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**Publication date**

2020

**Document Version**

Other version

**Published in**

Proceedings of the 6th International Conference on Design4Health

**Citation (APA)**

van Engen, V. P. M., & Bos-de Vos, M. (2020). How Supermarkets can Help their Customers to Become and Stay Healthy. In K. Christer, C. Craig, & P. Chamberlain (Eds.), *Proceedings of the 6th International Conference on Design4Health* (Vol. 4, pp. 51-58). Sheffield Hallam University.

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**Proceedings of the 6th Conference on Design4Health**

**Editors: Kirsty Christer, Claire Craig & Paul Chamberlain**

**Volume IV**



Proceedings of the 6th International Conference on Design4Health

Amsterdam, Netherlands, 1st - 3rd July 2020

Editors: Kirsty Christer, Claire Craig and Paul Chamberlain

ISBN: 978-1-8381117-0-0

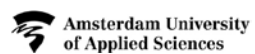
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## Volume 4

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# Citations for the Proceedings

Christer Kirsty, Craig Claire and Chamberlain Paul, eds. 2020. *Proceedings of the 6th European Conference on Design4Health*, 1st-3rd July 2020 Amsterdam:

Sheffield Hallam University.

ISBN: 978-1-8381117-0-0

Citation for Paper in Proceedings (Chicago author-date): 11

Author Surname, First Initial. Second Initial. (Year). Conference paper title. In Christer K. Craig C. and Chamberlain P., eds. 2020. *Proceedings of the 6th European Conference on Design4Health*, 1st-3rd July 2020. Amsterdam:

978-1-8381117-0-0

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# How Supermarkets can Help their Customers to Become and Stay Healthy

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*ABSTRACT Preventing or decreasing chronic health conditions by healthy eating is increasingly seen as a shared responsibility. Defining what is healthy is person-specific, depending amongst others on a person's health and responses to food. Supermarkets, which are considered highly influential in shaping the diet of customers, are starting to serve customers based on their health needs. This study explores how supermarkets can tailor their service provision to the dietary needs of individual customers and what business and design implications this involves. Through a service design approach involving participants with elevated blood glucose levels, thoughts and emotions during the process of dietary change were translated into a customer journey that reveals multiple opportunities for service delivery to support healthy eating. The customer journey can be used by supermarkets to shed new light on their positioning and customer segments. The study also provides inspiration for how supermarkets and other organizations can support customers with specific health needs to eat healthy via group-based and personalised services.*

Keywords: diet, health, supermarket, service design, customer journey, co-creation

## Introduction

Supermarkets are considered highly influential in shaping dietary choices (Waterlander et al. 2018). While they are typically seen as organizations that seduce customers to make unhealthy choices, they can also support customers in adopting and maintaining a healthy diet. However, how they can effectively support individuals in healthy eating is unclear. Using a service design approach, this study investigates how supermarkets can tailor their services to specific dietary needs of individual customers, and thereby contribute to their health. As this approach to serve customers based on their health needs is still nascent, this study answers the following research question: How can supermarkets facilitate and support their customers in dietary change and what business and design implications does this involve?

The focus of the study is on reducing the consumption of refined carbohydrates, which are eaten in abundance globally (Nelson et al., 2018). The excess intake of carbohydrates causes insulin resistance and elevates blood glucose levels (Zeevi et al. 2015). People with elevated blood glucose levels risk developing diabetes type 2, which causes them to live in suboptimal health and simultaneously puts pressure on the care system (Gibney 2002).

Studies have shown that reduced carbohydrate intake as a nutritional strategy has beneficial effects on blood glucose levels of both healthy people and people with diabetes type 2 (Westman et al. 2007). At the same time, research shows that people have unique blood glucose responses to food (Zeevi et al. 2015), implying that there is no 'one-size fits all' diet (Szakály, Fehér, and Kiss 2019). This indicates that generic food recommendations need to be replaced by advices tailored to specific groups and characteristics of individuals by means of precision nutrition (Palmnäs et al. 2019).

## Method

A service design approach was taken as both services and dietary change involve a sequence of interactions over time (Polaine, et al., 2013). Data were collected and analysed via two activities with people who adopted a carbohydrate-restricted diet to lower their blood glucose levels. With the exception of one participant, all participants underwent the dietary change recently and were therefore capable of recalling their thoughts and describing vivid situations. Due to the focus on service opportunities for supermarkets, the participants are referred to as 'customers' instead of patients. Each activity was performed with the participants individually, and took between one to two hours. The activities resulted in written documentation created by the participants and notes taken by the researcher. These notes were developed further immediately after the activity.

### *Activity 1. Constructing and exploring the 'thoughts & emotions' customer journey*

The main author constructed and explored a customer journey with five participants who followed a carbohydrate restricted diet. At the start, the purpose of the study – the exploration of how supermarkets can serve customers in healthy eating – was explained. Subsequently, via a three-step process, participants were invited to share their experiences during the process of dietary change by describing the thoughts and emotions which they deemed potentially relevant or of interest for supermarkets to establish new services.

First, participants shared the process from being diagnosed with elevated blood glucose levels to adopting a carbohydrate-restricted diet. The Product Emotion Measurement Tool (Desmet 2019) in combination with a timeline, helped participants to express the thoughts and emotions that they experienced over time (see Figure 1). Participants were asked to map their thoughts on the timeline with a brief verbal description of the situation, and enrich each thought by picking a sticker that best reflected their emotion during that specific thought. The participants were instructed to place the sticker and explanation on a fitting position of the timeline, with the y-axis ranging from an intense positive emotion (top), via a neutral emotion (middle), to an intense negative emotion (bottom); and the x-axis representing the chronological order of their thoughts and emotions. The diagnosis of elevated blood glucose levels marked the start of the journey. The ending of the timeline was left open for the participants to describe their current state. Afterwards, the participants were asked to indicate which stages they considered as critical. A critical moment was defined as an important moment with impact on the person's next steps, either in a positive or negative way. Finally, the participants were asked to write down the support (e.g. consultation with medical professionals and patient-to-patient platforms) that they used during the transition, and indicate during which moments the desired support was absent or ineffective.

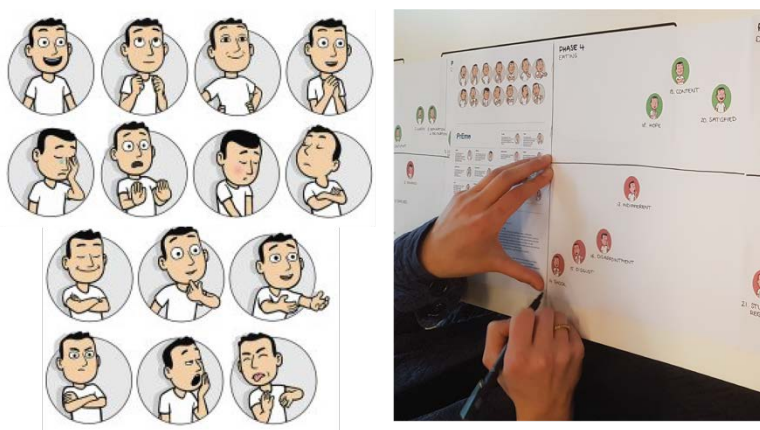


Figure 1: The emotion stickers by Desmet (2019) (left), used by a participant to construct a 'thought & emotion' customer journey (right).

### *Activity 2. Opportunity finding with a synthesized customer journey*

The customer journeys participants constructed served as a basis for the creation of a synthesized journey. First, the individual maps were analysed for overlapping thoughts, emotions and critical aspects. The resulting synthesised customer journey includes a combination of reoccurring concepts, such as sadness to give up on enjoyable foods; and less obvious thoughts and emotions that were considered critical by individuals, such as the concern of eating more fat. In case of variability in participants' thoughts and emotions, the extremes were integrated in the journey. The synthesised map, which is shown in Figure 2, contains four phases: 1) Awareness and Consideration, 2) Preparation, 3) Doing, and 4) Evaluating.

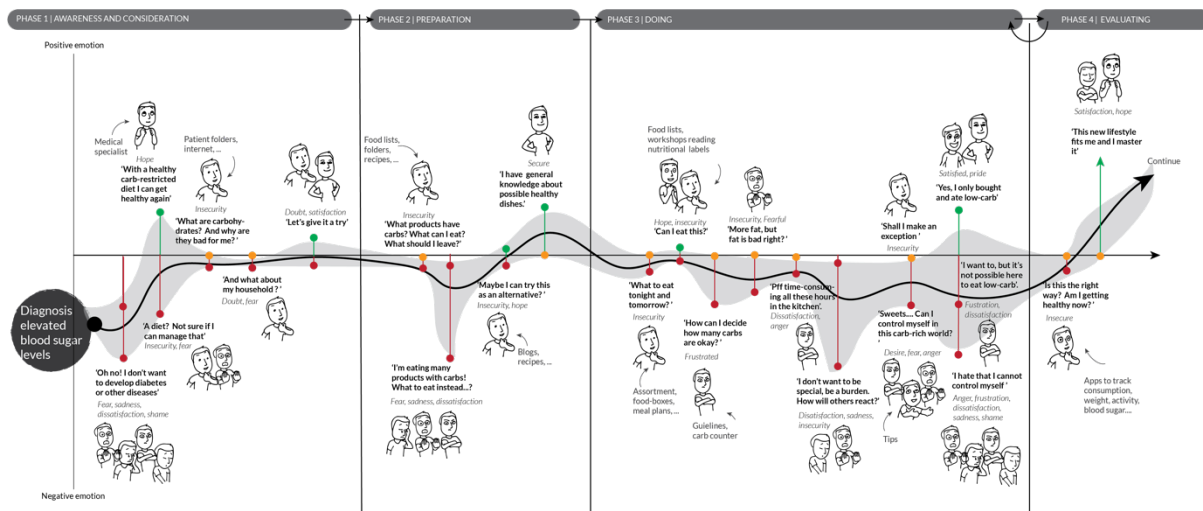


Figure 2: The synthesised customer journey reflecting thoughts and emotions during dietary change.

Then, two people with diabetes were engaged in opportunity finding by discussing the synthesised customer journey. Both participants (a founder of a patient-to-patient diabetes platform and an ambassador of a diabetes patient organisation) work with different types of diabetes patients on a daily basis. They could therefore contribute valuable input from the perspectives of different patient profiles. To find windows of opportunities, participants were invited to share ideas that could support a person with elevated blood glucose levels in (stages of) the dietary change. Each idea was discussed to find the underlying need or desire, which represented the opportunity. The participants were asked to cluster the needs and desires and describe the overarching opportunities (see Table 1). The main author helped the participants in this process by asking questions and summarizing insights. To arrive at a final clustering, participant two also reflected upon the results of the session with participant one.

Table 1. Fragment of the clustering that led to the fifth opportunity.

OVERARCHING OPPORTUNITY	DESIRE/NEED CLUSTER	DESIRE/NEED
Creating a supportive environment	No seduction	<ul style="list-style-type: none"> <li>No promotion of carb-rich products (e.g. discounts, recipes)</li> <li>Low-carb routes or sections</li> </ul>
	Self-initiated restriction	<ul style="list-style-type: none"> <li>Shielding carb-rich products during online purchase</li> <li>Setting personal restrictions related to carb-quantity</li> </ul>
	Stimulating healthy choices	<ul style="list-style-type: none"> <li>Incentives to buying low-carb</li> <li>Rewarding good behaviour</li> </ul>
	Social acceptance	<ul style="list-style-type: none"> <li>Low-carb party and dining assortment</li> <li>National educational campaign</li> </ul>



## Findings

The activities resulted in two generic observations and five windows of opportunities.

### *Generic observations*

The first observation is that an opportunity can reinforce positive emotions or improve negative emotions, and thereby enhance customer experience and motivation. An example of reinforcing a positive emotion was to strengthen pride after successfully withstanding seduction. To enlighten a negative emotion, a participant suggested avoiding the word 'diet' as this word has a negative connotation. The second observation is that opportunities are present throughout the complete customer journey and do not limit themselves to existing touch points and interactions with supermarkets.

### *Opportunity 1. Facilitating evaluation of diet-related health*

The first opportunity describes the use of health check-ups, in this case assessment of blood sugar levels, to: 1) enable supermarkets to offer targeted and personalised health-driven services, 2) enhance customers' receptiveness to dietary change, and 3) establish a feedback loop.

An initial health check-up is required to identify customers with elevated blood glucose levels, and thereby enable supermarkets to offer these customers targeted services to improve their health via diet. Moreover, the test outcomes create awareness and enhance customers' receptiveness to change. A participant described: 'by seeing the outcomes I realized that I really needed to change'.

Participants also sought follow-up tests to evaluate the effectiveness of their diet and make changes if necessary, empowering them in self-management of their health. Furthermore, participants expressed the desire to evaluate other diet-related health metrics, such as cholesterol and blood pressure, as these metrics should be integrated to offer a truly personalised diet.

### *Opportunity 2. Encouraging a positive attitude towards dietary change*

The second opportunity is to encourage customers in developing a positive attitude towards dietary change by enhancing knowledge and skills, and facilitating them to experience the new diet as a way to combat negative prior experiences and prejudices.

Participants mentioned to be hesitant to commit to a diet. Reasons for this hesitance were negative prior experiences with dieting, having prejudices about dieting, lacking knowledge and having low perceived self-efficacy. One participant explained that he does not like to commit to unfamiliar things, as he does not know what he will commit to. These reasons imply that customers may not even consider dietary change.

Interestingly, the participants expressed that their perception of the diet changed after experiencing it and seeing positive health outcomes, such as weight loss and improved blood glucose levels. People described a transition from being insecure and hesitant to feeling convinced, satisfied, proud and in control. Despite describing their new diet as having less variety, the participants also

described it as tasty, easy and healthy. This shows the importance of making people attempt the new diet.

### *Opportunity 3. Exploring opportunities for dietary improvements*

Third, supermarkets can support customers to 1) structurally evaluate the healthiness of their diet and 2) provide healthier alternatives accompanied by evidence.

First, participants desire support in evaluating the healthiness of their current diet. Participants mentioned that reflection on one's diet remains important as carbohydrate-rich foods may be present in a 'hidden' form, product ingredients may change and healthier alternatives may emerge.

Second, participants seek support in finding alternatives to the unhealthy products in their diet or the 'healthier' options. This exploration was described as an emotional rollercoaster, driven by successes and failures in finding healthy and desirable foods. However, participants mentioned to experience distrust towards supermarkets and manufacturers and their dietary advices. Participants said that supermarkets should proof if, and how, their proposed alternatives are better compared to other products. Collaborations with experts and research institutes were mentioned as possible ways to enhance trust.

### *Opportunity 4. Supporting implementation of the new diet*

A fourth opportunity is to provide customers practical support to implement the new diet. Participants described the desire for support during day-to-day actions related to their diet. For example, they seek meal inspiration and support in reading nutrition labels as this is considered effortful and complex. Furthermore, a participant described the inner-conflict of consuming more fat. He desired guidance in determining the right quantities. Moreover, some participants wished to reduce the time they spend in the kitchen to make low-carb foods such as seed crackers.

### *Opportunity 5. Creating a supportive environment*

The fifth opportunity is to create a fully supportive environment that accommodates and stimulates a healthy diet by redesigning the food ecosystem and enhancing knowledge and acceptance in society.

Participants described to experience various negative emotions caused by their environment. The first problem occurs when the social environment does not accommodate the diet, for example during catering of events. This can also happen unintentionally as described by a participant: 'a friend who invited me for dinner failed to offer a low-carb meal due to her lack of knowledge'.

Seduction was the second problem that was voiced. Some participants perceived the sight of unhealthy foods as challenging. One participant described a strategy for self-control by only shopping in the outer ring of supermarkets; the vegetables, dairy and meat and staying away from the inner part. Another participant wished to adapt the visibility of products during online shopping. He described that: 'interventions to eat healthy make no sense if supermarkets simultaneously seduce you to buy unhealthy products'.

## Conclusion & discussion

The aim of this study was to explore how supermarkets can tailor their service provision to the dietary needs of their customers and what business and design implications this can involve. The contribution, which is primarily focused on commercial organizations that already do or wish to engage in designing for health, is twofold: 1) it describes how a customer journey can be used to shed new light on their positioning and customer segments, and 2) it presents five opportunities to support healthy eating and associated business and design implications.

The results outline five service opportunities that supermarkets can use to enhance their social responsibility by supporting a healthy diet and thereby contribute to preventing and reducing the occurrence of diet-related diseases: 1) facilitating evaluation of diet-related health, 2) encouraging a positive attitude towards dietary change, 3) exploring opportunities for dietary improvements, 4) supporting implementation of the new diet, and 5) creating a supportive environment.

These five opportunities have several implications for supermarkets and designers who work on stimulating healthy eating. First, precision nutrition (i.e. moving from generic services to group-based and personalised services) is important to take into account (see Figure 3). This is in line with earlier research, which highlighted the potential of precision nutrition to optimize health (Palmnäs et al. 2019; Szakály et al., 2019). It means that supermarkets need to transition from serving the population to serving individuals. Diet-related health needs of customers can be used to identify new customer segments. Customers with elevated blood glucose levels represent one example of such new customer segment. Services may target the needs of customers in this segment and can be personalised by integrating the lifestyle, dietary preferences and context of individual customers. Another option to personalise services is to include individuals' unique responses to specific foods. Personalised services are important to satisfy customers and thereby enhance customer retention.

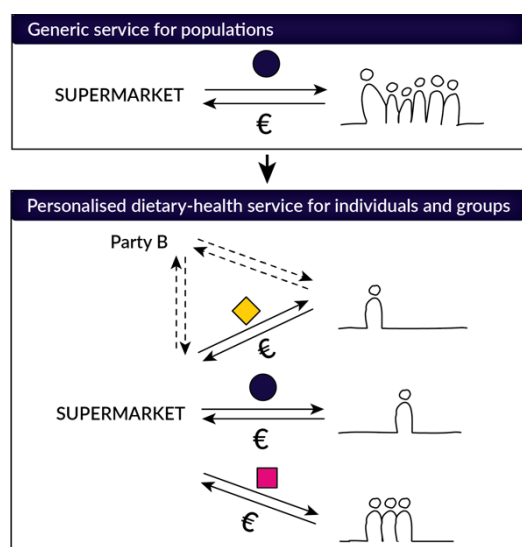


Figure 3: Changing from serving populations to offering personalised and group-based services, possibly in collaboration with other parties.

Second, dietary behaviour of customers is not limited to the moment of shopping. This means that a supermarket can also create value for customers prior to, and after, the shopping activity itself, as illustrated by the opportunity to facilitate health check-ups. As suggested by Waterlander et al. (2018) achieving healthy eating requires a holistic approach. Thus, when designing for healthy eating, it is important to consider the entire time span that may be relevant for the actors involved, instead of focussing only on the obvious moments. Consequently, this triggers changes in communication channels, core activities and also introduces the possibility for new collaborations.

Third, supermarkets will establish a new relationship with their customers. Collecting health-data of customers is expected to increase the level of intimacy with them. This raises the question what relationship a supermarket aims to pursue: being a facilitator or an involved partner? Related to this is the question to what degree a supermarket engages customers to co-create new services. Co-creation allows services to respond to customers' desires and concerns, which is suggested to enhance customer acceptance of precision nutrition services (Szakály et al., 2019). Collecting health data also introduces opportunities for data mining. For example, the combination of customers' purchase- and health data can explore consumption determinants of good health. To create a good overview of the possibilities and constraints for health-driven nutrition services, designers need to identify and assess the different values that play a role in such new relationships, such as privacy, well-being, but also economic value.

Due to the limited number of participants, this paper can be best interpreted as a first exploration on how supermarkets can contribute to the health of customers with elevated blood glucose levels. To examine to what extent the findings are generalizable to different customer groups, the 'thought & emotion' customer journey approach can be used with participants undergoing other types of dietary change. Future work may also address the perspective of supermarket chains to include the lenses of viability and feasibility (IDEO 2015). For example, future work can explore how the opportunities described in this paper can be aligned to the commercial stakes of supermarkets and how to utilize available customer data.

## Acknowledgements

We would like to thank the participants in this study for sharing their experiences and ideas.

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