

# The Power of Senses

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## **Valorization Addendum**

The research conducted in this dissertation can be disseminated beyond academic borders. In line with Article 22, Appendix 4 of the Regulation Governing the Attainment of Doctoral Degrees the “process of creating value from knowledge, by making knowledge suitable and/or available for social (and/or economic) use and by making knowledge suitable for translation into competitive products, services, processes and new commercial activities” (National Valorization Committee 2011, p. 8). In this valorization addendum, I first outline how I have disseminated knowledge throughout my PhD trajectory, and second, explain how the findings of this dissertation can benefit a larger audience beyond academia.

### **Knowledge valorization during the PhD trajectory**

Throughout my PhD trajectory, acquiring, generating and disseminating knowledge constituted an iterative process that guided my research. As an external associate early-stage researcher, I was fortunate to follow several workshops and courses of the Service Design for Innovation Network (SDIN), a Marie Curie training network funded by European Union’s Horizon 2020 Research and Innovation Program. SDIN consisted of an interdisciplinary research community that was formed by several European universities. Multiple academic and non-academic workshops and trainings were hosted across SDINs member universities, which together strengthened my understanding of service design as an approach and mindset to innovate and develop customer-centric services, that result in extraordinary customer experiences. The academic courses provided me with the theoretical and foundational knowledge that constitute service design, whereas the workshops and conferences facilitated a more practice-oriented application of different methods and tools. Given the customer-centric perspective that service design takes, understanding and facilitating superior customer experience is an essential element in service design research and practice.

## Valorization

Throughout my PhD trajectory, I attended several international conferences, where I presented my research to academic and non-academic audiences. Exchanging state-of-the-art research and discussing industry relevant topics with an interdisciplinary audience of conference participants, was an essential part of attending these events and disseminating knowledge. In Table V.1 and V.2, I provide an exemplary overview of the events I participated in.

<b>Academic event</b>	<b>Role / function</b>
Let's Talk About Service, 2015 Namur/ 2016 Antwerp / 2018 Ghent	Workshop including interdisciplinary teamwork on industry project and collaborative research projects
Frontiers in Service Conference, 2017 New York / 2018 Austin /2019 Singapore	Research presentation and Q&A
QUIS15 2017 Porto	Research presentation and Q&A
LaLonde Service Conference, 2017 LaLonde les Maures	Research presentation and Q&A
ServDes conference, 2016 Copenhagen	Workshop on Design Thinking

**Table V.1** Overview of academic events

<b>Practitioner-oriented event</b>	<b>Role / function</b>
Service Design workshop, 2016 Politecnico di Milano, Milan	Interdisciplinary teamwork and practicing of service design tools
Service Design workshop, 2016 Köln International School of Design, Cologne	Interdisciplinary teamwork and dissemination of knowledge to practitioners
Ethnographic research course, 2017 University of ESSEX Colchester, Colchester	Learning theory and practice of ethnography and ethnographic research in a multidisciplinary group of early stage researchers
Service Science Factory (SSF) workshop for a regional project of LIOF called LimburgMakers, 2017 SSF, Maastricht	Coaching and guiding a series of workshop activities with managers from diverse industries
Show Case Article / Blog Post 2018 for UMIO “Why senses are clue to designing the perfect customer experiences” Find article here: <a href="https://www.umio.nl/2018/03/02/why-senses-are-clue-to-designing-the-perfect-customer-experience/">https://www.umio.nl/2018/03/02/why-senses-are-clue-to-designing-the-perfect-customer-experience/</a>	Interview for UMIO, the executive branch of Maastricht University to disseminate research insights for practitioners operating in the field

**Table V.2** Overview of practitioner-oriented events

## **Valorization addendum per manuscript**

While the conclusion of my dissertation highlights mostly research implications, this dissertation is additionally of value and relevance to a diverse group of stakeholders beyond academia. In this addendum, I discuss how the findings of this dissertation can help service managers translate this knowledge to value propositions for a broader audience. While especially manuscript 1 and 2 are concerned with the theoretical developments of CSE and its foundational dimensions, there are yet important implications for practitioners, too. Since my three manuscripts build on each other, especially the in-depth analysis of CSE in manuscript 3 yields important implications for service providers and managers, policy makers and society at large.

### **Manuscript 1 Making sense of customer service experiences: a text mining review**

Manuscript 1 provides the status quo on customer service experience research and establishes a more comprehensive picture of the phenomenon and its five foundational dimensions: physical, social, cognitive, affective, and sensory. The findings of the study show a shift in CSE focus from a product and brand to a value and interaction perspective. These findings suggest that research and development (R&D) of service providers have to move beyond product development and branding, to the design of valuable service environments and interactions across the customer journey. This means that service providers should thoroughly analyze customer journeys, and how each of the touchpoints can be optimized in order to improve customer experiences. This is particularly important, given a recent research that shows how customers choose one service provider over another on basis of the experience (Gartner 2020). Customer journey mapping, service blueprints, or system maps offer useful tools to map existing services and touchpoints. For example, system maps generate an overview of all actors and their activities involved in the service delivery. Involving different actors in the mapping activity can spark new ideas and solve delivery issues from a strategic and operational point of view.

Furthermore, R&D should take a customer-centric perspective to understand the customer journey and the role of each touchpoint for CSE. This means that the involvement of customers in analyzing existing services is of profound importance. The insights of this manuscript show

that the influence of the five dimensions of CSE are highly personal, and therefore, an in-depth assessment of current service delivery and the CSE it creates should regularly take place in collaboration with existing customers. Furthermore, testing service innovations, through experience prototyping can generate meaningful insights before a new service innovation is launched. From a strategic point of view, testing service concepts in an early stage and through a customer feedback loop to prevent innovation failure a later, and costlier stage.

Additional tools that help to identify potential bottlenecks in the service offering are for example, customer empathy maps and issue cards offer great means to take a deeper dive into customer perceptions. For example, the empathy map highlights customers' responses, feelings, thoughts and activities and therefore not only provides insights on the customer, but also elicits potential inconsistencies in the provider vs. customer perceptions. To further explore these inconsistencies, issue cards can foster a conversation that crystallizes customer needs, for example at a touchpoint level. On the basis of these findings service providers can better tailor their services to customers and design richer touchpoints that move beyond the core offering, which could enable them to set apart from competition. Because focusing on customers' needs and optimizing bottlenecks can in turn maximize CSE at any physical or non-physical interaction across the customer journey.

In manuscript 1, I also highlight the importance of the sensory dimension of CSE. Human senses facilitate the interpretation of information that is absorbed from the service environment (i.e. servicescape), and which guides perceptions and responses. Understanding the influence of sensory stimuli for CSE, allows service providers to create multisensory rich customer journeys, where the interplay of different stimuli can ease the cognitive effort that customers require for their activities along the customer journey. For example, a sound stimulus that raises the customer attention, is followed by a visual stimulus that illustrates the activity the customer should take. Such as the sound and speaker announcement in a supermarket that informs customers that a new check-out register is opened, is followed by a blinking green light above the check-out register, where customers can then line up and place their items on the check-out register belt.

Given the prominent role of senses in shaping CSE, I suggest that service providers pay particular attention to designing meaningful stimuli across

the customer journey. While the majority of stimuli are beyond the service providers' control, inducing congruent and relevant stimuli across the customer journey can create richer experiences. In order to identify at which touchpoints customers increasingly struggle or would benefit from additional or distinct sensory information, I suggest several in-depth interviews and walk-along diaries conducted by customers. Customers could for example use their mobile phones to immediately record and capture their thoughts while going through the customer journey.

**Manuscript 2** Toward multisensory customer service experiences: a cross-disciplinary bibliometric review and future directions

In manuscript 2, I take a broader perspective on the sensory dimension and show how different disciplines contribute to a more comprehensive understanding of multisensory integration. While extant literature explored the effect of environmental stimuli on individual senses, such as atmospherics in retail stores and also increasingly in online settings, often referred to as e-tailing, surprisingly little is known about the interplay and activation of all senses and their effects on perceptual and behavioral outcomes. These insights would not only allow retailers to design sensory rich and meaningful stimuli across their service encounters, they would also benefit customers, such that they can select to the customer relevant stimuli that help them complete activities and, therefore, enhance CSEs along the customer journey.

In this study I demonstrate how neuroscience and cognitive science can provide important insights on sensory processing and multisensory integration. The insights of the study show that customers simultaneously activate different sensory modalities (e.g. touch and vision modality) and link sensory information to already existing memories. Therefore, the comprehension of all senses is important, because it is the sum of multiple sensory stimuli that activates existing memories and guides perceptions and behavior. For example, if we anticipate paying contactless with a card in the store, we first look for a sign at the check-out terminal, while holding the card in front of the scanner, we wait for a sound and the instructions that we can remove our card. While this process is different in many stores, we can still compare the process to our existing memories that are somewhat related to this process. However, if we would miss particular cues, such as the sound and confirmation that our card was scanned and the transaction is being processed, we would likely get nervous and more

prominently seek help with process. The more difficult it is for us to solve this situation; the more frustration evolves. Understanding this process is therefore very important, because sensory perception is closely linked to cognitive and emotional responses.

If, for example, a service provider wants to change customer behavior, such as switching from cash to contactless card or phone payments, sensory information processing is an elementary component that should drive the (re-)design. Based on my study insights, I suggest that service providers investigate CSEs while they occur rather than retrospectively. In fact, understanding which stimuli customers select and how they link them to their existing memories, delivers the explanation for their retrospective reactions. This means that customer behavior or the expression of their emotions is the outcome of interpreting sensory information from the service environment. Manuscript 3 yields more specific insights into the underlying process and how service providers can investigate these subtle elements of CSE.

### **Manuscript 3** Unraveling customer experiences in new servicescapes: an ethnographic schema elicitation technique (ESET)

In manuscript 3 I conduct a more fine-grained investigation of multisensory integration and its role in shaping CSE across the customer journey. I introduce schematic information processing as the fundamental base that shapes CSE. In the empirical study of manuscript 3, I disentangle the effect that leads from sensory stimulation through the connection to existing schemas in form of experience memories, to customers' cognitive, emotional or behavioral responses. In particular, I show how the assessment and modification of existing schemas guides customer behavior. The findings of this empirical study offer important implications for service providers, public institutions, policy makers and society at large.

First, recognizing the role of schemas in shaping CSE, shows that service providers and other institutions, such as policy makers, who are interested in understanding why customers think and act the way they do, need to explore which sensory information customers filter and connect with existing memories. This is because filtering of sensory information determines the activation of experiences, both positive or negative. For example, if customers increasingly report the smell of cleaning detergent in a supermarket reminds them of hospitals, this might not be the ideal

sensory stimuli for this environment. Service providers can easily act upon this and either change the smell of the detergent or enhance other smells that are connected to more positive memories. Techniques that can help unravel the selection of sensory information constitutes are customer diaries in form of mobile ethnography, that helps customers share immediate notes, photographs or audio recordings at the momentum of occurrence. Additionally, eye-tracking can be beneficial to better understand visual stimuli and their relation to the other senses. In particular public institutions such as municipalities, hospitals or even universities design their services a large and diverse group. A large variety of services in each of these institutions is part of the ecosystem and a smooth delivery is essential to function for the system at large. Tools such as stakeholder and ecosystem maps help uncover different actors' roles and needs and can also lead to detecting valuable opportunities and synergies.

Second, the findings of this study suggest that past experiences are at least as important as customers' current experiences. They not only serve as a reference point, they also help customers navigate and act in unfamiliar environments. Thus, understanding which experiences are activated can reveal important information for service providers. Useful tools that can be used are diary studies, in form of shared narratives. These can either take place as think aloud protocols, in which the customer verbally expresses all thoughts, or narratives and memos that are conducted by the customer, the researcher or both in form of participatory observations. Investigating at which touchpoints customers have problems connecting sensory information to existing schemas, and which reoccurring schemas lead to negative emotions or reactions, provides valuable insights on where and how to improve service offerings. For example, if customers repeatedly seek assistance at self-service-check-out terminals in a supermarket, service providers can, for example, optimize sensory information through additional visual and auditory stimuli that ease the process of self-check-out.

Third, insights on commonly activated schemas and subsequent behavior, can also have a profound impact on regulations of governments and policy makers. Think, for example, about the current state of emergency given the coronavirus (covid-19) pandemic outbreak. Covid-19, within a few weeks, changed human life profoundly. While the government seeks to prevent the spread of the disease, and therefore, attempts to regulate and change human behavior, recent developments have shown that these changes are very difficult to implement and obey. Supermarkets try to remind

customers with different sensory stimuli (e.g., signs at the entrance, markers at the floor and announcements) to act socially responsible, by taking social distance of at least 1,5 meters, avoid panic purchases that imply hoarding of products, and encourage customers to pay their groceries contactless, instead of using cash. An observation of shopping behavior has shown that customers initially did not follow these instructions, and therefore, let stores to take more extreme measures that should remind customers that we are still facing exceptional circumstances that require following these measures.

An investigation using, for example ESET the methodology that I used in manuscript 3, could benefit understanding which stimuli (e.g. lines at the floor indicating distances to the next shopper or information signs at the entrance of the store) are encountered by customers and which schemas are as a result activated. ESET follows a four-stage approach that consists of in-depth interviews, participatory observations, customer journey mapping, and emotional journey mapping activities. Using ESET, first some in-depth interviews with customer's can already clarify misunderstandings between provider and customer. In addition, following several customers along their customer journey can further reveal subtler elements. Participatory observations and emotional journey mapping activities can elicit challenges and obstacles that customers face. These insights can in turn be used to ease the habitual change process for customers.

The difficulty to change human behavior is due to the difficulty of accommodating or even temporarily replacing our existing schemas. For example, to not shake hands with people that we know or to avoid touching fruit and other products to check their stage of maturity, without buying them. Furthermore, governmental institutions should be aware that regulations, which demand customers to dramatically change their behavior, also result in more extreme emotions, such as anxiety or anger. Understanding the cause of these emotions at particular journey touchpoints, could already allow with simple measures to ease these pain points, and therefore lead to a more sustainable and socially desirable behavior. The combination of customer journey and emotional journey mapping activities can generate meaningful insights in this matter.

From a methodological point of view, manuscript 3 shows that increasingly complex phenomena such as multisensory CSE, also require a combination of methods that allow a more fine-grained analysis to elicit tacit experiences and knowledge stored in memory. The multi-method approach

## Valorization

that I developed in manuscript 3, not only benefits service providers, it can also be used for different purposes as the example above illustrates. From a customer perspective, even complex and longitudinal experiences can be revealed in their rich details. ESET also enables customers to reflect on perceptions and behavior. This can be particularly helpful under circumstances where customers anticipate changing their existing behavior. For example, reducing compulsive buying behavior in grocery stores.

In sum, understanding the role of senses and unraveling the process of multisensory integration can have a profound impact on CSE, which likewise benefits the service provider and customer. Designing and managing multisensory rich and meaningful CSEs, can therefore provide a unique weapon in today's CSE battlefields.