role. As most of these learning objectives are somewhat practical, I would lastly want to develop combining practical experience with a research point of view. I would want to discover where academic research would meet a practical working environment when it comes to designing and developing a product for a start-up.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

The overall project will take more time than usual. This is because the graduation project is combined with a summer project in July and August which is called International Research Project (IRP) Delft: multidisciplinary team of TU Delft Master students performing projects for several company's during summer. In preparation of these projects, eight hours a week are needed for IRP related work. Therefore four days a week are used for the graduation program instead of five. This is why the eventual graduation date is set in October.

