

---

# Time Flies: Turning The Security At Amsterdam Airport Schiphol Into A Service Experience

**Signe J. Wellendorph**

Copenhagen School of Design  
and Technology  
PBA in Design & Business  
Copenhagen, Denmark  
signejoernung@hotmail.com

**Masaki Goda**

Kyushu University  
Design Department of Art and  
Information Design  
Fukuoka, Japan  
goma5246@gmail.com

**Myrthe Koops**

University of Applied Sciences  
Utrecht  
Communication and Multimedia  
Design  
Utrecht, The Netherlands  
myrthe\_koops@hotmail.com

**Lizza Kempe**

University of Applied Sciences  
Utrecht  
Communication and Multimedia  
Design  
Utrecht, The Netherlands  
lizzakempe@gmail.com

**Mark Wong**

University of Applied Sciences  
Amsterdam  
HBO-ICT Game Development  
Amsterdam, The Netherlands  
mark.wong@hva.nl

**Abstract**

This case study looks into the experience around waiting lines, specifically in the waiting area before security at Amsterdam Airport Schiphol. The focus in this case study is on how to make waiting in line more positive and meaningful. In relation to the specific waiting area described in this paper, where preparing for security is a main purpose, the research question was: "How can we change the waiting time before the security at Amsterdam Airport Schiphol to a positive experience while seducing the travellers into the preparatory process?"

Research through design has been the approach to research this question. Experimental, close range field research has been done together with prototyping and testing ideas. This case study has resulted in a concept that is both meant to inform travellers about the security process as to entertain the travellers while waiting. This will both enhance the throughput of the security as improve the experience the traveller undergoes, which makes their time pass more quickly, positive and meaningful. This changes the way we see security waiting lines nowadays and in the future, where it is not only an obligation but also a positive experience that suits the purpose of an airport.

### **Author Keywords**

Time Flies; Amsterdam Airport Schiphol; Design; Behavioural Change; Meaningful Time; Waiting Line; Security; Preparatory Process; Service Design; Experience Design; Waiting; Waiting Time; Persuasive Design.

### **ACM Classification Keywords**

Design; Human Factors; Experimentation; Security; Measurement.

### **Introduction**

Waiting is a necessary part of travel, often unpleasant and boring, rarely worth the while. Going through security service is a part of the travellers' journey through the airport. Oftentimes the travellers have to wait in the waiting area before security. These waits are mostly perceived negatively, in spite of efforts to decrease waiting time and increase efficiency.

Waiting lines and the experience around waiting is a well-studied subject constantly trying to solve the time consuming inefficiency of the waiting. Most examples that tackle the anxiety around waiting lines or turning the waiting line into an enjoyable experience can be seen in theme parks where they have the ability to change the environment around the waiting line and make use of e.g. interactive surfaces that enable the children in the waiting line to write on a wall or play music by touching different areas of a wall (Martín, 2013). Here, the distraction element is vital.

But in the case of Amsterdam Airport Schiphol, and the waiting line before security, distraction should only be to the amount of the travellers still having enough focus to keep up with the preparatory process.

Besides this, there is a clear difference in the perception of the waiting line and emotional level of the travellers in theme parks and the waiting line in a security context. The goal of the two situations is different from each other. One is chosen by the visitor itself and the other is being experienced by the traveller as an obligation.

This case study focuses on how to make the waiting experience in the waiting area before security at Amsterdam Airport Schiphol more positive and meaningful, while still not distract the travellers from the preparatory process. At the same time, creating a meaningful experience that keeps the waiting time filled with interesting things to look at and interesting activities to do will make the waiting time perceived as shorter. And that leads us to the research question for this paper.

*"How can we change the waiting time before the security at Amsterdam Airport Schiphol to a positive experience while seducing the travellers into the preparatory process?"*

In this case study there has been a focus on three different research domains; psychology of waiting lines, designing for meaningful experiences and designing for behavioural change.

### **Background**

#### **Designing for waiting lines**

When designing for waiting lines the 'design principles of waiting' are important to take into consideration (Maister, 1985; Norman, 2008). These principles focus on the psychology behind waiting. In addition, there is a focus on changing the perception of the waiting time

rather than making the process itself more efficient. As it is known that filled time passes more quickly than unfilled time (Larson, 1987; Maister, 1985; Norman, 2008; Taylor, 1994), this case study focuses on making the current waiting time perceived as shorter by filling their time.

### **Designing for meaningful experiences**

“Products are consumed, services are experienced” (Theodore Levitt). Companies delivering a service should therefore put a great effort in turning that service into an experience. The memory of an experience is a crucial component in working with creating and designing for a meaningful experience. A way of doing that is to theme the experience. This theme should be recognized throughout all impressions, not only in written form but also in all visualizations, inside and outside the experience. Where impressions are a big part of what will be remembered of the experience (Pine & Gilmore, 1998). All impressions should be harmonized and all negative impressions should be eliminated (Pine & Gilmore, 1998). Another factor that makes an experience more meaningful is by engaging all five senses (Boswijk & Peelen, 2008; Pine & Gilmore, 1998). These sensory stimulants should support the theme and the more they are engaged, the more the experience will be remembered and effective.

In order to create a meaningful experience for the individual, the experience should meet with characteristics that are essential when designing the experience (Boswijk & Peelen, 2008). These characteristics have a focus on intrinsic values, doing and undergoing an experience and having an increased concentration and focus together with a clear purpose.

### **Designing for behaviour change**

In order to frame the current behaviour and specify the target behaviour, the Behavioural Lenses have been used (Hermsen, Mulder, Renes & Lugt, 2015). Because it is not sufficient only to know about the behavior to change, it is also important to provide adjustable steps to behavioural change (Sheeran, 2002; Snyder & Hamilton, 2002; Snyder et al., 2004). In this case study intervention strategies have been used, such as ‘Social Feedback’ and ‘Action Planning’ (Hermsen and Renes, 2014).

### **Methodology**

In this methodology, three studies were executed researching the target group on their current experience, their behaviour and what meaningful time is to the target group.

### **Study 1 - Cultural Probes On Current Experience**

#### **Method**

Cultural Probes, or design probes, are a window into the life of the user. Probes, or information gathering packages are handed out to participants and they are asked to track themselves for a certain period (Wright & McCarthy, 2008; Gaver & Dunne & Pacenti, 1999) In this case specifically at Amsterdam Airport Schiphol from the entrance of the airport until right after security. Afterwards, the travellers sent back the completed cultural probe.

#### **Participants**

15 leisure travellers were asked to participate. They were between the age of 18-35, both male and female.



Figure 1. Cultural Probe and Folding Instructions

## Materials

An instruction paper, a folding instruction paper, the Cultural Probe and a smartphone for taking pictures (see figure 1).

## Results

Several responses indicated that an experience at Amsterdam Airport Schiphol comes with a holiday feeling. Many associations that were mentioned had to do with travelling. In the waiting area, the leisure traveller is already thinking about the subsequent travel. But these thoughts don't match with the feeling of the actual experience in the waiting area.

Several pictures have been made where participants were together with friends and loved ones. This adds an extra layer to the experience and is part of the happier moments at Amsterdam Airport Schiphol, experience together.

The study showed that the first thing that the travellers see, when entering the waiting area, is the number of travellers present in the queue. Another insight is that the travellers looked at elements in the waiting area that were different from their previous experience, such as new technologies and new interior.

The travellers would like food or drinks in the waiting area because that is the only moment in their journey through the airport, that they are not allowed to consume.

Other travellers wanted a shorter queue, more control over the situation or a more efficient process.

To get deeper into the experience of the traveller located in the waiting area, the next section discusses a study that focused on this specific area.

## Study 2 - Observation On Current Behaviour Method

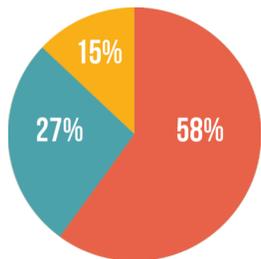
The behavioural lenses (Lens 1 - Habits and impulses; Lens 2 - Knowing and believing; Lens 3 - Seeing and realizing; Lens 4 - Wanting and being able to; Lens 5 - Doing and keep doing) have been used to gain insights about; the target group's current behaviour in the waiting area, to observe for a period of two hours, and evaluating data. This has been done in order to obtain several opportunities and challenges for achieving the target behaviour (Hermsen, Mulder, Renes & Lugt, 2015).

## Participants

All travellers that were present in the waiting area intended for economy flyers. The observation was focused on travellers that were flying for leisure purposes.

## Results Challenges

The leisure traveller does not have any hands available for other purposes than the preparatory process. Only when the line is not moving, they take out their smartphones of their pockets. When the line does move, and there is a gap in the line, the traveller impulsively anticipates and moves forward. This impulse behaviour should not be disturbed (too much). When the line is very short, there is (too) little time to display the target behaviour, as there is a rivaling goal present in the waiting area, which is preparing for security. The target group has no knowledge about the target behaviour, they should be well informed, about what is expected, when they enter the waiting area. Whether the target group is enough intrinsically, or extrinsically, motivated to change their behaviour should be tested.



- ◆ TO RELAX
- ◆ MEET UP WITH LOVED ONES
- ◆ GOING HOME

Figure 2. Reasons for flying

### CHANGE THE EXPERIENCE?

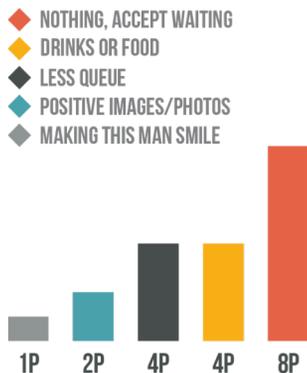


Figure 3. Changing the experience

### Opportunities

Many travellers take out their phones when the line is not moving, they seek for entertainment. Other ways of seeking for entertainment are looking around to other travellers, the conveyer belts or to the ceiling. Knowing this, the target group will have the opportunity, when there is a long waiting line, to display the target behaviour as the current waiting time is unfilled time. That makes target behaviour very attractive in comparison to the current behaviour and is easily distinguishable from the current behaviour. The target behaviour is easy to implement because the traveller automatically comes into contact with it. Besides that, there is little social support present in the waiting area, which gives an opportunity to change that.

### Study 3 - Interviews On Meaningful Experiences

#### Method

In the waiting area before security filter 1, intended for economy travellers, at Amsterdam Airport Schiphol, three interviews have been held that had a focus on meaningful time and the travellers' needs and values in the waiting area. Asking the questions to the travellers, had to be done while walking together with the travellers down the waiting line, so that the line would not be held up.

#### Participants

45 travellers that were present at the waiting area intended for economy flyers. All travellers were flying for leisure.

#### Materials

No recordings were allowed. All answers were written on a paper whilst asking the questions.

### Results

As also found in study 1, the leisure travellers experience in the waiting area is not in line with their reasons for travelling. The leisure traveller only has a meaningful experience in the current situation when they think about the experience that follows (see figure 4).

One of the reasons for the leisure traveller to go on holiday is to relax (see figure 2). Nevertheless, the reality that the traveller experiences in the waiting area is not in line with this as their anxiety level increases when they enter the waiting area.

Most travellers did not want to change their current experience, they accepted the waiting (see figure 3). There were some travellers that would like (free) food and drinks, skip the waiting area or shorter queues. A few travellers wanted a positive change by fx positive images or photos in the waiting area or they wanted to influence other travellers in a positive way.

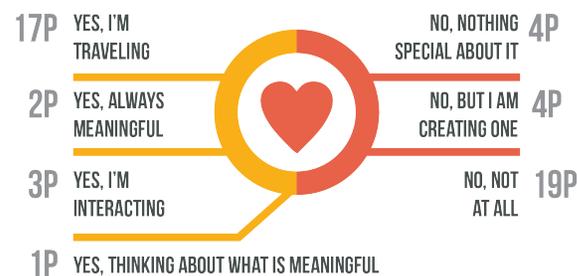


Figure 4. Meaningful time in current experience



Figure 5. Visuals mobile browser

### Concept – Leave Your Worries Behind!

By providing an experience in the waiting area at the security, that relieves the travellers' worries, Amsterdam Airport Schiphol will be the airport that turns security into a service.

The Leisure traveller will leave their worries behind by uploading their worries through a browser. When the worry is uploaded it will fold into a paper plane that will be shown on a big screen in the waiting area and will fly away, left behind.

Besides the personal worries that the leisure traveller has, they also have worries regarding the preparatory process which will be relieved as there will be an animation on a public screen in the waiting area explaining what to do.

The concept consists of two parts - The entertaining part where travellers in the waiting area interact with the browser by leaving their worries behind, and the informative part where relievers are given to answer the travellers' questions and inform them about the preparatory process.

### Link to research

One of the requirements for creating a meaningful experience is that one must do and undergo something when in contact with the concept (Boswijk & Peelen, 2008). By making the travellers actively send their worries through the browser, the concept hereby meets this requirement. This will help to feel as if time passes more quickly and at the same time contribute in creating a better contact between the traveller and the environment that they are in.

Furthermore, as a result from the observation and the cultural probe, it was found that the travellers doesn't have any hands available to use. By making the travellers use their own smartphone as an entrance to participate in the concept, the concept deals with the fact that the travellers doesn't have any hands available to use, while in the waiting line.

Not knowing what to do is the biggest source of negative emotions and anxiousness (Maister, 1985; Norman, 2008; Taylor, 1994). This is important to take into consideration as it is known that emotions dominate in the waiting line (Norman, 2008), which means that if travellers in the waiting line are anxious, more travellers will be susceptible to those emotions and the level of the anxiety in the waiting area will increase. This is being supported by results from the observation of the current behaviour in the waiting area, that showed that the travellers have to be well informed about what is expected, to understand the target behaviour. This insight has been used in creating the informative part of the concept.

The fact that the travellers accepts the waiting shows to a certain extend, that their main focus is on preparing and going through security, which has been the incentive for this study to also include and focus on the preparatory process and creating the informative part.

When the traveller has uploaded their worry through the browser a voucher will be sent to their phone offering a free coffee that the traveller can purchase in the tax-free zone after security.

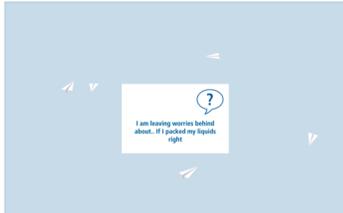


Figure 6. Screen showing the text: "I am leaving worries behind about.. If I have my liquids packed right"



Figure 7. Screen showing worry folded into paper plane

#### **Study 4 - Worries**

To design for- and relieve the worries of the travellers, research has been done to understand what the most mentioned worries are amongst the leisure travellers.

#### **Method**

Both a literature review and a survey have been used. The survey took place in departure 1 before the waiting area. In this area, the travellers are not yet in the worried mind of state that is common in the waiting area before security, which makes the results from the survey a good indication, but not a common ground. The survey consisted of a list of twelve worries that were found from both a literature review (Priceline Group, 2016) and insights from Amsterdam Airport Schiphol Security employees.

#### **Participants**

50 participants, travellers that were present at departure 1, filled in the survey. All participants represented different age groups and nationalities.

#### **Results**

As a result the four most mentioned worries have been found. These worries are about situations that the traveller does or does not have impact on. The most mentioned worries are: Whether I am in time to catch my flight? (12p); Whether my bag is ready for security? (12p); The possibility that my luggage will get lost? (15p); Whether I have to take my shoes off? (15p). To relieve these worries, the security process at Amsterdam Airport Schiphol has several solutions such as the security agent that is always present at the waiting area and there to help the travellers with their worries regarding the preparatory process.

#### **Study 5 – Testing**

The concept has been tested in order to know if the travellers are willing to participate in a concept or an experience in the waiting area at Amsterdam Airport Schiphol.

#### **Method**

For a period of eight hours (08:00 – 16:00), a television screen was set up in the waiting area before security filter 1, which showcased the latest ten paper planes flying away (see figure 6&7). In the waiting area there were three stands the traveller came in contact with the concept. These stands were meant for greeting, informing and thanking them to participate. On the signs, meant for greeting and informing the travellers, there was a QR code, which the travellers could scan. By scanning the QR code, the travellers were sent to a webpage where the travellers could participate in the concept by leaving a worry behind.

#### **Participants**

All travellers present at the waiting area intended for economy flyers.

#### **Results**

During testing it was observed that travellers looked at and read the signs that were placed in the banklining. Almost nobody scanned the QR code. A reason for this is that their mindset, as stated earlier in this paper, did not allow them to focus on anything else other than preparing. Besides that, the banklining in the waiting area (even when it was full) was constantly moving. That results in the fact that there is less opportunity to participate in the concept.

There was no voucher available when the traveller participated in the test, this could have influenced their willingness to participate. Also, in contrast to the final concept, access is gained through a QR code rather than push message during testing. This made the threshold to participate higher.

## **Discussion**

### **Are worries contagious?**

It is known that emotions are contagious and by that means emotions in the waiting line are contagious as well (Don Norman, 2008; Pearsoned, 1999). In most situations body language and facial expressions are being used - though little study has been done on whether a person's emotion can spread to another during textually mediated communication (Hancock & Kailyn & Ciaccio & Mae-Hwah Lin, 2008).

Since emotions can be contagious, sharing a worry with other travellers might have impact on how they will feel and what their current emotion will be.

On a positive note negative emotions or worries can be useful if it makes you act on them. Seeing someone else's worry might make you worried as well, and that can lead to action. Negative emotions can give a person focus on the action that is needed from them (MO, 2009). In this case those negative emotions give the traveller a focus that is needed for the preparatory process. Other than that, it is known that an increased focus, makes an experience more meaningful (Boswijk & Peelen, 2008). The worries that travellers have regarding the preparatory process, have also been used to inform the travellers, which could make the travellers better at preparing.

### **Wanting and being able to**

As we know from theories of behavioural change, there

is a difference between wanting to change your behaviour and being able to do it (Hermsen et al., 2015). As a result of the test, almost no travellers had time or the opportunity to participate. That makes it hard to say if people didn't want to participate at all or didn't have the chance to.

In order to know if this concept is suitable for the waiting area, the concept should be tested on its own, by observing how people react to the concept, and not only the willingness to participate.

## **Conclusion**

Through research it seemed that the unanswered questions that the travellers might have, to a certain extent distracted them from the preparatory process, and in order to make them engage in another concept (apart from the preparatory process) that could give them a more meaningful experience, those unanswered questions or worries should be relieved.

Leave your worries behind! deals with the travellers worries and offers them a way to reduce their worries, clearing their minds and making them ready to focus on preparing for the security.

The research has shown that the travellers in the waiting line are mostly focused on preparing and getting through security, which makes it hard for them to engage in something else, than the actual preparing.

It has therefore been difficult to carry out more thorough research in the waiting area, due to the travellers lack of incentive to participate and as a result of that, the lack of participants.

It can be questioned whether this research is enough to make conclusions and answer the research question. In order to do so, there has to be done further thorough research.

This lack of incentive to participate and the results of the research that was made within this study leaves us with a new question:

*"Are travellers at all ready to participate in a concept in the waiting area, next to preparing for the security process?"*

For future steps, it should be researched how ready they are to do something else than preparing for security. Also look into what the balance should be. Lastly, it could be interesting to look into how to engage the travellers into something else than preparing.

## References

1. Baker, Julie. Cameron, Michaelle. 1996. The Effects of the Service Environment on Affect and Consumer Perception of Waiting Time: An Integrative Review and Research Propositions.
2. Boswijk, A., & Peelen, E. (2008). Een nieuwe kijk op de experience economy. Betekenisvolle belevenissen. (2<sup>e</sup> edition). Amsterdam: Pearson Education Benelux.
3. Christopher K. Hsee, Elaine Hatfield, John G. Carlson. Emotional contagion and its relationship to mood, From Yale University & University of Hawaii, From <http://www2.hawaii.edu/~elaine/82.pdf>
4. Gaver, B. Dunne, T. Pacenti, E. Design: cultural probes. interactions, 1999, 6.1: 21-29.
5. Hancock, J. T. & Kailyn, G & Ciaccio, K & Mae-Hwah Lin. J. (2008). I'm Sad You're Sad: Emotional Contagion in CMC. Retrieved may 28th 2016 from: <http://collablab.northwestern.edu/CollablabDistro/nucmc/p295-hancock.pdf>
6. Hermsen, S., Mulder, S., Renes, R.J. & Lucht, van der, R. (2015). Using Persuasive by Design-model to inform the design of complex behaviour change concepts: two case studies. In: Value of Design Research Conference. Paris. 2015.
7. Hermsen, S. & Renes, R.J. (2014). Ontwerpen voor gedragsverandering. Centre of Expertise Creatieve Industrie Utrecht/Publab – Hogeschool Utrecht.
8. Hermsen, S., Mulder, S., Renes, R.J. & Lucht, van der R. (2015). Using Persuasive by Design-model to inform the design of complex behaviour change concepts: two case studies. In: Value of Design Research Conference. Paris. 2015
9. Larson, R.C. (1987). Perspective on queues: Social Justice and The Psychology of Queueing. Retrieved June 14th 2016 from [https://www.researchgate.net/publication/237131171\\_Perspectives\\_on\\_queues\\_Social\\_justice\\_and\\_the\\_psychology\\_of\\_queueing](https://www.researchgate.net/publication/237131171_Perspectives_on_queues_Social_justice_and_the_psychology_of_queueing)

10. Maister, David. 1985. The Psychology of Waiting Lines. *The Service Encounter*. (1985)
11. Martín, H. (2013). More theme parks make sure waiting in line is long on fun. Retrieved May 29th 2016, from <http://articles.latimes.com/2013/aug/08/business/a-fi-theme-park-lines-20130809>
12. MO. (2009). *How we feel affects what we see*. Retrieved May 28th 2016 from: <http://scienceblogs.com/neurophilosophy/2009/06/08/how-we-feel-affects-what-we-see/>
13. Norman, D. (2008, 28 augustus). The Psychology of Waiting Lines. Retrieved February 13th 2016, from <http://www.jnd.org/ms/Norman%20The%20Psychology%20of%20Waiting%20Lines.pdf>
14. Pearsoned. (1999). Emotions and Moods. Retrieved May 28th 2016 from: <http://catalogue.pearsoned.co.uk/samplechapter/0132431564.pdf>
15. Pine, J., & Gilmore, J. (1998). Welcome to the Experience Economy. Retrieved February 21st 2016, from Harvard Business Review: [http://rushkolnik.ru/tw\\_files/4995/d-4994348/7z-docs/4.pdf](http://rushkolnik.ru/tw_files/4995/d-4994348/7z-docs/4.pdf)
16. Pine, J., & Gilmore, J. (1998). Welcome to the Experience Economy. Retrieved February 21st 2016, from Harvard Business Review: [http://rushkolnik.ru/tw\\_files/4995/d-4994348/7z-docs/4.pdf\\_102-105](http://rushkolnik.ru/tw_files/4995/d-4994348/7z-docs/4.pdf_102-105)
17. Priceline Group. (2016). *Booking.com Survey Reveals Top Causes of Business Travel Stress*. Retrieved May 8<sup>th</sup> 2016, from [http://files.shareholder.com/downloads/PCLN/2076049038x0x884279/0E279893-8170-421E-ACC7-D7428618C89E/PCLN\\_News\\_2016\\_4\\_5\\_General\\_Releases.pdf](http://files.shareholder.com/downloads/PCLN/2076049038x0x884279/0E279893-8170-421E-ACC7-D7428618C89E/PCLN_News_2016_4_5_General_Releases.pdf)
18. Sheeran, P. (2002). Intention – Behavior relations: A conceptual and empirical review. *European Review of Social Psychology*, 12(1), 1-36. doi:10.1080/14792772143000003
19. Snyder, L. B., & Hamilton, M.A. (2002). A meta-analysis of US health campaign effects on behavior: Emphasize enforcement, exposure, and new information, and beware the secular trend. *Public Health Communication: Evidence for Behavior Change*, 357-383.
20. Snyder, L.B., Hamilton, M.A., Mitchell, E. W., Kiwanuka-Tondo, J., Fleming-Milici, F., & Proctor, D. A meta-analysis of the effect of mediated health communication campaigns on behavior change in the united states. *Journal of Health Communication*, 9(S1), (2004) 71-96.
21. Wright, P. Mccarthy, J. Empathy and experience in HCI. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, 2008. p. 637-646.