TEAM 12 | Designing for the user experience through three design challenges

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INTRODUCTION

The goal of this report is to show, apply and substantiate newly obtained skills and insights in the field of User Experience (UX) towards three challenges with real companies.

First, Essense presented the challenge of improving the UX for a specific user group through a department of an airport. With our team, we tackled the following situation: *From the perspective of the food services at the airport, how can the UX for a tired parent on a transfer flight be improved*? The proposed design -The Family Hideout Pod- is presented in this report. The considerations concerning UX and future additions and improvements, as well as a business case view on the concept, are discussed.

Second, we describe our insights in terms of UX in relation to the other challenges tackled by other teams within this course. These are the challenge set-up by Mireabeau about the implementation of a Conversational AI in an investment application for young adults and the challenge by Philips about experience design for patients with high waiting times in the emergency department.

To conclude, general insights and differences between the challenges, companies and possible approaches are established in the general reflection. Lastly, the weekly log gives insight into our development and understanding within the group. Together, this report shows how we chose to apply

theory within the field of User Experience in relation to challenges and design in practice.

TARGET CHALLENGE

The Challenge

Essense, the company providing us with our challenge, is in itself focussed on service design. They, therefore, provide us with a clear service to focus on in our challenge: The food and its services at an airport. The food services are present throughout a large portion of the airport, both before and after security there are options to get food and a drink. Dishes from all over the world are available, and the speed at which one can get a bite varies from a to-go dinner to a full dine-in experience. Within the department, the defined target group were tired users, like parents travelling with their family. The research already performed by Essense established that the tired mood is connected to known behaviours such as the avoidance of busy spaces, looking for a place to recollect and are overall being in need of a rest.

The Family Hideout Pod

Our designed concept to target the challenge is the family hide-out Pod, which is a secluded space designed to be placed between the security and the gates. In this space, families can find respite. Equipped with comfortable benches and a foldable table, the space can be used to relax, play, work or eat.

FIGURE 1: CONCEPT SKETCH WITH FOOD BEING DELIVERED AT THE POD

To further explain our concept, awaken your storytelling brain [16] and travel along with the Cassalanter family, and experience their perspective of their first journey travelling by plane.

Victor, Amalia and their three children are rather excited to go on their first holiday by plane together. Wanting to be well-prepared and avoid the stress and exhausting experience they had when they drove to France for a holiday, they decide to plan as much as possible ahead. The train tickets to the airport, the hotel and the public transport tickets at their destination are booked. Just the plane tickets need to be taken care of, and then they are ready to go.

During their booking online, an option for a Family Hideout Pod pops up. For a small fee, they can reserve a place to relax in between flights with the

option to have food delivered to your location. Amalia finds this an ideal option. She really is not looking forward to looking for a restaurant on a busy airport and being pulled to all sides at once by children who wish to look at the next fluffy toy they get with the children's menu. They decide to book the space for two hours in their three-hour transfer. Their reservation of the Pod is automatically included on their plane ticket.

After their first flight, Oswald, Eliza and Teren run off, excited to see the place they have arrived at. Victor quickly catches up and walks around with his children for a bit before he navigates them to the Pod they will be staying at. Amalia goes there immediately and takes alone time to recharge. Once everyone is gathered at the Pod, the family orders some food for pickup. Amalia relaxes in the Pod with Eliza and Teren who are drawing and playing a video game. Oswald is still curious to see more and asks his father to join him to pick up the food.

The family eats together in the Pod, undisturbed by the rest of the airport. At the end of their stay, Amelia feels rather relaxed, but also ready to continue their journey. A message shows that they can add another 30 minutes to their stay if they would like. Their flight is leaving soon, so instead they gather their luggage and make their way to their gate. A short walk later they are ready to check in and continue towards their holiday destination.
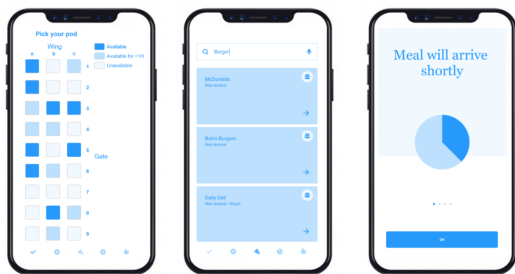
Theory

In the following paragraph, the applied theories, and what we gained from using them while designing the Family Hideout Pod concept will be explained.

Perspective-taking & empathy

We started with our own experience at airports (first-person perspective) and briefly talked with some people about their experiences on transfer flights specifically (second-person perspective). The rest of our information was gained through reviews and benchmarking (third-person perspective) In order to properly design for the target group, understanding and switching between perspectives is key [20]. We further used storytelling to try and understand what our user group of a tired parent would feel through taking an empathic approach [20]. A useful method to empathize is the storytelling technique [9], which was used in the previous section in the story about the fictive Cassalanter family.

Service blueprint

The Service Blueprint is a consolidated version of a story, used to find key points in the story at which design opportunities present themselves [1]. The Service Blueprint we used was provided by Essense. Through using this tool, we started mapping the experience from anticipation to reflection [10]. By adding the estimated energy levels throughout the experience of ordering tickets to eventually leaving the airport, opportunities for improvement could be found. We found most energy could be won by decreasing stress in the anticipated experience through providing clarity and a touchpoint at the airport. With the Pods providing a place to recharge, the user could eventually win energy during their journey.

Decreasing stress

Decreasing stress is a main focus as the airport is a busy place that most people are not familiar with. Because it is an unfamiliar environment, it is important to 'guide' the traveller before we can 'release' and 'excite' them, as discussed during the presentation. This setup can be understood as applying Maslow's pyramid [15]. We aim to fulfil the basic needs first (guide), such as a calm place they can withdraw to and food, before moving on to higher needs such as exploring the airport (release) and experiencing all there is to offer (excite).

Integrated Behavioural model

Another way to decrease stress is through stimulating resting and relaxing behaviour. In order to stimulate this behaviour, we used the Integrated Behavioural Model (IBM) [10]. We aimed to target two parts of the model, which we identified as key elements in our user's behaviour. These include the perceived control beliefs as well as the presence or absence of environmental constraints. Through our design we lift any environmental constraints that inhibit the user to perform resting behaviour; we provide a safe space in which this behaviour can be performed. Due to the fact that the user is able to reserve the Pod in advance, we also target their perceived control. Because they know they will have a private space to go to while waiting, they will likely feel that they have more control over the situation and their possible actions, and thus we improve the perceived control which in turn can directly influence behaviour [2, 10].

Self-assessment

The theories described were used to both shape and ground our concept. However, in a longer design case, it would be preferred to take some theories and techniques a step further. During our concept design, we made use of a first-person perspective, as well as the third-person perspective in the form of benchmarking and provided information [20]. The

second-person perspective was touched upon briefly but would be beneficial to dive in further. This could be done through user interviews, questionnaires or co-design sessions.

Based on the discussion we will now reevaluate our process and outcomes. Our process revolved around using the Service Blueprint to map out the customer journey and experience; with it, we identified the energy levels of the user and highlighted the touchpoints of the users with the food department. That way we could visualize the problems and opportunities and target our solution. This led to our final concept, which was quite well-received during the challenge discussion, however, some useful and valid points were made.

The concept can be taken further, especially with personalization of the Pods. This could be done by including more hedonic qualities, e.g. through introducing modular interior, light and temperature control, or access to e.g. extra pillows, all of which can improve the appeal of our Pods [11]. Additionally, the Pods could have themes that the users could pick, to make them more enticing, especially for families with children. Furthermore, several versions for different types of users could be created, to cater to other user groups.

For example a smaller Business Pod with a desk setup, to cater to the needs of individuals who are on a business trip. Or a Romantic Pod for couples who are on holiday. It is evident that many more possibilities exist to further increase personalization for different users. These types of personalized rooms already exist in other settings, such as Disneyland and Legoland and this highlights the use of benchmarking [18, 19]. At the time of the presentation, we had not yet focussed on these possibilities, however because of the feedback they have been integrated within our business case, to further strengthen our concept.

It is also interesting how our concept would work in conjunction with other designs and innovations, as well as existing infrastructure within the airport. Because it creates a 'safe space' it could be used as a starting point for other activities. This also works in conjunction with the guide, release and excite principles stated earlier. They would then be able to leave the Pod temporarily and enjoy the rest of the activities that the airport has to offer, after they have claimed their safe space in the Pod.

It would also be possible to integrate the food department further by letting the users order their food beforehand and have it be delivered to their Pod before they arrive, so it is ready to eat as soon as they arrive. This would work especially well in combination with some of the other project's concepts, for example in order to gauge arrival times at the Pod and have the food ready at the exact right moment. All these possibilities show that our concept has a strong basis, but that it could easily be expanded upon.

This also highlights one of the points of feedback that we received, that it could have been presented as more of a story or experience, as also described by Hassenzahl [12], rather than clearly but plainly explain the context. As stated before, we worked structured through the Service Blueprint [1] and designed the concept as a reasonably viable business proposal that could improve the user experience. This worked well to identify opportunities, however upon reflection it could have been beneficial to transition towards more of a 'story' perspective and zoom in specifically on the experience of the user while they would use the Pod. Doing this could have helped us to be more ambitious with the concept and think about the further possibilities that could be integrated. It would in turn also prepare us for presenting the concept as a story, while we could afterwards take a step back to present the basic concept it is built around. In conclusion, transitioning from a problem/solution focus to a

design possibilities focus could have helped us to get even more out of our concept.

Business case

In terms of business, there are three main things we need to look at: options for food facilities at the airport, benchmarking personalized spaces and examining the viability and costs of this idea.

Benchmarking

For food facilities, a brief search provided us with a variety of examples of applications and services that provide food delivery all over the airport. Apps such as AirGrub [8] and AtYourGate [4]are examples of these services being successfully implemented. Thus the system of ordering food via apps and having it delivered is already present.

Benchmarking personalized spaces gives us a number of examples of how personalization of space can increase the experience. The Citizen M hotel [3], gives guests the possibility to control the light and temperature in the room using an app, allowing them to tailor the space to their needs. Examples of personalization specifically created for families are the Legoland hotel rooms [19], or the hotels at Disneyland Paris [18]. These companies spend a lot of time creating a specific ambience to a room or providing a theme. These themes ensure that the activity and experience of the guest staying at their hotel sticks since there is no other hotel like it.

Viability and costs

For the Family Hideout Pod to become a reality, a set of systems need to be set up. The system of ordering food via apps and having it delivered is already present. A system to order the Pods at the airport during the booking is something that should be programmed and made available for booking websites. As the Pods are specifically meant for families, it is envisioned that the option for ordering the Pod only pops up for a family booking a flight,

however, in future development, multiple types of Pods for different users could be created.

The systems needed are the first investment, but can - once functional - be applied to all possible airports that have Pods. The fee that needs to be paid when ordering the Pod should cover the maintenance of the Pods and over time the initial investment. However, the price should ideally stay below the fee for entering a lounge at the airport to ensure that this space is affordable for families travelling.

Proof of concept

As the Pods are expected to have a rather high set-up cost, it is wise to test if this envisioned idea is viable and the cost-structure is effective. This can be done through a small-scale test setup. By setting up a few Pods and letting them be used by real users against a small fee, we can check if our envisioned user group is actually interested in using such a Pod, as well as possible improvements. Their experience of being at the airport should become more positive overall. If that is the case, an estimation can be made if the Pods can be profitable with the aforementioned restrictions.

To conclude, we think that our concept is an idea that can be valuable and viable for a new airport. Further development of this concept would be done by getting more perspectives involved and using small tests to prove parts of our concept.

OTHER CHALLENGES

Mirabeau Challenge

The first design challenge in the course was given by the full-service digital agency Mirabeau. Mirabeau's focus is on creating the best experiences for its customers in a human-centred way. In order to create this experience, they focus on design, technology and insights. The challenge Mirabeau presented was to create a tool/service to attract and convince young adults who are interested in investing to choose to invest with the client. Mirabeau mentions that the global pandemic is a driving force for young investors to start investing. The challenge is therefore derived from a current need of young adults, which shows a clear 'why' when looking at it from Hassenzahls explanation of Experience Design [12]. The envisioned client in the challenge is a Nordic financial services company, that is the market-leader for long-term savings and insurance. A requirement in the challenge is the use of a Conversational AI that is integrated into the designed tool/service.

The design solutions from each group in essence worked very similarly, with most groups having an application where users can select options to invest in. A single group also created a matching web interface to give users the possibility to also invest when on a computer. The conversational AI worked similar in each of the concepts, with it providing assistance to help a novice user. All groups stated that they heavily designed from the 1st person perspective due to the target group of the challenge being the same as the members of most design teams [20]. The perspective proved to be valuable as a lot of design teams mentioned that they didn't know much about investing or brokers, so they learned relevant aspects through benchmarking and tried to create an accessible and easy to use application. Next to this perspective, some groups used questionnaires to gain a better understanding of the target group and their values. They wanted to understand not only if young people invest but also why they don't invest, which really shows they wanted to understand the core values and needs. This approach enabled the use of a mixed perspectives approach [20]. Many of the design teams created persona's for the target users and some also made a user journey map to speculate how the personas might react to the concept. The different groups had different theories behind their design decisions. At least two groups mentioned Schwartz et al. theory about having fewer options possibly making users happier, they then limited the number of choices a user would have on the screen [14]. Another strong point stated by a group was the change in paradigm from a knowledge economy to a transformation economy [6]. The group did this by giving the user the option to select ethical values that the user finds important and thus empowering the user to invest based on their morals. Other groups also included the option to invest similarly but did not mention the theory of the paradigms.

Philips Design Challenge

The second challenge was set up by Philips and specifically the Experience Design department. Philips as a company focuses on design for healthcare. Healthcare is however approached as a continuum; ranging from products for healthy living to medical treatment. The challenge the teams participating had to tackle was about designing a product or service to manage expectations for waiting times in the emergency department in the United States (US). In the US anyone is allowed to come into the emergency department to request care, which due to the unpredictability, often results in long waiting times. The hospital staff has to prioritize between patients and have to deal with communication to these patients. This is important seeing that hospitals are obliged to treat any patient that comes in and the number of patients that leaves has to be kept as low as possible. The focus of the challenge was on designing for behaviour change and communication towards low-acuity patients.

The results of the challenges included varying concepts from applications to physical wall designs. A few of the teams participating in the challenge managed to gather real user insights using interviews or surveys. An interesting comment was made by the representative of Philips about how one team used a survey (second-person perspective) to validate their own (first-person perspective) assumptions. In relation to the mixed perspectives approach [18], this shows the potential of different perspectives in different parts of the UX research process. Another theory addressed by multiple teams was the

3

interaction-action continuum theory addressing the different levels of human attention [5].. The interaction-action continuum is relevant when envisioning and categorizing the interaction of the design positioned in relation to the attention of the user. The use of this theory is logical considering the divided attention of the user between the to-be designed concept and the existing actions present while at the emergency department.

A theory mentioned by only one of the teams was the social translucence theory [7]. The theory of social translucence shows how to design for communication and collaboration between large groups of people, in which visibility, awareness, and accountability are deemed important factors. The essence of the challenge lies in the lack of resources and behaviour within a social group. Overall the usage of this theory could have been highlighted more due to the relevance within the context. A connecting theory that could have been highlighted more is the integrated behaviour model (IBM) [10]. The goal of the challenge is to design a behaviour change intervention and the IBM model can help identify important beliefs and factors to target for behaviour change. For example, knowing where the user perceives barriers of lack of control towards the wanted behaviour, allows the designer to target these specific areas with their persuasive design.

GENERAL REFLECTION

The challenges

The three design challenges provided all had different goals and requirements. The first challenge from Mirabeau had strict guidelines and made the design teams focus on creating an application or web interface. The second challenge by Philips had a more open approach by giving the design teams a lot of freedom in shaping the product/service. The third challenge from Essense had a very service-oriented approach and gave each design team a different target user and department to create a concept for.

Comparing the challenges we can say the challenge by Philips and Essense took a more open-ended approach. In both challenges, the user experience was central in coming up with new design solutions. The approach fits best with the definition of Hassenzahl, who argues designing for user experience in essence is not one solution or technology [12]. In contrast, the Mirabeau challenge had a set 'solution' using an application, so it used the user experience to shape the solution in a more concrete way. The challenge from Essense was unique by also approaching the challenge from the company itself through dividing into different departments and taking the role of different services into account. When designing this requires a different approach, since it does not necessarily see the company as one entity offering one service but rather a network of different departments.

The companies

Combining the outcomes and directions of the three challenges we can distinguish different approaches for each of the companies.

Mirabeau offers a human-centred design approach to its clients. They state the following: "We empower companies to make human-centred decisions by voicing peoples' needs and connecting them with business strategy. Uncovering the needs of people is something that they did through speaking to clients and end-users and benchmarking, therefore we can conclude they often work using a mixed-perspective approach [20]. In the design challenge, they also mentioned literature that can be relevant when tackling the challenge. This way the company encourages the use of literature to support design decisions by using the 3rd person perspective [20]. They also use other design thinking methods, but the exact methods were not mentioned during their presentation. We can expect them to use methods that make it easier to empathize with end-users like co-designing or creating personas. Mirabeau also states that for them, design thinking is

not a slogan, but it is embedded in their everyday way of working. A method they used to understand the problem and the context is the double diamond method. A tip Mirabeau mentioned was that they sometimes need to rephrase the clients' assignment. The thing a client may ask may not be exactly what the end-users need. This means that sometimes they need to educate a client about how something needs to be done differently to better fit the user and their experience. Mirabeau sees it as the responsibility of designers to balance between the business goals and the user their needs.

Philips has a major focus on experience design throughout their company. The importance of experience design is shown in their company structure, which includes a department focused solely on experience design. The importance is further reflected in their company vision through three important values: radical empathy, holistic care and humanizing technology. Philips thus believes using empathy to understand and connect to the user is an important tool in designing high-quality products, as similarly argued by Smeenk [20]. Philips as a company shows a clear strategic approach to design in which values have a strong influence on the company workings. This view is clearly visible in the Philips design paper 'Rethinking value in a changing landscape', in which two researchers describe how Philips believes in using paradigms to understand future and past values and the related role of innovation [6]. Characterizing is how they reflect from both a human and a business perspective, in which the user experience is identified as very valuable for successful innovation for a business.

Essense also has a human-centred approach. They work together with key stakeholders like customers, users and partners to go from 'purpose to solution'. Essense's collaborative approach is defined by answering three questions: Where to focus? What to create? How to execute? Essense has a strong

4

emphasis on service design and using service tools like a service design blueprint. The service design blueprint is a very strong tool to take a scenario as a starting point and to then see how a customer's steps influence the organizational steps necessary. The customers and organizational steps are also known as front stage and backstage. Essense provided insights into how they personally use the service design blueprint for many of their clients. By mapping out the service blueprint a clear idea of a concept can be created and new opportunities can be identified. The user experience is something that is mapped out in detail using this tool. An easy overview is also beneficial in communicating with clients or other partners. A concept can become clear very quickly and new possibilities or issues at a certain step can be identified and acted upon. This enables a very collaborative approach which Essense mentions in their presentation is the case, with 50% of their work normally being at a client and 50% of their work at the office. We can see the mixed perspectives' method come into play here again with the use of all three perspectives in most of their projects [20]. A detailed set of passenger profiles were used as an effective tool (persona) to emphasize a specific profile. A general step-by-step action plan was provided to let people who have no experience with the context understand the process better. This makes empathic designing possible but also enables designing from the third perspective when the first was not possible. The information provided really shows how Essense expects the student teams to also have an outside-in (customer-centric) instead of an inside-out (company-centric) approach.

Reflection on UX theories & lessons learned

During the course, we were taught the theories behind UX and learned to implement these during the design challenge. As a team, we find the following theories and insights particularly important when designing for the user experience.

The experience wheel from Solowski proved to be an effective tool to get a quick overview of the things that should be in the back of your mind when designing. Understanding the clear distinctions between multiple 'areas' and seeing the detailed corresponding elements can be effectively used when designing [22].

For a designer using multiple perspectives is seen as something that is very important during a design process. Each perspective offers unique insights which cannot be gained through the other. Making sure a designer (or design team) utilizes all the perspectives ensures any challenge is explored thoroughly, from all the possible directions.

Empathy also is one of the fundamental parts of designing for the user experience. Understanding and empathizing with the needs and wishes of a user is essential in creating the right user experience solution. Designers should want to feel empathy, which is important as the psychological theory from Zaki shows that having an empathic response is not only automatic [21].

The presented companies seemed to use user experience to help design innovations that work. The role of user experience for innovation was shown in all the challenges and backed up by theories such as that by Norman and Verganti [17]. Considering user experience seems to be more than a method, but rather a way of looking at design and understanding why it matters.

User experience is about recognizing the user as more than the scenario related to the product. The user has a whole life, which the product will only become a part of. Essense for example showed this through arguing they believe in behavioural profiling rather than demographic profiling. Philips similarly believes it is important to take a holistic approach. While designing for user experience it is thus important to recognize that the user should be at the centre, rather than the design itself.

These insights as described above were gathered during week 4-6 of the course. An overview of how these insights were gathered, through a combination of individual and collaborative activities, can be read below.

During week 4 we discussed how to approach the upcoming challenges and report. We decide to schedule a weekly meeting each Tuesday to give an update on our progress. We proposed to individually watch the challenges by the other teams, but added notes and insights to a shared document. Later, these organized insights could be easily discussed at the end of the three weeks.

During week 5 our project brief was uploaded, so we started to prepare for our challenge. After reading through the project brief we started off by filling in the proposed service blueprint using the Miro template. This first iteration of the blueprint was rather broad and allowed us to identify bottlenecks and touchpoints to focus upon within our ideation. Some theories were revisited due to them being relevant for our design challenge, such as the IBM and mixed-perspectives theory [10, 20]. Additionally, we found the UX over time theory as mentioned in the UX white paper relevant [13].

The ideation continued with a brainstorm of concepts and theories and benchmarking of food concepts already present at the airport, based on the previously identified touchpoints and bottlenecks. Connecting to the defined passenger profile by Essense, the 'Family Hideout Pod' concept was chosen to further develop for the presentation. A second more detailed service blueprint was filled in to strongly connect the concept to the context. Lastly, a presentation and the accompanying visualizations, such as a storyboard and small interface mock-up, were developed to be able to show the insights to others.

During week 6 the concept and reasoning were presented during the challenge together with Essence. After the presentation, we discussed the given feedback. It became clear from the feedback that more focus could be put on the role of storytelling and narrative for UX within our concept, so it was decided to work this out further for the report. Some theories were again revisited to be able to connect to the other challenges – for example, the Integrated Behaviour Model [10] for the Philips Challenge. After summarizing together we divided the writing work for the report and defined draft deadlines. The draft report was thoroughly checked by each team member before finalization.

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