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Novel Technology in a Retail Space

A study of how IKEA retail space influences adoption of smart technology for the home

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Abstract

The objective of this thesis is to understand how a retail space could facilitate a broader adoption of a novel technology. I aim to respond to the following questions, (i) 'What characterises the practice of operating a smart technology for the home?', (ii) 'Which are the main barriers to reaching out to a broader range of customers, as opposed to only the technology interested customers?', and (iii) 'What in the retail space would need to change to facilitate broader adoption of a novel technology?'. The theoretical framework is built around social practices, how they are composed and transformed over time, and how the different elements influence and shape each other. From a cultural analytical perspective, it is very important to understand how emotions, senses and atmospheres shape the practice of adopting a novel technology, such as IKEA's Home Smart system. The area of study was several IKEA retail stores, across Europe. Data was gathered through interviews with, and observations of, IKEA staff and IKEA store visitors. Several experiments to test early hypothesis formed during the field studies were also conducted. Through the lens of social practices, the barriers identified were, lacking system understanding, information not available (at point of sale), staff not available to answer questions, staff not capable to answer questions, poor atmosphere (not tailored to local needs), poor atmosphere (disturbed by damaged or dusty furniture), and malfunctioning system. The required changes to the retail space to overcome barriers and support further adoption were; simplify and make system more intuitive to use, more partnerships and alliances with other smart technology developers, increase smartness of products, technologies and systems, ensure interactive information is available at point of sale, train staff on Home Smart range, ensure Home Smart areas are properly staffed to support customers, consider Home Smart advisory service in store and at customers' home, technology must at all time work as intended, improve cleanliness in Home Smart area, and Furnishing in Home Smart area must match local preferences. To support further adoption of smart technologies for the home, retailers must understand what influences potential customers' store experience and hence purchase decisions. The learnings from this thesis can be used to adjust the retail space to support this journey towards accelerated novel technology adoption in a retail space.

Keywords: Novel technology, adoption, smart homes, retail space, customer experience, retail atmospheres, social practices, material, competence, meaning.

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It has been a roller-coaster ride to write this thesis, and unfortunately, I had to experience the passing of my beloved father, which caused severe disruption in my writing. Therefore, I am deeply grateful for the approval to hand in my thesis in August instead of June.

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To my father:

You have been very tough on me, but that is how you raised me into a warrior. Thank you for always believing in me, despite my breakdowns and failures. You have not only been my father but also my mother, my hero and will forever be my inspiration.

Lund, 2022-08-31

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Ramona Engdahl

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1 Introduction

1.1 Background

In my search for a company where I could perform my work placement, as part of my Master Studies in Applied Cultural Analysis, I got in contact with the Head of Marketing at one of IKEA's business lines called Home Smart. It contains IKEA's range of products that are connected and can be controlled either via a 'gateway', a remote control or IKEA's Home Smart app from a smart phone. The current product portfolio consists of speakers, curtains, and lighting, to mention a few. It is a fast-growing product line, but Head of Marketing mentioned that primarily technology interested customers purchased the Home Smart range of products. I was challenged to understand why this is and to elaborate on potential solutions to reach more customers, 'the many people', as IKEA refers to, which implies that IKEA's ranges are for all customers, regardless of financial strength or social status. I spent a significant amount of time in the field, visiting several IKEA stores where I observed and interviewed customers, as well as sales staff. The work placement sparked the idea to continue to deepen my knowledge around how a retail space can facilitate, or act as a barrier to, the adoption of a novel technology, such as IKEA's Home Smart range. It is worth noting that most of the information gathered for this thesis took place between June and November 2021. The Home Smart range at IKEA is developing fast, therefore some of the findings in this thesis may have already been addressed by the team.

1.2 Novel Technologies for the Home

Novel technologies designed for domestic purposes have developed during the last decades. One such example is the introduction of 'Home Smart', where accessories and appliances are designed to assist in domestic services. While the adaptation of novel technologies has been studied in different research disciplines (Li, Yigitcanlar, Erol, & Liu, 2021), we know less about the importance of the place of purchase. Does the design of the physical retail space affect the potential users' interest in the novel technology? If so, will changes of the retail setting change the way different groups of people feel about smart home products? This topic is studied from a retail perspective and based on a study of retail spaces at IKEA's Home Smart sections in several European countries.

1.3 Objective and Research Questions

The objective of this thesis is to understand how a retail space can facilitate a broader adoption of a novel technology. Adoption here means that a customer is purchasing and making the use of the new technology as part of daily life at home. To support the journey towards this objective, three research questions have been formulated:

1. What characterises the practice of operating a smart technology for the home?
2. Which are the main barriers to reaching out to a broader range of customers, as opposed to only the technology interested customers?
3. What in the retail space would need to change to facilitate broader adoption of a novel technology?

1.4 Previous Research

I have selected three areas of research that I think add value in the understanding of novel technology adoption in a retail space, (1) Smart home technology and barriers to adoption, (2) Physical retail spaces and the customer experience, (3) Meaning of 'home', domestication of technology and 'pleasance'.

Smart Home Technology and Barriers to Adoption

Since this is a study of how novel technologies are adopted, there is a need to understand the current body of knowledge surrounding what a smart home is, the technologies involved, what is known to be the common barriers to adoption and suggested response to overcome these barriers. No single definition of what a smart home exists but the understanding is that it entails sensors and seamless communication between devices, providing for example: control of energy, security, home entertainment and ambience, health monitoring and assisted living arrangements (Gram-Hanssena & Darby, 2018). Some describe smart home as a 'digital revolution' (Walport, 2014). The revenue in smart home market is projected to reach US$126.10bn in 2022 and is expected to show an annual growth rate of 13.30%, resulting in a projected market volume of US$207.80bn by 2026 (Statista, 2021). On the contrary, consultancy PwC asked 2000 consumers in 2018 about their views and intentions to adopt smart home technologies. They found that most consumers (52%) still have no plans to invest in connected home technology (PwC, 2018). One group of authors (Li, Yigitcanlar, Erol, & Liu, 2021) conducted a thorough literature study and have summarized adoption barriers and suggested responses as per the figure 1 below.

Distrust and resistance	Limited perception of smart home	Financial considerations	Concerns of privacy and security as perceived risks	Technology anxiety	Negative social influences
• Technical improvement to decrease the risk likelihood, e.g., reliability, controllability, and performance of devices. • Combat misperceptions about constant surveillance. • Provide transparency on the collection, processing, and protection of personal data.	• Adopt the participatory development approach. • Provide personalised education tutorials and technical support. • Increase consumers' familiarity with smart homes.	• Reduce initial adoption costs to provide users with 'easy entry'. • Provide attractive business incentives or other preferential policies. • Consider cost as an important influence factor in smart home popularisation.	• Technical improvement to prevent the leaking of private information. • Develop ' Privacy-friendly' techniques. • Publicise purposed procedures related to private information. • Legal improvement to reinforce the existing privacy legal framework	• Develop technologies focusing on social well-being. • Provide adequate training programs and real-time technical support to mitigate • users' technology anxiety. • Develop 'easy to use' innovative solutions to improve users' satisfaction level.	• Generate positive word of mouth in multiple ways. • Advertise smart homes with broader social and well-being benefits.

Figure 1. Summary of adoption barriers and suggested responses (Li, Yigitcanlar, Erol, & Liu, 2021).

Dr. Benjamin K. Sovacool, Professor of Energy Policy, and Dylan Furszyfer Del Rio, a research fellow in Energy Systems, both working at the Science Policy Research Unit (SPRU) at the University of Sussex, suggest that not all smart home technologies have the same level of 'smartness' and have categorised the smart home technologies into six different levels, as depicted in figure 2 below (Sovacool & Furszyfer Del Rio, 2019).

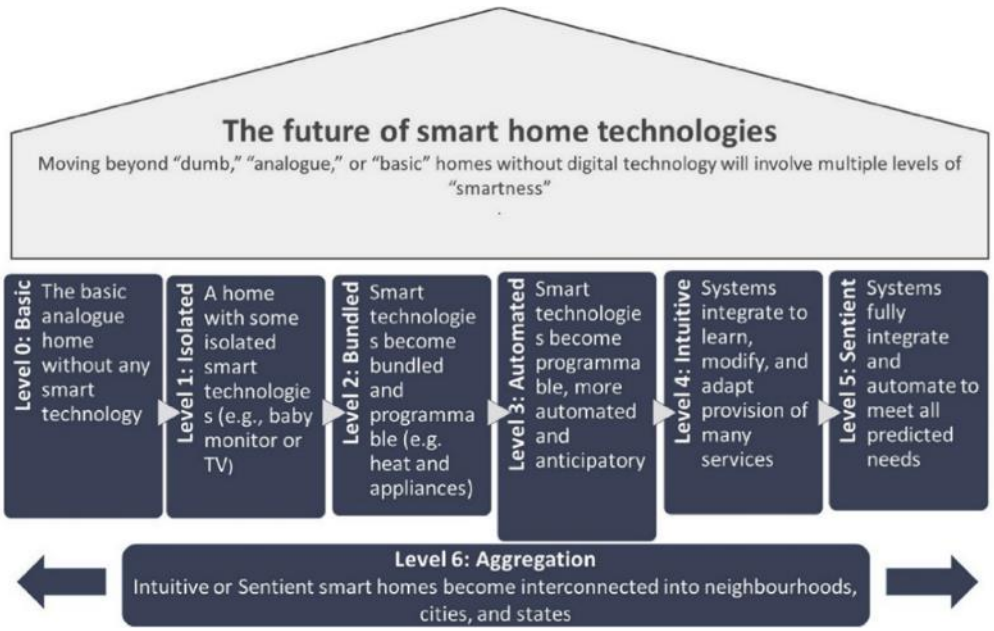

Figure 2. Six levels of 'smartness' for a smart home technology (Sovacool & Furszyfer Del Rio, 2019).

We now understand what smart home technology is, what it promises, what some of the barriers may be and how to potentially overcome them. Before we can analyse adoption, we must understand point of sale and promotion of these technologies. We will therefore explore what is known about the physical retail spaces, in which these technologies are displayed and marketed.

Physical Retail Spaces and the Customer Experience

When referring to spaces, such as a retail space, Philosopher Michel de Certeau claims that a 'place' is the coexistence of things and humans and that the place is created by humans and things (Certeau, 1984). This line of thought about a place also interlinks with how another Philosopher, Theodore R. Schatzki defines 'activity-space-places', which are a "matrix of places and paths where activities are performed" (Schatzki, 2002). Other scholars, such as Everts et al., also stress the relationship between 'place', material arrangements, and activities, by stating that "places only exist within and through activities that arrange surrounding entities and meanings." (Everts, Lahr-Kurten, & Watson, 2011).

Researcher Pierre Martineau published an article in 1958 claiming 'the customer generally thinks of shopping as a total experience which runs through a number of departments in a number of stores and ends when she (or he) returns home' (Martineau, 1958). He stresses that there are many factors, not directly related to the product itself, that will, consciously or not, sway a shopper's behaviour. Examples of those factors are, atmosphere, status, personnel, and other customers. Consciously or unconsciously, they will direct the shoppers' steps. Martineau was probably the first to talk about 'store image', which is the general view that a shopper has of the store and the total experience connected to it.

During the purchase stage in a retail space, which is under study in this thesis, it is suggested that that companies should identify specific touchpoints and trigger points that lead customers to continue or discontinue their purchase journey. The researchers conclude, based on plenty of references to other research, that customers use and are exposed to multiple touch points that each have direct and more indirect effects on purchase and other customer behaviours. Four types of touch points were specifically identified, brand-owned, partner-owned, customer-owned, and social/external/independent. Companies need to determine how key touch points can be influenced. The researchers conclude that a deeper understanding of the 'the moments that matter' is needed (Lemon & Verhoef, 2016).

There are plenty of definitions of customer experience. In this thesis I selected to use one that is multidimensional and seems to be commonly accepted. It describes customer experience as being of five kinds: sensory (sense), affective, (feel), cognitive (think), physical (act), and social identity, (relate) experiences (Schmitt B. H., 1999). Others claim that the whole customer experience is mostly influenced by the store layout and how it facilitates the store visit (Bäckström & Johansson, 2006). Furthermore, the role of displays is an important aspect of store layout (Nordfält & Lange, 2013). Others are pointing to service having the greatest impact on customer satisfaction (Hunneman, Verhoef, & Sloot, 2015), which is one of the factors that Martineau found to influence a shoppers purchase decision (Martineau, 1958).

In addition to understanding the technology itself, potential barriers to adoptions, and suggestion to overcome them, we have now scanned research related to the retail space itself and what shapes the customer experience and consequent purchase behaviour. I now have a connection between the technology, barriers, and the retail space. Nevertheless, I would need to understand in greater depth what is known about the 'home' itself. What does research tell us about the 'home' when contrasted to a house or apartment which is simply the physical space?

Meaning of *Home*

Norwegian researcher Margrethe Aune has developed three categories of 'home': the home 'as haven', the home 'as project' and the home 'as arena for activities. The home 'as haven' is an image of a home that illustrates the importance of unity and privacy in the domestication of homes. The home 'as project' is an illustration of domestication where rebuilding, redecorating and appropriation of artefacts are central. The home 'as arena for activities' is about working together. The feeling of home lies in the unity of people and activities (Aune, 2007).

Aune also studied Norwegian homeowners spending patterns (Aune, 2007). She concluded that Norwegian homeowners spend a significant amount of money in their home and that this is quite rational from a financial perspective since it typically increases the home's value. What she points out as interesting is however that quite a significant share of the spend goes into improving the 'aesthetic' of the home, such as changing the style of the kitchen or bathroom. She concluded that this spend is not as rational: 'creating a home that can fulfil your needs and present yourself to others is a central dimension of everyday life'. We need to understand people's motives, needs and preferences so that we can tailor information and influence the domestication of technology.

With regards to 'aesthetic', one prominent player in the industry of smart home is Lutron that use the word *pleasance* to describe the space they want to influence: *a place where you experience comfort, romance, and peace of mind — a place where you experience pleasance*. They define pleasance as 'a fundamental feeling that is hard to define but that people desire to experience' (Lutron, 2022). The smart home technology is clearly not only a way to free up time or to save cost through more efficient energy use, but to also create a good feeling at home. One could argue that we have always aimed for our homes to be a space of pleasance, but what the smart technology is offering is to create this through one simple switch, or even more simple, through a pre-defined routine or pattern, such as a particular light setting and themed music as we enter a certain room, at a certain time of the day and week.

Pleasance also reflects what Sarah Pink, Social Anthropologist and Professor at the Department of Design at Monash University, describes as 'the qualities of experience, the sensory, affective and satisfying dimensions of everyday life'. Her focus is on energy practices in the home. She stresses that to understand energy, which is invisible, we must first study the visible material practices, technologies and persons that consume energy. She concludes, based on ethnological as well as neuroscience research that our senses are inseparable. This is relevant because what a researcher hears, in an interview or during an observation, may not reveal the unspoken ways in which people experience domestic practices. These practices must be understood as embodied and multisensory. What makes a home in Pink's view is the complex constellation of things and processes that come together. The paths are entangled and have different velocities of movement, meaning both different speeds and directions (Pink, 2011).

Positioning

It is clear from the literature review that there is plenty of knowledge in the field of technology adoption – barriers and solution to overcome them have been suggested. In a similar fashion, a vast amount of research has gone into spaces generally, retail spaces specifically, and what triggers shoppers to purchase. Furthermore, many have addressed the cultural aspect of the home and how technology is domesticated. Despite the overall contributions of the above discussed studies, there is still a gap in the literature regarding technology adoption, or domestication of novel (smart) technology for a home, in specifically physical retail spaces such as the one at IKEA retail stores. Hence my research objective, to understand how a retail space can facilitate a broader adoption of a novel technology, can generate original insights into the nexus where novel technologies meet the retail space. IKEA is a very suitable place of study since it is a retail giant with a purpose to serve a

very broad range of customers and they have quite recently added smart technology to their range; hence it is still novel. I will deep dive into the space in which Home Smart products are displayed and marketed to customers in the stores, aiming to understand the barriers to accelerated adoption and to suggest how to overcome these barriers.

1.5 Theoretical Framework

My theoretical framework evolves around the cultural analytical perspective of social practices, their composition and transformation in space and time. This will be complimented with the complex perspective of emotions, senses, and atmospheres and their impact on practices and adoption of novel technologies.

Smart home technologies hugely impact the way we live and go about our lives. The promise of a more convenient, efficient, and enjoyable home is tempting. For these technologies to be effectively integrated in our home, we need to adapt our practices. Therefore, the study of social practices, how they emerge, exist, and become obsolete, is of utmost relevance to understanding barriers and how to overcome them.

Research about daily practices have become a dynamic field in social sciences and humanities over the last decades. I want to start with a definition for the term ‘practice’, where I believe cultural sociologist Andreas Reckwitz provide a straightforward answer, ‘a routinized type of behavior’ (Reckwitz, 2002). Hence, practices concern behaviours that have become routinized. He goes on to suggests that a practice is a pattern that consists of interdependencies between elements such as bodily activities and mental activities and things, in addition to previous knowledge. The individual functions as the carrier of the practice.

In the book ‘The Design of Everyday Life’, the authors hold that if new strategies and solutions are to be effective, they must be embedded in the details of daily life. They explore what consumers do with things in their home, to go about with their daily lives. We read about the dynamic social practice of DIY as an example, which is not only about consumerism, but an activity where people become part of a complex network where competence are embedded in, and transferred between, people, tools, and materials (Shove, Watson, Hand, & Ingram, 2007). Although the authors give plenty of examples of how practices change, they don’t offer a systematic way to analyse the process of how new practices form.

In the book 'The Dynamics of Social Practice', social practices are subject of study – how they emerge, exist, and die, the elements of practices, how they are transferred, transformed, and interact with each other (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). These authors go one step deeper, compared to Reckwitz as well as Shove, Watson, Hand and Ingram, where they provide the means of explaining the 'how' to make practices part of daily life. Therefore, I will now examine 'The Dynamics of Social Practices' in greater depth, starting with the elements.

Practices, or the 'doing of something', are seen as a combination of three element types: material, competence, and meaning. Material can be objects, infrastructures, tools, hardware, and the body itself. Competence are multiple forms of understanding and practical knowledge. Meaning includes symbolic meanings, ideas and aspirations (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). Let us now explore how practices and their related elements change and transform.

Changes to a practice occur when links are created, sustained, or broken between the elements. The elements also shape each other, as depicted in figure 3 below, which in turn forms new practices, or modifications to existing practices (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012).

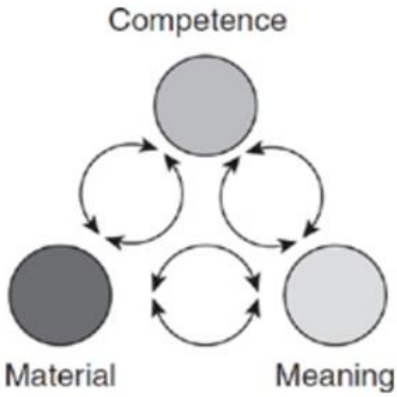

Figure 3. The elements of a practice shape each other (Shove, Pantzar, & Watson, The dynamics of a social practice, 2012).

The three element types have varying degree of mobility – to what extent they can be transferred from one place to another or from person to person. Materials are always physical and so they can be transported physically. Materials will often also remain intact when transferred. On the contrary, competence and meaning are not physical, they appear to circulate and when they do, they tend to change. Another aspect to consider is that for competence to move, the receiving party needs to have

pre-existing know-how to build on. This also naturally limits the spread of competence, especially compared to materials, since the rate of transfer is limited by pre-existing knowledge. Furthermore, knowledge build up and transfer takes time. On the contrary, meaning can transform and spread geographically very fast in today's connected world. (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). We now understand that each of the elements will continuously shape each other and that some elements are more mobile than others.

The decomposition of practices into three element types, material, competence, and meaning, and how they change and transform over time, will be used as the basic framework to analyse the barriers to technology adoption, with the example of IKEA's Home Smart technology. Reckwitz provided a crisp definition of what a practise is, which is meaningful for the overall understanding of social practices, but his work, in comparison to the authors of 'The dynamics of Social Practice', does not provide me enough material around how practices are created and transformed. Although emotions are already part of 'meaning', as one of the elements of practices, as defined by the authors of the book 'The Dynamics of Social Practice', I have decided to broaden my theoretical framework to compliment with more knowledge around emotions, senses, and atmospheres.

Sarah Pink links social practices and places, explaining that practices are inseparable from the spaces which they are part of (Pink, 2012). She adds that a place is not only a static physical space, but it continuously created by movements and interactions with and between humans. In other words, social practices are simultaneously a component of a space but also the creator of the same space.

Schatzki (1996) as well as Hui, Schatzki, & Shove (2017) have highlighted the role of emotions and mood in the creation and transformation of social practices. It is also noted that there is a growing interest in discussing emotions in the making of practices (Umut Aslan, 2022). Umut Aslan makes the connection between emotions, 'sense', 'sense of a place' and 'atmosphere'. He explains, and references to several other researchers, that 'a certain place, in its material and sensorial totality, can gain a certain affective capacity by having specific 'atmospheres', which can affect human action and mood'. I interpret action here as behaviour, which has similar meaning to practice.

Based on above mentioned research, it is apparent that emotions and mood, a consequence of 'sense', brought about by a certain atmosphere and place, can have significant impact on our social practices. An atmosphere's impact on shopping behaviour was addressed already in 1973 by Philip Kotler (Kotler, 1974). He notes that the mindset of the typical businessman was more practical and functional and hence the 'silent language' of atmospheres was not top of mind. Kotler recommends

business to be more intentional about creating and tailoring their atmospheres to the target audience, to achieve differential advantage over competitors.

To summarise the above research, the 'right' atmosphere, in a certain place, will drive a certain practice, such as adopting a novel technology. Therefore, it is important, in addition to analysing social practices, to also study the place, the atmosphere and which emotions that these generate, at IKEA retail, and specifically the local space where the Home Smart products are displayed. This will support my understanding of IKEA's retail space's capacity to either promote, or act as a barrier to, adoption of their Home Smart technology.

1.6 Methodology

In this sub-chapter I describe the main methods that I applied in my research – 'participant observation', 'interviewing', 'experimental learning', and 'integrated data collection and analysis'. Before I elaborate in greater details, I will begin with describing the process of my ethnographic field work.

I began all store visits with an initial conversation with the IKEA store personnel that I was going to work alongside. I then started my research with hours of observations. I observed how customers walked into, and through, the Home Smart area, when and where customers stopped and observed the smart products, how they touched and tested the products, and how the customers talked with their family members and friends about their experiences. I also studied how interested customers that flock a space, or a product attract other customers to come to have a look too. Other than that, I also studied the interaction between customers and the IKEA sales staff. I tried to understand why some purchased and why some did not, with focus on those that first seemed interested but decided not to purchase. I then started to mix observations with conversation with customers, again with focus on those that seemed interested but decided to move on without purchasing. In the back of my head, I was mindful about speaking to a broad range of customers to get perspectives that reflect the diverse set of customers that visit IKEA stores. This meant, including an equal share of men and women, young, middle-aged as well as older customers. Since I visited several stores around Europe, I also managed to get a good balance in terms of national diversity. In most of the store that I visited especially in Malmö, Delft and Älmhult, the customers were very diverse, so I did not really have to 'search' for my informants. Rather than gender, ethnicity or age, it was the specific behaviours of the IKEA store visitors, such as a woman filming the area or a child

pointing at and being curious about the changing light coming from the smart speaker lamp, that sparked my interest to select them as my informants.

After a few rounds of observations mixed with customer interviews, I started to also engage with IKEA staff to test my hypothesis about the barriers and motivations to purchase. I managed to get IKEA staff's approval to make a few experiments to test my hypothesis. My argument was that I wanted to improve the customers' experience and see if their feedback would add any value to the level of interest of future customers that approach the reconfigured space. Let us now turn to some of the research methods that I applied throughout this research.

Participant Observation

American professor Danny Lynn Jorgensen defines participant observation through seven features: (1) 'a special interest in human meaning and interaction as viewed from the perspective of people who are insiders or members of particular situations and settings', (2) 'location in the here and now of everyday life situations and settings as the foundation of inquiry and method', (3) 'a form of theory and theorizing stressing interpretation and understanding of human existence', (4) 'a logic and process of inquiry that is open-ended, flexible, opportunistic, and requires constant redefinition of what is problematic, based on facts gathered in concrete settings of human existence', (5) an in-depth, qualitative, case study approach and design', (6) 'the performance of a participant role or roles that involves establishing and maintaining relationships with natives in the field', and (7) 'the use of direct observation along with other methods of gathering information' (Jorgensen, 1989). The ethnographer, when conducting participant observation, can be seen as applying a mixed method approach, containing a blend of the following more distinct roles: (1) complete observer, (2) observer-as-participant, (3) participant-as-observer, (4) or complete participant (Gold, 1958). I think Gold's description of participant observation, existing on a scale, is good because it helps me as a researcher to understand that it is fine and the right approach to "float" between different roles on that scale, between complete observer and complete participant.

I spent a significant amount of time in the field, in several IKEA stores where I observed the interaction between customers and IKEA co-workers, between family members touching, exploring, and discussing products. As Jorgensen also points out, participant observation is particularly useful when 'little is known about the phenomenon' (Jorgensen, 1989), in this case novel technology adoption in a retail space. Jorgensen adds that it is also suitable when 'there are important differences between the views of insiders as opposed to outsiders' (Jorgensen, 1989), and as my research shall

reveal, this is the case – IKEA's initial view of the barriers, did differ from what I come to find. Participant observation was an obvious choice for me since I needed to get more information than what I could get from only interviewing. This said, participant observations needed to also be complimented with interviewing since participant observation would only get me so far. I needed to, through the whole processes, get direction as to where to focus and to get feedback on some of the material gathered. For this purpose, interviewing is the perfect complimentary tool to participant observation.

Interviewing

Most of my interviewing was unstructured or as Davies describes it 'naturally occurring' or 'just happening', a conversation in which the researcher still has questions or direction of inquiry in mind (Davies, 2008). I appreciate this method of collecting information because I typically came across, what I felt, truer statements, as opposed to people answering pre-defined questions where they sometimes seemed to respond in a way that they thought they should (what they thought I wanted them to answer). I always tried to mitigate or reduce this risk by stating that there was no 'right' or wrong answer and of course also by applying other data gathering methods than only interviewing.

Some of my data was collected using semi-structured interviews with IKEA sales staff and customers, but also with staff at the headquarters of IKEA. Semi-structured interviews have the advantage that they are open-ended and are not limited to the preconceived notions of the Ethnographer (Davies, 2008). Semi-structured, as well as unstructured interviews would be conducted simultaneously with both customers, as well as sales staff. This approach enabled me to observe and potentially stimulate a re-enactment of the social dynamics during visits. Again, for un-structured as well as for structured interviews, I made it very clear that there was no right or wrong answer. Participants were encouraged to think freely and to base their answers on their personal experience. For example, sales staff were encouraged to not only describe barriers as they see it but also how they can be overcome.

Sarah Pink has highlighted the risk of receiving incomplete information through interviews. Very few people will be able to convey in spoken words, the true answer to a certain question. Practices are multisensory and so it is unrealistic to expect that an interviewee should be able to paint a complete picture about their experience during a short interview. There are so many unspoken ways in which people experience domestic practices (Pink, Doing Sensory Ethnography, 2009). Therefore, I decided quite early on, not to use structured interviews, such as in the form of a survey, because I

did not really know which questions that would elicit the true reasons for not adopting IKEA's Home Smart technologies. To deeply understand the problem, I knew that I had to get much closer to the sales staff, and particularly close to the customers, to make them feel relaxed and comfortable to speak their mind.

While conducting observation and interviews in the different stores, I was most of the time dressed in the same clothes as an IKEA staff member. I firmly believe that it was beneficial for me to wear the same clothes as the sales staff since the customer often approached me to ask for information about the products. When I knew the answer, I supported that customer and then, in most cases, I explained my role as a researcher. It was then often very easy for me to get them to open-up about their views and perspectives. I felt very integrated in the field and the interview in many cases became a very natural conversation. I often received information that I had not thought about asking for. By having friendly conversations, at the same time helping them to explain how the product works, I could listen, see, and understand their fear and insecurities towards these technology products on a deeper level. Furthermore, to enable a natural space, I decided not to hold any paper and pen. I think that this approach also contributed to a relaxed space where the interviewee was able to share freely, and I could benefit from unfiltered information, what the interviewee really perceived and felt about the range, ambiance, and customer service.

I should also add that although I did, for most part, state that I was doing research, there were instances where I either forgot that, and situations where I consciously did not mention my role as a researcher. The reason for this being that I then had the opportunity to take two different roles. In the first instance, when I was clear about being a researcher, perhaps some people would tell me more straight forward answers, that they would shy away from sharing with a regular member of the staff. On the contrary, another person may feel more comfortable to give their own feedback and view to a person who is, in their thought, a member of the staff. The latter person would not feel like he or she was being interviewed, by a researcher. After the conversations with customers and IKEA co-workers, I would generally make a summary and write it down in a journal, which I later used for quotes, fieldnotes and personal reflections. The notes followed a salience hierarchy (Wolfinger, 2002), which meant that they did not follow any predetermined subject or structure.

Experimental Learning

I argue that like how experiments are a natural ingredient of natural sciences, the approach can be very effective in social sciences, because research is about building new knowledge, and the

faster we learn, the more productive researcher we can become. The experimental, iterative process supports the researcher in moving faster to validation and hence conclusions.

Throughout the fieldwork, while doing participant observation and gathering data during interviewing, I started to develop some ideas for what a barrier to novel technology adoption could be and what would perhaps constitute a solution to overcome them. Although my theoretical framework and my own data made sense and I could start to draw conclusions, I wanted to test my hypothesis to become more certain about what I saw and heard. Therefore, I started experimenting with the interior design, different lighting, and colour and arrangement of furniture based on the informants' feedback and reaction to the current set-up. I observed customers before and after the re-design to test some of my hypothesis around barriers and what attract the customers to the Home Smart products. It gave me very valuable feedback on my line of though and added another dimension of credibility to my conclusions.

Aristotle explored the link between learning and experience. He contrasted the scientific knowledge from practical understanding through an example of a young person who cannot understand political science because he is not experienced in life (Thomson, 1976). Dewey, an influential educationalist, argued that education needs to be closely married with personal experience (Dewey, 1963). He argues that how people learn is as important as what they learn. One prominent theorist in the field of experimental learning is Kolb, who refers to the learning cycle (Kolb, 1985). According to Kolb, learning is a cyclical and iterative process, comprised of four steps: (1) something is learnt, (2) observe and reflect on the learning, (3) theorize and conceptualise, (4) engage in active experimentation.

I have applied the principle of experimental learning at IKEA where I follow the process outlined by Kolb. The experiment itself, as we shall see, evolves around changing the scene in the areas where IKEA's Home Smart range is displayed so that I get measure and compare customer behaviours before and after, and from there confirm my hypothesis around what in the retail space that drives certain behaviours and practices.

Integrated Data Collection and Analysis

This paragraph concerns the distinction between gathering and analysing data. In the book 'Doing Sensory Ethnography' Sarah Pink writes, *'...the idea that there are real rigid distinctions between fieldwork and analysis, making them separate stages of an ethnographic research process,*

would be misguiding.' and *'…analysis is a continuous and incremental process rather than simply a stage in a research process*' (Pink, Doing Sensory Ethnography, 2009). I could not agree more. I felt that I was continuously mixing data collection with analysis. My observations and interviews brought me in directions I could never have imagined prior to entering the field. Some would say that this is unstructured, but I would call it being agile and open to new ideas and the 'unstructured' approach makes me flexible. It enables me to move faster in my work. I do recognise that this approach would be less fruitful and perhaps even wrong in other fields and research topics, when a more fixed process would produce more predictable results. It is perhaps this quite unpredictable retail space, comprised of millions of variables, that calls for a more iterative approach to finding answers to my objective.

Lastly, due to IKEA's company policy, I was not allowed to photograph customers. To address this drawback, I decided to create my own illustration of the customers and use them interchangeably with the photographs, where customers were not present. I feel that it was important to show the customers' behaviour in visual form because I believe this will not only convey the message in a more effective way, but it will also make my thesis more inclusive to a broader range of readers such as neurodivergent readers, being a dyslexic myself, who have difficulty understanding complicated texts or too much information. To describe 'customer behaviour' and 'customer experience in a retail space' with written words alone may not be enough. By incorporating visuals, it will also give the readers the feeling of 'being in the moment'. Other than that, it enables me to think and analyse the moment that I wanted to capture. When having a goal to sketch a moment, it makes me more observant since I need to recall the settings, the people and their reactions, facial and bodily expressions. Therefore, the process of sketching adds another lever of understanding of the situation, compared to when I as a researcher only convey in text, what I observe, feel, and conclude from a particular observation, moment and engagement with the space and the people present. These sketches, like the one in figure 4 below will be visible in chapter 2 where the bulk of the fieldwork is presented.

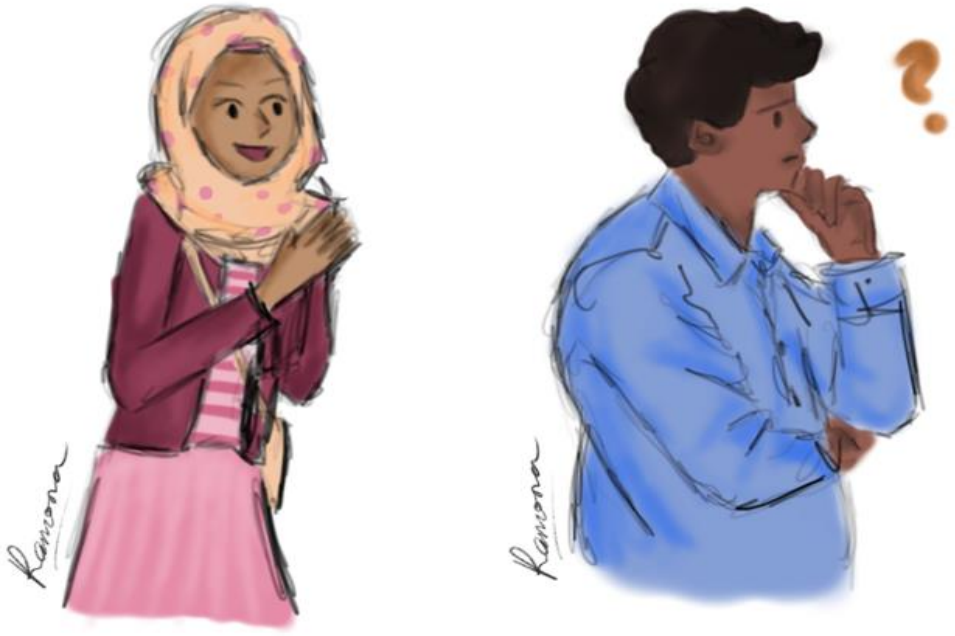

Figure 4. An example sketch, highlighting important moments in the fieldwork. This sketch shows the diversity of the customers as well as their facial expressions.

1.7 Empirical Material

The table below provides an overview of the different interview and observations that collectively represent the largest and most important empirical source of input to this thesis. Data collection for this thesis started already during my work placement assignment at IKEA. Hence all observations and interviews took place in the period between June 2021 and November 2021.

Stores	Observation time in stores (Hours)	Customers interviewed (Numbers)	IKEA Co-workers interviewed (Numbers)
Älmhult (SE)	18	12	4
Malmö (SE)	8	9	3
Delft (NL)	40	26	2
Paris (FR)	4	-	-
Liege (BE)	4	4	-
Hamburg (DE)	4	-	-
Gentofte (DK)	4	-	-
Total	82	51	9

As depicted in the table, most of the interviews and observations were made at IKEA's stores in Delft and Älmhult. Älmhult store was selected because it is close to IKEA headquarters, where I also spent quite a significant amount of time to collect data from various specialists, such as product developers and marketing specialists. Delft is a city in the Netherlands where IKEA has a store that is owned by Inter IKEA. It is special in the sense that it is often used to test new store concepts. This was the main reason why I selected IKEA store in Delft. It is also visible in the table above that apart from segmenting by store, I separate the interviews with customers from those with IKEA co-workers.

To get a broader understanding of the IKEA's retail space and customers' perception of IKEA's Home Smart range, I also visited a few other stores in Europe. Because I have gathered information from seven stores, I can, with reasonable confidence draw general conclusions, and see differences in customer and IKEA staff behaviours and interactions.

According to IKEA store co-workers, weekends are known to be the busiest days with many visitors at IKEA stores. While weekdays, especially Mondays are usually the days that have least visitors where the stores are known to be 'emptier'. I wanted to see how people behave during these different days and hours, whether they visit the store on a purpose, planned or just wanted to browse the store. I imagined that some would rush straight towards the products they had already decided to purchase while some were there just to get some inspiration and window shopping as part of family activity. Therefore, when I visited Delft, I decided to arrive on a Friday and left late Monday evening, after the store had closed. This enabled me to experience the busy weekend and the quieter Monday. In total, I got to observe and interact with customers as well as store co-workers for more than a total of 80 hours. It enabled me to truly see the changes in terms of types of visitors, numbers of visitors, differences of behaviours during peak hours, as well as the off-peak hours.

As mentioned above, I also interviewed important stakeholders at IKEA headquarters in Älmhult. They served two purposes, to gain insight into IKEA Home Smart range, target groups, objectives, and challenges but also to discuss my own observations and interview material. The initial information gathering was very helpful in the sense that it guided me in terms of what to look for, to formulate my aim and research questions. The follow-up discussions, post observations and interviews, helped me in my hypothesis formulation and confirmation.

I conducted several experiments throughout my fieldwork, to learn more and validate my hypothesis. The table below lists my main learning experiments, my hypothesis, and a description of the experiments. All hypothesis and experiments were designed after analysis of the input I had

received from IKEA store visitors and sales staff, either through participant observations or via interviews.

Location	Test hypothesis	Experiment description
Delft	A cleaner, brighter area, with all technology working, will attract and engage more customers. A furnishing with brighter colours, better matching to local needs, will attract more customers.	Based on customer feedback, dusted off all surfaces, changed out dull carpet to a new white coloured carpet. Added white air purifier, replaced several dark coloured accessories to white colour. With support from staff, fixed all damaged items and ensured the technology was working as intended.
Älmhult	Me wearing normal clothes as opposed to IKEA uniform will (a) expose lack of staff issue and (b) show decline in adoption due to no staff available	Changed between wearing IKEA work clothes and my normal clothes. While in IKEA clothes I was able to retain customers in the area and support the customers (to the best of my knowledge). While wearing normal clothes, I would blend in and hence see the real situation (since I am not a regular member of staff).
Malmö	Me playing with the full capability of the smart speaker and smart lighting will drive more traffic, interest and engagement in Home Smart area.	Repeated experiment of playing with sound and lights to study how customers behaved differently.

With more than 80 hours of participant observation, 51 customer interviews, and nine IKEA co-worker interviews within the period of six months, I have accumulated a mountain of information. With my objective in mind, I needed to figure out what information that mattered the most, if I saw any patterns, and finally how I should structure and communicate this in a meaningful and understandable way in my master's thesis. The iterative process of moving between analysis and data collection was certainly important and effective, but not sufficient to make sense of the information and to communicate it. What I decided on was to think about the customer journey as a starting point, which I shall come back to later in this thesis. When I made this decision, I started to see some patterns and taking the process that the customer moves through a retail store, also made sense from a communication perspective. A reader then has a chance to predict what information that will come next in my thesis and therefore is better equipped to comprehend patterns, analysis and findings. Building on the comparatively comprehensive fieldwork, I feel that I have decent backing for my analysis and following findings.

1.8 Ethical Considerations

(Davies, 2008) emphasize the importance of transparency towards the participants, regarding the research and its purpose. This enables the participants to make a conscious decision about whether they wish to participate. She further adds that is it a continuous process. Although in most customer interaction, I stated that I was doing research for my master's thesis and I asked for their consent, there were instances where I did not reveal my purpose. As, I mentioned earlier this was because I wanted to see and hear customers' behaviours and interactions as a member of the staff. This 'undercover' approach, although valuable from a research position, is questionably ethical. One could argue however that it is inevitably so that some customer will perceive me as a member of staff and so it does not matter whether I was 'undercover' consciously or not – I would still achieve the same results. Another deceiving fact could be that I was wearing IKEA apparel, where customer, whether I wanted it or not, thought that I was a full-blooded member of the IKEA sales staff. In fact, I even had a badge reading 'new at work'. Therefore, there is a risk that some customers forgot that I was a researcher and hence they may have provided me information that they did not actively consent to. Therefore, I cannot be certain that all interviewees have explicitly approved that I use the information they provided for my research. I was actually a bit contradicting to have two roles at the same time, being an ethical researcher while complying with the rules and regulations as a member of staff.

As per IKEA's policy, shaped by General Data Protection Regulation (GDPR), I was not allowed to take photos or record the customers, nor was I allowed to use my mobile phone while wearing the IKEA uniform. It was quite challenging to balance my job of doing research with supporting customers. Although my primary objective was research, I had to always prioritise the customers, if there was a conflict, since I could otherwise damage the IKEA brand by being perceived as less service minded. This prioritization sometimes forces me to first service the customer, by answering questions and then trying to ask questions back about my research project.

Another aspect that is worth mentioning is that I have previously worked for IKEA and therefore had a better understanding of the company, compared to other researcher entering this field. I think this for most part gave me an advantage since I understand IKEA values, tone of voice and ways of working. This said, it could also be so that I am blinded to some aspects that I take for granted. This has very likely shaped by work, but I struggle to come up with concrete examples of what would have been significantly different, have I had a different background and work experience.

1.9 Overview of Thesis

Chapter 2 begins with an introduction of IKEA, the concept, their Home Smart range, and the challenge according to management, which is connecting back to the objective of this thesis. The empirical data and analysis are presented in a way that matches a customer's journey through a store, divided into three main processes, containing the most significant touchpoints that influences a customer's purchase decision. Through an exploration of the retail spaces, this chapter starts to address the barriers and opportunities to reach out to a broader customer base. The three learning experiments are also presented and analysed in this chapter.

In chapter 3, the practice of operating smart vs non-smart technology is explored, using IKEA's smart speaker as an example to contrast a non-smart sound system. This is where the answer to the first research questions, 'What characterises the practice of operating a smart technology for the home?', is answered. The barriers and opportunities for further adoption in IKEA's retail space, addressing research questions 'Which are the main barriers to reaching out to a broader range of customers, as opposed to only the technology interested customers?' and 'What in the retail space would need to change to facilitate broader adoption of a novel technology?", is then analysed and answered through the lens of social practices, broken down into 'materials', 'competence', and 'meaning'.

Chapter 4 is where I conclude and reflect on my results and to what extent my findings are applicable to spaces outside of the specific retail spaces where my fieldwork was conducted.

2 IKEA Retail Spaces and the Customer Journey

This chapter explores IKEA retail spaces and contains the bulk of the fieldwork. The customers' experiences connected to the Home Smart system is addressed, which collectively expose the barriers to adoption and partially also what in the retail space that would need to change to facilitate a broader adoption of the Home Smart technology.

The chapter begins with an introduction of IKEA, the concept, their Home Smart range, and the challenge according to management, which is connecting back to the objective of this thesis. We learnt, in chapter called 'Previous research' that there are certain touchpoints that will influence a customer's experience in the store (Lemon & Verhoef, 2016). This chapter will explore those touchpoints in detail.

2.1 Concept and Retail Stores

The IKEA vision is ‘To create a better everyday life for the many people’. The business idea is ‘to offer a wide range of well-designed, functional home furnishing products at prices so low that as many people as possible will be able to afford them’ (IKEA.com, About us, 2022).

Figure 5. Image from IKEA website (IKEA.com, 2022).

IKEA’s first store opened in 1958 in Älmhult, a city in rural Småland, also hosting most IKEA’s corporate functions and the centre of its range development. As of June 2022, there are now 471 stores across the globe, with more than half in Europe. Collectively they accumulated a top-line sales of close to €42 billion in the fiscal year of 2021, of which just above a quarter comes from online sales. IKEA group employs around 225,000 employees (IKEA.com, About us, 2022).

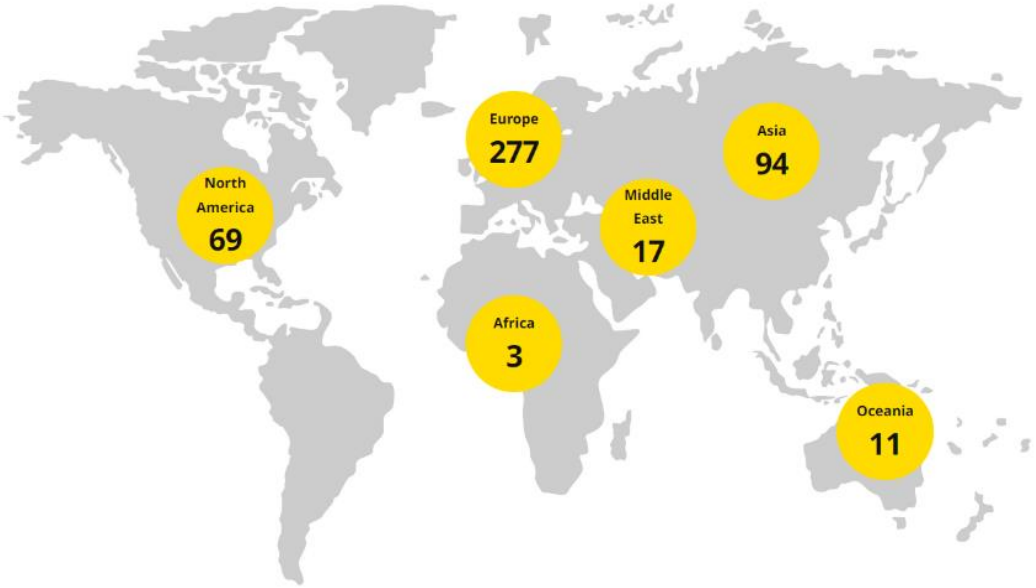

Figure 6. IKEA store location (IKEA.com, 2022).

Although IKEA is exploring new ways of meeting customers, the bulk part of stores is still primarily located on the outskirts of major cities, making access by car the preferred mode of transportation for customers. The stores typically have two levels. The first floor is where we find the market hall, covering product ranges such as home décor and accessories. On the second floor we find different room settings, displayed furniture, and children's department, the restaurant and cafeteria.

Figure 7. Arrow steering the customer throughout the store visit.

One of the most striking things about the IKEA store is its highly engineered layout. Arrows on the floor keep shopper traffic flowing in one direction. Along the way, customers are fully equipped rooms displaying the various furniture and accessories. Customers can step into the rooms, lay down in beds, testing the level of sturdiness of chairs and sofas, and spreading out rugs and curtains in the marketplace to get a better look. The importance of the store layout and atmospheric factors, for the customer experience, have been highlighted in earlier research (Jain & Bagdare, 2009). The customer experience is also thought to be created through an entanglement of emotional, cognitive, social, and sensorial elements during the shopping journey when the customer interacts with the product or service (Schmitt, 2003). Others highlight the importance of the store design for the consumers motivation to move from merely interested to an actual acquisition of goods or services (Van Rompay, Tanja-Dijkstra, Verhoeven, & van Es, 2011). We have already learnt that social practices, such as making a purchase, is heavily influenced by the spaces that customers are exposed to (Everts, Lahr-Kurten, & Watson, 2011; Pink, Situating Everyday Life: Practices and Places, 2012; Schatzki, 2002). IKEA's engineered layout, consciously designed to maximising 'the meeting' between spaces and humans, is likely a huge part of IKEA's success. If the space 'speaks' to the customers in the right way, the likelihood of a customer purchase increases. As we shall see, there is also plenty of room for disappointment if the spaces and atmospheres' do not live up to the expectations and needs of the customers.

Most sales personnel work at the cashiers. This is intentional, to encourage customers to touch and play with the products (Lindqvist, 2009). Service levels and staffing are supposed to be the same around the world. IKEA's concept of the customer's role in relation to the low prices have important implications for the level of service: to have such low prices the consumer pays the price – they must pick things up in the store, carry them to their car, take them home and assemble them (Johansson & Thelander, 2009). The Smart Home range at IKEA is in practice treated no way different from the other areas, not many staff in and around the area, which we shall see, is a concern from a customer service perspective.

2.2 Home Smart Range

IKEA Group consists of three companies, IKEA retail, Inter IKEA, and IKANO bank. Inside Inter IKEA, we find the range development teams. They are organized in several Home Furnishing Businesses, of which one is called' Home Smart'. This range contains what is referred to be outside of IKEA as smart home technologies. This is one of the newest and fastest growing ranges.

Figure 8. Some of the Home Smart products (IKEA.com, 2022).

Historically, IKEA's products have been rather low-tech, mainly furniture and furniture accessories. Customers understand their usage and introducing them in the home, has not called for significant changes to the customers' behaviour. This is now changing with the Home Smart range.

Head of Marketing at Home Smart, who was also my supervisor during my work placement at IKEA, was my main informant when it came to information related to the Home Smart range. It was very hard to get in contact with product developers, but Head of Marketing was very knowledgeable and was able to answer most of my questions. Some of the information provided in this sub-chapter is also from my own knowledge, having worked at IKEA. She shares that Home Smart was developed with the intention to be a new business opportunity to strengthen the IKEA brand and home furnishing offer by finding innovative and technology solutions for life at home (Interview, 2021).

The wishes position for the product range is *'Smarter living for the many people: we enrich the IKEA range and life at home, utilising digital solutions and technology'*. Lifestyles, family units and living formats are becoming more fluid and flexible. These changes bring with them a need for a more fluid and flexible home. A home that can fit many different activities and meet many different needs. The smart home is an answer to this need. The three main 'value spaces' have been identified where IKEA has the biggest opportunity to make a difference to people's changing lives at home – 'Atmosphere', 'Well-being', and 'Peace of mind'. IKEA is developing the Home Smart offer to deliver solutions for both existing and emerging needs connected to these spaces (IKEA, 2021).

Figure 9. Picture from IKEA website (IKEA.com, 2022).

Atmosphere is about setting the scene. Creating atmosphere requires a set of digital and physical products that can deliver both functional and emotional benefits. Benefits that support and amplify the experience of different activities throughout the home. For example: a bedroom that plays music and opens the blinds as you wake up; or a dining area where cosy mealtime lighting changes to targeted lighting for evening homework at the table. Products include Smart sound, Smart lighting, Smart windows (IKEA, 2021).

Well-being refers to health and wellness. The IKEA ambition is not to be a health care provider, but by focusing on some key enablers in a home furnishing context, IKEA can improve well-being for the many people. This can be achieved by providing solutions that help people to sleep, eat and

live better at home, with particular focus on a healthy and comfortable indoor climate. Products include Smart air and there is more to come (IKEA, 2021).

Peace of mind means reducing anxiety. It is about enabling people to feel relaxed and in control of their lives, including who and what they have in it. Products include Smart power and there is more to come (IKEA, 2021).

It is worth noting that through the value spaces, IKEA is really taking a holistic approach towards what the Home Smart range should do for the customers. It's so much more than providing only convenience, which several researchers have pointed out as an important aspect for customers in their purchasing decisions (Aune, 2007; Kotler, 1974; Lemon & Verhoef, 2016; Pink, 2011).

Head of Marketing explains how IKEA's business idea is to reach out to the many people. IKEA Home Smart must thus be designed to work for a broad range of customers – the guests, the children, the homeowners, the roommates, maybe even the pets. They should all be able to enjoy the smart home and interact with it in the way that they choose (Interview, 2021).

2.3 Target Groups and Home Smart Challenge

The Home smart solutions aim to reach two different customer segments (Interview, 2021):

1. Traditional IKEA home furnishing customers who are interested in making their lives at home more convenient.
2. More technically interested customers who may be new to the IKEA store. Focusing on families, first movers and millennials who are more open to improving their homes with smart devices.

IKEA mentioned that they sell their Home Smart range to primarily technology interested customers, segment one above, and that they struggle to reach out to a broader range of customers, segment two above, who they currently sell furniture their other home furnishing ranges to (Interview, 2021). According to IKEA, one of the main barriers were technology fear and they wanted me to find out what other barriers there may be. This is what triggered my interest to deep dive into the problem, to learn more about the perceived barriers and what in the retail space that would need to change to eliminate or reduce these barriers.

The remainder of chapter 2 addresses the most important touchpoints for IKEA. I have decided to present my data and analysis in a way that matches a customer's journey through a store, based

from my store observations. There are three main processes that exposes the most significant information about how the retail space either promotes or act as a barrier to adoption of smart technology, as depicted in Figure 10 below.

Figure 10. The customer journey processes, with the steps containing the most important touchpoints, based on store observations

It is in these processes where the most important touchpoints exist, where IKEA can truly sway the customers interest in their smart home technology.

As described in the methodology chapter, I mixed data collection and analysis. In a similar iterative way, my data collection and analysis of the customer journey is moving back and forth between the process steps described in figure 10. There are of course plenty of interesting things to explore both before the customer come to the store and after leaving the Home Smart area, but those steps have not been part of my research.

2.4 Enter Store

Before dissecting the process step when customers 'Approach the Home Smart area', it is worth mentioning that based on plenty of observation and interviewing, I came to conclude that quite a few of the customers that came into the store knew little about the Home Smart range. This is important to acknowledge because it means that these customers are more fragile or vulnerable, compared to a customer entering the store, that is more familiar with the Home Smart range. What I mean with fragile and vulnerable here is that if they, when seeing the Home Smart range for the first time, they are quite easily put off, if the experience is not good. An example can be, which we shall see is quite common, that they have a question about the products and then when no one is available to answer, they will not feel secure enough to go ahead with the purchase. A customer that is previously aware of Home Smart technology, may also have questions, but they have a basic knowledge and so they may accept to not get the support and still go ahead and purchase because they think that they can figure it out by themselves. We learnt that competencies, such as knowledge in the case above, is not

as mobile as for example materials (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). What is happening in the case of the customer, entering the store without pre-existing knowledge, is that he or she will struggle to adopt a new practice when the knowledge, from an IKEA sales staff, is not transferred to the customer.

2.5 Approach Home Smart Area

The process step 'Approach the Home Smart area' starts when a customer hears a smart speaker, sees the home smart area, or any of the products on display, and it ends with the customer either walking right past the area or start to interact and engage with the area. Since I visited several stores, I had the chance to see different approaches to how the Home Smart range was displayed and maintained by the staff working in and around the area. One would think that IKEA's standardised concept should not allow for this variation, but I can confirm that differences did exist. This difference was an opportunity for me since I could then see good and bad examples of the details around the Home Smart range and how that drove technology adoption and sales.

The Home Smart area in Liege, Belgium, for instance looked cosy. Music was played from the Home Smart speakers, and one could hear from afar, calling for the customers' attention, well ahead of reaching the area. The light from the smart speaker lamp, named *Symfonisk*, matched the interior as well as the soft music from the speakers. The area generally looked complete and well taken care

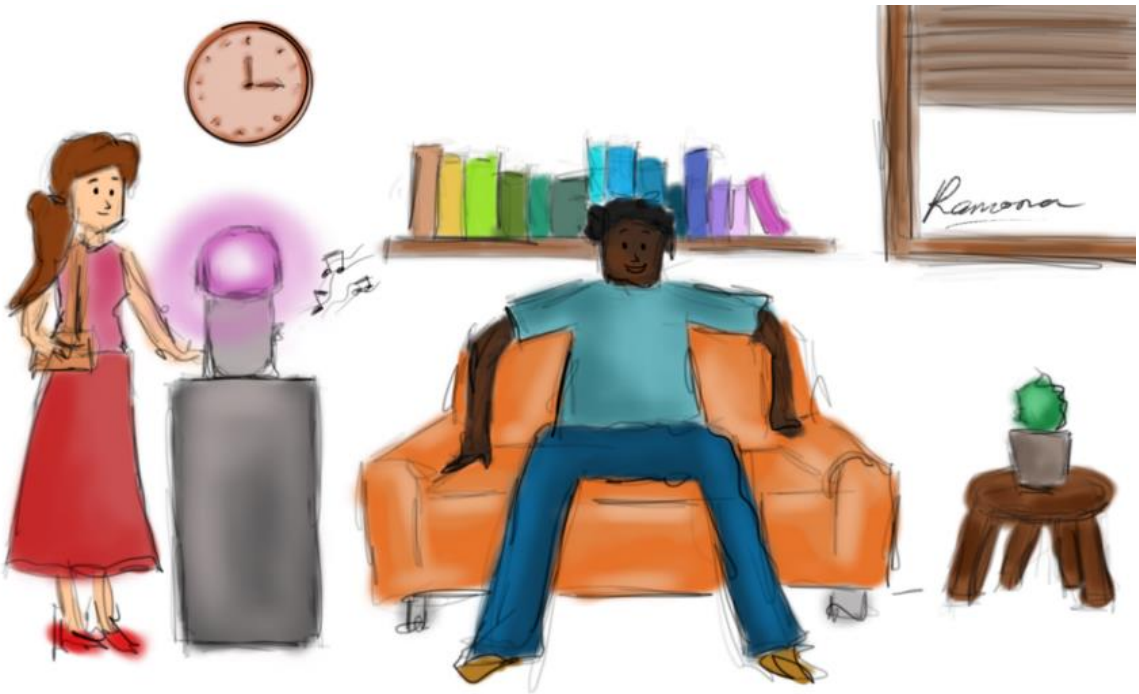

Figure 11. Customers enjoying the 'smart living room' area and testing the Symfonisk smart speaker in Liege, Belgium

of. There were families including children that stopped by the area to test the products to try-out the touch screen. Everything worked well. Four hours of observation at the Home Smart area on a hot summer day in July and probably also a working day, since it was Wednesday, between 2 pm-6 pm, there were around nine groups of families or couples, making it about a total of 30 visitors. The cosy setting, including the light and music, really attracted the customers to not only walk through, but to stop by and play with the products.

This was in sharp contrast to the main Home Smart room in Delft, where the full range was displayed. It was located at the lighting area, in the middle of the pathway where the visitors passed by, so it was impossible not to notice the showroom.

Figure 12. Disinterested customers passing by the main Home Smart showroom at Delft store.

After some time of observation, it became quite apparent that very few people stopped by this main Home Smart area. There were quite a lot of traffic, but it was as if they did not notice the

showroom. I also noted that at least one of the lamps hanging in the ceiling was broken and it was obvious even from a distance. When inspecting the area closer the dust was noticeable.

Figure 13. Broken lamp and dusty furniture.

I decided to speak to some customers about what they saw or did not see. The customers that I spoke with were very open and willing to answer questions and share their thoughts freely. One thing in common that almost all customer shared, regardless of sex and age, was that they did not think that the area looked visually appealing. One customer said:

> I don't like the dark interior. It does not fit the Dutch culture

Another customer added:

> This area is not attractive enough to make me stop and check out the products.

I kept on asking other store visitors that passed by the area and another person commented:

> Oh, is this a smart product showroom? I didn't stop because it doesn't attract me. It looks very dull and untidy to me. I didn't notice the smart products since the room looks so dark and quiet. I suggest that you turn on the lights and change the furniture to something brighter.

However, amongst all the uninterested store visitors that did not stop by, I noticed one curious visitor checking the touch screen at the showroom. When I asked what drew him to the area and if he is familiar with Home Smart, his response was:

> I know this brand because I have seen my friend using the smart speaker. I like the Home Smart range and think they are cool, but IKEA needs better way in promoting it. This area is obviously not pleasing

> to the eye. I came here to look for the product but didn't notice that this was the showroom for Home Smart, because of how it looks, until I saw 'Home Smart' written on the wall.

I feel that it is important to highlight that many store visitors had similar views of the area, especially concerning the colour and the aesthetic side. Another visitor said:

> This is not my type of home décor. Everything looks so dark and lifeless. If it was white, it would more likely catch my attention. The carpet and furniture look dusty. All this makes me hesitant to even enter the room, so why would I buy the product?

When I shared all these feedback with the sales staff, they were not surprised and said that they had overheard similar comments. One of the staff members said:

> The customers are not drawn to the interior and the dark colour of the smart room. Black is not common in Dutch houses, for sofa yes but not for walls and other furniture.

Another member of the sales team then said something that triggered me:

> Very few customers stop by at this area. I have suggested changes to the interior, but no one supports my idea.

I felt that the feedback and comments from the sales staff were very important to consider since they work closely with the customers at the store and may see a clear pattern in the customers behaviour.

Experiment – Improving Furnishing and Atmosphere at Delft Store

My own perception of the Home Smart area and the negative comments from customers as well as IKEA store staff, triggered my curiosity to experiment with the colour scheme, furniture setting and ambiance, and then adjust the retail space according to the feedback from the interviews.

I pitched the idea to the area manager, that we could perhaps experiment with the Home Smart area, and then evaluate if and how the customers would react differently to this. The first two pictures below show how the area looked like before I implemented the changes.

Figure 14. Before the changes was made to the retail space.

The next two pictures below show the changes that I made to the retail space.

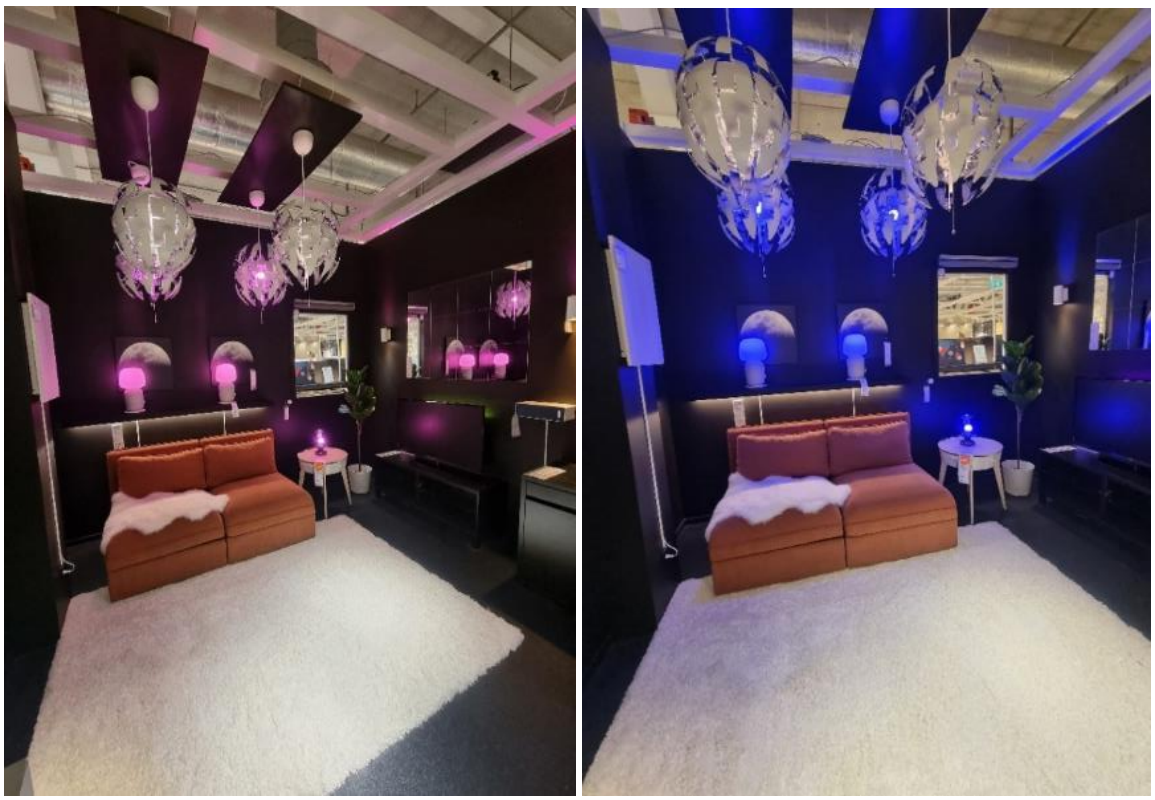

Figure 15. After the changes was made to the retail space.

The dusty looking carpet was replaced by a white carpet. The standard light bulbs were replaced by IKEA's smart light, which customers could remotely alter the colour scheme. Some new pieces of furniture and accessories, such as a white table with air purifier, *Starkvind* were introduced. I was not allowed to change out the sofa that in my opinion was too worn out. Neither was it possible in such short timeframe to re-paint the black wall to white. I also dusted off and vacuumed the whole area. I asked the technical support to fix all broken items and to make sure that the controls were operating as intended.

It was interesting to see, after the changes, how the store visitors suddenly slowed down at the area and started to play with the Home Smart system. I over-heard many comments from visitors where they praised the look of the area. Some people were clearly enjoying the music from the speakers and plenty of children were excited about the possibility to alter the lighting.

I saw another visitor filming the area using her mobile phone. When asking what made her stop by and why she filmed the area, her response was, looking very excited:

> I really like the style of the interior. The colour combination, the decoration and the colourful lights makes the room pops. That's why I stopped to check out the area. I didn't know the lamp could change colour!

I approached and asked one more customer why he paused and what was on his mind:

> I stopped here because I really like the decoration. It looks funky, especially with the changing lights and the music. I really like it.

Another customer who stopped by added:

> I heard the music and the colourful lights from afar. This made me stop by to check out the room, and then I feel curious, so I checked the touch screen. I didn't know what these products could do and I didn't know IKEA had such cool products.

Another customer commented:

> I first heard the music as I walked towards this space and then I saw the beautiful lights. When I came closer, I was really impressed with the beautiful setting of this room. I love the white carpet and the white details in this room. It complements the whole style.

Another visitor that was taking pictures of the area with his mobile camera, when asked why he stopped at the area said:

> Of course, I stop here because it looks cool! It is really my taste. I feel inspired to do something similar to my room and consider buying the Symfonisk speaker with the colour bulb.

I believe that I managed to change the atmosphere of the space, based on the visitors' preference, which we know from previous research has a major impact on social practices (Umut Aslan, 2022; Kotler, 1974). The atmosphere was not only addressing many of our senses – it looked visually appealing to the viewers, matching local preferences, and with the music from the smart speakers on, it was also possible to 'hear' the atmosphere. There were fewer, if any, elements that put off, or disturbed the customers in their experience of the area – no broken items, everything was working as intended.

Figure 16. Interested customers stopped by the Home Smart showroom at Delft store after the changes was made.

I note that it was very effective to use the method of experimental learning. I had formed a hypothesis that a nicer looking area, or a better atmosphere, could alter the practice of buying the Home Smart products. The experiment validated my hypothesis so that I can quite confidently state that the 'right' atmosphere will facilitate adoption of a new practice, such as buying IKEA's novel Home Smart technology. Obviously, the right atmosphere is situated and very individual, but it is certainly important and under the influence of the people responsible for the retail space. It is also important to highlight that the details of the changes to the area were based on the informants' feedback.

Experiment – Smart Lighting and Sound System in Malmö Store

Lastly, under the headline 'Approach the Home Smart Area', when I did my fieldwork at the store in Malmö, I decided to experiment with the smart lighting and the sound system. Let me first provide some background. While I was observing the area, I noticed that something happened when I checked the touch screen, to see if the speakers and the lighting system worked. Suddenly more people were pulled towards and into the area when I changed the music. The opposite effect, no particular interest from customers, that simply strolled past the area, was apparent when there was no music from the smart speakers and no change to the smart lighting. I then decided to re-enact this. I started playing some funky music in the speakers and kept adjusting the smart lights. Many visitors stopped by, and I noticed that they wanted to play with the system themselves. On the contrary, when I shut off the speakers and kept the light to a normal white light, there was clearly less commotion in the area.

This experiment with music and lighting did something to the atmosphere. Both (Schatzki, 1996) and (Hui, Schatzki, & Shove, 2017) highlighted the role of emotions and mood in the creation and transformation of social practices. Umut Aslan explained that 'a certain place, in its material and sensorial totality, can gain a certain affective capacity by having specific 'atmospheres', which can affect human action and mood' (Umut Aslan, 2022). My experiments showed that a more inviting and exciting atmosphere do affect human action and mood.

2.6 Experience Products and Area

This third step of the process, starts if a customer has made the decision to enter the smart room, and I write 'if' because a customer will only do so if the retail space has triggered the interest in the previous step, or if there is a pre-existing interest, such as a customer having already decided, in an

earlier point in time, that he or she wanted to experience the Home Smart range. In the case of a customer having already decided to experience the range, even in case of an off-putting atmosphere, this person will proceed because perhaps the purpose of the store visit was to see or buy a Home Smart product, and so the atmosphere is of less relevance.

I will exemplify this process step with my visit to Delft. When I arrived at Delft, it was on a Friday, at 1pm. I stayed at a hotel close to the IKEA store. As I walked towards the store, I walked through the car park and noticed that it was almost full. I could already imagine how busy it would be inside the store. I was a bit surprised how there could be so many visitors on a weekday, in the middle of the day when people were still working. As I was waiting for my supervisor to provide me with the IKEA uniform, name tag, and access card, I saw people walking into the entrance, mainly couples and families with young children. According to the supervisor at Delft store, lunch hours on Fridays are the busiest time of the day because visitors will come to IKEA to have lunch, and some stay for the rest of the day at the store because they work half day on Fridays. I felt that it was a good opportunity for me to observe the store visitors' shopping behaviours and practices.

During the introduction talk with my supervisor at Delft store, I was told that the rooms containing the smart technology range was called 'smart rooms'. These rooms have various welcoming words according to the products displayed, such as "*come in and try our smart lighting*". There were six smart rooms around the store, in addition to one main area where the full range of Home Smart products were on display. Every IKEA store that I visited, had these full range Home Smart showrooms. These showrooms were fully equipped with almost the whole Home Smart range and according to some employees, they are supposed to be one of the main attractions at IKEA stores, considering the 'fancy' interactive customer experience that was offered at these showrooms. Here, the visitors could not only see, but also engage and interact with the full range product and its capabilities.

I started off my store observation by strolling around the restaurant area to see what kind of visitors that were lunching. This time, I did not only see families with young children but also groups of people with long sleeved shirts and lanyards hanging around their necks. I guessed that they were employees of nearby businesses, enjoying their lunch with colleagues. I looked at the area where restaurant guests could temporarily park their shopping trolleys while having their food. Many of the trolleys were empty. I concluded that many started their day with lunch to proceed with shopping afterwards.

I continued my observation by walking from one section to another: bedroom, kitchen, office, dining area, bathroom etc. Since the store was so huge and I already had plans on how I wanted to spend my Friday observation, I made a quick random look at each of the departments before spending the rest of the day at the main Home Smart showroom area. I stayed at the bedroom department for a while, for closer observation. The bedroom area had one smart room where smart lights were built inside the wardrobes.

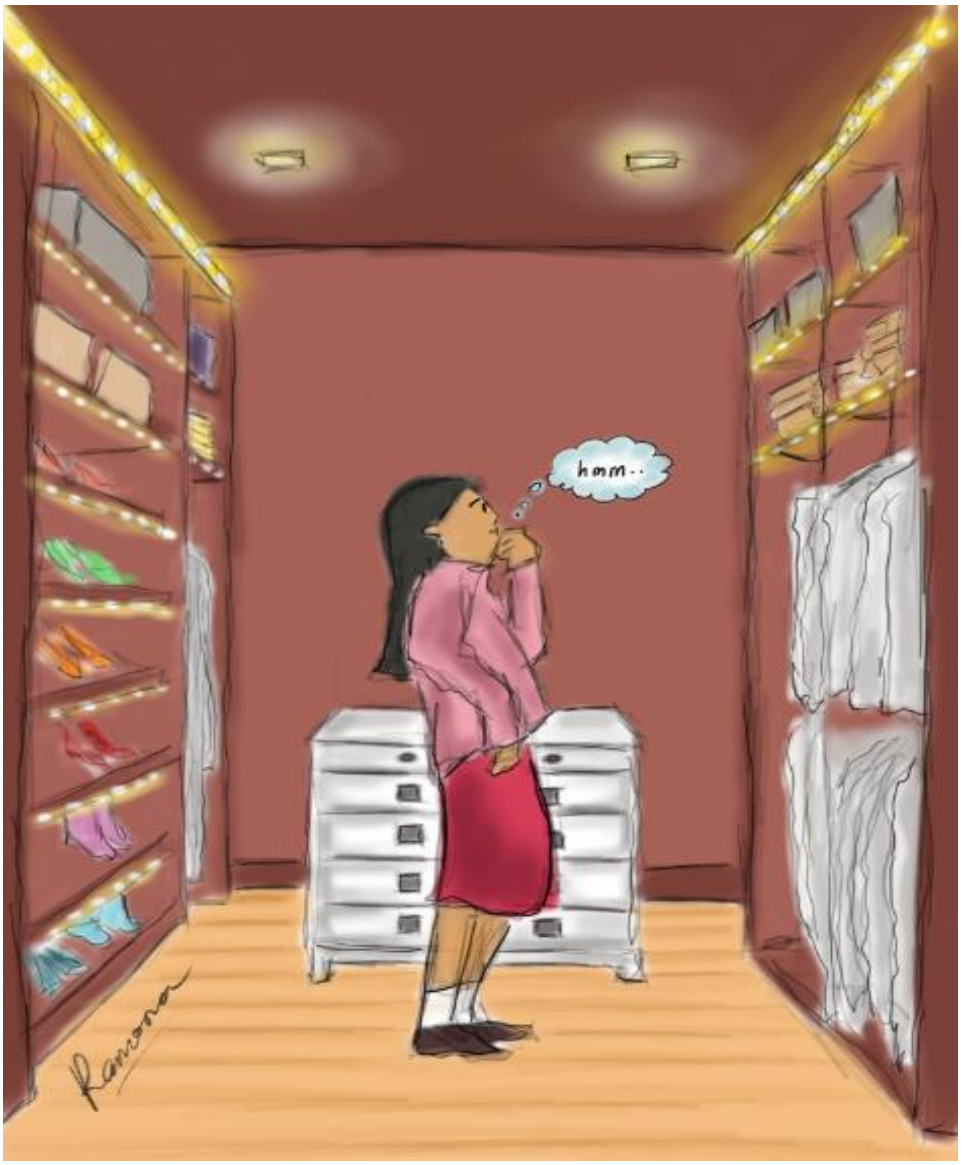

Figure 17. Interested customer wondering and gazing curiously at the smart lights inside the walk-in closet.

They were accompanied by a smart remote control on the wall where the visitors could test and adjust the colour scheme and brightness.

Figure 18. The smart remote that was fasten to the walls of the 'smart bedroom'.

I noticed that the rooms that were equipped with smart products were classified as 'smart rooms' usually had more visitors stopping by. I believe it was either because of the welcoming words that says *"come and try…"* that sparks the customers' interest or perhaps the extra touch on the aesthetics side that IKEA had put to the interior for these rooms.

Each of these small smart rooms was equipped with a touch screen that functioned as an information tool for the smart products. The touch screen was the most important tool for the visitors. It did not only explain how the product works, but it was also a replica of the Home Smart app. It is meant to make the Home Smart experience in the store more interactive and interesting. For someone who is not familiar with the Home Smart products and needed to know how they work, the touch screen was supposed to be helpful and trigger interest for the product, as it also acted as a marketing tool.

Figure 19. Curious customer exploring the Home Smart system using the touch screen.

After strolling around the store and checking whether and how the smart products on display worked, I noticed that several products including the touch screens were not functioning at all, while other touch screens that functioned, did not connect properly to the devices that supposed to make the smart product work. This affected the whole customer experience which is meant to be interactive and fun.

After my own unsatisfying experience by the non-functioning smart products around the store, I felt curious to see how the store visitors would behave and react to this situation. As expected, there were lots of interest in the beginning when the visitors, including children wanted to try the smart products, by testing the touch screen. When I was at the dining room area for example, I saw the visitors pressing the buttons on the touch screen to change the mode for the dining room. Since the touch screen offers different colour temperature and music to choose from, I saw how the visitors looked puzzled and dissatisfied when the smart lights did not change according to the colours they

selected when pressing the button. I saw them trying repeatedly and heard one person saying to another:

> I thought the colours could change? I pressed this purple button, but nothing happens, or is it just me that don't know how to use this?

Figure 20. Customer looking puzzled when the Home Smart system did not work properly.

I spoke to some IKEA sales staff who shared:

> Product not working happens very often. There should be a duty schedule for us staff to make sure that the smart products on display are working.

Another staff member added:

> It's easy to the fix non-functioning Home Smart products but other staff don't know how to. They are depending on me to fix them.

I conclude that there seems to be a knowledge gap amongst the members of staff.

What I describe above is a situation where the products do not fulfil the intended purpose. This affects the customers' store experience and their decision to buy since they were not able to see how the product would perform. Only a very determined and knowledgeable customer would proceed to purchase this product because they understand that the system on display is not working, and it has to do with the set-up, and they trust that they will be able to work it out themselves. This person already has the practice of using novel technologies, such as IKEA's Home Smart system and so there is no need to influence it. On the contrary, the broken set-up or broken product, can have two different kinds of impact on a customer that is not as determined and knowledgeable. Either they understand that the system is not working as intended and decide not to go ahead because they fear that it could happen also in their home. One customer statement directly supports this:

> If this product does not function here, why would they work at home?

Alternatively, they may not recognise that the system is not functioning as intended and they blame their own capability or knowledge of how to operate the system. Both options will lead to a no-go decision. Another observation I made was that some customers explored the area and system, and everything was working perfectly fine, but they decided not to purchase because there were not sure about how to make it work at home. One customer commented:

> The touch screen only shows what the product can do. It doesn't show what I need and how to get started.

In this case, we are looking at a broken material transfer. Material here, referring to one of the three components of a practice, is the whole system set-up. The practice of adopting the smart technology is not triggered because the material, the Home Smart system, is too complex. Another customer statement also supports this standpoint:

> I'm dependent on my son's support to make this product work.

2.7 Inquire Information and Knowledge

The fourth and last step of the process under this study begins when a customer has explored the Home Smart range, product, or system, and now would like to receive more information. The process ends with the customer receiving an answer or alternatively that the answer is not provided, and the customer decides to move on with the journey, with or without picking up a product from the Home Smart range.

I feel that it is also worth highlighting that my fieldwork began at the heart of IKEA, at the very first store in Älmhult where I was invited to the IKEA festival by the Home Smart team. Here, I was also given the chance to represent Home Smart. This was a golden opportunity for me to get really close to IKEA Home Smart experts, customers as wells as IKEA store visitors for the first time as a researcher, while at the same time get to know the products. Due to the festival, there were many Home Smart range developers, other specialists, and marketing staff on site, so this was really a golden opportunity to absorb a lot of information.

Figure 21. IKEA Festival in Älmhult

Figure 22. Customer looking happy after receiving help and advice from IKEA Home Smart specialist who explained in detail on how to use the smart app.

I spent the whole working day with the Home Smart team, and it was indeed very valuable. Around 4 pm, most IKEA co-workers that was not directly employed in the store, left the festival. I decided to stay to give my full attention to the Home Smart area and the customers entering this area. I wanted to see their reactions and level of interest when approaching and engaging with the Home Smart range. As explained in the introduction, my objective when wearing the IKEA uniform, was to support the visitors to the best of my ability. I noticed that there were many store visitors that were curious about the Home Smart products. Since there were no one else wearing the IKEA T-shirt at the area, they walked towards me for help and questions. I was able to support many of the customers since I had gained some product knowledge from my interactions with the Home Smart specialists earlier in the day. This said, there were also some instances where I couldn't answer a customer's question and so I had to get support from a sales staff that worked at different department in the store. Since there were very few sales staff, and most of them were busy, it took me a while to get help. When I came back, the customers were often upset for having to wait such long time. Others could

not be bothered to wait and had therefore decided to leave the area. This situation repeated itself several times.

Experiment – Complete Participant Observation vs Hybrid Researcher and Employee

I realized that my presence created an unnatural situation since I was not a regular staff member. I both added a positive experience for the customers that I was able to support, while I also sparked frustration when I was unable to answer their questions and had to ask the customers to wait. I therefore decided on a new experiment where I would change into my normal clothes and hence blend in with other store visitors, and not be considered a staff member in the eyes of the customers. I wanted to test my hypothesis that there is lack of staffing and that this has a negative impact on customers' interest and level of adoption.

I now started to engage in participatory observation, but more towards complete observation, the least intrusive form on Gold's scale of participant observation (Gold, 1958). Naturally, customer stopped approaching me. I noticed a continued large interest in the Home Smart range. Many were playing with the touch screen, while others were checking the products. I could also see that many

Figure 23. Frustrated and confused customers in Älmhult looking around as if they were searching for help or IKEA sales personnel.

were looking around, trying to locate a salesperson. When there was no sales staff available, they mostly decided to proceed forward, and I could pick-up signals of frustration.

I noticed a big difference between the level of customer satisfaction and hence decision to purchase, when comparing with the situation before 4 pm when several of the Home Smart specialist were around, customers had their questions addressed and hence many decided to move forward with the purchase. I could also compare with when I was present because then I was at least able to answer most of the customers' questions. I changed clothes a few times and I noticed a pattern: when I was around to answer questions, more people picked up products and when I was blending in and only observing, I kept seeing disappointed customers. I therefore conclude that I was able to verify my hypothesis: staff presence will drive a greater adoption.

When I started to engage a bit more with the store visitors, I received the following statements that supported my observation of customers being frustrated by not getting the support they needed:

> I have many questions but there is no staff around to help me.
>
> I'm interested about this smart blind, but I'm not used to all these buttons. I would love to have someone to show me and help me out.
>
> I'm curious about this smart lamp, but I don't know what I need to make it work
>
> I'm interested about some products that are on display but there is no clear information where I can find them in the store. I must spend time searching and I lose interest on the way.

I decided to also speak to some of the members of the staff in the store. These are some comments from them:

> Considering that Home Smart is rather new, we should put extra effort and have extra staff available to help the customers.
>
> The customers always need assistance. They won't be able to figure everything out themselves.

Clearly, there is a confusion here where perhaps all three elements of the practice, to adopt the smart technology, are at play. When we analyse the 'material' element, we have the system itself that seems to be hard to transfer. The 'competence' is lacking, both on the customers' end but also on the staff side. 'Meaning', the third element of a practice, is harder to analyse. There are many emotions at play, but if we focus for a while on the process of a customer having an inquiry about the product, we can understand that it must create a lot of emotions, primarily negative ones, when answers are not

provided. The customer may feel intimidated and insecure, but also uncertain about the benefit of the Home Smart product and system.

2.8 Wrapping Up the Customer Journey

When a customer 'approach the Home Smart area', the atmosphere can either pull the customer in, have no effect, or in worst case, simply refrain the customer from entering the area. Thereafter, when a customer 'Experience products and area' there are plenty of touch points that can either induce the practice to adopt the technology but also push the customer away. If the customer is still interested, he or she may now move on to 'Inquire information and knowledge' about a certain product or the system. As for the previous steps, where are many things that could go wrong here, leading to a customer not adopting the technology.

Throughout the process, plenty of barriers to adoption have been highlighted. Starting from the beginning of the customer journey, the potential is huge. A customer has decided to enter the store and the engineered layout is steering the customers towards the Home Smart areas. Most customers at this point are certainly potential buyers of Home Smart products because it is still a novel technology. This means that the retail space has an opportunity here to alter the potential customer's practice, to make the practice adoption of this novel technology. Depending on the level of pre-existing knowledge, the customers will require varying extent of influence to move from being a potential buyer an actual purchase. For IKEA to be successful in moving the needle on Home Smart technology adoption to a greater extent they need to consider all three elements, 'material', 'competence' and 'meaning'. This is the focus in the next chapter.

It is also important to mention that I noticed a clear difference in the customers' behaviour amongst the different stored I visited around Europe. The store visitors in Delft, for example, seemed to be very open for interviews and discussion, and so it was very easy for me to have a natural conversation with them. Most of them, regardless of age and gender were also more technology savvy, compared to the store visitors in Malmö, and they were not very bothered about having less available IKEA sales staff. However, they reacted strongly to the 'aesthetic' side of the retail space. One of the main things that bothered them was the dark colour of the Home Smart area. After making changes to the Home Smart area including changing the dark materials to white, there was a huge difference in terms of interest among the IKEA store visitors at Delft. On the contrary, I experienced that the store visitors in Malmö and Älmhult were less 'tech savvy' and needed lots of help and guidance

from the sales staff, especially the customers in Malmö. They reacted more positively when they saw an IKEA sales person around, whether it was me in my uniform or another co-worker.

3 Changing Practices for Broader Adoption of IKEA Home Smart

In previous chapter, IKEA retail spaces were explored in greater depth. The customer journey was analysed, from 'Approach the Home Smart Area' through to 'Inquire information and knowledge'. The empirical information was analysed using my social practices as theoretical framework. The objective of this chapter is to further analyse and summarise the barriers and opportunities to reaching out to more customers. The analysis is structured, using the three elements forming a social practice. Before taking the analysis further it is valuable to be explicit about what practice it is that the IKEA retail space is specifically targeting to influence. This also addresses the research question of 'What characterises the practice of operating a smart technology in the home?'. Therefore, we shall briefly explore and contrast the difference between operating a smart versus a non-smart technology. The two different practices are exemplified using a non-smart sound system, that is contrasted with a smart speaker, such as the bookshelf speaker in IKEA's Home Smart range.

3.1 The Practice of Operating Smart vs Non-smart Technology

The trigger to select the thesis objective, to understand how the retail space can facilitate a broader adoption of a novel technology, was born out of IKEA's perception, which was explored in previous chapter, of a struggle to reach out to, what they refer to as, 'the many people'. 'The many people' is core of IKEA and part of their vision: 'to create a better everyday life for the many people' (IKEA.com, 2022). In their view, they primarily get through to the technically oriented customers, that are already accustomed to the practice of using smart technologies in their homes. In other words, the Home Smart range is currently not accessible 'for the many people'.

A Smart speaker, like the bookshelf unit, offered by IKEA, needs to outperform the non-smart speaker on one or more of the three elements of practice. In the language of social practice, 'the many people' do not yet have the practice of operating the Home Smart system. Reckwitz defined a practice as 'a routinized type of behaviour' (Reckwitz, 2002). How can the use of a smart technology be routinized? To begin with, the 'material' element is quite concretely a home with an internet connection, which for most, if not all households, is today close to as common as electricity. The second material that is needed, in most cases, is the 'gateway'. A 'gateway' is a piece of networking

hardware or software used in telecommunications networks that allows data to flow from one discrete network to another (Wikipedia, 2022). When this is installed in the home, the foundation is in place and the possibilities to add additional material is almost endless – controllable lighting, blinds, cameras, air purifiers, and a plethora of devices and sensors. We have learnt that there are two more elements required, in addition to 'materials', namely 'competence' and 'meaning' (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). Starting with competence, at least one of the family members of a certain home need the competence of knowing what is needed, how to install and connect the smart system for the home, how to operate it and how to troubleshoot, in case of system or product failure. It may not be obvious whether it is the internet that is down, if the gateway is failing, or if a device is malfunctioning. The collective competence of the home also needs to understand the capability of the smart technology, what void it is filling, what practice is it replacing, or improving, which connects to the last element of 'meaning'. The 'meaning' of the Home Smart system needs to be addressed. Someone, and preferably everyone, in the home need to feel good about it, to understand the purpose of the technology or system. This is clearly connecting to the other two elements because if the right set up, 'material', is not in place, or if the right 'competence' is not in place, the negative emotions will take over. This said, it is not enough that we can install it and have the competence to make it work, we certainly also need to experience the benefits, be it convenience or a certain atmosphere that make the home more enjoyable. As the theory of the three elements so clearly state, the practice will not be sustained unless all three elements are in place and being addressed (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012).

To understand the change required, for a new practice to form, we also need to know the baseline, what the new practice is 'competing' with, what it is replacing or improving. Let us exemplify with a normal sound system, that is not smart. The 'material' element is the amplifier itself that is typically simply plugged in to the wall socket. If the speakers are stand-alone units, then the wires must be physically connected to the amplifier, but often the amplifier and speakers are one unit and so it is only the power cord that needs to be connected. This type of sound system has been around for ages and so the competence is quite widespread. The 'meaning' related to a speaker can of course relate to the design of the speaker. People probably buy an expensive Bang Olufsen sound system, much for the design. This said, the main 'meaning' relate to the emotions that the music create when the sound is streaming out of the speakers. The installation and operation of this non-smart sound system is a practice that is the baseline, with which a smart speaker must compete.

To summarise and answer the question ‘What characterises the practice of operating a smart technology in the home?’, it is firstly about having the right material, such as an internet connection, a router, a gateway and at least one smart product being controlled. Secondly, is about having the competence to operate the system and thirdly to understand the purpose of the system and to experience something better, compared to operating a non-smart system, and this can for example be an improved mood, sprung from an improved atmosphere.

3.2 Material Element – Barriers and Opportunities for Further Adoption

Through the field studies, it became quite clear that many people see the system as a barrier. They do not understand what they need to buy to make it work. None of the products in the Home Smart system will work without the gateway itself, which is considered the ‘brain’ of the system. In addition to the ‘gateway’, the customer needs to have either a remote control or the IKEA Home Smart app. This means that there are at least three components of the system to make it work. Together, they form the ‘material’. This makes the change or mobility of the ‘material’ quite complex to move into a customer’s home, especially if the customer does not have pre-existing knowledge about how the system works. Price is also an example of the material element, that I have not addressed to a greater extent. The price for a smart technology is of course important and it must be reasonable, but it is unlikely so that the price itself is the core reason why someone is considering switching to a smart speaker. It just needs to be ‘right’.

In the theoretical framework we learnt that the ‘material’ dimension must be manageable and understandable, so that it can easily be transferred into the home of the potential customer. Practices are formed when links are created and broken between the elements of a practice (Shove, Pantzar, & Watson, The dynamics of social practice, 2012). For the Home Smart system, this linkage becomes more complex since the element itself is in fact a network of elements and so there are linkage also in between the material element itself.

The authors of ‘The Dynamics of Social Practice’ include the human body as an example of the material element (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). I choose not to treat the body as material since I think it dilutes the element and makes it harder to distinguish from the element competence, which to me is naturally connected to the human body. The display of a competence must be done by a human. The act of doing can only be enacted by a human. If it was a machine and system that is doing something, we would refer to it as being capable, not competent.

(Reckwitz, 2002) views the individual as the carrier or the practice, which to me, makes more sense when trying to understand the role of the people involved in changing a practice. Yet another issue I have with the 'material' definition is that the authors describe a material as always being physical (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). When it comes to Home Smart technologies, surely the 'gateway' is physical, but it contains advanced software and algorithms, some being contained within the hardware itself but other parts belonging to a cloud, and so the material element is in fact not always physical.

The longer-term perspective is to work with the technology itself to make it even more 'plug-and-play', and hence user friendly. It must be easy for any customer, even without pre-existing knowledge, to buy and integrate the Home Smart technology in the home. The devices must be very intuitive. Furthermore, although IKEA is a large global company, they cannot make the transition alone. Hundreds, if not thousands, of companies are floating the market with technologies, and so the integration with those must also work. Therefore, partnerships and alliances, such as the one with the Zigbee alliance with the mission to, '…ignite creativity and collaboration around the Internet of Things, by developing, evolving, and promoting universal open standards that enable all objects to securely connect and interact…', are critical (Connectivity Standards Alliance, 2022). The direction of more and better integration with other companies is very much in line with the centrality of linkage – if practices are to be sustained, linkages must be renewed and retained (Shove, Pantzar, & Watson, The dynamics of social practice, 2012). Even if IKEA's ecology of smart products become more integrated, there can be other technologies that may disrupt the harmony. This is of course true for other companies as well and so the partnering around making technologies work together is an ongoing journey that will benefit the customers, adopters, and hence all entities supplying smart technologies.

Although IKEA is challenged to reach out to other groups than only the technically oriented customers, the company must explore even more sophisticated smart technology. Product such as the smart bookshelf speaker is, as earlier concluded, only reaching level 1 on the scale of smartness (Sovacool & Furszyfer Del Rio, 2019), and at this level the benefits and added value is insufficient to truly impact change to baseline practice. IKEA offer Home Smart technologies that reach much higher smartness levels, build on AI technologies that enable learning and tailoring to the individual family members' needs. When reaching this level, we could perhaps talk about a 'digital revolution' (Walport, 2014). While the level of smartness and sophistication is increasing, it is important not to leave anyone behind. IKEA must avoid creating an even larger threshold for those that have not begun

adopting any of the smart technology. The way forward in this domain is to make the smart technology extremely user friendly. Striking this balance may sound very challenging and it probably is, but simplicity is a core value of IKEA and clearly exemplified with the assembly instructions containing only pictures.

3.3 Competence – Barriers and Opportunities for Further Adoption

The previous empirical chapter provides plenty of evidence for the 'competence' element being a major barrier to adoption. There is certainly a threshold that needs to be overcome, to get started. There needs to be an understanding of the components of the system, the gateway and the app or remote control. It is not a big step, and most people already have a smart phone with apps. If the smart system is operated by a remote control, people are often used to this as well. The 'competence' to operate a smart technology needs to either be already pre-existing for the customer or to be readily transferred to the customer. Here, IKEA is really struggling because, firstly, the information does not seem to be sufficiently available in the area. Few Home Smart areas have clear instruction at point of use that describe what the 'starter-package' look like. What does a customer need to make it work? Secondly, there is also a lack of information about how to operate the system. In most of the smart rooms there is a tablet available, from which the customer can operate the system, but this is a mock-up and not what the customer will be using in their homes. Secondly, my fieldwork repeatedly provides evidence of lack of staff in the Home Smart area and so customers do not get answers to their questions, which puts them off. The competence is not flowing from IKEA to the customers; hence the new practice cannot be formed (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). Thirdly, my fieldwork confirms that there is a lack of knowledge about the Home Smart system even amongst the existing staff. Again, this makes transfer of knowledge very difficult and slow.

While the technology is developing and becoming more user friendly, IKEA must compensate by accelerating the flow of knowledge to the customers. This involves many things. My field study clearly indicates that there is a shortage of staff in and around the Home Smart area and the level of competence amongst the staff is rather low. This said, IKEA wants to offer low prices and staff cost has a considerable impact on prices. Therefore, IKEA must work with clear communication at the point of sales as well as with the instructions that come with the products. IKEA is continuously expanding their offer and experimenting with new ways of serving more customers. For quite some years they have offered customers in many of their markets to assemble the furniture. They will

probably also install products from the Home Smart range for customers. Perhaps it would be worthwhile to also offer an advisory service, either in the store, or in customers' home, where IKEA could support the customers with not only solving the problem of installation but also to suggest, based on customers' needs, what the IKEA Home Smart range can solve for the customer. This would be a very proactive approach to supporting the adoption by both transferring 'competence' while providing for the element of 'meaning'.

3.4 Meaning – Barriers and Opportunities for Further Adoption

According to previous research, brought up earlier in this thesis, adoption of smart technologies in a home is about more than merely a rational and economic choice (Aune, 2007; Kotler, 1974). We have also learned that there are many factors, other than the product itself, such as the atmosphere around the product, that can sway a shopper's behaviour (Martineau, 1958). There are many things about the retail space for IKEA to think about here, and as we have learnt in the previous chapter, many touchpoints are below satisfactory level.

While the presented marketing material both address convenience, mood and atmosphere, my field study clearly reveals that the retail space does not always live up to this promise. Hence, it seems like IKEA has understood what (Aune, 2007) stresses, that creating a home is about more than convenience. Unfortunately, IKEA's retail space is often not meeting this ambition. In its application, the element of meaning seems to be the most challenging for IKEA. The intention is there, but the system is simply not working, which creates either a big frustration for those customers that understand how the system is intended to work and for the customers that cannot tell whether the system is working or not, will feel uncertain about their own capacity to operate the system, when in fact they do nothing wrong. Furthermore, related to the element of 'meaning', when the smart lighting should cater for a cosy atmosphere, it can quite easily and understandably be ruined by poor choice of colour schemes or parts of the setting being broken or dusty, which was the case for example at the store in Delft. Perhaps the easiest is to make sure that the technology itself is doing what it is supposed to do, that everything is working so that the light changes colour when a customer is working with the smart touch screen. Furthermore, the furnishing in the area must look clean and not have obvious defects. The experiment related to the atmosphere in Delft proved the importance of this point. Lastly, and perhaps most importantly, remembering what IKEA is selling, which more than merely a product or system, but certainly also good feelings, mood, or a great atmosphere to

experience in the home. The retail space must enact this, and that means the furnishing matching the local preferences, such as colour schemes.

In my view, the element of ‘meaning’ is perhaps the most important and simultaneously the most complex element. Here, ‘the why’ needs to be addressed. What is the purpose of the smart speaker? How can it improve my daily life? I may already have a remote control so that I can control it from my sofa, so why would I replace it with another remote control or an app? When I want to listen to music, I will need to be near it so that I can hear the music and so I could as well use my old non-smart remote control. Perhaps some people enjoy the feeling of having a connected home, but then we are referring to those that are already ‘believers’ and adopters of the smart technology and that group of people is not the problematic groups for IKEA, not the study of this thesis, since they have already adopted, they already have the practice of operating smart technology. This group of people are already looking for the next device to connect to their home and less concerned about ‘the why’. They are rather asking ‘what next’ or ‘what about’, seeking new devices and features to add on to their existing infrastructure. The ‘meaning’ element for these users is extremely powerful because, as Aune described, they adopt not only from a pure rational choice, but also maybe because they want to ‘create a home that can fulfil your needs and present yourself to others is a central dimension of everyday life’ (Aune, 2007). They are proud to tell others about their smart home because it makes them feel modern and in the forefront of home technology.

One interesting angle here is perhaps the smart home technology that were categorized into six different levels (Sovacool & Furszyfer Del Rio, 2019). The IKEA’s bookshelf speaker is perhaps situated in level 1, where it is kind of isolated. It does not really influence and connect with many other things in the home. Therefore, the added value is not that great, and it is a product mainly for those people that have already adopted the use of the smart home technology for the home. Let’s play with the thought that the speaker could reach level four or even five, where it is more intuitive, where it is able to adapt, learn, and predict needs. The speaker could then play the music that is right for the person in the room, at a certain time of the day. This includes not only music but podcasts, and news, and even important information that the listener is known to appreciate. It is out of my personal comprehension whether this is possible today, with the specific speaker on offer at IKEA. It would probably require to be complimented with additional technologies and sensors, such as artificial technology and maybe also some new hardware. The point is, when the smart technology reaches a higher level of sophistication, the ‘meaning’ gets stronger which in turn will enable a new practice, such as adopting a smart speaker. It is worth pointing out that, when the technology gets smarter, the

requirement on the user may also be elevated, setting new demands again on the 'competence'. This is underlining the point made by the authors of the book 'The Dynamics of Social Practice' (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012).

The thorough reader of this thesis has probably already noted that I sometimes bucket something under 'material' when it could as well have been placed under 'meaning'. The level of system sophistication is one such example where it is part of the 'material', but the smartness level is also what creates 'meaning'. This said, the authors are also very clear about the fact that they are extremely interrelated and shape each other (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012).

Figure 24 below is intended to summarise some of the potential barriers to adoption of IKEA's Home Smart system, categorised into the three elements of a practice. This is a summarised answer for the research question about barriers to adoption:

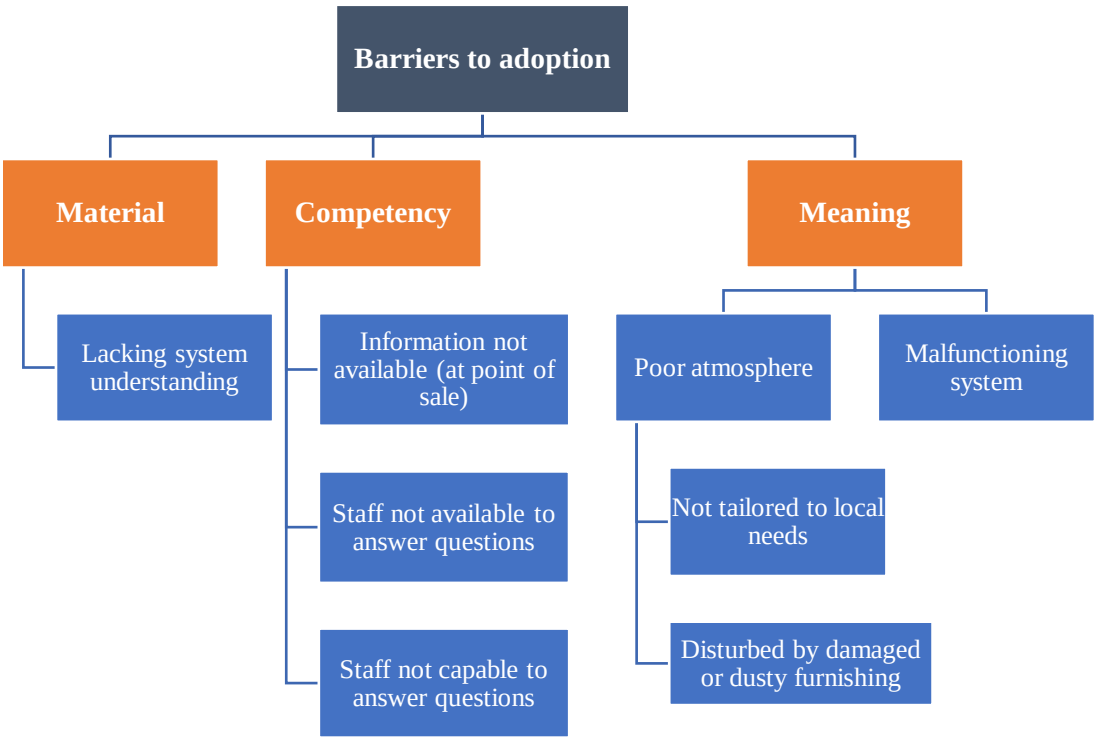

Figure 24. Summary of barriers to adoption of IKEA Home Smart system, categorized into three elements of social practice

Figure 25 below is summarising some of the changes to the retail space that would facilitate further adoption of IKEA's Smart Home technology. This is a summary of how the retail space can facilitate a broader adoption of a novel technology, such as the IKEA Home Smart system.

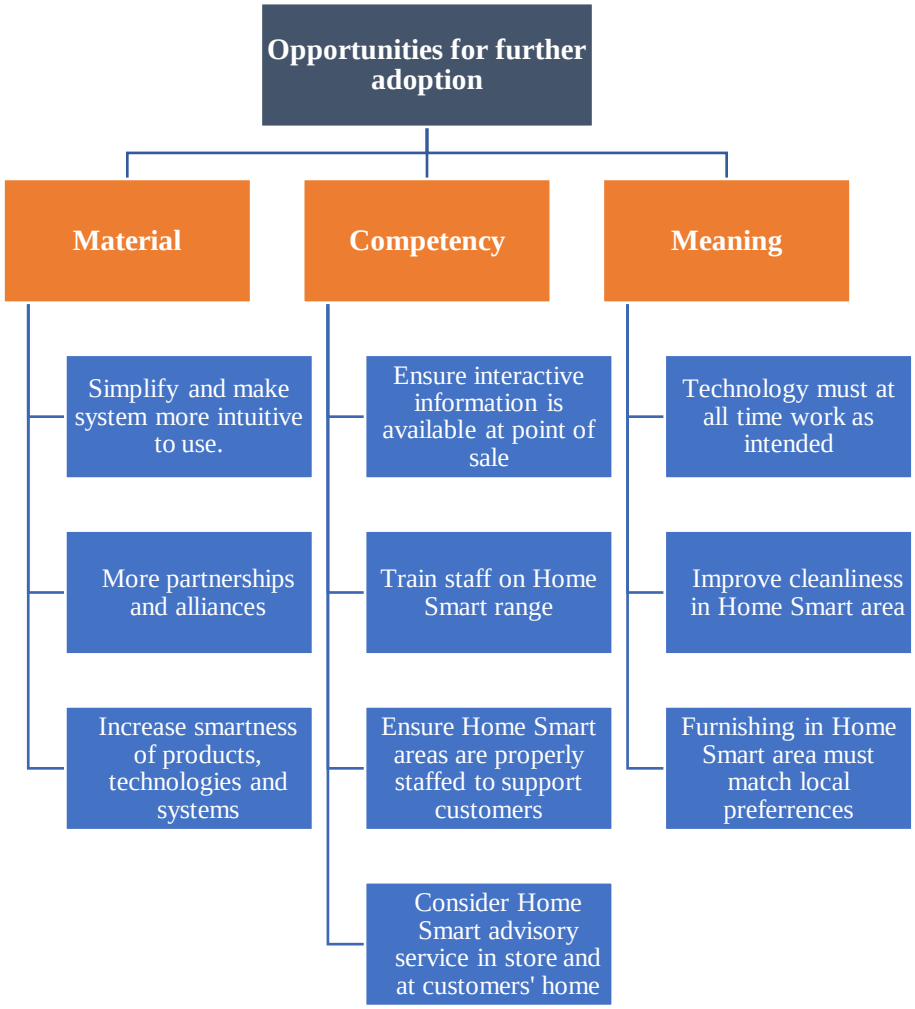

Figure 25. Summary of opportunities for broader adoption, through the lens of the three elements of a social practice.

The required changes to the retail space to overcome barriers and support further adoption were; simplify and make system more intuitive to use, more partnerships and alliances with other smart technology developers, increase smartness of products, technologies and systems, ensure interactive information is available at point of sale, train staff on Home Smart range, ensure Home Smart areas are properly staffed to support customers, consider Home Smart advisory service in store and at customers' home, technology must at all time work as intended, improve cleanliness in Home Smart area, and Furnishing in Home Smart area must match local preferences.

4 Conclusions

The objective of this thesis was to understand how a retail space can facilitate a broader adoption of a novel technology. I wanted to understand the barriers to reaching out to a broader range of customers. I also wanted to explore what in the retail space that needed to change to facilitate a greater adoption.

Before embarking on my research objective, I needed to define what characterises the social practice of operating smart technology for the home, connecting to research question 1. This was addressed in chapter 3.1.

I conclude that several barriers to adoption have been identified, addressing research question 2, 'Which are the main barriers to reaching out to a broader range of customers, as opposed to only the technology interested customers?', summarised in figure 24, chapter 3. These were discovered through plenty of observations, interviews, and experiments, in several stores around Europe. I have also presented some recommended changes to the retail space, that would enable a greater adoption of IKEA's Home Smart technologies, addressing research question 3, 'What in the retail space would need to change to facilitate broader adoption of a novel technology?', summarised in figure 25, chapter 3.

The barriers as well as the suggested changes to the retail space to facilitate a greater adoption, have been analysed using mainly the theoretical framework presented in the book 'The Dynamics of Social Practice', where practice was broken down into three elements (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012).

My findings have some overlap, and consensus, with previous research on barriers to technology adoption (Li, Yigitcanlar, Erol, & Liu, 2021). Examples of overlap are technical support, to address the barrier of 'Understanding of the product and system'. Li et al however, mention barriers such as financial considerations and security concerns that are not top of mind based on my research. Therefore, I hold that my research has relevance and adds to the general knowledge around novel technology adoption in a retail space. About the physical retail spaces and the customer experience, I believe I have identified specific trigger points that that lead to customers either continuing or discontinuing their purchase journey (Lemon & Verhoef, 2016). I have referred to them as barriers. A group of authors pointed to service having the greatest impact on customer satisfaction (Hunneman, Verhoef, & Sloot, 2015; Martineau, 1958). My research is confirming, at least that it is one very important factor. In summary, regarding the previous research about retail spaces, my work is

confirming many of the points, but I feel that my research fills a void since I combine novel technology adoption, in specifically a retail space.

It is worth noticing that the team at IKEA's business range called Home Smart, were quite focused on store visitors being reluctant to purchase because they have anxiety about the technology, that they are not sure how to operate it. Although this may be true for some customers, I have demonstrated that the situation is both more complex, that there are other barriers, but at the same time, I have offered some quite simple solutions, such as ensuring that there is enough staff in the area to answer questions. A key take-away here is that we must refrain from guessing what customers think. An ethnographic approach, with emphasis on field work, will increase the likelihood of arriving at a better view of reality. The devil is always in the details and those are always best studied at the place of action.

My analysis has greatly profited from looking through the lens of social practice. The only critique towards the theory, I can think of is that the three elements are so entangled with each other so that it becomes almost unnatural to take them apart when analysing practices.

My work was concentrated to several IKEA retail stores and so my findings are fully applicable in those stores. Since I have seen many of the barriers in all the stores I have visited, I can quite confidently predict that the barriers probably exist in the remaining stores across the globe. Will my findings be relevant in other retail spaces, outside of IKEA? The argument for this is that the smart technology is in fact still a novel technology, requiring customers to change practices. The barriers found in other retail spaces may not be of equal magnitude and perhaps those spaces have thought more about how to support their customers in their journey towards new practices. One interesting example from Sweden could be the retailer Kjell & Company. They offer plenty of smart home technology and based on my own experience with those stores, they seem to recruit very technically and service minded employees that are always available to support their customers and ease the transition towards use of smart technology for the home. It may not be fair to compare IKEA to Kjell & Company of course, since the two companies have completely different business models, ranges, and target groups. Yet, if IKEA is to expand and really break through with their Home Smart range, it's certainly interesting to benchmark with companies like Kjell & Company.

IKEA's Home Smart products are examples of smart technologies for the home, and smart technologies can be considered novel technologies since they have not been around for a very long time. Are the barriers and potential solutions to overcome them, as suggested in this thesis, applicable

for other novel technologies? I would argue that the theory around the dynamics of social practices would hold true for any novel technology and therefore it is quite likely that my findings could be valid for adoption of other novel technology in other retail spaces. This would certainly be an area of interest for further research.

Furthermore, my analysis has focused on IKEA's retail spaces and how they can facilitate adoption of smart home technology for customer' home. Through traditional ethnographic approaches, such as participant observation and interviewing, I have exposed several barriers and opportunities, in this retail space, for a broader adoption of smart home technologies. The application of the method 'experimental learning', which is rather unusual in the world of cultural analysis, brings some food for thought for further studies in applied cultural analysis. First, my experience was that the experimentation was a fruitful method for the analysis, insights that I may not have had only through the observations and interviews emerged during my interaction with the materiality of the place. Secondly, my findings have, at least to some extent, already been tested by the experiments. Through the experiments, I was able to experience two states – one before the experiments and then a new situation after my intervention in the retail space. This method has moved my hypothesis from merely being research founded to a proven finding yet analysed through the lens of the Theory of Social Practice (Shove, Pantzar, & Watson, The Dynamics of Social Practice, 2012). I would strongly encourage other cultural analysis, entering the field, to explore the method of experimental learning. Through these tests and interventions in the field, the researcher can progress both faster, with higher precision, towards proven insights and findings.

It would be very interesting to conduct more field studies in homes of customers who have already started adoption of smart technologies. This could reveal important information about how smart technologies create meaning in the everyday life at home, that product developers as well as retail designers could use to further improve the technology and space in which the products are on display.

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