Bachelor Thesis Interaction Design

THE CUSTOMER BUYING PROCESS
- a tediuos affair or a pleasant experience?

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1. Abstract

Services constitute an ever growing part of the western economy. A lot of people are employed in the service sector and almost every day most of us come into contact with a service of some kind. A special kind of service is the self-service concept that leaves the customers to manage on their own.

At IKEA, the international home products retailer, customers choose, pick up, transport and assemble the products themselves. This makes it important to give special attention to store layout and how things in the store are organized.

Connections were made between the preparations customers do at home and the actions they perform in the store. To create a more positive shopping experience by making it easier for the customers to find their way in the store and pick up the products they want, focus was laid on a digital map based on an electronic shopping list.

2. Introduction

Employment in the service sector has grown over the past decades and in several OECD (Organization for Economic Co-operation and Development) countries about three-quarters of all jobs were found in this sector by the year 2000 (OECD 2000). It is also almost exclusively in the service sector that new jobs in Europe are created today (D'Agostino, Serafini and Ward-Warmedinger, 2006). This makes it relevant to pay attention to how services are created and performed.

Companies can no longer compete only by providing value through their products; they have to create long-term, emotional bonds with their customers. This is done by creating meaningful and memorable customer experiences, in co-creation with the customers (Bitner, Ostrom and Morgan, 2007). With the methods and tools used by experience designers, service designers and interaction designers, this can be put into practice.

This paper is the result of an assignment from the Customer Relations Department at IKEA in Helsingborg, Sweden. IKEA is constantly concerned with attracting more customers and to encourage them to come more often.
IKEA presented two issues:

1. Customers do not always get hold of all the products they intend to buy.
2. Customers feel that it takes a long time to shop at IKEA.

The result of these issues is a less positive shopping experience, which the assignment was to try to change.

The research was done in the IKEA store in Malmö in southern Sweden. IKEA Malmö is newly built (2009) and the world's second largest IKEA store. It is also the world's “greenest” IKEA so far. The company uses CO2 neutral heating and cooling, electricity from renewable energy sources, no light bulbs, and leftovers from the restaurant are made into biogas. The store is also a so called best-practice store, which serves as a model for all other IKEA stores, especially the ones that are going to be built in the future.

In the Malmö store customers and employees were observed and interviewed. All interviews were made in Swedish. The citations in the report are therefore not an exact word for word translation.

The interviews revealed that the main problems for customers in the store are related to wayfinding. The most frequently asked questions by customers to the employees are “How do I get to ...”, “Where do I find...”, “Where is...”. Some of those questions may be due to the fact that the Malmö store is new and much larger than the old one. However, this does not fully explain the customers' feelings of disorientation and confusion. It also has
to do with the physical layout of the store. These circumstances and the issues presented by IKEA resulted in a proposal of a service that ties together the preparations the customers do at home, i.e. the shopping list, with how they easily can find their way around the store to pick up the items on their list.

2.1 Problem statement
The hypothesis was that, if customers get an individually adapted shopping-path through the store, they will

1. find the products they want,
2. thereby feel satisfied, and
3. be more inclined to visit the store again.

The aim was to find alternative solutions to help customers find the products they want easily and quickly. Special attention was given to how digital aids can make it easier for customers to find their way in the IKEA store.

2.2 Focus and constraints
A number of problems customers had in the store were related to stock balance and queuing. These problems were not further looked into since they were outside the scope of this project. The main attention has been given to problems regarding wayfinding and orientation in the IKEA store and their relation to the total buying experience.

All the tangibles a customer comes into contact with, both the ones at home and the ones in the store, were identified (for the full list, see chapter 4.3). Of all the tangibles, focus was laid on the Family-card (IKEA’s loyalty scheme), the shopping list, maps and signs.

The main focus of the improvement proposals was given to a digital map of the store. However, the graphical interface, i.e. the choice of colors, symbols and layout, has not been part of this work. The customers should have the possibility to print the map but the environmental impact of such a solution has not been investigated. No attention was given to the placement of the printer, the features of the print-outs and contents of the shopping list.

Since the project only involved pre-sales activities and activities in the store, no attention was given to payment, cash desks, or after sales activities such as product deliveries, exchange and returns, home transportation and product assembly.
Even if the IKEA web site has played a part in the solution, it has not been analyzed in any way. The focus has been only on the digital shopping list that can be made there. Since IKEA wants solutions that fit a wide range of people, smart phone and mobile phone solutions were omitted. Finally, no cost/benefit analysis or investigation of underlying technical solutions and systems has been made.

3. Design context and related theories

The underlying theories for this project, presented in this chapter, are the result of a literature study. The basics of the theories as well as common expressions and tools will be explained. The main focus will be on service design and spatial design.

3.1 How interaction design and service design integrates

Richard Buchanan defines four orders of design, distinguished by their design objects: signs, things, actions, and thought. The corresponding design disciplines are graphic design, industrial design, interaction design, and environmental design.

Interaction design focuses on how human beings relate to other human beings through the influence of products. But the products are more than physical objects; they are experiences or activities or services. According to Buchanan, there is a common misunderstanding that interaction design is concerned fundamentally with the digital medium. However, the concepts of interaction have roots in twentieth-century design thinking and have only recently abandoned the preoccupation with “visual symbols” and “things” (Buchanan, 2001).

From Buchanan's point of view service design and interaction design with the digital material (IxD) both are within the Interaction Design order. In Buchanan's model IxD positions itself as a discipline integrating design objects of symbols, things and actions. Service design integrates actions and the thought governing the environment in which these actions are performed. Thus IxD and service design together could function as integrating disciplines across the orders of design.
The possibilities of establishing a common ground between IxD and service design could be based on the similarities in material aspects (dynamic, temporal) and similarities of the design methods employed. Another integrating aspect is that IxD focuses on the design of the interactive artifact, while service design focuses on the design of the service that the interactive artifact is a part of (Holmlid, 2007).

3.2 Service design

“Service design is the design of intangible experiences that reach people through many different touch-points, and that happen over time.”

(Moggridge, 2007)

In the book *In the Bubble*, John Thackara states that the world is filled with technology and devices, but we have forgotten to ask ourselves what this stuff is for and what value it gives. The focus should be on services, not on things, and we should refrain from flooding the world with pointless devices (Thackara, 2005).

The aim of service design is to ensure that service interfaces are useful, usable and desirable from the client's point of view, and effective, efficient, and distinctive from the supplier's point of view (Erlhoff and Marshall, 2008). Products can be said to serve two needs for the owner: perform a function and communicate values. If people are to be made to desire services more than products, services also must communicate these values – we must create service envy (Moggridge, 2007).

There are some features that clearly distinguish products from services (Moritz, 2005):

<table>
<thead>
<tr>
<th>Products</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>tangible</td>
<td>intangible</td>
</tr>
<tr>
<td>produced and consumed at different times</td>
<td>production and consumption mostly occur at the same time</td>
</tr>
<tr>
<td>storable</td>
<td>cannot be stored and simultaneously lose their value if they are not used</td>
</tr>
<tr>
<td>owned</td>
<td>used</td>
</tr>
<tr>
<td>exist both in time and space</td>
<td>happen over time and across several touch points, and experiences of the same service are different every time</td>
</tr>
<tr>
<td>quality can be quantified</td>
<td>quality is difficult to measure</td>
</tr>
</tbody>
</table>
Because of these features it is crucial to the design of a service that the designer gets an understanding of the whole service experience. You have to “walk in the customer's shoes” - to understand and experience the customer journey. Service design systematically applies design methods and principles to the design of services. It has a human-centered approach and the design process starts with the person; what are this person's goals, motivations, experiences. An important attribute of human-centered methodology is that the process is iterative. In service design visualizations or models, prototyping, and enactments are methods vital to the creation of successful services. These methods are closely related to activities, such as documenting the environment or servicescape, blueprinting, and defining touch points (Holmlid & Evenson, 2008).

Service blueprinting is a technique for depicting a service at different levels. It describes the service in enough detail to implement and maintain it. Touch points are the tangibles that make up the total experience of using a service. They can be everything from advertising to computer interfaces, shops and customer representatives. All touch points needs to be considered and designed in order to create a clear, consistent and unified customer experience. Touch points also depicts the important moments in the customer journey (Moggridge, 2007).

Service design makes a distinction between the interactions between customer and provider that are part of the service encounter, and other activities that precede it to make it possible. The former comprise the “front stage” and the latter the “back stage”, separated by the “line of visibility”, i.e. activities or services that are invisible to the customer (Teboul, 2006; Glushko & Tabas, 2008).

Through scenarios it is possible to visualize what happens, how people act, in what order things happen and the coordination of backstage and front-stage activities. This may be done by storyboards to describe what a person does in the service process (Holmlid & Evenson, 2008). To be able to get a mental picture of a future service you could also use the technique of evidencing.

This can be done by producing fake tangible evidence such as newspaper articles and advertisements and use them as evidence that the service exists (Moggridge, 2007).

Personas are a blend of multiple people with similar goals, motivations, and behaviors (Saffer, 2007). In the scenario we created we put our persona through the process of making a shopping list, finding the way through the store and picking
up the items from the shopping list. The scenario can also be acted out, and artifacts used in the enactment are prototypes that invite comments from the participants. Fake something so that people believe just enough that it is real, then they will talk about the experience rather than the look or feel of it. This form of experience prototyping is used to give an intimate and subjective idea of what the experience of using a service could be (Moggridge, 2007). Prototyping in services includes both experiences and touch points. Prototypes can range from sketches to full scale facilities (Holmlid & Evenson, 2008).

Closely related to service design is experience design. It focuses on the whole situation a person is in, and the experience somebody makes in that situation, involving the whole environment, the narrative unfolding and the interaction happening (Gagliardi, 2007). Experience design wants to create relationships with individuals, not targeting a mass market (Chromosome22, 2010).

3.3 The importance of the built environment – the servicescape

The influence of the physical environment on peoples' behavior is particularly obvious for service companies such as hotels, restaurants, banks, and retail stores. Self-service companies like IKEA, will be most interested in predicting and understanding customer behaviors in the physical setting related to areas like customer attraction, satisfaction, and retention (Bitner, 1992). IKEA repeatedly makes surveys of their customers' satisfaction, they measure the customer flow through all departments to see the customers' movements and they have different methods of making the customers stay longer in the store.

What people perceive about the servicescape affects their emotions, beliefs, and physiological sensations which in turn influence their behavior. This perception can influence peoples' beliefs about a place and the people and products found in that place. Because services are intangible they afford fewer cues on which to form beliefs about service quality. People may then use their beliefs about the servicescape as surrogate indicators in forming beliefs about service quality, other attributes of the service, and of the people who work there (Bitner, 1992). Thus it should be highly relevant for IKEA to pay attention to their servicescape and how customers relate to it.
The purpose for being in a place influences a person's emotions and what is noticed and remembered about the environment. A person also enters a place in a certain mood. How this person responds to a certain place also has to do with what he or she expects to find there. These expectations vary according to past experiences in the environment, as well as what the person has heard or read about the place (Bitner, 1992).

Three dimensions of the servicescape are particularly relevant for the impact on people:

1. ambient conditions (temperature, lighting, noise, music, scent),
2. spatial layout and functionality,
3. signs, symbols and artifacts.

Spatial layout and functionality of the environment are particularly important to customers in self-service environments where they must perform on their own and cannot rely on employees to assist them (Bitner, 1992).

IKEA has a very elaborate self-service concept. The customers choose, compare and try the products out in the exhibition. The price tag tells them everything about the product. They then write down their choice of products and where to get them. The next step is to get the products from the self service warehouse or the home decoration shops. Some products require the customers to contact the employees, as in the case of some sofas that are transported from a central warehouse to the store on demand. When the customers have all the products on their list they transport the flat packages home by themselves, or order home delivery. And finally they assemble the products themselves following the instructions that comes with the packages. To make it possible for the customers to do all this by themselves it is essential for them to be able to find their way through the store easily.

3.4 Spatial design

As mentioned, spatial layout and functionality of the environment are important to customers in self-service environments where few if any employees are present and the level of customer activity is high. Spatial design involves the study and research of relationships between people and their environments to be able to design spaces that respond to these relationships (Auckland University of Technology, 2010).
A powerful factor that affects wayfinding behavior is the degree of familiarity an individual has with a place. The more familiar the individual is, the more initial difficulties can be overcome and efforts can be directed to increase the knowledge level of the place. If familiarity alone does not explain disorientation, other factors, such as visual or spatial features of the environment, could be considered (Weisman, 1981: Dogu & Erkip, 2000).

The legibility of architectural elements, such as entrances, circulation and landmarks, is a condition to understanding the spatial organization of a building (Arthur & Passini, 1992: Dogu & Erkip, 2000). Its effect goes beyond ease-of-use of a building and includes other variables such as confusion, anger, perceived crowding, and personal comfort (Wener & Kaminoff, 1983: Dogu & Erkip, 2000).

People look for different types of information in the environment to be able to find their way in a place. Following variables can be influential:

- visual access to familiar cues or landmarks within or outside a building,
- the degree of architectural differentiation between the areas of a building that can aid recall and orientation
- the use of signs and room numbers to provide identification or directional information,
- building configuration, which can influence the comprehension of the overall layout of the building (Weisman, 1981: Dogu & Erkip, 2000).

To be able to form a mental map of a place, spatial clues must be identified. Therefore they must be distinctive by the form and volume of architectural and decorative elements, and by finishes, light, color and graphics (Arthur & Passini, 1992: Dogu & Erkip, 2000). In the IKEA Malmö store there are no apparent landmarks and in many departments no clear overview. In many cases this is done deliberately to keep the customers longer in the store.

Difficulties in finding the way can result in loss of time, a feeling of decreased safety, stress, or general discomfort. Visual or spatial variables such as the signage provided, the ability to see through or out of a setting, the way one location looks different from others, and the overall layout all influence wayfinding behavior (Peponis et al., 1990: Dogu & Erkip, 2000).
The circulation is the organizing force of a layout and the space in which people move and have to find their way (Arthur & Passini, 1992: Dogu & Erkip, 2000). Studies suggest that the complexity of a floor plan configuration is the primary influence on wayfinding performance (Weisman, 1981: Dogu & Erkip, 2000). Simplicity and regularity of floor plans aid people in learning about the layout of a setting. An individual cannot make a mental map of a building until it has been passed through on several occasions, or until the individual gets familiar with the environment (Dogu & Erkip, 2000).

Visitors to a shopping mall expect to find comfort and safety in such a place. Therefore, a shopping mall should provide security and pleasantness. Owners of department stores used to think that by actually confusing the shoppers they could keep people longer in the store and more products would be sold. Today they are discovering that good wayfinding practice is a positive marketing benefit (Arthur & Passini, 1992: Dogu & Erkip, 2000). IKEA has the mindset that by making customers walk the winding path through the store, by dividing the path by a wall in the middle, and by separating the product range to either side of a broad walkway, the customers will stay longer and shop more.

In complex settings, such as shopping malls, the selection of information could also be too confusing. If wayfinders are exposed to a variety of marketing techniques, signage, sounds, and crowds a condition of overload could develop. In such cases people reduce their intake of information as a coping device. The result is that even if they are looking at the relevant information, they cannot process it (Dogu & Erkip, 2000). Apart from the maps, the signs in the IKEA store are often placed high up, hanging from the ceiling, which also makes it difficult to see since the customers' focus are on the products.

Too many signs can make it hard to notice relevant information.
Maps over buildings such as shopping malls too often compound wayfinding difficulties instead of helping to solve them. They may be organized by bureaucratic hierarchy in the structure of departments rather than by shopper needs (Dogu & Erkip, 2000).

4. Methods

To get acquainted with the subjects the work was going to be about, the project started with a study of literature. The main part of the research was made in the IKEA store in Malmö, although some initial visits to other retail stores and supermarkets were made. In the IKEA store observations of what customers do and how they navigate were made. To learn about what kind of problems and issues customers experience when visiting the store, interviews with customers and employees were carried out. During the time spent observing and interviewing, personas were created to test the first ideas on. A first version of a scenario was created which was discussed at the customer interviews.

The next step was a workshop with those customers that earlier had been interviewed. By asking them to comment on the concept ideas, the project got important feedback.

The shopping process at IKEA was mapped by creating a so-called service blueprint. Two separate blueprints were developed, reflecting both (see chapter 4.3) the current buying process and the new service concept.

To visualize the final ideas, a prototype of a digital map and a slide show scenario of the whole concept were created.

4.1 Literature studies

The project was going to be about shopping experiences and finding things. From the start there was a desire to explore service design, which revealed that service design is closely related to experience design. Finding things, in this case products in the IKEA store, would mean that the layout and the environment in the store would have to be investigated. This led to the topic of spatial design. Access to several IKEA-documents concerning their concepts of selling, store layout and store operations, gave a good insight into their way of thinking.
4.2 Observations

Observations are a good way of gathering information about people's behavior in a natural environment. There are two types of observations; structured and unstructured observations. In structured observations it is predetermined what behaviors are going to be studied. An unstructured observation is more of an investigation to be able to get as much knowledge as possible (Patel & Davidson, 2003).

To take in the atmosphere and get a better understanding for the environment, unstructured observations at the IKEA-store were made in an early stage of the project. Focus was on how people navigated in the store and how they found information. The researchers also tried to navigate with the help of maps and signs, looked for short cuts and generally tried to get familiar with what kind of experiences an IKEA customer might have.

To come closer to the customers’ shopping experiences at IKEA, five customers were accompanied on different occasions during their way through the store. Immediately after they were also interviewed (see chapter 4.4.2). Following the customers around the store provided an opportunity to observe them closer and in more detail during their shopping. Observations were made of if and how they used the maps and signs, and if there were any other difficulties or issues during their shopping process. The observations lasted between forty minutes up to two hours, depending on the customer. In addition to these observations, new things were noticed more or less every time the store was visited.

4.3 Service blueprint

Service blueprinting is a technique that can be used to depict a service at multiple levels of analysis. It can facilitate the detailed refinement of a single step in the customer process as well as an overview of the entire service process. A service blueprint consists of five parts:

1. Customer Actions include all of the steps that customers take as part of the service delivery process.
2. Onstage/Visible Contact Employee Actions are actions of frontline contact employees that occur as part of a face-to-face encounter.
3. Backstage/Invisible Contact Employee Actions are all of the other contact employee actions, both those that involve non-visible interaction with customers as well as other activities that contact employees do in order to prepare to serve customers.

4. Support Processes are all the activities carried out by individuals and units within the company who are not contact employees but that need to happen in order for the service to be delivered.

5. Physical Evidence is all the tangibles that customers are exposed to that can influence their quality perceptions.

(Bitner et. al., 2007)

To get a better overall picture of IKEA’s buying process a mapping of how it looks today was made. By doing this it became more obvious what parts would be involved in the new service. The process included identifying all the touch points the customers come into contact with, both at home and in the store. At home the customers make preparations such as leafing through the IKEA catalogue, browsing the IKEA web site and making a shopping list on the site. In the store the customers are getting inspiration from the exhibitions where they can look at, and try the products out. They navigate through the store with the help of maps and signs and on the ground floor they pick up their products from the home decoration shops and self-service warehouse. The new service ends there, before the customers go to the cash desks.

A service blueprint depicts a service at different levels.
The touch points for the new service are:

At home:

- Web site: shopping list
- Family-card

In the store:

- Entrance: map, signs, customer representatives, stairs, escalator, elevator, toilets, Småländ (children's playroom), lockers, Family-computers (where you sign up for the loyalty scheme).
- Upper floor: furniture, products, product tags, signs, floor arrows, information sheets, empty shopping lists, pencils, measure tapes, catalogues, customer reps., computers for home planning, children’s play corners, shopping bags, bag carts, information desks, restaurant, toilets.
- Ground floor: stairs, elevator, Småländ, products, product tags, maps, signs, floor arrows, customer representatives, shopping carts, children's play corners, cutting table (for fabrics), label machine (for weighing and pricing fabrics).
- Self-service warehouse: map, signs, floor arrows, information desk, Find-it computers (for looking up products), shopping carts, shelves, furniture in flat packages.

After the workshop (chapter 4.6) a new mapping of the service process was made. The blueprint gave an idea of the dependency between actions and where possible failures can cause snowball effects. It also provided a possibility to make some final adjustments to the service.

4.4 Interviews with employees and customers

There were two statements to work with: customers do not always get hold of all the products they intend to buy, and they find it takes a long time to shop at IKEA. Since there was no information about what caused this, it was necessary to find the underlying problems to be able to solve these issues. As there was an interest in peoples' experiences, detailed information about the customers' visit to the IKEA store were needed. Facts and figures were of no interest, which is why the choice fell upon qualitative interviews.

Qualitative interviews have more or less always a low grade of standardization, which means that they give room for the
subject to answer in his or her own words. By doing qualitative interviews there are greater possibilities to find out what a person has on his or her mind. Often a qualitative interview takes more the form of a conversation than a questioning. There is no ready-made questionnaire but a list of topics to be discussed and room for the subject to talk about what comes to mind (Trost, 2004).

4.4.1 Employees

The employees have daily contact with hundreds of customers. To get more background information before interviewing the customers, it was recommendable to start interviewing the employees. To cover as many different departments at IKEA as possible, it was decided to interview employees from Information/Cash desk, Living-room, Market hall, and Self-service warehouse. The interviews took place at the IKEA-store, in a quiet corner of the restaurant or in a conference room. These locations made the employees comfortable since they were in an environment they were familiar with. It was rewarding to do the interviews more like conversations. The subjects were more relaxed and could steer the conversations in directions most interesting to them. The relaxed atmosphere also made it easy to steer them back if they got too far from the main issues. This way of conducting the interviews made it possible for the subjects to talk about what they really found important.

To be sure nothing was missed and to be able to quote the subjects correctly, all interviews were recorded with a dictaphone. This also made it necessary to transcribe everything afterwards. The transcriptions were very useful and have on several occasions provided information about different details.

For the first employee interviews there were prepared questions which were asked very much like in an ordinary structured interview. This was due to the researchers not being confident enough to let go of the questionnaire and let the interview progress on its own. This was made to ensure that all the topics were covered. When the researchers’ confidence grew, the prepared questions were not needed anymore. Instead there was a list of topics to cover:

- Personal background – education, earlier employments, present tasks and day-today work
- Attitudes – customer contacts, customer questions and problems, the new store
• Closing – general thoughts about IKEA as a workplace, improvements that can be made

Discussions about personal background was mostly done to make the subjects comfortable by talking about things they know very well, but also for the project to learn about the subjects’ work experience.

The second topic mostly concerned customers and the most common questions that customers ask. There was a discussion about what problems and reasons might lie behind those questions. The “do-it-yourself” concept was a returning subject in the interviews; how it works, if there are enough aids to help the customers help themselves, and if there are parts that are confusing. Another subject was the employees’ opinions on what customers might like or not like about IKEA. The closing was devoted to the employees’ own solutions or ideas about improvements, and to give them an opportunity to ask about the project.

4.4.2 Customers

To ask customers in the entrance to IKEA, if they were willing to be accompanied during their visit and interviewed afterwards, did not seem like a good idea. They would likely feel stressed if total strangers would follow them around, and in addition to that take up an hour or more of their time to make an interview afterwards. Instead, people in the researchers’ circle of acquaintances were asked. The fact that there already was a connection between the researchers and these people was a good thing in making the situation feel more comfortable and “normal”.

Five customers were observed and interviewed on four different occasions. As mentioned earlier, the observations took from forty minutes up to two hours. The following interview took about an hour.

By joining the customers on their shopping round, questions could be asked afterwards about things that had happened and their thoughts and experiences regarding those happenings. This made it easier to have a meaningful discussion, since all shared the same experiences. To make the interviews informal and relaxed, all except one were held in the restaurant at IKEA. The one not held at IKEA was done in the customer's home.

The fact that the employee interviews were held first made it easier to come up with relevant questions for the customers. As with the employees there was a list of topics to discuss:
• Preparations prior to the visit
• Difficulties
• Elements of irritation
• Spent time at the store (planned and real)
• Visiting frequency
• Product purchases
• The new store
• Walkway
• Employees
• Self- service concept
• Technical aids

It was of interest to know if and how the customers prepared at home, i.e. if they browsed the web or catalogue and if they made shopping lists. Another interest was to see what kind of problems customers could run into and how they found their way around the store. It was also important to learn about what worked fine and what they liked about IKEA, to make sure that those things were not changed or affected in the new service. A common denominator in all the customer interviews concerned wayfinding in the store. That applied to those who like to take the long route and browse the whole store, as well as those who just want to go in, get their items, and go.

When the interviews were done, both with employees and customers, all things of interest were listed. All the things the customers like about IKEA, and that should not be affected, but rather supported, were listed first. What customers experience as problems or difficulties and what they do not like about IKEA were then added. The lists helped to close in on the issues that would be the focus of the design proposal.

4.5 Personas and scenarios

A common tool in the design process when designing a product or service, is to create personas. They are supposed to give designers a sense that they are designing for specific people, not just “the users” that easily can be twisted to serve any purpose. Personas should be modeled by talking to and observing real users (Cooper, 2003). IKEA wants to attract a wide range of people, and it is hard to create something that works for “everyone”. During the observations, a few categories of customers were frequently observed. From these customers personas to design for were created.
The ideas were tested on four different personas. The first persona, the Pensioner, represents customers over 65 years, a group that is inclined not to visit IKEA very often. This person was used as a negative persona - a reminder of who the service is not designed for. The second persona, the Mother, has three children. She is interested in her home, effective, likes smart storage solutions but has a tight schedule. This is also the kind of customer, according to IKEA representatives, that IKEA regards as their main target group. The solution should not upset her! Therefore she is the primary persona. The third persona loves interior decoration and often comes to IKEA just to walk around and get inspiration. She is the Stroller. This is a person who probably does not have a problem with walking the path and does not mind if it takes a long time to shop. In other words, she (in this case) is happy with things as they are and the solution must not interfere too much with her expectations. The fourth persona, the Craftsman, is a carpenter who comes to IKEA on his customers’ behalf. He takes a short cut through the cash desks to go directly to the self-service warehouse and pick up the items he wants. He knows exactly what to buy and has no time to lose. This customer is well known around the employees, and a lot of different craftsmen were observed in the store on all visits. The last two personas are secondary personas, whose needs can mostly be met by focusing on the primary persona (Cooper, 2003).

To be able to explain the concept to others, scenarios were created. A scenario resembles a simple story about what it would be like to use the service. Going through the scenarios with the different personas is a good way for a designer to see how and if the concept is working and if something is missing (Saffer, 2007). The scenario of the new service changed over time due to inputs from the interviews and the observations. This is the last version:

“Before going to the IKEA store, the customer is looking at products on the IKEA home page. She is adding the products to her personal shopping list on the web page. When she is entering the IKEA store she walks up to the digital map just inside the entrance. She swipes her Family-card in the slot placed to one side of the map. On the screen the products from her shopping list appears as numbered dots on the map. To the right of the map her shopping list is visible with a corresponding number to each product. She can clearly see the most direct route for her to walk through the store. She can choose to print her shopping-map, but decides to rather swipe the card again as she passes more digital maps on her way through the store.
On the ground floor she chooses to swipe her card on the digital map again. This time she is not interested in finding the way, but rather finding the products that she wants. Thus she chooses to print the shopping list where she can see on what shelf and in which department each product can be found. She picks up a shopping cart and sets out to do some shopping!

4.7 Prototyping

It can be hard for people to fully understand a design concept and get the complete picture. By prototyping the idea, all the pieces of the design comes together into one unit so people can see or maybe even use it in some ways. This will help to communicate what the finished product actually could be like (Saffer, 2007). The design concept is built on a service which covers actions from the user’s home all the way through the IKEA store. It includes many steps, but the focus is on the parts regarding wayfinding and the shopping list. The main issue of the map was how to make a simple enough but informative visualization of the floor plan to make it easy to navigate from. The shopping list was used to mark where on the map the products could be found. For the workshop, static images of how the digital map would look and work were made. Afterwards, to explain the whole concept, a slide show of the entire service, including all the map images and text, was created.

4.6 Workshop - testing parts of the concept

To get input on how to proceed, a workshop with four of the earlier interviewed customers was arranged. The shopping list and its content was the starting point for the discussions. The comments from the customers were that they wanted the products to be sorted in order after where they can be picked up in the store. It should be possible to print the list on site. The list
should have pictures of the products, product name, price and total amount. If a product is out of stock the customer should be recommended substitutes and information about when the product will be available again. Another important aspect was to get additional information when products are made up of more than one part: “This lamp comes with a separate cord, which you can find here”. They also wanted the possibility to sort the list on different variables and to customize it, thus deciding the content themselves. Other features could be tips on smart solutions attached to the products, the possibility to keep a list with staple products like candles and batteries etc., and the possibility to get the list to a mobile phone via Bluetooth or similar.

After the discussion about shopping lists the discussion moved on to aspects that are important for wayfinding, like signage. The customers wanted symbols and pictures instead of text on the signs when possible. That would make it easier to understand directions at a glance. When there is text it should be in different languages, not on signs but in printed brochures etc. The use of color codes, for example different colors on the arrows and path on the floor, also helps. To be able to understand an exact location in the store the customers also expressed a need of a clear overview of a place and a possibility to confirm along the way that they are on the right track. Thus they concluded that it is important to have landmarks for orientation and reference.

The last part of the workshop was devoted to a discussion of a simple prototype of the digital map and its contents. The scenario was also discussed. The customers especially liked the part where the products from the shopping list appear as numbered dots on the map. There were some comments on the Family-card. A person should not have to rely on a physical card. Manual log-in is important as well as possibilities to use mobile applications with, for example, 2D bar codes. In addition, the card has no real value for customers today. To make the card more valuable the customers would like to have personal offers and tips founded on previous purchases, for example. Different versions of IKEA’s floor plan map were also examined. There was one map very similar to the one already in use; blue with white print, then some variants with multi colored background – some with pictures and some without. The most preferred map was one with every department in a different color and with small pictures of the products that can be found in each department.
4.7 Concept validation

After the completion of the project the work was presented to IKEA. Present at the meeting was a representative from the Customer Relations Department, one from the IT department with focus on mobile solutions and one from IKEA Inter Systems, the owner and worldwide franchisor of the IKEA Concept. The whole project was presented, including the slide show prototype. After the presentation the prototype was discussed along with general comments about wayfinding.

5. Design process and results

The main part of the research is based on observations of customers in the IKEA store, interviews with employees and customers and a customer workshop. The observations gave a general feeling for the difficulties customers can have with wayfinding, but the most important contribution was that they served as a basis for the discussions with the customers during the interviews.

From interviews with both customers and employees, it became known that what customers like most about IKEA is the design and the smart solutions. Inspiration from the exhibitions, the wide range of products – there is something for everybody, and the quality in relation to the price are also highly appreciated.

Customers also like the home page, the fact that the store is suitable for children, the flat packages, self-service cash desks and the Find-it computers where you can search for products and get their location in the store. Those are all aspects that the solution should support.
The most common complaints or difficulties customers have are:

- Finding the way (most frequently asked questions to employees)
- Long way to walk in the store
- Maps are not used and/or not understood
- Signs in the ceiling are not seen
- Departments are not distinctly marked off

When coming to IKEA the customers have an idea of what they want to look at. They have perhaps made a list of items on a slip of paper or just keeps a list in their head. This means that in order to see or get all those items they have to walk a specific route in the store. The aim of the new service is to connect the shopping list to a map to make it more convenient for the customers to shop at IKEA. To be able to do that it had to be a digital solution. To test the ideas that had come up during the interviews, a workshop was arranged. The goal was to find out what kind of information the customers need on a shopping list and what aspects of wayfinding they find important.

5.1 Wayfinding

The more familiar a person gets with an environment, the more new information about the place he or she can take in. A mental map cannot be made until a person gets familiar with a place, or until the person repeatedly has traversed it (Weisman, 1981: Dogu & Erkip, 2000). The familiarity factor explains, to a degree, why customers found it hard to orientate in the new IKEA store compared to the old. The problems with wayfinding at IKEA will become less troublesome for the customers with every visit. But to make them come back to visit again, every visit must be a good experience. A customer should not have to be a regular visitor to be able to find the way in the store.

In the interviews several customers had expressed that they wanted to find the most effective way without having to pass through departments they had no interest in. For some it was just important to have control over where they were and where they were heading, even if they intended to walk the path.

Part of the IKEA store concept is for the customers to walk the marked path and be exposed to as many products as possible. IKEA's belief is that in this way the customers will stay longer and buy more. One example of making the customers stay longer is what one of the employees explained:
"When you enter a department you are supposed to see a so called “shop window”. It is made to break the customer flow in two directions, then into the aisles on the sides. This makes the customer lose focus of where he is going; he starts to look around and notice the products instead."

IKEA uses "shop windows” throughout the store to break the customer flow into the aisles on the sides.

How a person responds to a place has to do with expectations depending on past experiences of the place and what the person has heard or read. The purpose for being there influences emotions and what is remembered about the place (Bitner, 2002). Customers constantly made comparisons between the old and the new IKEA store in Malmö. That is understandable since the old store had been there for 30 years, looking almost the same throughout that period. Many of the customers had heard that the new store is the world’s second largest IKEA store, which might have influenced them in thinking that the path through the store is longer than it actually is. According to one of the employees the path in the new store is not more that 100 meters longer than in the old store, but one customer said:

"I have a feeling it (the path) is much longer. Also because you know it is the second largest store. Then it feels as if it is several kilometers longer."

As for the purpose of being there several of the customers stated in the interviews that sometimes they felt like browsing around and sometimes they just wanted to go in and get what they came for and go. These different purposes obviously make a lot of difference to how a customer act and react in the store.
Signs, the ability to see through and out of a setting, the degree of differentiation between settings, and the overall layout are factors that influence how well a person can orientate in a place. Difficulties may result in a feeling of loss of time, decreased safety, stress, or general discomfort (Peponis et al., 1990: Dogu & Erkip, 2000). These factors can also explain why customers feel it takes a long time to shop at IKEA. Some comments from customers on this were:

"If you know where to look for something it is actually easier to plan your time. If you do not know you have to spend time searching."

"If you do not feel like sight-seeing and being inspired, but rather just go in and do your errand, I think it is hard to find the fastest route."

"Sometimes it is very trying to have to walk all the aisles. There are shortcuts, but they can be hard to find. On earlier occasions I have looked at the signs, because you get really stressed by walking all the aisles."

"You know what to find in all the departments, and if you are at a department where you know you do not want to buy anything you just want to find your way out of there!"

One idea to solve the navigation problems was to have a hand scanner with the customer's individual map. A shopping list that the customer prepare on the IKEA web site before entering the store would show the most effective way to walk through the store by presenting the products as dots on the map. With the scanner the user would also be able to scan products in the showrooms, and on the map they would see where the products could be found. The question was where to put the scanner during the shopping. In the interviews the customers felt that both hands should be free. Other comments was about the display on the scanner, would it be big enough, would it be possible to see the map and all the details? Some employees were wondering if it would be possible for IKEA to have the amount of scanners necessary for all customers to have one. A decision was made to concentrate only on the map and discard the scanner.
5.2 The map

Since navigation was a major issue in observations and interviews, examinations of the maps IKEA has over the floor plans were made. Customers trying to use the stationary maps, even walking with a map folder in their hand while shopping, were observed. It was still difficult for them to understand where they were and where they should go. What was it with the map that made it so difficult to understand and use? During the interviews it was discovered that it is hard for customers to distinguish the departments from each other, to see where one department ends and another begins and to get an idea of how many departments there are. This applies both to the environment in the store and to the maps. One IKEA customer's comment on this was:

"Here (at IKEA) the awareness ought to be so great regarding the layout, that it should not have to be vague at all. You should not have to wonder about what department you are heading for, or where the arrows on the floor are, or where information about which department you are walking into is placed. Occasionally I felt like there was one product range on one side of the path and another on the other side. Suddenly I was among the pet stuff when I was looking at pots. And then I had to go over to the other side to see the rest of the pots. Jumpy. Weird. It is not so convenient."

The same customer continues:

"It is more vague here, not as clearly marked off. You do not really know when the product range ends. When should I stop looking at this? If I have looked at the outdoor furnishings, if I start here, is it enough that I walk this far to know if I have seen everything and that this is the whole range? Or do I have to keep on walking? That distinction was not good enough."

"Customers trying to figure out the map."

"Customers trying to figure out the map."
A person must be able to “read” elements such as entrances, circulation and landmarks in order to understand the organization of a place. This affects the level of difficulty when using a building, as well as feelings of confusion, anger, perceived crowding, and personal comfort (Wener & Kaminoff, 1983: Dogu & Erkip, 2000). At the IKEA store there are no apparent landmarks beside the products, and the main focus on the map is a dashed white line (the walking path) snaking its way across the picture.

IKEA’s map of the upper floor.

The names of some departments are not optimal. For example Bookcases also has furniture for hi-fi equipment and TV-sets. The Green room has pots and plants, why not call it that instead? If a customer is looking for something specific he or she has to search the index at the bottom of the map, which is printed in relatively small print. Here the naming also can cause problems, for example if the customer wants a writing desk her or she should look for a working desk at the Workplace department.

The fact that there are no apparent landmarks, and in many departments no clear overview in the Malmö store, is in many cases done deliberately. One employee explains:

“IKEA has a trick, and it is especially obvious in my department. When you enter there is a really big wall to the right where there are products displayed. It is very strategically placed there (so you can't see the exit).”
This is how a customer experiences something like that:

“There were so many impressions. It was like I did not see where a department started and ended. It was not clear. You can always guess, because you know that there is Living room, then \textit{that} should be there. But with this large store I would want... like with the large pieces of fabric hanging here and there! It should be with letters: Living room. Then you know what happens, because now it feels more like a self-service warehouse.”

A map should give directions at a glance and not making the customer figure out how to use it. The map of IKEA's floor plan got this comment from one customer:

"But the map itself was not so obvious either, because I did not immediately recognize that it was this floor. I only saw Living room and what it said on the map. Then it took a while before I actually realized; aha it is this floor! It was printed in relatively small print too. It was not so obvious and clear. I happened to know that there are two floors here, but if it had been the first time I would have wondered how many floors there were.”
To get new input, designs of other maps were examined. Shopping malls resemble IKEA in the aspect that they are large buildings with smaller departments or stores. Maps of shopping mall often show the different stores in different colors, and each store has a number. In maps from theme parks and zoos the walking path is the main focus and along the path there are pictures of the attractions and animals.

Maps of theme parks and shopping malls as these generated new ideas of how IKEA’s maps could be improved.

Three alternative maps were created and tested on the customers at the workshop. The first map had the same design as the one in use today: blue with white markings. On the new version, the walking path was made more legible, and two short cuts that are not on the original map were added.

A small modification was made of IKEA’s original map.
On the second map all departments were in different colors to make it easier for the customers to understand the different departments' boundaries.

Furniture serve as landmarks for orientation.
In the interviews some customers said that it can be difficult to notice signs when the products are in focus. Because pictures are known to be easier for people to remember than letters, sketched furniture were placed on the third map, more or less where they actually are in reality. In that way landmarks were created on the map that corresponds to real objects in the environment. This would help customers to remember what to pass on the way to their destination; to turn left by the “dinner tables” instead of the “back wall” in the Dining room department. The third map also had colored departments. At the workshop the customers confirmed most of the assumptions about the maps; they clearly preferred the third map.

5.3 Shopping list

When the shopping list was discussed at the workshop, the most important aspect was that the customers wanted the products to be sorted in order after where they pick them up in the store. Today the list can be sorted after where in the self-service warehouse the products are. The list can also be sorted after in what order the customer added the products and after weight, with the heaviest item first. There is also information about where in the self-service warehouse the products are to be picked up. Since many of the products come in flat packages a customer has to seek them in the exhibitions to look at them, and try them out. It was important to visualize both where the customer can look at the products and where he or she picks them up.

The focus has from the beginning been on the map and not the list. Therefore, after the workshop, it was decided to show the list on the map with just the product names, department and shelf. The products are then marked as numbered dots on the map.

5.4 The prototype

The customers said that they found it easier to understand the map if the departments were shown in different colors. That way department boundaries, sizes and placement became clearer. It was also easier if they got landmarks on the map, in this case in the form of products placed in each department.
The prototype shows three overlapping maps; one of the upper floor, one of the ground floor and one of the self-service warehouse. A user changes the view with tabs that are placed in the upper left part of the screen, like in a web browser. The map of the floor where the customer is currently standing clearly shows where he or she is by showing a big red dot with the text: “You are here”, and a small red dot on the tab. The colors of the tabs also indicate which one is active and which are not.

The maps must be useful for everybody, not just for those with shopping lists. Therefore the customer has to log in to get the items from a shopping list onto the map. Otherwise it is just a map of each floor that can be printed out. When the customer has logged in her or he chooses which list to get and the list is then displayed on the screen to the right of the map. Each item on the list has a number which corresponds to a numbered dot on the map. The difference is that in the exhibitions, where customers look at products, an icon with an eye is showed next to the product number, and where they pick it up there is an icon of a hand.

To be able to show the whole concept, the scenario had to be combined with the prototype. The easiest way to do that was to make a slideshow of photos, maps and text.
5.5 IKEA’s validation of the service

The strategy of keeping customers longer in the store to make them shop more has begun to be questioned at IKEA. It was agreed that the proposed service in this project might actually put customers in a better shopping mood, even if they will not stay as long.

It was thought that difficulties can arise when more than one customer wants to use the map at the same time. Another problem could be the digital solution with touch screens, since there already are Find-it stations and Family-stations in the stores. The Family-stations are for Family members and for customers who wants to apply for a membership. With so many different stations and purposes it could confuse the customers.

Other aspects of the map, such as printing and number of maps, were discussed. If there is no possibility to print the map, there has to be quite a number of digital maps evenly distributed throughout the store. Otherwise users will forget which way to go.

There was also a general discussion about wayfinding. A comment was that it is presumably not the signs that are the problem but the orientation as such. It was agreed that there is a lack of landmarks and that it is difficult to get an overview of the departments. The idea to use products as landmarks was found to be a good one. This however is only an option if the map is digital, since IKEA refurnishes and changes the placement of the products at regular intervals.

It turned out that IKEA already has plans of investigating improvements to the wayfinding system in the stores. The process of making some initial studies is started. These studies will be used to decide if a project called Customer Guidance is going to be set up. This project will be managed by IKEA Inter Systems. Studies that will be made are:

- an expert walkthrough in the stores in Delft and in Malmö
- qualitative research in Delft, Tokyo and Rome
- an evaluation of the existing service in Waterloo

The expert walkthrough will be made by a professor and designer of visual information. The qualitative research will consist of observations of five customers in the store followed by interviews.
6. Discussion and conclusions

This project’s starting points were that customers do not always come home with all the products they had intended to buy, and that they feel it takes a long time to shop at IKEA, resulting in a less positive shopping experience. The reason for being at the IKEA store is to buy furniture or home decorations. Being able to find products easily and quickly therefore was of main importance. In order to do that effectively it was also important to make wayfinding as simple as possible, which is why the focus was on IKEA’s floor plan maps. The argument was, that if the products somehow could be combined with the maps, there would be a possibility to create a more positive shopping experience for the customers and make them come back more often.

IKEA wants customers to stay longer in the store and shop more. They have different methods of doing that, for example:

- the shop window,
- the length and design of the walking path increases the time spent in the store,
- every time the path takes a turn products are exposed straight in front of you.

These methods obviously makes customers stay longer, but do they actually shop all that more? If they find it tedious, difficult and frustrating they might not be in a good shopping mood. It could be that the new service makes the customers stay for a shorter period in the store, but that has yet to be proven. It is also not certain that this makes them shop less. Perhaps they are in a better shopping mood if they find it effective and well organized, and maybe they will even stay longer just because of that.

It would be a benefit if the employees gets fewer questions from the customers about directions so they can spend more time on sales activities, and that would of course be a great benefit to IKEA. A drawback would be if the employees got questions about the digital map instead!

Because IKEA Malmö is the “greenest” IKEA store today, it is important that this is visible in all details. But would the function to print a map or a shopping list in the store maintain this image? Depending on what kind of paper is used, it does not necessarily have to be a bad thing. It could even be a benefit to the environment if the maps would be printed only when needed and if they could replace the preprinted brochures.
There are always people who do not like computers and screens. A digital solution could therefore be a disadvantage, for example if customers do not understand how to use the touch screen. By now though, most people have seen and used a touch screen at some point. Even if IKEA discards a digital solution, an improved static and analog map would be a great help to the customers.

The digital solution would of course have to be tested on the customers in the store. There are issues about the layout and legibility that are not worked out. Pictures of products can help to create landmarks, but can also muddle the overall view of the map. If it is not obvious to the customers what floor they are on, it is also not obvious where they should go. It could be confusing with three overlapping maps, and to be able to quickly understand which map corresponds to the floor they are on, especially if another customer has left the map with another floor active on the screen. It could be that, since there are three maps, the customers might think there are three floors. They would probably understand the use of tabs since it is common in web browsers and other computer programs, but there might be issues regarding what map is active-inactive and about finding the “You are here” spot.

It is also uncertain what happens when several customers at once gathers around the map. Today it is possible for more than one customer to use the map at the same time. A solution could be to set up a station, just like the Find-it computers, with two screens for a standing position and one for a sitting position. To not confuse the customers with too many different stations the Find-it computers could only be available in the self-service warehouse (as they are today) and previously mentioned Family stations only where you find the Family products and outside the cash desks.

The Find-it stations have three screens placed around a pillar; two for a standing position, and one for a sitting position.
Everything comes down to the questions: Will the customers take the time to make a digital shopping list? If not, is the digital map in itself a big enough improvement to make it easier for the customers to find what they want? Is the map usable? Does this service make the customers' shopping experience more positive? Will they come back more often and will they shop more, less or about as much as they already do? This must be further investigated through user tests and more interviews in the store.

Since IKEA is about to start a project regarding wayfinding and guidance in the stores there was considerable interest in the findings presented in this report. This report will be used as a part of IKEA's initial studies. That presents possibilities for the above questions to be answered.
7. Further developments

During the work on this project a lot of ideas have come up. It has not been possible to investigate these further, but they may be taken into consideration for further developments of the concept.

7.1 Mobile phones and smartphone applications

Today it is possible to e-mail the shopping list from IKEA's web site and access it through a mobile phone connected to the Internet. It would be convenient if a customer also could get the information from the digital map directly to the mobile phone and vice versa. In that way the customer could get access to another person's list as well as his or her own. This solution could also be an alternative to the print-function. Instead of choosing “Print”, the customer chooses “Transfer to mobile phone”.

Another idea that came up in the interviews was to have a 2D barcode in the mobile phone that could be scanned by the digital map, and in that way replace the physical Family-card. Then the customer would not have to bother about bringing the card or remember a password to log in.

7.2 Improved shopping lists

During the workshop the customers came up with a lot of ideas concerning the shopping list. They wanted to have recommendations on substitutes and information about availability when products are out of stock. They wanted to be alerted when products are made up of more than one part, a possibility to sort the list on different variables and smart tips attached to the products. All this information already exist in IKEA's systems. It should not be impossible to put this information together, but how difficult it might be is another question.

There is of course a risk in having too much information on the list. It could get all cluttered and take up several pages. One solution could be to have a basic list and a small assortment of add-ons too choose from for those who wish.
7.3 Product locations

Today information about the exact shelf is available for products in the self-service warehouse, but not for items at home decoration shops. The only information the customer gets about those products is the name of the department where they can be found. It would be a benefit to both customers and employees if these departments also were divided into a system with shelves. The customers can more easily find what they want and the employees will find it easier with pricing and restocking. The new service would definitely benefit from such an improvement. The function of the digital map would then come close to the function of the Find-it computer. Maybe those two tools could be interconnected.

7.4 More functionality in the map

The digital map gives opportunities to display more information to the customers which can promote sales. IKEA could, for example, display new products and bargains when a customer clicks (or touches) a department on the screen. There is a risk with too much information on the map of course, since the purpose of the map is to support wayfinding and not advertising. There is also a risk that a customer spends too much time with the map, blocking it from other users.

7.5 Extended use of the Family-card

The customers’ comment on the Family-card was that it has no real value today. To make people have the card always at hand and use it, it must give something more than free coffee and lowered prices on Family products. The customers’ own ideas were to have personal offers and tips founded on previous purchases. There could also be a system of recommendation, like Amazon books: “The person who bought this also bought this” or “Since you bought this, you might also be interested in this”. IKEA has probably already thought about this, but it can be of interest to them to know that the customers are positive about it.
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May 2010

Products  Alice / Location
1. Bathrub mat  PATRULL
2. Corner sofa  TILOSAND
   NBI Non-stock item, contact customer service
3. Side table  22 / 18
   KLENGSBIO
4. Spice rack  KRONES
5. Chest of 5 drawers  52 / 01
   NOPEN
6. Shower curtain  BAVEN
7. Plant pot  BARFOTA
8. Potted plant with pot  BONSAI

Way down to:
Home decoration shops
Self-service warehouse
Cash desks/Exit