IMPROVING THE PASSENGER EXPERIENCE IN THE BAGGAGE RECLAIM AREA.

Master thesis - Design for Interaction
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IMPROVING THE PASSENGER EXPERIENCE IN THE BAGGAGE RECLAIM AREA.

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‘The opinions expressed in this document reflect only the author’s view and reflects in no way the European Commission’s opinions. The European Commission is not responsible for any use that may be made of the information it contains.’
After each project, one can find areas that can be improved for the future. And every project has given me new insight into how to approach a project next time. This final project as a student, I can say this was one that has given me a lot. During this project I have learned more than I thought beforehand. I have learned about myself on a professional level, as well as on a personal level. In both areas I have experienced challenging moments. Therefore I want to thank all members of my committee.

I want to thank my chair, Prof. dr. Paul Hekkert, for the insightful comments during the meetings, for your perseverance and patience towards me. I tried to listen to you as well as I could, but even though I could not always bring what I had in mind, you kept pushing me and give me new energy again. It was a great honour to have you on my graduation committee.

Katinka Bergema, my mentor, you have helped me immensely during this project. Always ready to listen to my stories and struggles. Thank you as well for your sharp questions and patience with me. I could not have asked for a more understanding team.

A big part of the team, were Marijn Scholten en Anouk Postma from Schiphol Group. Both have been amazingly supportive, for my project as well as for my personal life. You both have been there for me at all times, so thank you for your commitment and involvement, even when the project took longer then intended. Thank you for giving me the opportunity and believing in me till the end.

Of course, I have had a lot of support from my wife, Nadja Opperman and parents Fons Boellaard and Lidy van Schie. Their continuous support and talks refreshed me and gave me multiple times new insights and energy. They have been supporting me during my whole student period and they deserve a lot of credit for their patience and believe in me.
The growing number of flights every year means more passengers departing and arriving at Schiphol and this puts pressure on the processes at Schiphol, both in lead time and passenger experience. In the context of the reclaim area, this could mean that baggage handlers have more flights and more baggage to handle compared to previous years. Schiphol’s ambition is to be Europe’s preferred airport, for passengers, airlines, and logistic service providers. Therefore is Schiphol focusing to providing the passenger with a positive experience of the complete journey. This project is focused on improving the passenger experience in the reclaim area. Internal research is showing that the passenger’s quality perception is dropping each year. The aim is to find areas where the passenger experience can be improved. In this context, are besides Schiphol, also airlines and baggage handlers involved. Schiphol provides the facilities, while baggage handlers take care of dropping the baggage on the arrival belt.

The following research question was formulated in order to gain insights that will be the base of the project:

*Gain a deeper understanding of the experience of passengers during the process of reclaiming baggage.*

*And identify what elements of this journey should be improved in order to create a more positive experience of the baggage reclaim process.*

To be able to answer the research question four methods were used; a literature study, observations, interviews with passengers in the reclaim area, and an internet questionnaire. The literature gave a lot of insight into the experience of waiting. A research by Maister (1985) studied the psychology of waiting and drew several conclusions that are useful for any context where people wait. His insights are principles that can be applied anywhere. From the list of factors that affect the perceived waiting time, the following were used for this project: Unfair waits feel longer than equitale waits, waiting for service feels longer than waiting while serviced, perceived value of the wait affects the perceived waiting time, uncertain waits feel longer than certain waits, and unexplained waits feel longer than explained waits.

The passenger research provided insight in the current experience. Here it was found that uncertainty about different elements of their arrival journey is causing stress and a negative experience. The first element is the uncertainty of their baggage; passengers worry about whether it will come, when it will come and where. What also affects them is that their next steps in the journey are affected by when their baggage will arrive. The inability to look ahead in their journey is another stress-source. For passengers that are not familiar with the airport, there comes the stress of not knowing where to go and what to do on top of it. Passengers do not feel that there is anyone taking responsibility for their concerns and when there is a problem it is down to the passenger to notice and act on it. The context of the reclaim hall is well known with anyone, everyone can picture the last time they were waiting besides the reclaim belt, together with all other passengers. Struggling to find any sign of their baggage and wonder what is happening. Passengers cannot afford to take their focus of the process as they are worried about missing their baggage’s arrival.

After gathering insights into the passenger experience, the ViP (Hekkert & Van Dijk, 2014) method was used to form a statement on the desired effect. For this a future context was formulated. The context formulated is built on four themes; connected world, iGeneration, empowered consumer, and efficiency vs well-being. This provides inspiration for what effect is desired in the future context.
The formulated statement, based on the context is as follows: *I want passengers to experience feeling valued and at peace when reclaiming their baggage.*

To support this statement, an envisioned interaction is chosen: *feeling familiar and (being) expected, as when you arrive at home, smelling dinner being prepared for you.* This interaction allows the statement to be evoked. From this interaction the product qualities are derived, which are *welcoming, personal, caring, and thoughtful.* These qualities are used to design the solution that will evoke the experience of feeling valued and at peace.

In order to provide the passenger with the opportunity to look ahead in their journey and feel confident about their next steps is to provide a platform where passengers have their complete journey in an overview. This means that passengers can view the different steps in their journey, from the flight, the airport, the transport from the airport and their destination. This would unite the involved parties is one platform.

The first step to improve the experience would be to inform the passenger. Without information about their baggage, passengers are not open to distractions. If passengers are relieved of the worry about their baggage and the process, only then passengers will be able to pay more of their attention on other matters. Therefore, information about the status and arrival time of their baggage will feel like they do not have to focus on the process.

Being able to look ahead in their journey will make passengers familiar with their next steps. Knowing what to expect also relates to their experience in the reclaim area. Passengers are welcomed in a waiting area that has everything to make them feel welcomed and supported during their stay and beyond; an airport information desk, a coffee place, and interactive information screens. The reclaim area is laid out in a way that passengers experience a seamless flow, this means having a central area with an information desk and information screens, a coffee place and a divers waiting area where passengers are drawn to. From this central area, passengers can move on as they wish in order to end up at a reclaim location when their baggage becomes available.

To make them feel valued is to evoke the feeling that there are possibilities to make the process fit their journey. The travel app provides passengers with the opportunity to adjust the baggage reclaim process to their journey, even if they have to pay for it, this will make them feel valued.

The coffee place in the reclaim area and the possibility to adjust the reclaim process allows to offer passengers service, either to compensate any delay or to invite passengers to reclaim their baggage from an alternative reclaim location on or outside Schiphol.

The application gives passengers a range of possibilities in the time they are waiting, which shows that you make an effort to improve their experience. It shows that Schiphol thinks about their passengers, even in this stage of their journey. The qualities of ‘caring’ and ‘thoughtful’ indicate that the receiving party (the passenger) is cared for and that the providing party (Schiphol) has put thought and effort in it to making the passenger feel ‘valued and at peace’.

Using a video of the passenger journey has provide positive insights into the experience of this proposed concept. It seems to evoke the right experience of feeling valued and at peace. Further studies into the feasibility and user testing are recommended.
# Table of Content

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>10</td>
<td><strong>Travel App</strong></td>
<td>88</td>
</tr>
<tr>
<td>Schiphol Group</td>
<td>12</td>
<td><strong>Realization</strong></td>
<td>93</td>
</tr>
<tr>
<td>PASSME</td>
<td>14</td>
<td><strong>Roadmap</strong></td>
<td>95</td>
</tr>
<tr>
<td>Arrival Process</td>
<td>15</td>
<td><strong>Validation</strong></td>
<td>98</td>
</tr>
<tr>
<td>Baggage Reclaim Hall</td>
<td>16</td>
<td><strong>Simulation</strong></td>
<td>100</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>19</td>
<td>Test</td>
<td>102</td>
</tr>
<tr>
<td>Priority</td>
<td>21</td>
<td>Test Setup</td>
<td>103</td>
</tr>
<tr>
<td>Previous Initiatives</td>
<td>22</td>
<td>Test Results</td>
<td>105</td>
</tr>
<tr>
<td>Assignment</td>
<td>23</td>
<td>Conclusion</td>
<td>113</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>24</td>
<td><strong>Evaluation</strong></td>
<td>114</td>
</tr>
<tr>
<td>Research Plan</td>
<td>26</td>
<td>Conclusion</td>
<td>116</td>
</tr>
<tr>
<td>Results</td>
<td>30</td>
<td>Discussion</td>
<td>117</td>
</tr>
<tr>
<td>Conclusion</td>
<td>44</td>
<td>Recommendations</td>
<td>117</td>
</tr>
<tr>
<td><strong>Future Journey</strong></td>
<td>50</td>
<td><strong>References</strong></td>
<td>118</td>
</tr>
<tr>
<td>Future Context</td>
<td>52</td>
<td><strong>Appendices</strong></td>
<td>122</td>
</tr>
<tr>
<td>Interaction</td>
<td>59</td>
<td>A: Research Methods</td>
<td>124</td>
</tr>
<tr>
<td>Qualities</td>
<td>61</td>
<td>B: Literature</td>
<td>130</td>
</tr>
<tr>
<td>Arrival Journey</td>
<td>62</td>
<td>C: Research Questions</td>
<td>131</td>
</tr>
<tr>
<td>Reclaim Journey</td>
<td>66</td>
<td>D: Context Factors</td>
<td>139</td>
</tr>
<tr>
<td><strong>Ideation</strong></td>
<td>68</td>
<td>E: Design Guidelines</td>
<td>142</td>
</tr>
<tr>
<td>Methods</td>
<td>70</td>
<td>F: How-tos</td>
<td>144</td>
</tr>
<tr>
<td>Ideas</td>
<td>74</td>
<td>G: Idea Evaluation</td>
<td>145</td>
</tr>
<tr>
<td><strong>Conceptualization</strong></td>
<td>80</td>
<td>H: Video Scenario</td>
<td>146</td>
</tr>
<tr>
<td>Concept</td>
<td>82</td>
<td>I: Questionnaire</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Introduction

This chapter will show how this project, focused on the passenger experience in the baggage reclaim hall came about. A look at the process and the context is provided and the stakeholders involvement is mapped. Then the problem description and assignment are formed which are the starting points of this project.
The context of this project is Amsterdam Airport Schiphol (from now on mentioned as Schiphol), and more specifically the baggage reclaim hall. Schiphol welcomed 63.6 million passengers in 2016, which means a 9.2% growth compared to 2015. Schiphol agreed with the Dutch government and local residents to limit the number of flights to 500,000 in 2020, but has already reached 478,864 flights by the end of 2016 (a growth of 6.3% from 2015). See table 1 for the figures for the last three years. The growing number of flights means more passengers departing and arriving at Schiphol and this puts pressure on the processes at Schiphol, both in lead time and passenger experience. In the context of the reclaim hall, this could mean that baggage handlers have more flights and more baggage to handle compared to previous years. Numbers based on departing passengers showed in 2015 that the number of baggage pieces per passenger is decreasing, but the increase of passengers is causing an increase of the absolute number of baggage pieces handled (Schiphol - Ruimbagage en handbagage, 2016). This could affect the time it takes before passengers can reclaim their baggage and therefore their experience at Schiphol.

Schiphol celebrated its 100th anniversary in September 2016. In 1916, the first aircraft (see figure 01) landed at what would become the third biggest airport of Europe in 2016 in passengers (Schiphol, 2016). Table 2 shows the top 5 European airports in 2016. Schiphol is part of the Schiphol Group. Schiphol Group is also the owner of Rotterdam The Hague Airport, Lelystad Airport and has a 51% stake in Eindhoven Airport. Outside of the Netherlands, Schiphol Group has a share in Groupe Aéroports de Paris and Brisbane Airport, is involved in the development of terminal 4 of JFK Airport, supports airport activities on Aruba Airport and other strategic cooperations (Schiphol Facts & Figures, 2015).

At the bottom of this page, the mission and the ambition of Schiphol are shown. In order to develop and achieve this ambition to ‘be the preferred airport by travellers, airlines and logistic service providers’, Schiphol focuses on five pillars (Schiphol - De kracht van de Mainport, 2015):

1 - Top Connectivity
Schiphol suggests that it should not try to be the biggest airport, but rather focus on being the best airport. Therefore, Schiphol will develop on its network of connections, locally and internationally. For this the capacity needs to be increased, like with the realization of a new pier, but also developing regional airports.

2 - Excellent Visit Value
Being the best and therefore preferred airport, means that everyone that visits the airport should have an excellent experience. Therefore facilities and services should be of high quality in order to make Schiphol a pleasant place to spend time for everyone.
3 - Competitive Marketplace
By developing Schiphol as a place where it is attractive to meet up and do business, it becomes a place where big companies reside and which passengers like to use a hub.

4 - Development of the Group
Schiphol aims to be a healthy working environment where people can develop and together form a strong organisation. Finding international cooperations will give Schiphol a stronger financial position.

5 - Sustainable and Safe Performance
And lastly, safety and sustainability remain important focus points in all of its activities. Together with all stakeholders, Schiphol invests in a healthy and safe environment, that will take into account the long term.

<table>
<thead>
<tr>
<th>Airport</th>
<th>Passengers x million</th>
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<tbody>
<tr>
<td>London - Heathrow</td>
<td>75,7 (+1%)</td>
</tr>
<tr>
<td>Paris - Charles de Gaulle</td>
<td>65,9 (+0,3%)</td>
</tr>
<tr>
<td>Amsterdam - Schiphol</td>
<td>63,6 (+9,2%)</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>60,7 (-0,4%)</td>
</tr>
<tr>
<td>Istanbul - Atatürk</td>
<td>60 (-2,1%)</td>
</tr>
</tbody>
</table>

Table 1
Table showing figures for Schiphol of the last three years, with the percentage growth compared to the previous year.

Table 2
Table showing the top 5 European airports in 2016, based on amount of passengers. Also including the annual growth.

Figure 01
The first aircraft to land at Schiphol, a Farman HF-20.

Figure 02
A birds-eye view of Schiphol in more recent times.
As said, the growing number of passengers could increase the pressure on processes and create bottle necks in the travel journey. This asks for evaluating the passenger journey to determine what the aviation industry can do to improve this journey, leading to the initiation of the PASSME project. PASSME stands for Personalised Airport Systems for Seamless Mobility & Experience. This is a project funded by de EU Horizon 2020 programme, and unites twelve parties that work together to reduce the door-to-door air travel time in Europe with 60 minutes. Delft University of Technology and Schiphol are both part of this project. Besides the reduction of the journey duration, PASSME also wants to make the airport experience less stressful and more enjoyable. This graduation project contributes to at least one of the objectives of the PASSME project, namely to ‘Improve the airport experience for at least 70% of all passengers’, by ‘Producing a highly personalised passenger-centric experience’ (PASSME, 2016). The PASSME model below (figure 03) shows the passenger-centric approach and that innovations, stakeholders and their systems, processes and facilities affect the passengers experience.
The passenger journey in an airport can be divided in three parts: the departing process, the transfer process and the arrival process. Below, a process chart for the arriving passenger with his baggage is shown from the perspective of Schiphol (figure 05). The dashed lines mean that time is spent on transport or movement. On the right a more detailed process chart from the perspective of the arriving passenger is shown (figure 04). The process is split into different parts of the arrival journey, where different partners are offering service to the passenger. The first part involves the aircraft with passengers arriving at the airport, which involves the airline and Schiphol. The second part is about the passenger finding his way through the airport and if necessary, through passport control. This involves the Royal Netherlands Marechaussee and Schiphol. The third part is when the passenger arrives at the reclaim hall for their baggage. In this part, the facilities and service of the airport are involved. When there is an issue with their baggage, passenger will have to consult the right baggage handler. And finally, passengers will go through customs and possibly report any imported goods. The fourth part is about arriving at Schiphol Plaza, meet friends, relatives or acquaintances and find your way to the train, taxi or parking to make your way to your destination. This part involves Schiphol, possibly commercial facilities and transport services. The fifth and final part is when the passenger has arrived at their destination (home/hotel) and for instance, still needs to take actions to receive their baggage, in the case that it did not make the flight. In order to create a seamless passenger journey, one has to look at the transition from each step to the next step (ACI (03), 2014).
This project is aimed at improving the passenger experience in the reclaim hall. As a starting point, Reclaim hall 1 is used, but the result should be transferable to other reclaim halls at Schiphol and/or other airports. Reclaim hall 1 of Schiphol is used because the passenger experience can be under pressure when its maximum capacity of 1000 passengers is reached.

Schiphol has four reclaim halls. In reclaim hall 1, mostly passengers from the flights from Schengen-countries arrive (B, C and D-pier). Due to a limited capacity, sometimes passengers have to reclaim their baggage in one of the other halls. Below an image of entering reclaim hall 1 is shown (figure 06), while on the next page, a map of reclaim halls (hall 1 on the right) is shown (figure 07).

The light yellow marking indicates the area that is part of the reclaim halls, the orange area is where passengers wait around the belts. The yellow marking shows that reclaim hall 1 is connected with reclaim hall 2, while from hall 2 one can reach hall 3 and 4 via a longer hallway. Reclaim 3 and 4 are actually in one big space, where passengers from intercontinental flights arrive. The baggage belts are bigger in these halls, since the aircrafts are bigger and more passengers would also mean more hold baggage than with Schengen flights. Baggage is allocated to the reclaim halls and belts, based on walking distance for the passenger from arrival gate to reclaim hall. The preferred maximum walking time is 10 minutes.
Reclaim hall 1 is the smallest reclaim hall at Schiphol, with three regular baggage belts and one odd-size baggage belt. Besides the baggage belts, there are information screens at the head of each belt and above each belt, seats, baggage trolleys, a vending machine for drinks and a NS OV-chipcard recharge-machine in the hall. The screens at the head of each belt shows all the incoming flights and their assigned belts. The screens above the belts show a list of flights (origin and flightnumber) of which the baggage is arriving at that specific belt, together with the baggage handler, expected time of baggage arrival and further remarks. The remarks can be: “first baggage on belt” and “all baggage on belt”. These remarks are appearing when the baggage handler presses a button when they are unloading the first baggage and when they have unloaded all baggage. For passenger that need to enquire the baggage handlers, they have a desk or office here as well, indicated in the figure below (figure 06) with a green color. When passengers have reclaimed their baggage, they can make their way through customs where they can declare any imported goods if needed, before they exit the reclaim hall.

On the next page a complex map of the baggage handling system is shown (figure 08). All the colored lines show the routes departing, transferring and arriving baggage follows. According to Schiphol staff, it takes around three minutes for baggage to appear on the baggage belt in reclaim hall 1, after it has been unloaded on the docks assigned to reclaim hall 1.
Figure 08  Complex map of baggage handling system on Schiphol. The red routes between the baggage unloading docks and reclaim hall 1 indicate the arriving baggage for reclaim hall 1.
The context of the reclaim hall involves some direct and indirect stakeholders. Of course, in this project the passengers take in a central role in the stakeholder map seen on the next page. The passenger is obviously involved in the reclaim process. They make use of the facilities that Schiphol offers in the reclaim hall, receive information from Schiphol and in some cases the airline (hence the light square of airline involvement in the reclaim hall, figure 09), collect their baggage from the belt, and consult baggage handlers when necessary.

The other stakeholders that affect the reclaim process and how passengers experience it are considered now. Figure 09 shows when the main stakeholders affect the passenger arrival journey. Schiphol, the airline and the baggage handlers are involved during the reclaim journey. In the map on the next page (figure 10), it can be seen how the stakeholders relate to each other. A solid line-square means a direct stakeholder and a dashed line-square an indirect stakeholder. A solid line between stakeholders refers to an actual agreement between the connected stakeholders.

SCHIPHOL
Schiphol is responsible for the infrastructure, signage, and facilities. In the context of baggage reclaim, the information screens and signs are provided in order for passenger to find the right place to reclaim their baggage. The baggage belts are provided to enable the passenger to reclaim their baggage. The belts can be flat or tilted, with flat offering improved ergonomic handling for passengers and the tilted providing more capacity (Vanderlande, 2016). The unloading docks for baggage handlers and the baggage handling system that transports the baggage to the belt is provided by Schiphol. These facilities are provided to make it easier, more efficient or more pleasant for passengers, airlines and baggage handlers. Making the processes more efficient, reliable and attractive for passengers and airlines is done to make Schiphol ‘Europe’s preferred airport’. Therefore Schiphol wants to provide accurate information to the passenger that will help the passenger to experience a positive, seamless journey in a pleasant environment. This involves informing the passengers about when they are expected at which place, and how to get there.

AIRLINES
Passengers buy a service from airlines, but in the arrival process it showed that after passengers leave the aircraft, the interaction between passengers and airlines is limited. Even though at that point, passenger have not reclaimed their baggage yet, which they handed over to the airline at the departing airport. With the exception of KLM, airlines have contracts with a baggage handler to take care of the baggage transport.

<table>
<thead>
<tr>
<th>ARRIVAL JOURNEY</th>
<th>Landing</th>
<th>Disembarking</th>
<th>Orientation &amp; wayfinding</th>
<th>Border control</th>
<th>Reclaim hall</th>
<th>Customs control</th>
<th>Arrival hall</th>
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<tr>
<td>Schiphol</td>
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Figure 09  Stakeholder involvement map for the arrival journey
BAGGAGE HANDLERS
Passengers do not have direct contact with the baggage handler, other than when they have questions regarding their baggage. Like when their baggage did not arrive or it arrived broken. In that case, passengers have to enquire with the right handler about how it can be resolved. As mentioned, baggage handlers have a contract with airlines. They have agreements on the time it may take before the baggage is unloaded on the docks. Therefore, the baggage handlers are concerned with the airlines they have agreements with and they want to keep them happy.

INDIRECT STAKEHOLDERS
Other (indirect) stakeholders are customs, Vebego (facility services), suitcase brands (e.g. Samsonite, American Tourister) and baggage services (e.g. Travel light, Airportr, Luggage Buddy). In order to leave the reclaim hall, passenger have to clear customs. Customs does not affect the reclaim process directly, but they can affect the reclaim experience. Uncertainty about what has to be declared and whether they will be asked to open their baggage can make passengers nervous.

Vebego provides facility services to Schiphol. This incorporates the baggage carts, maintaining of airport facilities and cleaning. This can affect how passenger perceive the reclaim hall.

Suitcase brands want to provide the passenger with suitcases that will protect their belongings. Therefore they respond to the need of passenger to feel secure about their baggage. Suitcase brands are already offering suitcases that allows passengers to track their baggage. Samsonite has cooperated with Vodafone and introduced Track&Go, to allow people to track their suitcases (Luchtvaartnieuws, 2017). So even though they do not affect the context of the reclaim hall, they do affect what passengers know and want to know.

Similarly, services like Travel light, that offer the possibility to have your baggage picked up at the arriving airport or even at home to have it delivered at your destination is affecting the passenger expectations and perception of the reclaim process and the complete air travel industry.

CONCLUSION
This stakeholder overview shows that different parties affect the passenger experience of the reclaim process and the physical environment. What is noteworthy, is that the passenger only has an agreement with the airline, but this party is not noticeable present in the reclaim hall or process (except for KLM, since they take care of their own baggage handling). The fact that the baggage handlers work for the airlines and are less concerned with what effect they have on the passenger is also interesting. The effect of this will also be discussed on the next page.
This project is started due to the declining quality perception of passengers in the reclaim hall at Schiphol airport. Schiphol is looking to have more insight into what influences the passenger perception. The fact that the arrival journey and the reclaim hall in particular have not received the same attention as the departure or transfer journey is clear, think of the introductions of self-service at check-in, bag-drop and transfer. Speaking to different people within Schiphol that are involved in baggage reclaim or passenger experience, showed there could be a combination of reasons for this.

**Stage of the Journey**
The first reason would be that the arriving passenger is at the end of their journey and therefore less important. The passenger has arrived at their destination and that used to be the service they would receive, being transported together with their baggage from A to B. When the service became more than just transportation, it became clear that creating a positive passenger experience requires a holistic approach. Which means that the whole journey would need to be addressed to create that positive experience. The most logic thing to do then, is to start at the beginning, the departure. Because that is where you can affect the rest of the journey. One could argue that when passengers are at the end of their journey, they are less important, because the impact is smaller since they are about to leave. But Schiphol wants passengers to return, therefore also the end of the journey and even after the journey has ended is considered more seriously.

**Interest**
When looked at the stakeholders, it showed that the involvement of airlines is limited after passengers disembarked the aircraft. From then on, they hand over the responsibility to the baggage handler. The baggage handler (who work for the airline) seem to be less concerned with the experience of the passenger. To give an example, a baggage handler has to reach certain targets regarding the time it takes them to load and unload the baggage. So they will press a button that indicates that the first baggage is unloaded, even though at times the baggage is not there yet. How this affects the passenger that receives incorrect information, is less important to the baggage handlers. Other than Schiphol and the passenger, none of the stakeholders are affected too much by what happens after they have landed. At least, not as much as when passengers still needs to board the aircraft. The difference in interest and responsibility, but also being dependant on others has created a situation where it is not clear how to improve this part of the passenger journey and whose responsibility that should be.

**Money**
This leads to the next reason. The importance of the departing passengers is higher because they still have to be transported. Not only should the passengers be satisfied during the process, but a passenger that is too late for a flight is a costly affair. A delayed flight due to a passenger arriving too late or because the baggage of a passenger has to be taken off the airplane costs airlines and airports a lot of money. A passenger that waits a bit longer in the reclaim hall does not cost Schiphol or airlines nearly as much. However, when a passenger’s baggage is lost or damaged in the process, there are costs in order to compensate and send the baggage to the passenger.

At the same time, besides that less costs can be saved, the perception is that there is no big money to be earned during the arrival process. Passengers want to leave as soon as possible and they are less interested in commercial facilities. This means that for any investments that need to be done, it might be difficult to determine the possible return.
Airports Council International (ACI) published ‘Guidelines for passenger services at European airports’ in 2014, in which they identify three clear trends on passengers; they are more informed, they are more empowered and they want to enjoy a more personalized experience (ACI (01), 2014). People have access to real-time and accurate information via multiple channels in their daily life and information is shared between people very easily. Passengers want to receive this information to make their own choices, because it allows them to take control of their own journey. For instance, passengers have learned that they can do their check-in online, at a self-service kiosk or at a counter, which allows passengers to choose the option that fits them. Even the same person can have different needs for different trips.

**RECLAIM EXPERIENCE**

Although there have not been many changes to the arrival journey, there have been some attempts to improve the reclaim experience. In Helsinki Airport, architects created a true sense of place in the reclaim hall (see figure 11). Different elements of Helsinki and Finland were incorporated in the decoration of the reclaim hall. In Munich Airport, a trial was performed to give passengers the possibility to do their grocery shopping while they wait for their baggage (see figure 12). Ingredients or meals were kept at the right temperature in drawers, so that passengers can purchase them before going home (Future Travel Experience, 2015). Results of these initiatives are not publically available at the moment.

**BAGGAGE SERVICES**

Something that was mentioned earlier, are the payed baggage services that offer to pick up and send your baggage to your destination (e.g. Travel Light, Airportr). If more passengers are using this service, it will not only change the reclaim process, but possibly also the expectations and acceptance of passengers.

These initiatives show that in order to gain the loyalty of passengers, airports are looking to differentiate from other airports and therefore continue to improve their services and facilities to the needs of its passengers. It shows there are possibilities for redesigning the process, making better use of available time and creating a more pleasant, welcoming environment.
ASSIGNMENT

In this part, an introduction was given on the context of the project, the context of the reclaim hall, how the arrival process looks like and which stakeholders are involved in the baggage reclaim process and how they affect the passenger during the reclaim journey. Now, the problem is described, followed by the assignment that was drawn from that and the results this project should provide.

PROBLEM DEFINITION
SITA (1), an air transport ICT specialist, researched the passenger satisfaction in 2016 in ‘The passenger IT trends survey’ and found that 85% of passengers evaluating the whole travel journey on their last flight had a positive experience. But when specifically the baggage reclaim experience is rated, the percentage of passengers with a positive experience drops to 75%. It is not clear whether this 75% passenger satisfaction is just for the passengers’ experience in the reclaim hall or for their whole arrival experience, since SITA has identified only one step in their travel journey that takes place after landing and they labeled it ‘bag collection’. One of the influencing factors for the experience of passengers is waiting time. 88% of the passengers experience positive emotions when they have to wait 10 minutes or less for their baggage. The percentage of passengers that experience positive emotions drops to 54% when the waiting time at baggage reclaim is 30 minutes or more (SITA (1), 2016). However, the time that it takes for baggage to be unloaded from the aircraft and unloaded on the unloading docks is not in the hands of Schiphol and this is also not the focus of this project. On the other hand, the perception of the waiting can be influenced.

Schiphol is aware of the low quality perception of the baggage reclaim process, which was also shown in their own quantitative research. ACI studied the passenger journey and labelled each step with a stress level. The baggage reclaim-step is labeled with a high level of stress for passengers (ACI (02), 2014). The numbers mentioned before show that the waiting time is an important factor that determines whether the experience is positive. But there is a need for a deeper insight into the experience of the passengers during the process of reclaiming baggage. And which elements during this process are responsible for this experience and how the journey can be improved to create a positive experience for passengers.

ASSIGNMENT
The overall assignment has two parts, the first part is to gain a deeper insight into the experience of passengers during the baggage reclaim process and how the Schiphol can provide a more positive reclaim journey for passengers. The second part is to use these insights to come up with a proposal that accommodates the needs of passengers and that should lead to an improved experience of the baggage reclaim process with the passengers.

PROJECT RESULT
The research part of the project will lead to an understanding of the passenger experience in the baggage reclaim hall of Schiphol airport, presented in the form of a passenger journey-experience map. The project will be concluded with a concept proposal (product or product-service) that should improve the passenger experience, including recommendations on short/long term possibilities.
In this part, a research plan is formed. Based on a research goal and sub-research questions, the appropriate methods are chosen. The results are shown per method, after which a conclusion describes the insights brought together.
RESEARCH GOAL

After getting an overview of the context and the arrival process, some more in-depth research is needed to come up with good solutions. It is already known that the current experience of the reclaim hall is declining. This is based on research performed at Schiphol. Departing passengers were asked about their reclaim experience the last time they were there. Previous research at Heathrow airport has also shown that passengers experience high stress in the reclaim hall (ACI (02), 2014). But to get a better understanding of the current experience of passengers in the reclaim hall, further research is performed. The research is aimed at gaining insights on what is affecting the passenger experience in a negative way and how it can be improved in the future. The research goal is formulated below this page.

RESEARCH QUESTIONS

This goal is split into research questions, seen underneath the research goal. When answered, these should together lead to achieving the formulated goal. The experience is determined by the behavior passengers show, and the interactions that they have. There are already existing passenger journey maps of the arrival process, but none that shows a detailed passenger experience in the reclaim hall. The insights of this research will be used for a detailed passenger journey of the process of baggage reclaim, showing the behavior and interactions that are experienced by the passengers during the different moments in the reclaim hall. For this, the journey through the reclaim hall will be split into different moments. The behavior and interactions should tell more about the concerns and emotions passengers have while they go through the reclaim hall. It is interesting to see whether there is a connection between the behavior and responses to certain situations of passengers. This could indicate what stimuli evokes the experience.

Gain a deeper understanding of the experience of passengers during the process of reclaiming baggage. And identify what elements of this journey should be improved in order to create a more positive experience of the baggage reclaim process.

1. Which elements can influence the passenger experience of reclaiming baggage?
2. How can be dealt with negative emotions in order to create a more positive experience?
3. Which different moments can be identified during the process of baggage reclaim?
4. What behavior are passengers showing during the different moments in the baggage reclaim hall?
5. What interactions are passengers showing during the different moments in the baggage reclaim hall?
6. What are the concerns of passengers during the different moments in the baggage reclaim hall?
METHODS

In the context of the reclaim hall, passengers are known to be tensed and stressed, and wanting to limit the time-loss. From the experience of assisting with a small research performed by students from Medialab Amsterdam, it was clear that passengers are not always open to answering difficult questions that require their attention and do not wish to spend more time in the reclaim hall than necessary. It is already known that the primary concern of passengers is to reclaim their baggage, and therefore they want to keep their attention with the baggage belt while waiting. Therefore, the methods need to be chosen and adapted to these conditions in order to get the insights that are needed.

Insights into the elements that could affect the passenger experience and dealing with negative emotions are derived from a literature research (research questions 1 and 2, shown on the previous page). The identification of the different moments in the reclaim hall and the behavior of passengers in these moments come from observations, as well as the interactions that passengers experience (research questions 3, 4 and 5). Thirdly, interviews are held with passengers in the reclaim hall to learn more about the concerns of passengers, but also about the interactions (research questions 5 and 6). Finally, a questionnaire is used to gain insights into the passenger experience of the reclaim hall when people are looking back on it. The data from the research is collected and by clustering quotes, insights are drawn from it, that will form the basis of the passenger journey in the next chapter.

Next, short descriptions of the methods are given. For a complete research setup, please refer to Appendix A.

Literature study
Apart from the research that showed that passengers experience baggage reclaim stressful, the underlying elements that lead to this experience are not clear yet. Previously performed research studies and graduation projects that relate to the topic of passenger experience and baggage are consulted to gain insights from existing knowledge. The literature study is divided in the following topics: passenger experience, perceived waiting time, sense of place, peak-end rule, and negative emotions. These topics came about after orientating on the what could affect the passenger experience. Each element touches on a different element of the experience.

Observations
Passengers are observed from the moment they arrive in the reclaim hall until they leave the reclaim hall. During their complete stay, their behavior and interactions are registered. This is done for one passenger at a time and from a distance, in order not to disturb or influence the passenger. The time that passengers spent in the reclaim hall is also timed for the complete duration from entry till exit.

Interviews
The interviews are semi-structured. Five collages of images (see figures 13 -17 on the next page) are prepared from which passengers are asked to select one or more images. The images are selected in order to form a diverse collection. Each collage represents a different category: Physical, Subliminal (ambience), Human (interaction), Procedural and Communication. These categories are identified by the Airport Cooperative Research Program in ‘Improving the airport customer experience’ (ACRP (1), 2016). All interactions passengers have during their journey fall under these categories. Using these categories can give insight into which brings up positive or negative experiences. After passengers have selected the image(s), they are asked why they have chosen for these images.
From there on, further questions can be asked based on the responses of the passenger. The images are selected on relevance for the situation and the context, aiming for a selection of wide variety that allow all passengers to find something that triggers their experience on that category. The collages were shown, each followed up with an accompanying question.

Ambience: Which images show the ambience that you would like for this baggage hall now?

Communication: Which images show how and when you would like to be informed of things that matter to you.

Interaction: Which images show how you experience the contact you have with staff or other passengers or how you would like it to be.

Physical: Which images show how you would like to wait?

Procedural: What elements from these images would you apply to how you collect your baggage.

**Questionnaire**

Due to the limitations in the context (passengers are stressed and not keen to be distracted), a questionnaire is used to gain further insights in the passenger experience. This method gives people the opportunity to give the question some thought and answer at their own time with their full attention. This gives insight into their experience how they remember it, instead of while they are in the moment. They have had time to let their experience sink in and form an opinion about the experience. Also, it is interesting to find out what experiences people still remember and stand out for them. The questionnaire can be found in Appendix A: Research methods.
LITERATURE STUDY
The literature study has resulted in interesting insights, in particular on ‘waiting time perception’. Waiting time perception provided other topics of interest that were further researched. Therefore also ‘fairness’, ‘providing information’, ‘perceived level of service’ and ‘anxiety’ are discussed. The rest of the literature study can be found in Appendix B. The topic of negative emotions was studied, and considered, but not used for the remaining part of the project, since the possibility to take away the negative emotions was considered the best way to start.

Passenger experience
The passenger experience in the reclaim hall is a complex affair. Airports Council International (ACI(04), 2014) identifies three elements of the passenger experience, namely ‘the look and feel of the premises’, ‘the efficiency and passenger focus of the processes’ and ‘the encounters between people’. But when searching a more general term, user experience, it shows that it is also affected by the current internal state of the person, earlier experiences, as well as the current context (Law et al, 2009). Although this research was focused on the user experience of products, services, systems and objects, it does show that the passenger experience of the reclaim hall is not only affected by the reclaim hall, but the passenger experience of everything leading up to the reclaim hall also plays a part. A passenger arrival journey (current and ideal) made by a company researching the passenger experience (Beautiful Lives, 2016) is shown in figure 18. So the arrival experience before entering the reclaim hall has a big influence on the experience in the reclaim hall, but also their previous experiences are influential, since this could influence passengers’ expectations. ACRP ((2), 2016) mentions that passenger satisfaction is a result of the difference between their perception and their expectations. Passengers are satisfied when their perception exceeds their expectations (ACRP (2), 2016). Besides the experience up till then and their earlier experiences, Law et al (2009) identified the current context as important. A research of the passenger journey, performed by Beautiful Lives for Schiphol, showed that there two major elements in the passenger experience where airports can make a difference in the context, namely the waiting time perception and ambience (Beautiful Lives, 2016).

Perceived waiting time
Waiting time is generally divided in actual waiting time and perceived waiting time, from which the perceived waiting time is considered to have more impact on the passenger experience (Baker & Cameron, 1996; Nie, 2000). The perceived waiting time is positively influenced by, among others, a higher perceived fairness, certainty, explained waits, feeling of service and keeping occupied (Maister, 1985). These elements can be improved by
keeping passengers occupied, giving them a voice in the waiting process and/or providing an expected waiting time (Naumann & Miles, 2001 and Hui & Zhou, 1996). An overview of a waiting experience can be seen in figure 19. In this figure the perceived waiting time, based on Maister (1985), is shown in the top. On the left, the negative influences and the positive influences on the right. Positive means in this case that it lowers the perceived waiting time. Below the grey line, elements from research by Naumann & Miles (2001) and Hui & Zhou (1996) are shown. Keeping occupied, giving a voice in the process, and expected waiting time are seen to affect, in a direct or indirect way, the perceived fairness and sense of control. It provides an overview of which elements affect each other and how to improve for instance the perceived fairness.

**Fairness**
According to Maister (1985) the fairness of the wait has an effect on the perceived waiting time (see top box of figure 19). A feeling of not being forgotten can contribute to a shorter perceived waiting time. Perceived fairness of waiting has two other elements. First, people tend to think on the basis of the rule that whoever is there first, will be served first. Also known as “First In, First Out”. The second element is that people experience fairness, when everyone spends approximately equal amount of time waiting.

**Providing information**
Although Maister stated that uncertain waits feel longer than known, finite waits, Hui and Zhou (1996) found that providing information does not affect the perceived waiting time. The study consisted of two groups, one that was provided information on the waiting time and a group that did not receive information. The perceived waiting time did not improve significantly due to the information. However, providing information on the waiting time did
affect the sense of control, which affects the acceptability of the waiting time and thus the perceived service quality. This could mean that the perceived waiting time does affect the passenger experience, but that it is not correct to state that the perceived waiting time should be shortened in order to improve the waiting experience.

ACI(05) (2014) explains that when passengers enter an unfamiliar space, where information and signs are confusing, their frustration and stress levels increase. Passengers can perceive their surroundings in those situations as dangerous. Their rational thought process is interrupted and their more primitive instinct takes over.

**Perceived level of service**
Another aspect that influences the waiting experience is the perceived level of service. Maister already stated that when people feel like they are entered into the system, and are waiting while being serviced, the waiting time feels shorter. Even an acknowledgement of your presence can give people the feeling they are being serviced. This also has an effect on the anxiety that is experienced. It appears that pre-process waits feel longer than in-process waits, but post-process waits feel even longer than pre-process waits. This means that when passengers feel the service is over and there is no more value to be received, the perceived waiting time is longer.

**Anxiety**
In the study of waiting lines Maister (1985) listed anxiety as an emotion that increases the perceived waiting time. In a study on the effect of airport environment on the anxiety and enjoyment of passengers, Bogicevic et al (2016) found that design and to a lesser extent, scent, are related to the passengers’ enjoyment. While four attributes, namely functional organization, air/ lighting condition and to a lesser extent seating and cleanliness, are negatively related to passenger anxiety.

Anxiety could be experienced as a result of a low sense of control and uncertainty about the status of passengers’ baggage or the time that they are required to wait. Providing information could be beneficial for passengers to deal with the anxiety. In a study on how to handle anxiety, Hofmann et al (2009) found that from three different strategies: reappraisal, acceptance and suppression, reappraisal is the most effective strategy. Reappraisal of the situation is an antecedent-focused emotion regulation strategy, where the input to the system is manipulated instead of the output (as with acceptance and suppression). Brooks (2013) also found that, compared to the common strategy of trying to calm down, reappraisal of anxiety as excitement is more effective to the performance during anxiety-inducing tasks.

**Sense of place**
Passengers that come to the Netherlands are likely to arrive at Schiphol, which makes Schiphol the gateway to the Netherlands and Amsterdam. Airports have the opportunity to differentiate from other airports by creating a sense of place in the airport. This gives visitors the chance to get to know more about the local architecture, culture, cuisine, and community (ACRP (3), 2016). It can enrich and educate international passengers and provide them with a unique and memorable experience. By using (natural) light, open space, air, natural features, artwork, and music, a sense of place also adds to the ambience of an airport (ACRP (3), 2016).

For passengers that reside in the country of the airport, it can create a feeling of recognition and pride. They could experience a sense of happiness to be arriving home (ACRP (3), 2016).
**Peak-end rule**

A positive peak and a positive ending of the passenger journey leads to a positive rating and a memorable experience. People rate their experiences on how they were during the positive peak and how it ended. A passenger journey made up of only 8 out of 10 is not as memorable as an average passenger journey with a 10 out of 10 along the way and a positive ending. Whether the ending of the passenger journey is when they collect their bag or when they actually leave the airport is unclear. The last touchpoint between passengers and the airport might be when they drive off the airport grounds and onto the highway or when the train leaves the platform. But the moment passengers have repossessed their baggage and leave the baggage reclaim hall could also feel as the end of their trip.

**Conclusions literature study**

This literature study showed that the passenger experience can be affected by different elements. The arrival experience of passengers before they arrive at the reclaim hall, their previous reclaim experience and the current reclaim hall influence the experience. The waiting time perception and ambience are elements where airports can make a difference. Ambience is created with a sense of place, (natural) light, clean air, design and scent. Waiting time perception is reduced with fairness, certainty, explained waits, keeping occupied, reduced anxiety and increased feeling of service. Feeling in-service is beneficial to the perceived waiting time compared to pre-service, while post-service waiting feels even longer. Together with managing their expectations, giving passenger a voice in the process and keeping them occupied helps to increase the perceived level of service. Providing information on expected waiting time leads to a sense of control and increased level of service, which allows for reappraisal of the situation and therefore reduced anxiety.
OBSERVATIONS

In total, 13 passengers (see table 3) were observed during their presence in the reclaim hall, from entering reclaim hall 1 till exiting through customs. The average time they spent in the reclaim hall is 16.5 minutes. The shortest stay of a passenger was 3 minutes, while the longest stay was 31 minutes. The composition of the observed passengers can be seen in the figure below.

The approach to follow the passengers from start to end has given insight into a complete journey, which allows to understand their behavior and emotions better. It also means that one passenger is observed for up to half an hour. Although the observations were done from a distance, there were moments when the passenger was out of sight for a moment or observations had to be interrupted shortly to avoid being noticed. Even though these periods were not long, it could mean that certain behavior and/or interactions were missed during that time. However the presence of the passenger and his location was always known.

Results

The journey of passengers through the reclaim hall can be split into different moments: orientating, positioning, waiting, anticipating, collecting and exiting (a description can be found in Appendix C). Looking from a bigger picture, the complete arrival journey is characterized by the general concern of minimizing time loss and that comes from that the service passengers receive is over when the aircraft has landed (Maister, 1985). Therefore any time delay feels more aggravating than when service is still received. Looking at the reclaim hall, the obvious dominant concern is to reclaim their baggage as soon as possible. However, when the reclaim journey is considered in more detail one finds that passengers have different concerns during the different moments. A description of the behavior of passengers during the different moments can be found in Appendix C and summarized in the Passenger experience map (figure 1.20). This experience map also shows their thoughts reflecting their concerns (based on quotes from passengers), their emotional state and their interactions, based on the observations and interviews held. The insights from the observations are discussed below for the different moments.

Orientating

After entering, passengers with checked-in baggage check the screens to find out which belt they have to go to.

- 6/13 passengers showed clear signs of hesitant and insecure interaction when consulting the screens.
- Passengers, 8/13, show a goal-oriented and focused interaction during orientating.

Positioning

- Passengers are very curious and eager to find out (1) if their baggage is already there, and (2) how long they still need to wait. Only 2/13 passengers showed no interest in the screens or the belt, only to discover the presence of the screens later in the process.

<table>
<thead>
<tr>
<th>Gender (total 13)</th>
<th>Age group, estimated (total 13)</th>
<th>Social context (total 13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>Woman</td>
<td>Man + woman</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 3  Observed passengers
• In this step, passengers that travel with a partner or family can be seen separating. One adult waits at the belt and one adult sits down (with the children).
• Passengers that arrive at an empty belt, with no passengers waiting show hesitant and confused interactions. Seeing passengers from their flight gives them confidence and confirms they are at the right belt.

**Collecting**
When their baggage is identified the collecting is often rushed and determined. After reclaiming their baggage, passengers show relieved and calm interaction.

**Exiting**
When leaving the reclaim hall, passengers remain relieved and calm, but still determined to minimize timeloss.

**Conclusions observations**
The experience map on the next page (figure 22) shows four elements that influence the emotional state. The first element is how passengers enter the reclaim hall. Their journey before reclaim affects in what emotional state passengers arrive. This can be the flight characteristics, but also the journey from the arrival gate to the reclaim hall. The second element is when passengers arrive at the baggage belt and find out that their baggage is not there yet and that the expected arrival time is not in line with what they hoped or expected. The third element is when passengers have waited at the belt and the belt starts moving or a different sign is telling passengers that the baggage is on its way. This gives passengers the feeling that the end of waiting is near and they can finally tell that they will probably be outside in not too long. This brings the first relief with passengers and their emotional state changes into less negative. The last element is when passengers have reclaimed their baggage and they experience a big relief and their emotional state changes into a more calm state.

It appears that the state in which passengers arrive in the reclaim hall, the realisation of having to wait instead of passing through and the experience of waiting itself is having the biggest impact on the passenger experience in the reclaim hall.

**Waiting**
During this moment passengers wait at the belt for signs of their baggage, their attention is directed at the belt and the screens.
• Passengers, 8/13, are seen checking the screens for possible updates. Especially when the baggage is supposed to arrive or when they are confused about the baggage that is arriving. 5/13 showed restless bodylanguage.
• 4/13 passengers went to sit down. The passengers that did, either:
  • had a good view on an information screen,
  • had a good overview of the belt from the top of the stairs,
  • had someone else waiting at the belt for them,
  • were in a calm state of mind.

**Anticipating**
When there are signs that the baggage is arriving passengers show a change of bodylanguage. A sound that baggage is arriving and the belt that starts moving activates passengers to move (even) closer to the belt, with a good view of the baggage coming by and in a good position to grab their baggage. Focus and eager also describe the interaction during this moment. When the information on the screen does not match with what is happening on the belt, passengers get very stressed and uncertain.
<table>
<thead>
<tr>
<th>Doing</th>
<th>Orientating</th>
<th>Positioning</th>
<th>Waiting</th>
<th>Anticipating</th>
<th>Collecting</th>
<th>Exiting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter reclaim hall</td>
<td>Enter reclaim hall</td>
<td>Walks down to belt, checks whether baggage is already there</td>
<td>Checking screens for (updated) information</td>
<td>Attracted to belt when it starts to run and baggage drop</td>
<td>Identifies bag or checks if the bag is theirs</td>
<td>Repack, rearrange baggage</td>
</tr>
<tr>
<td>Look for information on baggage</td>
<td>Look for information on baggage</td>
<td>Stands at screen to check expected waiting time</td>
<td>Keeping an eye on the belt</td>
<td>Moving closer to belt</td>
<td>Finds a place where bag can be collected, rushes between people to grab bag or runs after it</td>
<td>Walk toward exit (skipping the small exit to use the main exit)</td>
</tr>
<tr>
<td>Find screens</td>
<td>Find screens</td>
<td>Decides to stand at dropping point, a spacious area or sit down</td>
<td>Checking cell-phone, texting or making a call</td>
<td>Looking intensely to dropping baggage, to identify own baggage</td>
<td>Collects and rushes back for second bag</td>
<td></td>
</tr>
<tr>
<td>Look for origin and allocated belt</td>
<td>Look for origin and allocated belt</td>
<td>Orientate to the right belt</td>
<td>Walk around belt [for better positioning]</td>
<td>Checking screen on more information</td>
<td>Rearranges bags on floor or at seats</td>
<td></td>
</tr>
<tr>
<td>Orientate to the right belt</td>
<td>Orientate to the right belt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thoughts</th>
<th>Where can I find my baggage?</th>
<th>Is my baggage already here?</th>
<th>I have been walking a long time, why is it taking so long for the baggage?</th>
<th>From which flight is this baggage coming from?</th>
<th>Im glad I have my baggage again and now I can finally leave</th>
<th>Is this also an exit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We walked too fast, we missed the sign…”</td>
<td>“We walked too fast, we missed the sign…”</td>
<td>I hope my baggage was on the flight</td>
<td>That almost looks like my bag</td>
<td>“Is there more baggage to come?”</td>
<td>I can’t have a good view, what if I can’t get to the belt in time?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emotions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal oriented</td>
<td>Confident</td>
<td>Focused</td>
<td>Focused</td>
<td>Activated</td>
</tr>
<tr>
<td>Focused</td>
<td>Eager</td>
<td>Attracted</td>
<td>Trusted</td>
<td>Determined</td>
</tr>
<tr>
<td>Confident</td>
<td>Impatient</td>
<td>Stressed</td>
<td>(In)considerate</td>
<td>Activated</td>
</tr>
<tr>
<td>Insecure</td>
<td></td>
<td>Restless</td>
<td>Focused</td>
<td>Indifferent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Impatient</td>
<td>Rushed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Calm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Confident</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hesitant</td>
</tr>
</tbody>
</table>

Figure 20  Passenger experience map, showing the behavior, thoughts, emotions and interactions
INTERVIEWS

There was some concern for how passengers would respond to approaching them during waiting for their baggage, since passengers are not keen to be distracted from the process, but it turned out positive. By approaching passengers when the expected time of arrival of the baggage was still at least 10 minutes away, passengers were open to participating, since passengers feel that they are waiting there anyway. Once the expected arrival time comes closer, passengers are more hesitant, because they wanted to keep their attention with the belt. In the end, 20 passengers were found to participate (see table 4). Four passengers were not able to finish the interview, due to their baggage arriving or having to consult the baggage handler. The interviews are spread out over three sessions, two of which took place during the day (09:00-17:00) and one session in the evening (from 23:00). This was done to consider if the experience of passengers that arrive in the evening were found to be slightly different, due to the time of arrival. Due to the amount of passengers that participated it is hard to draw a conclusion on this, but in the analysis were no noticeable differences found between the different arrival times.

The prepared collages with different themes, namely ambience, communication, interaction, physical, and procedural (see Appendix A), helped getting the interest of passengers and it gave passengers the trust that after each collage they could end the interview when their baggage would arrive. Since most passengers participated for all collages, most interviews started with the same touchpoint, namely ambience. Some passengers responded well to the images, where others were not interested. In these cases, the interviewer was able to discuss the different touchpoints that were represented with the collages, by asking about the how they experience them. This also applied to passengers that, in the first instance, said that they had nothing to say. After keep asking different versions of similar questions, still a valuable interview came about. The collages for interaction and procedural were confusing for passengers, because they were not aware of how they experience these touchpoints. In contrast, the ambience is easier for passengers to reflect on. This does not mean that the ambience is more important to passengers though.

Results

When the interviewees are asked about the **ambience** in the reclaim hall, it is clear that the ambience in the reclaim hall is considered goal-oriented and functional. 10/20 passengers (50%) mentioned that they would like the reclaim hall to show Dutch characteristics. This was indicated by the photo of Amsterdam channels, but passengers also selected photos that contained elements that they relate to The Netherlands, like water and modern design. Another appeal for passengers were photos that contained natural elements, either forrest or water. 7/20 passengers (35%) choose this, either because it came

<table>
<thead>
<tr>
<th>Gender (total 20)</th>
<th>Age group, estimated (total 20)</th>
<th>Social context (total 20)</th>
<th>Origin (total 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>Woman</td>
<td>Man + woman</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
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<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Table 4  Interviewed passengers
across as peaceful and relaxing or because it reminded them of outside. Apart from the passengers that prefer Dutch and/or natural elements, 6/20 passengers (30%) referred to the purpose of the reclaim hall. Meaning, the hall is functional and the ambience is considered not relevant here. Passengers feel that a passage space, where they only pass through, does not need to be cozy or fun. They prefer and expect efficiency and functionality above ambience.

When asked about how they would like to be informed, passengers consider the screens to be sufficient, 14/19 passengers (74%). Other communication channels are less popular, and even though some mention lack of battery or internet connection to be a reason why mobile notifications are considered inconvenient, still 4/19 passengers (26%) would prefer it. It seems that the accessibility of the screens makes them popular, while passengers also compare it to other airports.

The interactions that passengers have with airport staff or other passengers is very limited in the reclaim hall. Only 2/18 passengers (11%) mention that they would like personal interaction with airport staff. 15/18 passengers (84%) are not interested in contact or refer to it being like a waiting line where everyone minds their own business. Most passengers think the process is that simple that they do not need anyone, but when there is an issue, there should be someone to help them.

When it comes to the physical touchpoint, where passengers were asked how they would like to wait, 9/18 passengers (50%) prefered natural light and interesting seats. Another 4/18 (22%) liked a waiting environment where kids could be entertained. An important element is that passengers need to have a good view of the screens or baggage belt and it should not hinder the flow. For 5/18 passengers (28%) the waiting facility is not relevant, since everything that matters is just outside the reclaim hall.

The experience of the procedural touchpoints in the reclaim hall, like the baggage belts, is dependent on passengers’ expectations. 5/16 passengers (31%) expect a functional process and seem indifferent towards it. Also, 4/16 passengers (25%) reflect on their other experiences with airport systems, like check-in and baggage drop-off, and like that with this process they are not dependent on the pace of other passengers. Another 5/16 passengers (31%) expresses that they arrive at the reclaim hall knowing they are going to have to wait and that they calculated this into their journey. These passengers showed a very relaxed and satisfied emotional state.

Conclusions interviews
Reflecting on the different touchpoints it is clear that passenger expectations are determining their experience, as the definition of satisfaction by Oliver (1997) also shows that people’s satisfaction is equal to their perception minus their expectation, which is also stated by ACRP (2), 2016). Passengers consider baggage reclaim as a goal-oriented and functional step in their journey, a passage space. A functional process, where passengers are only there to reclaim their baggage, is expected from Schiphol. In reality, the reclaim hall can be a waiting space, rather than a passage space. Introducing anything that enhances the experience is welcomed by most passengers, as long as it doesn’t interfere or distract them from the process. Passengers do not commit to something when it could lengthen their time in the reclaim hall. When passengers find out that the reclaim hall is more like a waiting space instead of a passage space or when the process’ functioning is doubted and questioned, the passenger satisfaction decreases. Research by SITA (1) (2016) also showed that when passenger have to wait longer than 10 minutes the
percentage of passengers with positive emotions drops from 88% to 68%, and further down to 54% when it takes longer than 30 minutes. A way to improve their experience is to manage their expectations, this can be done before passengers arrive with information, as well as during their arrival and stay in the reclaim hall with the process and environment. It appears that improvements can be made on the ambience in the reclaim hall, as well as with the process. A visual (figure 23) by DKMA, an airport market research company, states that poor airport processes can do more harm to the passenger experience than poor architecture, interior and service. But good processes do not have the same effect, it only improves the experience slightly. You need good architecture, interior and service next to your good process to achieve great passenger experience (DKMA, 2015).
For the questionnaire, 70 responses were collected, although not all respondents completed all questions. From the respondents that left contact details, it seems that the composition of the respondents is reasonably diverse in gender, age and nationality. The respondents come from direct family, friends, fellow students, team mates and colleagues, as well as from family, friends and colleagues of friends. Most of the respondents are in the category of 21-40 years old, while the category of 41-65 years old is also represented well. Definite numbers of age categories are not available, since it was not part of the questionnaire. With a small number of exceptions, the respondents currently live in the Netherlands, but are not necessarily Dutch. Some of the respondents are from origin from other countries, but currently live in The Netherlands. Of the respondents, 80% traveled within the last 6 months and 75% came back from a leisure trip.

In the diagram (figure 24), it can be seen that half of the respondents experience arriving at their destination or at home as the end of their journey. The other half of the respondents was divided over the other options. From Schiphol’s perspective the passenger journey ends when passengers leave the airport, but as one might have expected, the passengers’ journey ends for most when they have actually reached their destination or home. When respondents were asked about how true it was in their experience that a certain attribute applies to the reclaim process (see figure 26), respondents were very divided on especially the attribute controllable (see figure 25). The interviews showed that the process itself was not experienced as controllable, but the fact that other passengers did not affect their waiting time does give passengers a feeling of control. The same attributes were considered, when respondents were asked how important they are for their experience (see figure 27).
**Biggest difference**

In this case, the biggest difference in general between the experienced value and how important they are considered, is for the attributes *efficient* (2.9 to 4.1) and *controllable* (2.3 to 3.5), while *respectful*, *personal* and *convenient* also show a significant difference.

**Most important**

The most important attributes are *efficient*, *clear* and *convenient*, while also *respectful* and *predictable* are amongst the high scoring attributes.
Clustering quotes

The questionnaire also generated a large collection of statements from respondents and these were collected together with the quotes that were written down from the interviews. By clustering the quotes that relate together certain topics appeared (figure 28). These were labeled and described by a concern, that was generated based on the quotes. This method helped to get to the different concerns passengers have. In figure 29 on the next page, an overview of the topic/ concern combinations sorted underneath the themes on the top row is shown. The results of the questionnaire showed that efficiency is very important, this is reflected in the goal-oriented concerns. The second-most important attribute was a clear process, which shows with the concerns regarding uncertainty and unexplained. A convenient process is more general and can relate to a lot, but especially to the concern of ‘feeling of service’ and ‘interpreting information’. While also the other attributes of respectful and predictable can be related to the concerns regarding unfair and anxiety.

Conclusions questionnaire

It shows that the attributes that the respondents labeled as important are also expressed in their concerns that resulted from clustering quotes from interviews and the questionnaire. These concerns can at the same time be related to themes that were identified with the literature research as influential of the perceived waiting time, the sense of control and the perceived level of service. Respondents have indicated that for them, an efficient, clear and predictable process is important. While also a more controllable, respectful and personal process is desired, since these are among the attributes that would need the most improvement.
<table>
<thead>
<tr>
<th>In-service</th>
<th>Anxiety</th>
<th>Uncertainty</th>
<th>Unexplained</th>
<th>Unfair</th>
<th>Goal-oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling of service</td>
<td>Worrying about the security of your baggage</td>
<td>Feeling prepared</td>
<td>Looking for confirmation</td>
<td>Understanding the process</td>
<td>Acceptable waiting</td>
</tr>
<tr>
<td>I like to do everything myself, but only as long as it goes well.</td>
<td>I want my belongings to be returned to me safely.</td>
<td>I want to know what is coming.</td>
<td>I want to have an overview of the situation.</td>
<td>I want to understand what and why.</td>
<td>I want the waiting time to make sense.</td>
</tr>
<tr>
<td>Being affected by other passengers</td>
<td>Wondering about my special baggage</td>
<td>Interpreting information</td>
<td></td>
<td>Feeling in control</td>
<td>Feeling in control</td>
</tr>
<tr>
<td>I want to avoid people and things that make me stressed.</td>
<td>I want to be sure I am at the right place.</td>
<td>I want to flow through the process.</td>
<td></td>
<td>I like to be in control of my own destiny.</td>
<td>I think the first priority is reaching my goal.</td>
</tr>
<tr>
<td>Stressing around the belt</td>
<td></td>
<td></td>
<td></td>
<td>Making sense</td>
<td></td>
</tr>
<tr>
<td>I want to collect my baggage without feeling rushed.</td>
<td></td>
<td></td>
<td></td>
<td>I think things should be appropriate to the place and situation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Feeling relaxed</td>
<td>I want to relax, but not be distracted.</td>
</tr>
</tbody>
</table>

*Figure 27: Topic/concerns that resulted from clustering quotes underneath different themes that affect the experience*
CONCLUSION

By performing literature research, knowledge was gained on elements that determine the passenger experience. The passenger research methods (observations, interviews and questionnaire) have provided insights into the current experience and the passengers’ concerns. In this conclusion the results are brought together and the areas of improvement are identified.

Starting at the passenger experience, the look and feel of the airport and its processes are the two determining factors. For both elements, the basics need to be satisfactorily. ACI (2014) and Beautiful Lives (2016) placed elements in a pyramid-visual that show which elements are required, which are expected by passengers and the elements that allow airports to excell at the top. Figure 31 shows the version by Beautiful Lives with ambience and waiting time as determining elements, while ACI’s version is similar but more specified. Best practises, hassle free, outstanding architecture, excellent hospitality and surprising concepts are mentioned by ACI. Besides the experience in the reclaim hall, the journey leading to the reclaim hall affects the experience. And questionnaire respondents indicated that their journey does not end after the reclaim hall, which could mean the prospect of the rest of the journey could also affect the passengers experience, for instance how accepting passengers are if they have to wait (see figure 30).

EXPECTATIONS VS ATTITUDE

Passengers arrive at the baggage belt with expectations of passing through or waiting for a while, but also with an attitude to time (prefer to be in control or spend it as pleasant as possible). A group of passengers calculate a certain time into their schedule for their arrival journey, they are not surprised with some waiting time and are not affected by it as much. This passengers that belong to this group can belong to the older age group (41+) that are returning from a leisure trip and are not in a rush

![Figure 28: Passenger experience. Before, during (Beautiful Lives, 2016) and after reclaim](image)
to get their journey over and done with. They are also used to these waiting times and seem more patient than the younger passengers, who are less used to waiting. Another group comes in with expecting to pass through, but also does not show desperation when having to wait. They are able to accept to wait and will look for stimuli to spend the waiting time. An example of passengers can be of ones that traveled in a group, they find entertainment with each other to discuss their journey that is over or that they are looking forward to. Passengers that expect having to wait, but do like to be in control of their time, often show insecure and anxious behavior. They worry about their baggage and about whether they will be able to make their train. They prefer to receive confirmation of their baggage and know when to expect it. The last group arrive in the reclaim hall expecting to be able to pass through or wait for only a short while and also likes to be in control of his time. They are goal-oriented. This group can be younger passengers that base their expectations on other services like same-day-delivery, which influences their attitude. They are focused on the time it took them to walk from the gate and consider this to be enough time for their baggage to be transported to the reclaim hall as well.

TOUCHPOINTS
The current passenger experience in the reclaim hall involves mostly Schiphol’s facilities and service, while the baggage handler can also be involved. In figure 31, the interaction touchpoints are mapped in the reclaim journey for both Schiphol and the baggage handler. The observations indicated that the first three moments of the reclaim journey, orientating, positioning and waiting, involve the most stimuli that are causing negative emotions. Passengers only interact with baggage handlers when there is an issue with their baggage. The figure shows rectangles when the type of touchpoint is present during that moment. The rectangles with more vibrant color and black stroke show touchpoints where possible improvements can be made.

**Orientating**
During the first moment passengers get a first impression of the reclaim hall and its ambience. Passengers enter the reclaim hall with expectations, based on the time that has past since their landing, and want to find out what the status of their baggage is. The look and feel of the reclaim hall confirms their expectation of a passage space. There is a lot to take in, and passengers have to make up in an instant what to do and where to go. Some passengers get it wrong and miss the first screens, it can take a while before they find their way back. As said, passenger get their information from the baggage belt screens.

**Positioning**
When positioning, passengers again interact with the

<table>
<thead>
<tr>
<th>RECLAIM JOURNEY</th>
<th>Orientating</th>
<th>Positioning</th>
<th>Waiting</th>
<th>Anticipating</th>
<th>Collecting</th>
<th>Exiting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schiphol</td>
<td>Physical</td>
<td>Physical</td>
<td>Physical</td>
<td>Human</td>
<td>Human</td>
<td>Physical</td>
</tr>
<tr>
<td></td>
<td>Subliminal</td>
<td>Subliminal</td>
<td>Subliminal</td>
<td>Communication</td>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>Baggage handlers</td>
<td>Physical</td>
<td>Physical</td>
<td>Physical</td>
<td>Human</td>
<td>Human</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subliminal</td>
<td>Subliminal</td>
<td>Subliminal</td>
<td>Communication</td>
<td>Communication</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 29  Interaction touchpoints with Schiphol and the baggage handler during the reclaim journey*
look and feel of, in this case, the reclaim belt and its surrounding, and they get a feel of the ambience around the belt. As mentioned, the look and feel of the belt and its surrounding expresses functionality, that is also what passengers expect from it. The process of baggage reclaim in combination with the information they receive is giving passengers the feeling that they have to stay there to wait for their baggage. For passengers to take a seat, they need to be assured that they do not miss out on anything. This assurance can be having a clear view of the belt and the information screens or have someone waiting at the belt for you. In the act of positioning, passengers make the consideration of waiting where there is space and waiting where they can reclaim their baggage as soon as possible. In a student project from Medialab Amsterdam, that worked on improving the passenger experience in the reclaim hall, it appeared (see figure 32) that passengers position themselves with that consideration in mind (Persoon et al, 2017). They rather wait with four rows of passengers in front of them, then wait at a spot where their baggage will only arrive after it has done a full lap around the belt.

The moment of arriving at the belt is also the first moment passengers find out if their baggage is already on the belt or how long they have to wait for it. Passengers try to put things in perspective: “I walked x minutes, so my baggage should also be here by now or at least almost.” Passengers need more reference than their own walking distance to the reclaim hall to make a more fair judgement. The message that passengers see on the screen, expresses the expected arrival time. Although this is already better than not giving any indication and it is not possible to be more exact at the moment, it should be Schiphol’s aim to provide more accurate estimates. Passengers can not depend on this estimation, meaning they will not leave the belt or commit to something else, because they might miss out on their baggage arriving.

Waiting
The same touchpoints are present during waiting. The information that passengers receive during this moment can be very confusing for passengers. Different scenarios are possible here. The expected baggage arrival can be 12:05, but that can also be up to 20 minutes earlier. The arrival of the baggage is announced with a message on the screen, “First baggage unloaded”. Sometimes this message shows but the baggage is not arriving, while it also happens that the message “All baggage unloaded” appears and still no baggage has arrived. This is obviously very confusing for passengers. This message appears when the baggage handler presses a button for ‘first bag’ and ‘last bag’. But they press the button at times when the baggage is not there yet, in order to make their targets that they have agreed with the airlines. It would be better when Schiphol would have control over this, since it affects the emotional state of the passengers. Not only does it confuse passengers, they can even get annoyed and angry because the information does not match what is happening and they feel fooled. Part of the anxiety
that passengers experience during waiting is related to concerns about whether their baggage will arrive at all. Providing passengers with a notification that their baggage was indeed on the same flight would already provide some relief with passengers. It will improve the waiting experience, since the chance that their baggage will not arrive is a lot smaller now, and unnecessary waiting is less likely. Actual arrival mishandling was only 4% of the delayed baggage in 2015 (SITA (2), 2016). Some possible improvements require cooperation between airport, airline and baggage handler. A conflict of interest between these stakeholders can hurt the passenger experience. Passengers expect that their journey is facilitated by all parties involved. Cooperation between all parties is therefore essential to create a seamless journey. Passengers have to deal with different parties throughout their journey, but passengers want to think of their own journey, not who to consult at what point. In the reclaim hall it is not clear to passengers who is responsible for what, based on observations it seems that most passengers are not even aware of the involvement of baggage handlers. The lack of taking responsibility for this part of the passenger journey reflects in the perceived level of service.

Apart from the messages, the baggage belt does not show other signs of progress in the process. In the literature, it was found that post-process waiting is perceived longer than pre-process waiting and even longer than in-process waiting. Considering that passengers are leaving the airport shortly, and the received service (flight) is considered to be over, waiting for baggage can be seen as post-process waiting. In the context of baggage reclaim, the service might be reclaiming baggage and the waiting can be seen as pre-process waiting. In both cases, this is perceived longer than in-process waiting. The literature study also showed that providing expected waiting time, giving passengers a voice in the process and keeping them occupied increases their level of control and perceived level of service.

As mentioned with positioning, passengers are not keen to commit to anything that might lengthen their stay in the reclaim hall or that might cause them to miss out on the moment their baggage arrives because they have to finish something first. Just taking a seat is only done when they have a clear view and access to the reclaim belt or when someone else represents them at the belt. Looking at the other senses, passengers can look forward to something to drink or eat, but they will not be too tempted at the moment, because their attention is with expecting their baggage. Just like people fear when they just ordered a cup of coffee, their bus will arrive. After a time walking through airports and sitting in an airplane, passengers can also long for other basics like fresh air and natural light.

The ambience in the reclaim hall is less important if passengers are actually passing through. But when passengers are waiting in the reclaim hall, it could be an opportunity to create a more hospitable ambience. The research showed that passengers are drawn to elements that relate to The Netherlands and to nature, this also matches with the longing for fresh air.
The research has shown the passenger concerns during the reclaim journey. By linking the concerns, that relate to the first three moments, to a stimulus and attaching the emotions and action tendency, based on the observations and interviews, a nice overview arises that shows how passengers are experiencing the reclaim hall and how it is evoked. These models are a good inspiration for idea generation (figures 33 - 35). Based on the insights that were gathered, three pillars for the next phases are identified: managing expectations, passenger involvement and hospitable ambience. First the future context of baggage reclaim will be considered. A vision of the future context will be formed, after which a response to that vision can be decided in a statement. This statement works as a design goal for the conceptual phase. This goal tells what is envisioned to be the effect that is desired. An interaction vision will describe how that can be achieved. Then, the product qualities are chosen that the ’product’ should possess to create that interaction vision.
After the current context was analyzed, the future context is considered. This is done by creating a vision of the “world” in 2025. This vision is related back to the context of traveling, airports and passengers. The choice to create a vision on the future context is made, because it prevents that a solution is proposed that might work in the current context, but not in the future context. It also allows to take a stand in this future context and decide on what kind of effect is needed from a ‘solution’. The vision on the future context is used to formulate a statement, which describes what kind of effect is envisioned for the passenger in the future context. To create a vision, factors based on trends and developments, personal thoughts and observations, and human universals are collected. By structuring these factors, a vision arises.

**DOMAIN**
The domain of the future context is traveling in 2025. First a context structure is formed in a general domain, then this is used to relate back to the domain on traveling.

**CONTEXT STRUCTURE**
The collected factors can be found in Appendix D. By clustering factors and linking the clusters to create a storyline or identify conflicting elements, four different themes are identified: Connected World, iGeneration, Empowered Consumer, and Efficiency versus Well-being. These themes are first discussed in general in the following paragraphs.

**Connected world**
In 2025, the objects, products and environments are connected. People’s devices connect and exchange information with objects and products in its direct environment. Autonomous cars connect to each other, to the road, to other objects or people in the environment, which results in a world with less accidents. While devices can connect to its direct environment, it also allows people to connect to a different environment and control objects there. The world is operating more pro-active than reactive, people will be used to being notified when they are required to do something. Which could cause that people are becoming dependent on devices to tell them what is happening. This means that people lose their sensitivity and ability to assess without a confirmation and are controlled by what our devices tell us. When devices take over some of our tasks and perform it better than we do, it makes people question their own abilities. On the other hand, technologies will help people to focus their attention on where it is needed and ignore all the stimuli that is considered irrelevant.

**iGeneration**
The iGeneration or generation Z is around the age of 20-30 years old in 2025. This generation grew up in a world where technology and social media form an important part of their lives. It allows them access to more knowledge and they are able to educate themselves better than previous generations. On the other hand, they are more dependent on technology and they have a lack of self-regulation. People are receiving constant stimuli, and their attention span has decreased further. The iGeneration also grew up in a world where security and privacy became increasingly important and trust in strangers was low. This means that this generation is known for avoiding risks. Even though people like adventures and to experience awe, their lives are becoming more planned and there is less room for risks and the unknown. People want to decide for themselves how they wish to live and they are very self-centered in that respect. Traditions of previous generations are abandoned, because their own way is considered to be the best way. People’s lives are rushed and hurried, distinction between private life and work has blurred further, and little time is left to spent on maintaining significant social
relationships. Although people spent their lives focused on themselves, they do want to experience a feeling of belonging. Technology allows people to access anything and be anywhere at any time. People can “be” in the same space with people that are actually located in a different place. So not only has work and private life blurred into each other, the real and virtual world have also mixed together and the virtual world is accepted as “real”. In their quest to a happy lifestyle, people are now looking for self-actualization. Instead of our self-image and status being dependent on what we own, it is more about who we are. For this, people try to fulfil their full potential and instead of religion, people turn to psychology and other sciences to be the best they can be. People will embrace products, experiences and services that help improve their ‘self’ and that they can share with the world.

Empowered consumer

People’s expectations are dependent on what they know and have experienced before. More people have access to technology, like smartphones and other devices that have a online connection, that more people have access to information and share experiences with others. People have access to a bigger variety of choice and are able to choose and switch as they like. This puts the consumer in control of their choice. People’s experience with an on-demand economy in daily life, that will grow even further, causes that people do not expect or accept to wait anymore. People are accustomed to instant service that is personalized to their situation and needs. Also, most people do not mind to pay for qualitative and personal service. Poor service can be costly, because people share their experience with the world constantly. Owning products is no longer important for people’s status, which results in a sharing economy. Instead of owning products, people prefer to pay for what they want or use. This can be in the form of having a subscription for the use of
products for a certain time period (as in lease), shared ownership or by paying for usage only when people need it. In a world where the consumer is in control of their choices, companies offer services that integrates the online and offline world. Consumers are able to choose or change as they go, both online from their own device or offline.

Efficiency vs Well-being
There is a need for more information, but only information that is relevant to people personally. Due to the constant feed of information and communication, people are receiving lots of stimulations, their attention span is decreasing and the temptation to check online feeds is hard to ignore. Time is spent as efficiently as possible. At the same time the 24/7 connected world is evoking a need for time ‘off the grid’. People are looking for moments where they recharge and restore their energy by closing off from the connected world. People realize that they need to take time for their own well-being and that an efficient lifestyle is not equal to emotional well-being. People focused on making their life efficient, but people’s experience is based on people’s perception and not necessarily on the actual reality. People want to limit the time that they spent on things that don’t contribute to their emotional well-being. Therefore people will strive to make the obligatory processes better by making it faster and more efficient, but take time for the things that improve our emotional well-being. People’s devices will indicate what can be done in order to sustain our well-being.

Vision on traveling in 2025
Together, these themes form a vision on the world in 2025. When this is seen in the context of traveling, airports, baggage and passengers the following vision arises.

In the context of the airport, people will experience a more seamless journey where the different steps in the process are linked together and passengers are able to go through the complete process in one flow. The passenger journey is characterized by limiting the time passengers have to spent on processes, no queuing and using the time that is available by creating experiences that contribute to people’s emotional well-being or improves our ‘self’.

People are used to having an internet connection most of the times, and their devices are connected to the airport environment and to their baggage. People can control their journey from their personal device, which allows them to personalize their journey as they go (also see figure 37). People are only interested in information that is applicable to them, (aural) augmented reality allows the airport and airline to communicate relevant information on the right moment to passengers. Biometry is used to recognize passengers and this helps to show each passenger the right information in the airport or on their personal device. When people travel, their devices allow them to communicate with their baggage on where they will meet up again. People have control over what they want to be notified about. Communicating the other way around is also possible, when the owner comes closer to where he wants to reclaim the baggage, the baggage will request his environment to be transported there. While technology developments allow us to fly even quicker all over the world, technology is also allowing us to be all over the world in a virtual world. The differences between the real world and the virtual world will be smaller, and the virtual world will be accepted as part of the real world. This could mean people are going to use virtual reality to hold a meeting with people overseas, instead of flying out to another country. Which means a shift in the balance of type of passengers might occur from business to leisure passengers. While traveling, people can share their experiences and allow other people to “join” them.
wherever they are via virtual reality. People will travel for holiday, but also to widen their horizon and seek personal growth. Status is less determined by what people own, and more about who people are. In their traveling, people seek opportunities for self-actualization.

When people fly, people will likely only carry some personal belongings what they need during the flight. Any baggage that passenger want to bring along, they’ll have to pay for. While at their destination, people can also pay for the use of products that they did not bring along. People that want to bring their baggage can also choose to have their baggage sent to their destination. In how people reclaim their baggage, flexibility and flow is key. People will want to choose when and where it suits them to reclaim their baggage. Reclaim will be personalized to the passenger’s journey.

For airports, it is important to create a journey that continuously flows and offer services that are characterized by flexibility, choice, dependability and efficiency, and at the same time facilitate experiences that contribute to the emotional well-being of passengers.

Figure 35  People’s devices and wearables will become essential in their journey
Passengers want to understand why they are waiting that long. Security & safety of their belongings is also a concern. Not being able to affect the process, evokes desperation. Not knowing what to do when things feel wrong, evokes distress.

Strategies to deal with dominant negative emotion:
- action tendency
- decoy
- virtue

People want service personalized to their situation.

People want flexibility.

People want choice.

People are worried about their privacy and security.

Processes/services are becoming more automated.

Technology dependent.

People want service personalized to their situation.

People want flexibility.

People want choice.

People don’t want to be bothered with selecting options.

Limited to the essence.

1. Post service
2. Pre service
3. In service

Provide expected wait.

Give a voice in the process.

Waiting for service vs waiting while serviced.

Unfair waits vs equitable waits.

Perceived waiting time is longer when...

Perceived value of the wait/service.

Uncertain waits vs infinite waits.

Unexplained waits vs explained waits.

People are used to on-demand service/access.

Increased ability to multitask.

People's attention span is decreasing.

Processes/services are becoming more automated.

Technology dependent.

People want service personalized to their situation.

People want flexibility.

People want choice.

People don’t want to be bothered with selecting options.

Limited to the essence.

People are worried about their privacy and security.

Improved waiting time is longer when...

Perceived value of the wait/service.

Uncertain waits vs infinite waits.

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Strategies to deal with dominant negative emotion:
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People are used to on-demand service/access.

Increased ability to multitask.

People’s attention span is decreasing.

Processes/services are becoming more automated.

Technology dependent.

People want service personalized to their situation.

People want flexibility.

People want choice.

People don’t want to be bothered with selecting options.

Limited to the essence.
Technology enables people to focus attention on relevant matters.

People’s attention span is decreasing.

Processes/services are becoming more automated.

(Time) efficiency is increasingly important, when it doesn’t contribute to people’s well-being.

As a response to 24/7 online, people need off-the-grid moments.

People are focused on the destination -goal-oriented-

Passengers like to be in control of their own process.

People are worried about their privacy and security.

Limited to the essence (Time) efficiency is increasingly important, when it doesn’t contribute to people’s well-being.

People want service personalized to their situation.

People want flexibility.

Plain waiting is considered unacceptable.

People are used to on-demand service/access.

People want choice.

People don’t want to be bothered with selecting options.

As a response to 24/7 online, people need off-the-grid moments.

Processes/services are becoming more automated.

Technology dependent.

Not knowing what to do when things feel wrong, evokes distress.

As long as nothing goes wrong, passengers like self-service.

Not being able to affect the process, evokes desperation.

Waiting time should be...

The lack of (noticeable) progress, evokes anxiety with passengers.

A guarantee that their baggage is there, would be comforting for passengers.

Security & safety of their belongings is also a concern.

Fair

Making sense

Passengers want to understand why they are waiting that long.

In relation with the rest of the journey

Waiting for service vs waiting while serviced

Uncertain waits vs infinite waits

Unexplained waits vs explained waits

Unfair waits vs equitable waits

Perceived waiting time is longer when...

Perceived value of the wait/service

Increased ability to multitask

Technology enables people to focus attention on relevant matters.

People are focused on the destination -goal-oriented-

As a response to 24/7 online, people need off-the-grid moments.

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Waiting time should be...

The lack of (noticeable) progress, evokes anxiety with passengers.

A guarantee that their baggage is there, would be comforting for passengers.

Security & safety of their belongings is also a concern.
On the previous page, a visual is shown where the insights that have been gathered are brought together. The visual shows the insights from the literature study on the left in circles. On the right, the insights from passenger research are shown in squares. And at the top, the insights on the future context are placed. Bringing all insights together has resulted in the formulation of a statement.

**STATEMENT**
Based on the vision, a statement is formulated. This statement can be seen as a design goal, that describes the effect the designer, personally wants to create with the solution.

Passengers will not be accepting to have their arrival journey be delayed in the reclaim hall. Passengers feel they have to be focused and goal-oriented in this process. Passengers will want a service that is more personalized to their situation. The threshold for passengers should be kept low and not feel like they are stuck to anything or have to commit. The passenger research showed that passengers want to feel they are in control, the waiting time should be fair and progress should be noticeable. While the literature study showed that besides the perceived fairness, the perceived value of the service and whether people are waiting to be serviced or are receiving service influences the perceived waiting time. In the case of reclaim, passenger are waiting after they received a service (the flight) or waiting for a service (baggage reclaim) which feels longer than waiting while being serviced. The perceived level of service is increased by combining the involvement of passengers while also taking responsibility for their process.

These insights together have given inspiration for the effect that is desired. The following statement is a result of this process.

**I want passengers to experience feeling valued and at peace when reclaiming their baggage.**

This statement is formed with the knowledge that in the future Schiphol and passengers will have more insight in where their baggage is located and how long it will still take to arrive in the reclaim hall. At the same time alternative services are being developed that allow for baggage being transported directly from the passengers’ house to the destination. However, it is expected that reclaiming baggage in the reclaim hall will still be relevant in the future. Also, considering Schiphol’s requested focus on the reclaim hall instead of alternative reclaim solutions, the statement turned out to be also applicable to the current situation instead of mainly focused on the future.

**At peace**
The goal that is envisioned is to make passengers feel at peace with the situation, where passengers are perceiving the process and service as fair and are able to accept the waiting time. When passengers feel at peace with the situation, they are not affected as negatively with the waiting time.

**Valued**
For an improved experience in the reclaim hall, passengers should feel that their experience is still important, and the perceived service is important in this area. When passengers perceive that they are receiving service when they are waiting in the reclaim hall and perceive it as a more valuable service, this will make them feel valued. Feeling valued and at peace with the situation will also influence the perception of the waiting time.
The statement describes what the product will offer, and the interaction description tells how it will be offered (Hekkert & Van Dijk, 2011).

The interaction between the passenger and the (what for now will be called) product can be described as *familiar* and (being) *expected*, as when you *arrive at home*, *smelling dinner being prepared for you*. (figure 36)
BEING EXPECTED
To create the effect of feeling valued, the interaction should be being expected. This feeling of being expected relates to ‘smelling dinner being prepared for you’. You feel valued and special when you come home and you are surprised when you see that your partner has taken the task to start cooking. This could feel like your partner has considered that you would appreciate this after a long day at work. Showing passengers that they are expected instead of ‘forgotten’, is related to the perception of service. With an increased perception of service, the perceived waiting time is shorter. In the context of baggage reclaim, passengers can feel expected when they feel that Schiphol and/or the airline is aware that you are there and that during your stay in the reclaim hall, you can count on the help and service of Schiphol and/or the airline. Passengers will experience arriving in the reclaim hall as a process where they are expected and therefore increase the perceived service and where Schiphol shows responsibility for their journey, which makes them feel valued.

FAMILIAR
To give passengers the experience of feeling at peace, passengers have to feel they arrived in a space they feel familiar with and that does not hold uncertainties for them. It means that the process should be clear to the passenger and that the information, messages and signs need to be recognizable and unambiguous. The aim should be to make passengers feel familiar with their surrounding, with the process, but also with what is coming up for them in the rest of their journey. Uncertainties about where passengers should go next is also giving them a feeling of unfamiliarity.

There is no more familiar place than your own home. Coming through the door, entering your house, gives a feeling of familiarity and recognizing the space and where to look to find what you need. You do not have to explore or think about what to do or where to go, you will find what you are looking for, where you expect it.
Qualities

For the product to evoke this interaction between passenger and product, it needs to have certain product qualities. For the interaction to be familiar and expected, the product has to be welcoming, caring, personal and thoughtful.

These product qualities together make the 'being expected and familiar' interaction possible. These qualities mean that Schiphol gives passengers the feeling that they know you and that Schiphol wants to make you feel that they are willing to adjust to your needs. Schiphol takes care of the obligatory process, that doesn’t add to your experience, while they also identify possibilities that do add to your experience and Schiphol takes your journey and situation into account during the process. The reclaim area enables to keep hold of the good mood that passengers arrive in. While for passengers that experienced struggle during their journey or are going to experience inconvenience, are given the feeling that Schiphol cares for their situation and an effort is made to make a difference for them.

Welcoming
This means to be open to passengers, expect them and provide support to help them find their way in the reclaim area, but also beyond that area, as this also affects passenger’s experience.

Caring
Take care of matters that don’t contribute to passengers’ wellbeing. These matters are experienced as elements that are part of the obligatory process, that passengers have to go through. Care for passengers by preventing them having to worry about these matters. Examples of what passengers have to do; looking for information on where to go, looking out for your baggage, acting when something is or has gone wrong, and finding out what to do and where to go after baggage reclaim.

Personal
For passengers to feel like they are being expected, they should get the feeling that they are expected and the service is adjusted to their journey, instead of to someone elses. The passenger journey will then feel like it is specifically that way for them, because it addresses their concerns. It is more about the passenger, and less about the process.

Thoughtful
Thoughtful is a way to show passengers that they are expected and they are heard. Just being heard is something that can already take away frustration with people. To be experienced as thoughtful, one does not only care about the passenger in the reclaim hall, but the passenger and his situation is considered before and beyond the reclaim process. Therefore, one should take their journey and situation into account when providing a service. Thoughtful is also experienced when you taken control of matters that passengers are not experiencing as pleasant.
ARRIVAL JOURNEY

Based on the Design goal, Interaction vision and Product qualities, an arrival journey is created. This is focused on the complete arrival journey, since it has to be one seamless experience and the reclaim experience can not be seen independantly from the rest of the journey. After the arrival journey is created, a in-depth reclaim journey can be formed. In figure 37, 38 and 39 below and on the next two pages, the arrival journey is shown. This can be split up in three parts, before reclaim, reclaim and after reclaim.

BEFORE RECLAIM

When passengers arrive at Schiphol airport, their focus is directed at finding their way to the reclaim hall and continue their journey. In order to improve the reclaim experience, passengers need to be addressed before reclaim. As seen in the arrival journey, passengers will need to receive a confirmation of their baggage arriving at Schiphol. This shows passengers that responsibility is taken for their baggage and they are still receiving service after disembarking the aircraft. A message at their arrival also shows that passengers are expected. The confirmation prevents that passengers will wait at the
reclaim belt, wondering whether their baggage will arrive or not. It will allow passengers from who their baggage has not arrived, to consult the baggage handler straight away, instead of waiting for no reason. Passengers also get **insight** into what they can expect from the arrival process, what steps are on their route to the exit and how much time it will approximately take. Passengers would benefit from this, because they do not want to delay their own arrival at their destination. If they have insight into their complete journey, passengers feel better prepared or can even take action to change this if needed.

**RECLAIM**

The reclaim journey is started by showing that passengers are also **expected** here and that the service continues. Passengers feel welcomed in the Netherlands and supported to find their way easily. The information that passengers receive and the ambience in the reclaim hall contributes to feeling **familiar** with the process and the facilities in the hall. During their time in the reclaim hall passengers are able to **look ahead** in their journey, taking away elements that are unknown or uncertain and cause anxiety. Taking away anxiety about the next steps in their journey, allow passengers to feel more at peace during their time in the reclaim hall.

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**Figure 38**  
Arrival journey - reclaim

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The reclaim hall shows clear possibilities passengers have in the meantime, that will allow them to look beyond the reclaim process. Passengers are helped to find their way in the rest of their journey, according to their needs. The received information and their perception of what is happening helps passengers to feel at peace. Their time in the reclaim hall feels less as lost time and no longer affecting their time of arrival at their destination. After receiving the notification of the due arrival of their baggage, passengers shift their focus to the reclaim belt.
AFTER RECLAIM
Due to the ability to look ahead in their journey in the reclaim hall, passengers feel more prepared when they arrive in the arrival hall. Passengers already know what to look out for and what is relevant for them. When leaving Schiphol airport, passengers look back satisfied and pleasantly surprised about the seamless arrival journey.

Arriving in the arrival hall, passengers know what to look out for that is relevant for their journey, they feel prepared.

On their way out, passengers pass by points of their interest to end their journey at Schiphol airport.

Passengers look back surprised and satisfied on the seamless arrival journey through Schiphol airport.

Figure 39 Arrival journey - after reclaim
RECLAIM JOURNEY

Based on the arrival journey, a reclaim journey is created. The focus of this project is to improve the experience of passengers in the reclaim hall, which means that this is where a ‘solution’ needs to be introduced. In the arrival journey the interaction qualities, *being expected* and *familiar* were applicable throughout the journey. In the reclaim hall these interactions are translated in the journey that is shown on the next page.

WELCOMED IN THE RECLAIM HALL
By welcoming passengers in the reclaim hall and showing that Schiphol is aware of their arrival and were expecting them, gives passengers an increased perception of service that enables them to feel at peace and valued.

In this stage of the arrival, passengers should already be aware of the expected arrival time of their baggage. At arrival in the reclaim area, they should also feel that the process is being taken care of, and this does not need their complete attention. Besides feeling the anxiety of their baggage, passengers were expected to collect information that is relevant for them on their own. Another element that make passengers feel welcomed is the layout. When passengers arrive in the reclaim area, the first things they notice are important for their journey.

TAKING THEIR JOURNEY INTO ACCOUNT
Looking ahead to the reclaim process, the service that passengers experience is based on their personal journey. This can relate to their baggage, but also to the journey up to the reclaim area and the remaining part of their journey. In the reclaim journey in figure 40 examples are given relating to providing service based on issues passengers experienced before, the length of their flight, their scheduled appointment, and preparing for their next step in their journey to their destination.

TAKING THEIR BAGGAGE INTO ACCOUNT
When at arrival it is already clear that their baggage is going to take longer than is considered reasonable, this is taken into account in adjusting the reclaim journey. An additional benefit of allowing passengers, that need to wait a long time for their baggage, to spend their waiting time in Plaza and reclaim their baggage there, is that this spreads out the passengers and prevents the reclaim hall from filling up with waiting passengers.

PLAZA
When passengers will reclaim their baggage in Plaza, they are likely to spend money at the shops and restaurants of Plaza while they wait. In this stage, passengers are informed of the relevant possibilities that Plaza offers for them.

RECLAIMING BAGGAGE
As said, passengers will appreciate receiving information that is relevant and personalized to their situation, like a notification of the due arrival of their baggage.

CONCLUSION
This reclaim journey has shown that the experience can be improved by showing that passengers are expected and making sure passengers feel familiar with the environment, the process and with their next steps. It has already provided insight into the aspects which could be used to improve the experience. This reclaim journey has been used to develop a list of design guidelines, this list developed during the project as the direction was defined. The guidelines can be found in Appendix E.
Figure 40  Reclaim journey

**Welcomed in the Reclaim Hall**

“Hello sir, your baggage will arrive in 15 min. We have a nice place here for you to wait, while your baggage is taken care of."

“All great! It feels like they knew I was coming.”

**Take their baggage into account**

“Hello sir, it will take a bit more time for your baggage to arrive than we hoped. We have enabled the possibility to reclaim your baggage from Plaza for you.”

“Schiphol is really making an effort to provide the best possible service to me.”

**Plaza**

“You will be notified when your baggage is due to arrive at Plaza. In the meantime, Plaza offers possibilities to have lunch, collect your prescription at the pharmacy or get some chocolates for your parents.”

**Taking their journey into account**

“We noticed there was an issue with your baggage when you left 10 days ago, therefore we enabled the possibility for you to reclaim your baggage at Plaza.”

“It looks like you had a long trip, you must be tired. You will have enough time now for coffee. Would you like that cappuccino now?”

“We see you need to be in Utrecht at 12h. Do you wish to receive your baggage at your hotel, so that you can make it in time to your appointment, or do you wish to contact your appointment to change the meeting time?”

“The train to Amsterdam leaves at 11:23 from platform 1. The ‘3-day Amsterdam travel ticket’ is a good option for you during your stay.”

**Reclaiming baggage**

“As announced, your baggage has arrived, sir. We hope you will have a pleasant stay and we will welcome you back on the 21st of May.”
METHODS

During this phase, several methods were used to generate ideas. Over the course of the project, methods like ‘how-tos’, ‘morphological chart’ and ‘Design with Intent’ cards (Lockton et al, 2010) were used. A few initial results from this phase are shown in figure 42 on the next page.

Ideation was continuously performed during a large part of the project. It helped to develop the right direction to take and a large part of those ideas is no longer fitting for the final direction that was eventually taken. However, these ideas did help to get there and were reviewed at different times in the project to evaluate their value.

HOW-TOS
This method was applied during the large course of the project. Over the course of the project the direction changed somewhat, and every time this method helped to define the direction further and generate solutions to certain ‘problems’. A few of these how-tos are listed below. The types of solutions on these How-tos are listed in Appendix F.
1. How can you distinguish features from each other, that passengers feel familiar with them?
2. How can you provide confirmations, to take away question marks with passengers?
3. How can you make a process feel like it is especially for them?
4. How can you prepare passengers for the rest of their journey?
5. How can you give passengers the feeling that they are expected?

MORPHOLOGICAL CHART
This method was used to generate solutions for different
Figure 42  Initial ideas - looking at the passenger-baggage connection, keeping the passenger up to date, and how to make the reclaim more personal
Can you give users a suggestion at exactly the right moment for them to change their behaviour?

Tailoring

Could your system adapt what it offers to match individual users’ needs and abilities?

Simulation & feedforward

Can you give users a preview or simulation of the results of different actions or choices?

DESIGN WITH INTENT

Design with intent is not really a method, but rather a tool. It is a deck of 101 cards that show a different approach to influencing behavior through design. The cards are divided into eight lenses; Architectural, Errorproofing, Interaction, Ludic, Perceptual, Cognitive, Machiavellian, and Security. Some of the cards that were used from the ‘Design with Intent’ card collection are shown in figure 43. These gave inspiration on timing a suggestion or message in order to make it feel relevant to the passenger, and giving passengers insight into how each step results in the end of their journey.

COLLAGE

During the interviews, the passenger-airport interaction touchpoint categories; physical, procedural, human, communication and subliminal (ACRP(1), 2016) were used. The conclusion was that apart from good processes, an airport needs to pay attention to their architecture, interior and service in order to lift the passenger experience further. The architecture, interior and service are affecting the ambience (subliminal) in the reclaim hall. On the next page a collage is shown in figure 44. These images relate to the architecture, interior and service that should evoke a being expected and familiar interaction. The images on ‘familiar’ show that the architecture and interior can contribute to feeling familiar. Apart from expected elements that fit the location where one arrives (the Dutch flowers and bikes), familiarity can also relate to knowing where to go. Natural guidance to important areas in the space, like natural light guiding towards...
the exit or a distinguishing center piece in the architecture accommodating the reception desk in a large hall. Which makes it easy and natural for people to identify and find.

Being expected can also be translated in the interior and service. The images show furniture that provides space to different types of waiting, allowing people to feel like their needs were considered. It also shows a set table, waiting for people to sit down, and a part of the house prepared for someone to relax there. When people would arrive there, they are likely to feel expected.
IDEAS

The ideation phase resulted in a collection of different ideas. But, as mentioned though, the interaction and (as a result) the product qualities were adjusted during the ideation phase. This happened when the initially chosen interaction did not result in the right ideas to reach the experience of feeling valued and at peace. The following ideas were considered to add to the experience that was envisioned. These ideas helped to form the concept that is described in the following chapter.

WAITING DECK WITH DEDICATED RECLAIM AREA

In the previous parts it was found that it is important what passengers find when they arrive. The first sights influence how they perceive the environment. It sets an ambience, as what the function of the space is considered to be. By welcoming passengers in a space that shows passengers can relax there, the mood is considered to be influenced by that. It also changes the expectations passengers can have from a space. If passengers arrive in a space that looks functional, they will expect a functional and efficient process. This is inspired by the comment of a passenger: “It looks functional, then that is exactly what you expect”. When the mood in the space is changed to a more pleasant waiting space, passengers could feel less frustration about a space that does not perform what it promises.

This idea is a combination of ideas, namely a waiting deck and a dedicated reclaim area along the belt. During the project, much time was spend in the reclaim hall to observe passengers and take inspiration from this. It is well known that passengers huddle around the belt, waiting for their baggage. The passengers that decide to sit down, are usually the first to arrive and their sight on the belt is not blocked by other passengers. Or they have someone else that is waiting at the belt for them. From this it became apparent that passengers do not want to lose sight of the belt. But they also do not want to lose a gap that leads them to the belt when their baggage arrives. This idea takes the needs of passengers into account by providing
them with the possibility to sit down and relax, still have sight on the belt while they wait from the waiting deck, and they have access to the belt via a dedicated reclaim area/ lane at the end of the belt.

The deck is an extension of the balustrade were passengers arrive in the reclaim hall. In the current setup they lower down the stairs to reach the baggage belts. In figure 45, the extension is visualized, although only partly decorated. In figure 46, a map of the reclaim hall is shown where the extension is also included at the top of the map. Here, an arrangement of seatings, greenery, and information screens is located to create a pleasant waiting ambience with the information passengers need. As said, this is where passengers arrive and what they will notice first. Due to the extension of the balustrade, the waiting deck is higher than the baggage belt. This enables passengers to keep a good overview of what is happening on the belt, which allows them to feel more at peace. The extension takes away some of the area around the belt, where passengers can wait for their baggage, but this area is used the least due to the baggage dropping point on the belt. Waiting in this area would mean having to wait for your baggage to complete an almost full lap around the belt before it reaches you.

The dedicated reclaim area at the end of the belt is introduced for passengers to have a guaranteed access area to the belt. This area is reserved for a type of walk-by reclaim. Passengers are only allowed to enter this area when their baggage is on the belt. In figure 47 the reclaim belt is visualized in a notification that passengers receive, to inform them of the walk-by reclaim area. The yellow lines along the end of the belt indicate a walk-by reclaim area on each side.
Test

The principle of a walk-by reclaim area was tested for an afternoon in the reclaim hall (see figure 48 for an impression of the setup). Using mobile railings from Schiphol, a walk-by reclaim was created. A sign on the railing asked passengers to only enter the area when they spotted their baggage and could reclaim it.

Passengers noticed the railings, but were not sure what it was supposed to mean. A reclaim area along a reclaim belt did not seem to make sense. The purpose and benefit was not clear to passengers, which is no surprise, since the baggage belt has been like this for a long time. Any change to it will evoke questions. Due to the location, at the end, the area did not catch everyone’s eye. Therefore, passengers did not see it as an opportunity to sit down, so it did not change their behavior. Some passengers were attracted to it, since it provided a possibility to lean against it and it provides some protection of their personal space (see the photo in figure 49). The railing also prevents passengers from ‘closing a gap’, when a passenger has reclaimed his baggage and leaves the area, the gap is often closed by surrounding passengers to protect their space. The railing prevented behavior like this, so the walk-by reclaim became a popular area to sneek in when it opened up.

SMART PERSONAL RECLAIM

The second idea that is in line with the experience that is envisioned, is a personal reclaim. This idea is again formed by two different elements that make the reclaim more personal, a personal waiting and reclaim area, and a connection between passenger and baggage.

The connection between the passenger and his baggage is based on a future where baggage is expected to hold technology that enables baggage to connect to its environment. As described in the future context, in the future product and environments are expected to communicate and act and react on each other. Just like a smart car will be connected to other cars, the road, or even the buildings, smart baggage will connect to elements in its environment. Its connection with the passenger starts already early in the process, therefore it will become familiar to the passenger at arrival to hear from his baggage. Before traveling, baggage can tell the passenger what is packed in his baggage. Because it knows what is inside the baggage, the passenger can tell that he packed everything he needs, or that he forgot something that was on his list. In the context of arriving at Schiphol, this would
mean that the baggage can tell the passenger what his status is during the arrival process. Due to its connection with the baggage via a mobile device application, the passenger can also communicate with his baggage. That might sound weird, but what if it would suit the passenger if his baggage would go directly to his hotel? He could communicate this to the airport, but if he could make his baggage tell its environment where it needs to go, then the information is always where it should be. The baggage can communicate this to any involved party in this process. Because the passenger is in direct communication with his baggage, he does not only feel familiar with this communication, it is also a trusted connection. Which will help passengers to feel at peace with the information. The baggage is after all ‘on his side’ and will make sure it will do what is best for the passenger.

The passenger is able to feel more at peace during his arrival, with the information he has from his baggage and knowing this is the right information. In this future oriented idea, the reclaim area is not the only option to reclaim your baggage. Being able to tell your baggage where it needs to go, opens up the opportunity to reclaim your baggage wherever it is most convenient in that situation. A change in your plans? Just tell your baggage that you want to reclaim in a different stage of your journey. Because the passenger can adjust the process to his journey, he is expected to feel that the reclaim process is personal.

Enabling to reclaim in a different stage of the passenger’s journey has the effect that this spreads the baggage and passengers over different locations, instead of all passengers around a baggage belt. This allows for a more personal waiting and reclaim space in the reclaim area. Again the connection between passenger and his baggage is enough for the baggage to arrive at the location of the passenger. The passenger does not have to worry about the process, but can focus on his own wellbeing and the remainder of his journey. In figure 50, the passenger chose to wait for his baggage, while he looks ahead to the remainder of his journey. This allows him to be at peace with waiting.

**ORGANIZE JOURNEY**

During the arrival journey passengers experience concerns regarding to uncertainties about where to go, what to do and what to expect ahead. This idea
is inspired by those needs. In figure 51 a selection of screenshots is shown that are part of an application. This application allows passengers to organize their arrival journey on the way. There are three parts, allowing passengers to organize their time ahead of arriving in the reclaim hall, their journey to the reclaim hall and preparing for the rest of their journey after baggage reclaim.

After a flight passengers could make their way straight to the reclaim hall, but passengers might have needs that they would like to fulfill as soon as possible. One can think of refreshing after disembarking, finding a snacks & drinks shop, or a pharmacy. Passengers can select the facilities that fit their needs, and then choose to find it on route to the reclaim hall or nearby the passenger’s current location.

The second part is for passengers to be guided to the reclaim hall. And receiving confirmation when arriving at the right location. This takes away the uncertainty of wondering whether you are moving in the right direction and whether you arrived at the right location.

After arriving in the reclaim hall, passengers can use the time to prepare for anything they still need to arrange before leaving Schiphol. This can relate to enjoying food and/or beverages, but also to gathering information and booking of train and tourist matters. Allowing the passengers to look ahead past the reclaim hall and perform steps they would have to look out for when exiting the reclaim hall, will give them confidence and feel more at peace. Making sure passengers know where they
have to go during their stay at Schiphol, gives passengers the feeling they are welcome and expected, and that they are supported to find their way.

Alternative
An alternative idea that is in the same line, is to allow passengers to think about their needs and allow Schiphol to prepare their request (see figure 52 for a screenshot showing the different categories). At arrival in the reclaim hall, passengers are able to collect their ‘order’ from a kiosk or counter. During their time in the reclaim hall they can enjoy the drink/ snack they ordered or look at the information that was prepared for them. This helps passengers to feel prepared for their next steps and feel ‘familiar’ with what is coming up, but it also feel ‘being expected’ as their arrival was prepared.

CONCLUSION
Based on the discussed ideas, a few insights can be drawn. In order to make passengers feel valued and at peace, they should experience a ‘familiar and being expected’ interaction. This can be achieved by changing the layout of the reclaim hall and make sure that passengers arrive in a welcoming environment, as with the waiting deck. Where passengers are give the impression that waiting does not have to mean, standing at the belt. This could be further improved by including facilities that are in line with their needs.

The walk-by reclaim along the reclaim belt provided passengers with a gap to the belt, but in this setup would not work. The passengers are not aware of the benefit for them and are used to standing around the belt, especially when there is plenty of space around the belt. This more personal reclaim area is developed in the next idea where passengers wait for their baggage to come to them. They are not needed to focus on the process and spot their own baggage out of a whole lot.

A second part of this idea was to introduce a connection between passenger and his baggage and allow them to adjust their reclaim process. This can be used to create a familiar interaction between passenger and his baggage, but also to make the reclaim process feel fitting to the passengers journey.

Finally, the ability to prepare for your journey through and after Schiphol is considered to have a big effect on the passenger’s perception of feeling welcome and cared for.
CONCEPTUALIZATION

The concept described in this chapter is formed for the future context, where technologies like connectivity are further developed and passenger’s devices are used more during travel. Therefore, first the concept that will fit in that future context is described, before a look into which steps in between will evoke a similar experience, is provided.
After the ideation phase it was found that the layout of the reclaim area, the process and the information are the key ingredients to an improved reclaim experience. The ideas were evaluated after this phase against the design guidelines that were formed earlier on. Each idea was evaluated and scored 1-5 on each guideline. The results can be found in Appendix G. The smart personal reclaim idea scores highest on the guidelines, but there are improvement areas for this idea. Each idea has its own strengths and together could form the concept that will create the envisioned experience. On some guidelines another idea scores just as well or only slightly less, but that idea focuses on another area of the passenger journey. Therefore that can work together. For instance, the smart personal reclaim focuses on information on their baggage and the process, where the organize journey idea focuses on the remaining journey.

The product qualities (welcoming, personal, caring, and thoughtful) together make the ‘being expected and familiar’ interaction possible. These qualities mean that Schiphol is aware of you and wants to make a difference for your experience. Schiphol takes care of the obligatory parts of the process, that do not add to your experience, while they also identify possibilities that do add to your experience. Schiphol takes the passenger’s journey and situation into account during the process, creating the best possible journey for the passenger. The reclaim area enables to keep hold of the good mood that passengers arrive in. While for passengers that are experiencing struggle during their journey, an effort is made to make a difference.

The concept direction is formulated as following: Baggage reclaim fitting to the passenger, taking into account his journey and his remaining steps in his journey. Making him feel valued and at peace due to taking away steps that do not add to his wellbeing and providing service that is fitting and relevant to his journey.

The first step to feeling valued and at peace and critical if passengers are to enjoy anything that is introduced to improve their experience, one has to take care of these responsibilities and procedures where they are currently not feeling the support or shared responsibility from Schiphol or the airline. Examples of what passengers have to focus on now, are:

- Looking for the right information on where to go
- Looking out for the right reclaim belt
- Looking out for their baggage
- Acting when something has or is expected to have gone wrong
- Finding out what to do and where to go after baggage reclaim

In order to be experienced as personal, caring, and thoughtful, the service during arrival is based on and fitting to the passenger’s journey. The following matters can be considered to base the service on:

- Their baggage arrival time
- Flight duration
- Time of arrival
- Arriving or returning passenger
- Steps to take after reclaim
- Their destination

These matters can be taken into consideration when service is provided. In figure 53, it can be seen that the service can be personalized to the passenger on communication,
Taking the passenger’s journey into account. Their journey before and after baggage reclaim (seen on the right and left) affects the communication, physical, procedural, and human interaction with the passenger.

Physical, procedural, and human interactions. Subliminal is the fifth interaction category, but the experience of the ambience is based on how the other categories are carried out and influenced by the architecture and interior of the space. These interactions categories are translated into the following service:

- Information on relevant possibilities for their journey
- Offer consumption that passengers will enjoy
- Adjust reclaim process to facilitate passenger’s journey
- Pro-active airport staff
As discussed in the ideation chapter, when passengers arrive in the reclaim area, they should see the elements that make them feel familiar. One can say that the current setup with baggage belts in the middle of space is what passengers expect and are used to, but that is not considered to be a positive familiar feeling. So in order to make passengers feel familiar when arriving in the reclaim area, there should be a natural attraction to the elements that set the mood and expectations of the reclaim area. This mood should be in line with their needs and concerns. So that would mean that the qualities of welcoming, personal, caring, and thoughtful should be translated into the layout. On the next page a top view image of the layout is shown in figure 54. In this layout the passenger arrive at the blue arrows, and the first things he will notice is the waiting area with a coffee place and the airport information desk. These three elements are important to create the welcoming and caring feel that passengers experience. Therefore the coffee place is position opposite the entrance of the reclaim area (1). Just like the airport information desk, which is positioned on the corner between the waiting area (2) and the baggage reclaim area (3). Airport information is therefore visible and accessible for entering passengers, as for passengers in the baggage reclaim area. The contrasting shape of the airport information makes him more noticable.

There is a distinction between passengers that reclaim their baggage and passengers that only pass through. These passengers are guided through to the left part of the area, where only passengers without baggage pass through.

In the waiting area, the seatings are located along the outside, while in the middle standing tables are located. The waiting area is provided with (interactive) information screen, where passengers can gain information regarding possibilities at Schiphol, transport from Schiphol, and useful (tourist) information for their trip.

Passengers move into the reclaim area, once they are notified of the availability of their baggage. This provides the opportunity to control the amount of passengers in the baggage reclaim area. In this area, individual reclaim locations (blue marking) are positioned along the edges of the space. Passengers choose an open location and their baggage comes out after they scanned their device. More on the process will be discussed in the next part.

This layout allows for a natural flow of passengers. Passengers are welcomed in the waiting area, where they wait without the processing sounds of belts and baggage dropping down. If passengers are travelling without baggage, they can use the route to the exit without having to move through the passengers waiting or reclaiming their baggage. Passengers wait with everything they need near by; coffee, information and airport information desk. They do not have to explore the area in order to find what they need. Having everything they need for every scenario near by, should help passengers feel familiar with the area. They do not have to wonder where they should go if anything happens.

A key first step identified earlier that would make passengers feel valued and at peace is to make sure they do not have to focus on the process. One does not want passengers to focus on processes that do not add to their emotional wellbeing. The layout is allowing passengers to know where to go in the reclaim area, and the personal reclaim locations prevent passengers from worrying about whether they are at the right reclaim belt and prevent them from having to look out for their own baggage. In
Figure 54  Top view from reclaim area
the case that something has gone wrong, like when their baggage has stayed behind or it will take long before it will arrive, the passenger is notified of this. Once the passengers feels that if something is wrong he will be notified of it, he will worry less about what might have gone wrong. A simple message that their baggage has been registered will take away the first worry about whether it was even on the plane. In the case their baggage did stay behind, a message of this unfortunate situation accompanied with how it will be solved will prevent that passengers wait for their baggage that is will not be coming.

In the situation that baggage will take longer than considered reasonable, at the moment passenger experience will drop after more than 10 minutes waiting, their reclaim process is offered to be adjusted. Will a passenger have to wait longer for his baggage, he is offered the choice of a free cup of coffee, or reclaim their baggage on an alternative location. This choice makes passengers feel valued, while it also allows passengers to accept and feel at peace with their situation. They will feel heard.

The option to have a coffee or change the location of reclaiming their baggage is available in a normal situation as well, but against a fee. Alternative reclaim locations can be Plaza or parking, but in the future any location should
be possible against a fee. Locations on Schiphol will be lower in price, but the service can be extended to public location like train stations outside Schiphol or Hotels. Reclaim on a personal address will be possible against the highest fee. Whatever the passenger will decide to do, it will be his choice and feel fitting to his journey.

The process in the reclaim area is designed to allow passengers to feel that their baggage is coming to them instead of them looking for their baggage. As described earlier, the passenger receives a notification on his device that his baggage is available. The passenger moves to the baggage reclaim area and chooses an open reclaim location (see figure 55), where he scans his device. Now the baggage knows where the passenger wants to reclaim and arrives at the passenger.

**INFORMATION**
Providing information is the third part that is important when one wants to make passengers feel valued and at peace. For passengers, their journey is considered to end at their destination, so it does not end at Schiphol. The information that passengers will help is related to the reclaim of their baggage, but also on what to do and where to go on Schiphol, how to go from Schiphol to their destination, and (tourist) information related to their destination.

Having to consult different sources for information that might not all tell passengers the same story does not add to feeling at peace. Their complete journey is formed by different steps, but that does not mean they can be seen seperately, they depend on each other after all. For instance, which train to take depends on when the passenger will clear customs. Therefore, this information should be provided in one overview. Of course, this requires a massive cooperation between all the involved parties that could be involved in the journey. But it could also be an opportunity for parties that could benefit from each other, since they are dealing with the same passenger. Forming a joint platform for all major European airports, transport companies, and tourist offices will be a challenge, but it is something that should be pursued.

This platform would be a third party application, which Schiphol could be involved in to develop. In this application, the passenger has an overview of the different steps in his journey. For each step, he has access to more detailed information. During arrival at Schiphol, he will have insight into his arrival journey and what steps he will face on his way out. While the passenger has the possibility to look into his next steps and prepare for them. This means he can see his options for his transport from the airport and book the ticket that he needs. It allows the passenger to organize his next step in his journey when he has to wait, or prepare his complete journey beforehand.

One of the most important pieces of information passengers will receive, is information about their baggage. As mentioned before, a confirmation of their baggage and an expected arrival time is beneficial to the passengers peace of mind. But in the previous chapter, the idea of smart personal reclaim was explained. The connection between the passenger using his device and his baggage, allows to alter the baggage reclaim process using the application. That means when the passenger’s situation changes, the passenger can communicate to his baggage what the changes are. For instance, when the passenger decides on his way that he wants to leave immediately and reclaim his baggage from the parking area, these changes are communicated to his baggage. Schiphol or anyinvolved party would be able to pick up this information from his baggage, to make sure it goes where it needs to go.
After giving an impression on what the reclaim area layout will look like, the Travel app was described, but the images (figure 56-65) on the following pages will help to show how that is translated into a proposed app design. Next to each screen, an explanation of the choices for the design is provided.

**Welcome Jeff!**

You have arrived at Amsterdam Airport Schiphol.

Your baggage will be collected from your flight and transported to the reclaim area as soon as possible.

Your baggage is expected to become available for reclaim in 12-15 minutes.

You will be notified when your baggage is available. At that moment you can choose an open reclaim spot in the reclaim area and scan your device to collect your baggage.
At arrival in the reclaim area, a notification on your baggage taking longer than was aimed for.

A choice is offered to have a free coffee while you wait for your baggage, or reclaim in Schiphol Plaza while you enjoy the possibilities there.

**Figure 58**  
**Delayed baggage**

Since your baggage is unfortunately taking longer to arrive than what we were aiming for, you are offered a free coffee from the coffee place in the reclaim area while you wait, or you can choose to enjoy the shops and restaurants of Schiphol Plaza and reclaim your baggage in the main foyer.

A free coffee please

Show me where to reclaim in the main foyer

Your progress

Your coffee is confirmed with the coffee place in the reclaim area, you can collect it there.

Enjoy!

**Figure 59**  
**Confirmation of coffee being prepared for you**
Overview of the different transportation modes from Schiphol.

Recommended train to your location, based on your baggage arrival time.

You have already purchased a 3-day-Amsterdam travel ticket.

Purchased train ticket included, option to view details.

After arriving with a delay at the airport, you are offered to leave straight away to your appointment and have your baggage transported to an alternative location.

Due to the delay of your flight, you arrived 45 minutes later than you were expecting. In order to make it to your meeting in Rotterdam, we can arrange that your baggage will be transported directly to a location in Rotterdam.

Yes please
Select a location

No thanks

Figure 60  Overview of complete journey

Figure 61  Delayed flight
Please select a location from the suggestions below, or choose an alternative address.

Select one of the suggested locations, based on your bookings and agenda, or enter an alternative address.

**Figure 62** Select alternative reclaim location

- Rotterdam central train station
- Harbour life Rotterdam hotel
- Elements tech office
- Choose an alternative address

**Figure 63** Welcome in the reclaim area

At arrival in the reclaim area, the passenger is welcomed. Care for the passenger is showed by notifying him of the importance of drinking water after flying.

Welcome in the reclaim area. There are plenty of water fountains around. Drinking water is important to minimize the effect of air travel on your body.

Please feel free to fill your bottle with our fresh water.

Enjoy!
Your baggage is also still 10 min away, that’s enough time for you to have your cappuccino and take a moment to relax and enjoy being back, before you continue your journey.

Shall we start preparing your cappuccino?

- Yes please! Order now
- No thanks I’ll skip this time

Your baggage is available for reclaim, please choose an open reclaim location nearby and use your device to collect your baggage.

If you need help, please use the help button on the scanner and someone will come to help you.
REALIZATION

The concept is based on three focus areas; the layout, process and information. To make passengers feel valued and at peace, passengers arrive in the reclaim area where they feel that everything is what they need, receive baggage updates and alter the reclaim process, and be able to look ahead to their complete journey.

RECLAIM AREA

The reclaim area layout and introduced facilities affect whether passengers feel that they have everything they need. The possibility to introduce facilities like an airport information and a coffee place is not dependent on future developments. The location as proposed might not be possible in the current layout, but could be realized on a different location. The success of a coffee place is expected to be dependent on other elements of the concept, this is discussed in the development map section.

RECLAIM PROCESS

The realization of ‘receiving baggage updates and altering the reclaim process’ depends on a number of things that need to be introduced. Below in figure 66, an image of the system that will allow the concept to be realized is visualized. It involves the passenger, his baggage and Schiphol. The connecting lines illustrates the interaction between them. The symbols around it show what is required to establish the interaction.

The description of the concept showed that there is a connection between the passenger and his baggage needed to provide the passenger with baggage updates and the opportunity to change the reclaim location. For this interaction, a mobile device application is needed and the baggage has to become ‘smart’. Smart, meaning ‘being able to connect and communicate to its environment’. The interaction is possible when both the passenger’s device as his baggage are connected to its environment. Which allows the passenger to control his baggage.

As said, the environment (Schiphol) has to enable the connection with the baggage. The connection with the passenger is already there, but the connection with the baggage will allow Schiphol and the baggage to determine the status and arrival time.

Finally, the interaction between the passenger and Schiphol is to communicate the right information to the passenger, but also to provide the relevant possibilities and facilities in the reclaim area.

COMPLETE JOURNEY

The third part of achieving the right experience is to ‘enable passengers to look ahead to their complete journey’. This includes to connect the steps in the journey in one overview, show what they need to get to their destination and taking their journey into account when offering service.

Connecting the different steps in one overview and form one journey gives insight into the arrival time at the final
destination, and provides insight into how each step is based on the others. In order to provide this overview for passengers in Europe, all (major) European airports, airlines and transport parties have to be involved in this Travel app. The first step would be to start with a small number of airports and just the railway company, in order to provide passengers with a more complete journey to their destination. Later on, airlines can be included to provide their passengers information about the flight and a platform to request something for during the flight. To complete the Travel app, another step in the journey can be introduced, the destination. Here, information about the destination is provided and passengers are able to look through options for sightseeing and book them in advance. A major project in itself and possibly hard to realize, but it would benefit the passenger and possibly the involved parties as well. Since the passenger will have a better overview of their journey, which will help to determine what they will want or need during each step. Therefore this is commercially interesting for all parties involved. Each party will also have more insight into how to prepare for passengers as they (can) prepare their journey ahead. Schiphol would in this case know more about the number of passengers arriving and how to welcome them. When passengers decide beforehand where to reclaim their baggage, Schiphol can make a better prediction of the upcoming situation and be more pro-active in their service.
In the introduction of this chapter, it was announced that the concept would be explained for the future context and the steps in between to get there would be discussed afterwards. The aim is now to show what steps to take that will contribute to the long term envisioned experience in the short and mid term as well. In the roadmap of figure 67, the three focus areas are shown. For each area, the steps to the concept are placed in the roadmap.

**SHORT TERM**
The first step to the proposed reclaim area are to introduce an airport information desk on a central and visible
position in the reclaim area. The second that can also be taken immediately is to introduce a coffee service, where passengers can buy coffee during their time in the reclaim area. For the moment this would be a mobile coffee service, a permanent coffee place would be even better for the welcoming ambience, but that would require passengers to let go of the process in order to get coffee. It is expected that passengers will only be able to do that once they have more personal information on their baggage arrival. That is why the coffee place is introduced just after it is expected that personal baggage update will start to be provided. Once passengers are used to getting updates, they will allow themselves to focus less on the process and move away from it, to be open to a coffee place. The coffee service can be used to offer free coffee to passengers that experience delayed baggage arrival. The personal baggage updates allow to provide the passenger with a confirmation of the baggage arrival at Schiphol and the announced baggage arrival in the reclaim area. On the short term this is expected to come from the airline. Later on when baggage will become more advanced and can connect to the passenger, the Travel app can provide this information. The last short term introduction is a range of interactive information screens in the reclaim area. Here, passengers can look for the information that is relevant to their journey. An interactive information screen is more inviting to the passenger than normal screens showing adds and information. And because it is interactive it will feel like passengers can indicate the information they want, and therefore feel more personal.

**MID TERM**

The reclaim area is expected not to change until the proposed reclaim area can be realized with personal reclaim locations. For the ‘reclaim process’ and ‘complete journey’ are developments possible. As mentioned above, The Travel app is introduced in the mid term, allowing to provide personal baggage updates and later on enable to adjust the reclaim process, as the baggage will be able to hold information on the desired reclaim location. The connection between passenger and his baggage, will provide insight into the expected arrival time of his baggage, as well as an insight into the time that the passenger has available and the possibilities that fit that time.

As the introduction of alternative reclaim locations at Schiphol is considered a good option to offer passengers, also to spread passengers and baggage. An alternative reclaim location is considered to add a great deal to feeling like the reclaim process is more fitting to the passenger’s journey. To realize this will take a lot of logistical developments at Schiphol, therefore the in-between step of opening up the reclaim hall to return when your baggage has arrived will be introduced earlier on. Allowing passengers to return and spend their time in Schiphol Plaza will already add to feeling less like the process is controlling the passenger. But it is not considered to be as affective as reclaim on an alternative location, as the passenger will feel like the process is adjusting to the passenger and the reclaim process is taking place on a moment that is convenient to the passenger. While the journey will feel more seamless and flowing when passengers will reclaim their baggage in a step further down their journey, instead of having to return to the reclaim area.

With a delayed baggage arrival, the passenger will initially be offered the choice between free coffee or return to reclaim later, while later on the option to reclaim at an alternative location at Schiphol will be offered. Alternative reclaim locations outside Schiphol will become available even after that, opening up the opportunity to offer as a paid service to passengers.
The development of the Travel app will start with first the airports and railway companies, followed by the airlines, and later on the destinations. This will increase the experienced feeling of being able to look ahead to their next steps, which was initially enabled with the interactive information screens.

LONG TERM
The proposed concept takes form with the introduction of the personal baggage reclaim area with the individual reclaim locations, split from the waiting area (with coffee place and airport information). Together with the alternative reclaim locations in- and outside Schiphol, and the Travel app, passengers are now able to experience reclaiming baggage without having to focus on the process, a process that fits their journey and feel prepared for their complete journey.
VALIDATION

This concept is designed in a way that it evokes a certain experience with passengers. This experience was formulated earlier in a statement. Before the concept is tested, a look back at the statement will be done to check whether it is expected that it will indeed evoke the right experience. Before it is discussed how it realizes the statement, the concept is discussed on the interaction categories; physical, communication, procedural, human, and subliminal.

**Physical**
Waiting area is positioned in front of a coffee place, where passengers can enjoy a coffee and/ or snack. The area is arranged with different waiting possibilities in seats and standing tables. Because the waiting area is split from the baggage reclaim area, passengers are not waiting with the sounds of baggage belts running and baggage dropping on the belt. Arriving at a waiting area that matches their needs shows that passengers were expected.

**Communication**
Information is provided that takes away the concerns of passengers. Allowing them to focus on other areas than the process. Information also relevant and fitting to passenger’s journey. Allowing them to look ahead in their journey.

**Procedural**
The process is flexible and customizable to passenger’s remaining journey. Instead of the passenger adjusting to the process, the process is adjustable to the passenger. Passenger is not required to focus on the process, which is done for them. Personal reclaim locations enable baggage coming to passenger, instead of passenger looking out for his baggage. Offering a process that does not require their focus and attention, and enabling them to adjust the process to their personal situation and needs, will add to passengers feeling valued.

**Human**
Located on visible place and available to passengers waiting and reclaiming. Position of airport information shows involvement and welcoming, they are there to support. Passengers will feel expected when they see airport information staff waiting to help them and also feel familiar, because they know where to go when they have questions or need help.

**Subliminal**
The reclaim area is designed for passengers to feel a sense of arrival and service. The waiting area is separated from the process area. Passengers arrive facing a waiting area with a coffee place, an airport information and their personal information at hand. Familiarity can be translated into an interior where passengers feel they arrived in the Netherlands, while adding greenery and light can create a peaceful waiting area.

**VALUED AND AT PEACE**
The statement was formulated as:
I want passengers to experience feeling valued and at peace when reclaiming their baggage.

The concept is considered to evoke this experience because it gives passengers the feeling that their situation is taken into account when they are arriving to reclaim their baggage. Schiphol provides the opportunity to adjust the reclaim process to the passenger’s journey. Besides that the process is adjustable to their journey, passengers feel valued and at peace due to the process related concerns they no longer have to focus on. The information they are provided with about their baggage,
but also about their next steps, in combination with the personal baggage reclaim locations, evokes a valued and at peace experience. Finally, the interactions are giving the passenger the feeling that Schiphol tries to relate to the passenger and connects with his situation, this shows their involvement and responsibility for your journey.
TEST

TEST GOAL
Evoke the future passenger journey with participants and let them feel and understand what that would mean for them. The goal of the test is to establish whether the proposed concept will realize its goal of passengers feeling ‘valued and at peace’ during the reclaim process.

Will the proposed concept evoke the formulated statement of ‘feeling valued and at peace’ with passengers?

METHOD
Due to the form of the concept, which is a proposed passenger journey for the future, the method should be based on that. Therefore the method should enable passengers to envision the future passenger journey and experience how they would feel about that. A way to demonstrate a future passenger journey is to use video visualization. This method ‘enables you to visualize future experiences or scenarios that show how a new design concept could potentially be used in or affect people’s lives” (Van Boeijen et al, 2013). Because the concept is part of a future context, a video allows to stage the envisioned journey through this future context. It is also a way to demonstrate the experience, interactions and emotions it evokes with passengers, which allows participants to recognize the situation and identify the added value and benefits it will have for them. It is a good way of showing how it could be if things were going a bit different. Using characters in the video enables participants to connect with them and relate to their journey.

The method of video visualization is considered suitable for showing the concept, but to evaluate the effect of the concept, participants need to be able to give feedback on how they perceive the concept. Therefore, the participants will be asked to answer questions that will establish whether the effect of the concept is how it is envisioned with the statement.
TEST SETUP

Performing the test with a video, followed by questions, allows to ask people in person, but also to open a digital version of it. Due to the limitations in time two channels are used to test the concept, asking passengers that just went through the reclaim process and asking people from my personal network. The risk of asking people from my personal network, is that they might be more positive because I asked them to participate. For this reason, the digital version of the test was made completely anonymous, with no questions asking for any personal information.

PARTICIPANTS
The test was translated into a digital questionnaire where the video was shown first, after which participants are asked to answer the same questions as the participants in person were asked. The digital questionnaire was shared within my personal network on social media. The test performed in person was performed outside the reclaim hall at Arrivals 1. Passengers that arrived and were waiting at Arrivals 1 were asked to participate. For this test, an afternoon and part of the evening was used to gain as much participants as possible.

VIDEO
As already mentioned, a video of the future passenger journey was used to demonstrate the concept in the passenger journey of three characters. Each character is experiencing a different arrival journey and different elements of the concept are demonstrated in the video. On pages 102-105, the screenshots from the video that were used during the test are shown in figures 68-74. The complete video scenario can be found in Appendix H.

QUESTIONS
The questions asked to participants was the same for both channels. The test in person was started by approaching passengers seen waiting at Arrival 1, and introducing myself and what the purpose is of my approach. It is shortly explained that this is part of my final project and that a vision of the future of baggage reclaim is demonstrated in a video. Participants are then asked to look at the video and afterwards fill in a questionnaire. Before the questionnaire is handed over, the participant is asked for his first impression. The questionnaire consists of four main questions. The full questionnaire is found in Appendix I.

1. From what I have seen in the video, Schiphol wants
2. *I think reclaiming baggage as shown in the video is...* (followed by the list of qualities that was used in the first questionnaire)

3. *Below images from the video are shown. Please indicate which emotion would describe best how that situation would make you feel.* (followed by seven screenshots and a list of negative and positive emotions)

4. *I agree ...* (followed by four statements and per statement the choice from strongly disagree to strongly agree)

The first question asks passengers to think about why Schiphol would want to introduce this concept. The options provided show possible motives relating to efficiency, enjoyment, welcome, personalize, care, and use of service facilities. The second question allows to compare the concept with the current situation. The same question and the same qualities were used with the first questionnaire. For the third question, participants are asked to relate to the different situations and select an emotion that they would expect to experience. The emotions were selected based on applicability in the context of baggage reclaim, taking into account the statement of evoking a valued and at peace feeling. Both positive as negative emotions are selected and are opposites of each other. A neutral emotion is also added as an option as well as the possibility to fill in an other emotion. The situations proposed are selected from the video and illustrate the possibilities of the concept. Initially, eight situations were chosen, but during the in-person test, the last situation (a general overview) was not adding insight because it was not understood by the participants. This situation will be taken out of the results, since it was not asked in the digital questionnaire. The last question is asking the participant to consider four statements and take a stand in how they feel about this. The statements are formed to check whether participants agree or disagree with the principles the concept is using (service based on their journey makes me feel valued, and service to compensate inconvenience is fair), and their opinion relating to assumptions made when forming the concept (passengers do not mind to pay for service, and passengers are willing to share personal details when the benefit is noticeable).
PARTICIPANTS
The test resulted in 39 participants in total. Of which, 25 participants entered on the digital questionnaire and 14 participants were found to participate at Arrivals 1, Schiphol. In general, it took participant 13 minutes to watch the video and complete the questionnaire.

From the responses on the post on social media, the participants on the digital questionnaire constituted of mainly people of the age group 25-40, with a few participants from the age group of 41-65 and >65. This was not asked in the questionnaire, and purely an estimation based on the responses on the post. From the participants that notified that they had participated, it seems to be predominantly Dutch residents. The in-person test was performed with mainly 25-40 year old participants and 41-65 year old participants. These participants were mainly European (9), while also South american (2), Asian (1) and Dutch (2) participants were found.

RESULTS
The results from the in-person and digital questionnaire were collected in one overview. Below the results for each question will be discussed and accompanied with visualizations.

From what i have seen in the video, Schiphol wants to ...
The first question was answered by all participants, but some decided to choose multiple answers. The digital questionnaire did not allow this but the paper version obviously did, even though there was a statement to choose only one answer. For the participants that chose multiple answers, all answers were used.

The results seen in figure 75 below, show that there are four options that are fairly equally chosen, but one answer dominated quite clearly. Based on this, the message of the concept is that Schiphol would want to make sure passengers feel cared for during arrival. 47% of the participants felt this way.

A nice quote from one of the participants: "Coming home after vacation is kinda sad. Waiting and not knowing where your luggage is or how long you have to wait for it to arrive, can end the vacation vibe pretty quickly. Keeping people informed and “care” for them during this time is great!"

![Figure 74](image)
Choose location and scan device

![Figure 75](image)
Perceived thought behind the concept

<table>
<thead>
<tr>
<th>Thought Behind Concept</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure passengers can leave as soon as possible</td>
<td>3</td>
</tr>
<tr>
<td>Make sure passengers enjoy their time they have to spend at the airport</td>
<td>5</td>
</tr>
<tr>
<td>Make sure passengers feel welcome when arriving at Schiphol</td>
<td>5</td>
</tr>
<tr>
<td>Make sure passengers are treated as individuals</td>
<td>21</td>
</tr>
<tr>
<td>Make sure passengers feel cared for during arrival</td>
<td>6</td>
</tr>
<tr>
<td>Make sure passengers make use of the services at Schiphol</td>
<td>5</td>
</tr>
</tbody>
</table>
I think reclaiming baggage as shown in the video is...

This question was asked in the previous questionnaire and allow us to make a small comparison. Below the results from the questionnaire from the video is shown, while on the next page, the questionnaire based on the current baggage reclaim process is shown. Again the paper questionnaire allowed to partly fill in the question. Therefore for the results from the video questionnaire the non-answered are regarded as ‘not applicable’ (N.A.), as participant usually leave it open if they are not sure what to do with it, because it does not fit with the context or question. The results from both questions show that the video was received positively. It is immediately clear that for each quality, a more positive result is achieved. The most important qualities to look at are; fair, flexible, personal, and respectful. Although clear and controllable can also be considered relevant. These qualities relate the most to the envisioned experience, feeling valued and at peace. On the right a comparison of the most relevant qualities is made. For each quality the average score (1-5) is calculated for the current reclaim process and for the proposed concept that was shown in the video. The

Figure 76  Perception of qualities in the proposed concept, shown in the video
I experience the baggage reclaim process as ...

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>Concept</th>
<th>+/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear</td>
<td>3.39</td>
<td>4.03</td>
<td>+ 0.64</td>
</tr>
<tr>
<td>Controllable</td>
<td>2.33</td>
<td>3.53</td>
<td>+ 1.20</td>
</tr>
<tr>
<td>Fair</td>
<td>2.60</td>
<td>4.03</td>
<td>+ 1.43</td>
</tr>
<tr>
<td>Flexible</td>
<td>1.88</td>
<td>4.08</td>
<td>+ 2.20</td>
</tr>
<tr>
<td>Personal</td>
<td>1.25</td>
<td>4.00</td>
<td>+ 2.75</td>
</tr>
<tr>
<td>Respectful</td>
<td>2.46</td>
<td>4.21</td>
<td>+ 1.75</td>
</tr>
</tbody>
</table>

The last column shows the difference between the current and concept score. The difference is significant and in some cases even more than doubled. This result is just an indication of the perception of the passenger. Due to the setup of the test and the limited amount of participants, one can not treat these results as conclusive, but more as an positive indication.

Figure 77: Perception of qualities in the current baggage reclaim process
Please indicate which emotion would describe best how that situation would make you feel.
For each situation, participants expressed how they would feel in that situation. On this and the next page the results are shown in figures 78-84.

**Baggage notification**
From the participants, 77% connects a positive emotion to receiving an update on their personal baggage. While 13% will experience feeling annoyed, worried, or confused. During the in-person test, some expressed that the actual time frame that is communicated (12-15 min) causes these emotions.

“...It is a lot of messages, and involving the device.. I will get ten messages. “

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident</td>
<td>21%</td>
</tr>
<tr>
<td>Relieved</td>
<td>21%</td>
</tr>
<tr>
<td>Interested</td>
<td>16%</td>
</tr>
<tr>
<td>Surprised</td>
<td>8%</td>
</tr>
<tr>
<td>Valued</td>
<td>11%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
</tr>
<tr>
<td>Confused</td>
<td>3%</td>
</tr>
<tr>
<td>Worried</td>
<td>5%</td>
</tr>
<tr>
<td>Annoyed</td>
<td>2%</td>
</tr>
<tr>
<td>Rejected</td>
<td>0%</td>
</tr>
<tr>
<td>Indifferent</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Coffee or reclaim in Plaza?**
In the case of the passenger’s baggage experiencing delay, one out of three (33%) would feel valued when offered free coffee or reclaim in Plaza. Some participants expect to feel worried or confused. Based on the additional comments that participants left, that has to do with the cause of the delay, how long it will be delayed and whether their baggage will come at all.

“...Worried that it may not arrive at all. But of course valued that you’re offered a free coffee. “

“Good ideas. I would not want to have coffee and then come back to pick up my bags.. I would just wait.. (thinking he had to get his coffee from Plaza)
Complete journey overview
Offering passengers an overview of their complete journey and the possibility to organize their journey, seems to be appreciated. Only 3% of the participants would experience confusion, while 92% would experience interested, confident, valued, surprised, or relieved.

“ The App would be really great, because we had no idea where to go for what and where to be! There even seemed to be two exits.

“ Would be good for tourists... I just want my suitcase quick;)

Offer baggage transport
When arriving at Schiphol with a delayed flight, passengers receive an offer to transport their baggage to a convenient location. This offer is mainly experienced as relieving (38%) and feeling valued (23%). One out of ten would feel worried. Additional comments that were made, were that they would wonder who would pay for this. Also, a participant mentioned that he or she would be annoyed, because something from their baggage might be needed for their next step.

“ Too intrusive. General message mentioning the delay and asking for location will [suffice]

“ I really like the possibility to split my baggage and myself if that suits my journey.

Figure 80  Expected emotions
Figure 81  Expected emotions
Offer drink
Notify passengers of the presence of water fountains and show there is an opportunity to have the cappuccino you would normally get, is evoking mixed emotions. A decent percentage of the respondents would feel valued, 33%. And one out of five would be interested. But also 15% of the participants would be annoyed with such a message. From the comments participant made, it appears that this is a step too far in the direction of commercial messages. Participants do not want to be sold anything.

"Too commercial. To know that I have a 10 minute wait is good. Immediate focus on commerce reduces my happiness with the message."

Baggage available
One of the most popular situations that was tested is the notification that the passenger’s baggage is available for reclaim. For this situation, 0% of the participants expects to experience negative emotions. Again, the emotions of relieved(40%) and valued(20%) are expected the most.

"Yes. This is pretty cool, then you know where you stand."
Scan device with personal reclaim location
The last situation showed the passenger request her baggage from a personal reclaim location, by scanning her device. Again, predominantly positive emotions are expected, with valued, confident and interested as the most chosen emotions. Noticeable is that almost one out of five, feels neutral towards this situation. It seems that participants are enthusiastic about the concept, but are not sure how this would work in reality.

“Good if it works. If this creates another waiting line I will be annoyed.”

“Great concept. Just really unsure of this is really doable.”

“Excited!”

Figure 84  Expected emotions
I agree ...

The fourth and last question was asked to check the passengers standpoint on the principles of the concept and the assumptions that were made. In figure 85 below the results of the four statements are shown.

The top two statements were made to check whether passengers would indeed be willing to share their journey details with Schiphol and whether they would expect to pay for offered service. It was expected that passengers would not mind to share their journey with Schiphol in order to receive fitting service. If the benefit is noticeable for passengers, they will accept it. The results confirm this assumption. It was expected that participants would be ok with paying for a service. The results show that the majority of the participants expect offered service to be free. This could be related to their concern and disgust for commercially intended messages.

Both principles that this concept is build on, service based on the passengers journey will make passengers feel valued and compensating for inconvenience is considered fair, are confirmed with the results from the test.

![I agree ...](image)

**Figure 85** Results from ‘I agree..’ with the following statements
CONCLUSION

Although the performed test of the concept has limitations in the setup and amount of participants found, it has already provided insights into how the concept will possibly affect the passengers. It is positive that participants experienced the concept in the passenger journey video as an attempt to make passengers feel cared for. Also, when the proposed concept is compared with the current situation, the improvements that are made on the qualities that relate to the statement are significant.

The evaluation of the different situations and the service provided is also received with positive emotions, that relate to feeling valued and at peace. The negative emotions that were experienced seemed to be due to worry about whether it will work and annoyance with messages that are too direct. Especially when passengers will experience messages as commercially intended messages. Instead of directing them into ordering a cappuccino that they might enjoy, it will be experienced more positive to provide insight into what the possibilities are in the time they are there. It might be less personal, but also be more appreciated than when it feels forced upon them. Besides the commercial intention that passengers perceive, the offer of transporting baggage is also experienced as ‘intrusive’. In this case the tone of the message was too personal, a more general message notifying the possibility is preferred.

There is a limit to the pro-active and personal approach that passengers will appreciate. Therefore it is better to enable the possibilities for passengers to adjust the process and let them take over and be in control from there.

CONCEPT IMPROVEMENTS
Based on the insights gained from the test, a few improvements can be made to the concept.

First, giving passengers the opportunities and showing what is possible without forcing it upon them will evoke the envisioned experience better. That means that instead of offering the services that are based on their journey, passengers will be provided with insight into what is possible in their situation with the time they will have to wait. Providing a list of opportunities will be appreciated more than a push-notification of ‘there is enough time for you to order this’. Passengers can make out themselves whether they want something or not, but having the option to make use of it is already a great step to make passengers feel valued and at peace.
Passengers want to understand why they are waiting that long. Security & safety of their belongings is also a concern. Not being able to affect the process evokes desperation. Not knowing what to do when things feel wrong, evokes distress.

1. Post service
2. Pre service
3. In service

Waiting for service vs waiting while serviced

Perceived value of the wait/service

Unfair waits vs equitable waits

Strategies to deal with dominant negative emotion:
- action tendency
- decoy
- virtue

Perceived waiting time is longer when...

Uncertain waits vs infinite waits

Unexplained waits vs explained waits

Increased ability to multitask

Limited to the essence

People are worried about their privacy and security

People don’t want to be bothered with selecting options

People are used to on-demand service/access

People want service personalized to their situation

People want flexibility

People want choice

People want service personalized to their situation

People want flexibility

People want choice

Plain waiting is considered unacceptable

Give a voice in the process

Provide expected wait
Technology enables people to focus attention on relevant matters.

People’s attention span is decreasing.

As a response to 24/7 online, people need off-the-grid moments.

Processes/services are becoming more automated.

(Time) efficiency is increasingly important, when it doesn’t contribute to people’s well-being.

People are focused on the destination - goal-oriented -

Technology dependent.

Not knowing what to do when things feel wrong, evokes distress.

Not being able to affect the process, evokes desperation.

Passengers like to be in control of their own process.

As long as nothing goes wrong, passengers like self-service.

Waiting time should be...

The lack of (noticeable) progress, evokes anxiety with passengers.

Making sense.

Passengers want to understand why they are waiting that long.

A guarantee that their baggage is there, would be comforting for passengers.

In relation with the rest of the journey.

Fair.

People want service personalized to their situation.

People want flexibility.

People don’t want to be bothered with selecting options.

People are worried about their privacy and security.

Limited to the essence (Time), efficiency is increasingly important, when it doesn’t contribute to people’s well-being.

As a response to 24/7 online, people need off-the-grid moments.

Technology enables people to focus attention on relevant matters.

People’s attention span is decreasing.

Processes/services are becoming more automated.

(Time) efficiency is increasingly important, when it doesn’t contribute to people’s well-being.

People are focused on the destination - goal-oriented -

Technology dependent.

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The lack of (noticeable) progress, evokes anxiety with passengers.

Making sense.

Passengers want to understand why they are waiting that long.

A guarantee that their baggage is there, would be comforting for passengers.

In relation with the rest of the journey.

Fair.
CONCLUSION

The title of this graduation report is ‘improving the passenger experience in the baggage reclaim area’. The development and test of the reclaim area, reclaim process and the Travel app has shown that there are different elements to improving the passenger experience in the reclaim area. The first step to a better experience seems to be to inform the passenger. Without the right information, passengers are not open to distractions. The information that is most vital, is related to their baggage. If they are relieved of the worry about their baggage and the process, only then passengers will be able to pay more of their attention on other matters. Information about the status and arrival time of their baggage will feel like they do not have to focus on the process. Another element that passengers would benefit from and will allow them to feel at peace is knowing what to expect. Being able to look ahead in their journey will make passengers familiar with their next steps. Knowing what to expect also relates to their experience in the reclaim area. When passengers arrive in the reclaim area of the proposed concept, they are welcomed in an environment that has everything to make them feel welcomed and supported during their stay and beyond.

Providing information is vital, and makes passengers feel at peace, but it also a form of caring for passengers. It is about recognizing the needs of the passengers, if they would benefit from knowing about their baggage, acknowledge it and provide the information, otherwise they will feel ignored.

To make them feel valued is to evoke the feeling that there are possibilities to make the process fit their journey. Providing passengers with a cup of coffee will make them feel valued, but it does not have to be a freebee to evoke the desired experience. Providing passengers the opportunity to adjust the baggage reclaim process to their journey, even if they have to pay for it, will make them feel valued. Giving passengers a range of possibilities in the time they are waiting, shows that you make an effort to improve their experience. It shows that Schiphol thinks about their passengers, even in this stage of their journey. The qualities of ‘caring’ and ‘thoughtful’ indicate that the receiving party (the passenger) is cared for and that the providing party (Schiphol) has put thought and effort in it to making the passenger feel ‘valued and at peace’. Not everything has to be spot on what the passengers needs, if out of the possibilities, some are exactly what passengers need then that is positive. It also opens up the possibility to make a passengers aware of a need, and feel surprised that this is addressed.

The title page of this evaluation chapter shows the same image that was made after the research phase. Now it shows the colored elements that the concept has entailed in its design. The proposed concept addresses elements like:

- The process feels more fair and in relation with the rest of passenger journey
- Flexible process - personalized to passengers situation
- Waiting while serviced, and value of the service
- Increased feeling of control, having a voice and a choice
- Contributing to a seamless journey-connecting the different steps/transportation modes in your arrival

One of the things that the concept does not included that was found in the literature by Maister (1985), is the effect of explained waits on the perceived waiting time. It was also mentioned in the test of the concept, that passengers would feel annoyed, because it just says ‘Delayed’. It seems that providing insight into why it was delayed, is worth paying attention to.
This project started off to gain insights in the passenger experience and in what way this can be improved. This project has shown that in this stage of the passenger’s journey; information about his baggage, insight into the next steps of his journey, and possibilities to adjust the process to his journey are all benefiting the passenger’s experience.

The results show similarity with the work of graduate student Boute (2016), who proposed to open up the reclaim area and install drop-out reclaim stations. This too, addresses the need for flexibility and choice for passengers.

The proposed concept in this project is formed by redeveloping three elements; the reclaim area, the reclaim process and connecting the complete journey. All three of these can be developed and turned into a complete concept and also need development before anything definitive can be stated about their affect.

Further research is needed in the expected number of passengers in the future, how many of them will use hold baggage and how many of them will use services like sending baggage ahead. But also what the introduction of alternative location reclaim are going to mean for the numbers reclaiming at the reclaim area. These developments are possibilities to spread the passengers reclaiming their baggage out, and prevent over capacitating the reclaim area.

The proposed concept is based on what to pursue, instead of what first to improve. The concept needs more development, user testing and a feasibility study before it can be introduced. There are steps in between which can already be realized. But the proposed concept also involves a challenge, as it has to join involved parties in one platform. This will take a lot to realize, but it is recommended to study the possibilities and obstacles that are possibly there. Besides a cooperation between involved parties when it comes to the complete passenger journey, the cooperation between parties at Schiphol is also an interesting area. It seems that the airport, airlines and baggage handlers each have their own interests to protect. But it is in the benefit of the passenger if this cooperation is developed with the passenger journey in mind. This could relate to sharing information and taking responsibility for the passenger’s journey.

As mentioned in the discussion, insight into passenger numbers in the future are needed, but also the developments in the travel and baggage industry should be paid attention to. This could affect the possibilities and necessity of the concept. Besides being actively looking for improvements to make that allows Schiphol to offer passengers an improved experience, it is worth to look for ways to enable others to improve the passengers experience at Schiphol. It is not just about what you do, but what you allow others to do. If Schiphol can enable other parties to provide the right information or to adjust the process, then Schiphol will be perceived positively because passengers experience it at Schiphol. If it enables to fulfill the needs of passengers when they are at Schiphol, passengers will like to return to Schiphol.


ACRP (2) (2016) – Airport Cooperative Research Program, Improving the Airport Customer Experience, p37.


DKMA (2015) – Definitive guide to airport ambience, DKMA.


Schiphol (2016) -


Schiphol – De kracht van de mainport (2015) - De kracht van de mainport


LITERATURE
Previously performed research studies and graduation projects that relate to the topic of passenger experience and baggage are consulted to gain insights from existing knowledge. The literature study is divided in the following topics:

- Passenger experience;
- Perceived waiting time;
- Sense of place;
- Peak-end rule;
- Negative emotions.

OBSERVATIONS
The insights into the behavior, interactions and emotions of passengers in the reclaim hall are based on observations. Passengers will be observed from the moment they arrive in the reclaim hall, and their behavior, interactions and emotions will be registered during their complete stay in the reclaim hall. This will be done for one passenger at a time and from a distance, in order not to disturb or influence the passenger. The following passenger specifics will also be registered, to provide the results of the observations with some context:

- Gender;
- Age group;
- Social context;
- Time in the reclaim hall;
- Time waiting at baggage belt.

As mentioned, the passenger will be selected at the entrance of the reclaim hall. The selection was done by choosing a moment when passengers come through the doors into the reclaim hall and picking the next person coming through. The aim was to be as diverse as possible in selecting. This means that based on the previous observations, a target passenger was set based on gender, age group and social context (e.g. the next young family that comes through). In the case of a group, one member of the group was the focus, but the others members were considered as well. When the passenger makes their way to another reclaim hall, the observations are aborted and a newly arrived passenger is selected.

When the passenger walks in, a stopwatch will be started, to measure the time in the reclaim hall. From there, the behavior, interactions and emotions are registered on a prepared form. The form is divided in columns per different moments that passenger go through, underneath the registrations are written down into rows for behavior, interactions, and emotions. There are two side notes to be made of this method. Firstly, the observations are done from a distance and therefore there were times when the vision of the passenger was blocked. This is also the case when notes were written down. Secondly, one passenger was followed per observation. In order to prevent the passenger of feeling that they are being watched, they are not observed constantly.

Behavior
In this part, the focus is on what passengers are doing during the different moments during their stay in the reclaim hall. And how do they response to situations, the environment or other passengers. The behavior and responses of passengers are written down in small notations for the different moments.

Interactions
The interactions passengers are having during their journey through the reclaim hall are noted. It is also noted with who or what the interaction was.

Emotions
Registering emotions based on observations of facial and body expressions is not completely accurate, since
these emotional expressions not always represent their emotional state clearly (Picard, 1995). Also, passengers can experience mixed emotions, for instance when they feel sad that their holiday has ended, but also feel happy to be home and return to their relatives (Berrios et al, 2015). Further, their emotion can be elicited by something else than what is related to the reclaim hall. Therefore it has to be mentioned that the registered emotions are interpretations of the researcher and not confirmed by passengers. To make it easier to register, a selection of positive and negative emotions are listed on the form for the different moments in the process, which are underlined during the observations. The selection is based on the work of Pieter Desmet (2012) and Steven Fokkinga (2016). Desmet made a selection of 25 positive emotions, which he grouped in 9 clusters. From the 25 emotions, 11 were used for the observations. Apart from one cluster, ‘affection’, all clusters are represented by at least one emotion. The selection was based on how relevant it is considered in this context. Fokkinga focused on a selection of negative emotions and ended up with 36 negative emotions, in 8 clusters and 15 subclusters. Apart from the subclusters ‘repulsion’ and ‘social failing’, all subclusters are represented in the selection of 19 negative emotions that was used for the observations. Again, the most relevant emotions in this context were selected. As a preparation, the descriptions of the emotions were consulted before a session of observations.

![Observation form](image)
On the form (figure 1.27), the time that the passenger spends waiting at the belt is noted and the time they spend in the reclaim hall is noted. This is the time from entering till leaving the reclaim hall. The journey is split up in three parts in this case, namely before waiting at the belt, waiting at the belt and after waiting at the belt. The observations were performed on a weekday during office hours. The target is to have 15 observations.

Materials needed:
• Watch with stopwatch;
• Prepared form and pen.

INTERVIEWS
In order to gain rich insights into the experience of passengers in the baggage hall interviews are held with passengers. The objective of interviewing passengers is to understand which concerns are important during the different moments in the baggage hall and gain further insight into what affects the emotions that passengers experience.

How
To create a low threshold for passengers to participate and still gain rich insights within limited time that passengers have, a simple, small and easy to perform exercise is prepared. During the literature research five different categories of touchpoints between passenger and airport were found from a report from the Airport Cooperative Research Program (Boudreau, 2016). These touchpoints, Physical, Subliminal (ambience), Human (interaction), Procedural and Communication, are used as categories for the interviews. For each category, a collage of images is prepared (see figures 1.28 - 1.32) from which passengers are asked to select one of more images. The choice of using different categories is to reflect on these categories separately and because it enables the possibility of stopping the interview when the passenger has reclaimed their baggage. By dividing the interview in five parts, an incomplete interview is still useful, because the results are compared per category. Also, it is an attractive thought for passengers to know the interview can be stopped when they are ready to leave.

The interview is semi-structured. For each collage a different question is asked. After passengers have selected the image(s), they are asked why they have chosen for these images. From there on, further questions can be asked based on the responses of the passenger. The images are selected on relevance for the situation and the context. Also the choice of image should say something about the concerns of the passenger in relation to that touchpoint. The selected image is noted for each category, together with further notes on the answers of the passenger.

Questions per category:
Physical: Which images show how you would like to wait?
Subliminal: Which images show the ambience that you would like for this baggage hall right now?
Human: Which images show how you experience the contact you have with staff or other passengers or how you would like it to be.
Procedural: What elements from these images would you apply to how you collect your baggage.
Communication: Which images show how and when you would like to be informed of things that matter to you.
Participants

Participants for the interviews are approached in the reclaim hall. As with the observations, the diversity of the passengers is considered. This means that passengers are selected based on gender, age group and social context, but also the location where they are waiting (seating or standing at the belt). The target for interviews is to have 15 interviews. (figure 1.33 for the interview notition form)

The challenge to gain the rich insights into the experience of passengers lies in the moment of approaching them and the question that is asked. Previous pilot interviews showed that the passengers are concerned with an efficient process and a time consuming research does not fit in with that. This already says a lot about their priorities. The research should be attractive and have a very low-threshold, in order to get passengers to participate. Starting off with a question like “what are the emotions you experience?” are hard for passengers to answer. The passengers will be explained about why they are asked to participate and that it won’t take longer than the time that they are waiting for their baggage. The screens above the baggage belts are consulted to have an indication that the passenger is expected to wait at least a few minutes.

QUESTIONNAIRE

Due to the limitations of the situation in the context, a questionnaire is used to gain further insights in the passenger experience. This method gives people the opportunity to answer at their own time with their full attention and it gives insight into their experience how they remember it, instead of while they are in the moment.

The questions are formulated in a way that it gives insight in how passengers remember their experience in the reclaim hall. The first two questions are giving more insight into when and for what purpose their last journey was. The third question is to find out when they feel their journey has ended. The forth question is to get them to think back to how they experienced their last journey through the reclaim hall. Questions 5 and 6 is about with which statements they can relate to and how they would like to spend their waiting time. Question 7 and 8 are to determine in what degree people experience different characteristics at the moment and which are important. Question 9 is an open question, where people can mention anything that they want to point out about their experience in the reclaim hall. Question 10 is to gather contact details that could be used to ask follow up questions.
Participants

The questionnaire was sent out using social media and email within my personal network. People that experienced flying to Schiphol and that collected their baggage were asked to fill in the questionnaire. The target was to get at least 50 participants.

1. When was the last time you arrived at Schiphol airport and had to reclaim your baggage?

2. What was the purpose of your last flight to Schiphol airport?
* Select 1 option
  - Arriving for a business trip
  - Returning from a business trip
  - Arriving for a leisure trip
  - Returning from a leisure trip

3. When do you feel your journey has come to an end?
* Once the plane lands at Schiphol.
* Once I’ve said goodbye to the flight crew.
* Once I’ve gone through passport control.
* Once I’ve collected my baggage.
* Once I’ve gone through customs.
* Once I’ve left Schiphol.
* Once I’ve arrived at my destination/home.
* Other (please specify)

4. After your arrival at Schiphol airport, you can collect your baggage in one of the baggage halls (see image below). Looking back, how do you rate the time you spent in the baggage hall of the airport?

Figure 89 Questionnaire, questions 1 - 4
5. During your time in the baggage hall, you might have had to wait for a while before your baggage arrived. Thinking back to your stay in the baggage hall, can you indicate which thoughts you can relate to?

6. Please rank the options below based on your personal experience. If you feel there are options missing, please use question 9 to share them. **Put the most applicable option on position 1 and the least applicable on position 6. If an option is not applicable (N.A.) at all, please tick the appropriate box.**

I would have less issues with waiting for my baggage if I could spend my waiting time ...  

- [ ] being more comfortable.  
- [ ] knowing more about the status of my baggage.  
- [ ] in a peaceful environment.  
- [ ] provided with some entertainment.  
- [ ] being able to prepare for what I am doing afterwards.  
- [ ] in a lively environment.  

7. Again, if you think back to your experience, which characteristics describe the process you went through when collecting your bags. Please indicate for each aspect listed below in which degree it is true for the current baggage reclaim process from your perspective.

<table>
<thead>
<tr>
<th>I think the baggage reclaim process is...</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Reasonably</th>
<th>Very</th>
<th>Completely</th>
</tr>
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<tr>
<td>Clear</td>
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<td>Controllable</td>
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<td>Convenient</td>
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<td>Dependable</td>
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<td>Efficient</td>
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<td>Exciting</td>
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<td>Fair</td>
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<td>Flexible</td>
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<td>Personal</td>
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<td>Predictable</td>
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<tr>
<td>Respectful</td>
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8. Can you indicate how important these aspects are for your experience of the baggage hall?

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<thead>
<tr>
<th>I think the baggage reclaim process is...</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Reasonably</th>
<th>Very</th>
<th>Extremely</th>
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<td>Respectful</td>
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9. If there is one thing that you would like to point out about your experience in the baggage reclaim hall, what would that be? It can be something that was already mentioned before or something that you thought was missing in the questionnaire.

10. If you don't mind being contacted for a follow up question, please fill in your phone number and/or e-mail address in below. It would be much appreciated.

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail address</th>
<th>Phone number</th>
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**APPENDIX B: LITERATURE**

**PASSENGER EXPERIENCE**

**Negative emotions**

There is an alternative way to improve an experience that already involves dominant negative emotions. Namely, by accepting that the stimulus that evokes the negative emotions cannot be taken away and focusing on working with that emotion to improve the experience. The following three strategies were proposed by Fokkinga (2016) that can be used by designers to take this different approach: ‘Empowering the action tendency’ [action tendency], ‘Adding a mood-congruent decoy stimulus’ [decoy], and ‘Evoking a reappraisal using virtues’ [virtue]. The basic emotion model of Desmet (2002) shows that the experienced emotion is the result of the appraisal of someone’s concern in combination with a stimulus. The emotion then results in an action tendency. Fokkinga uses this model to explain the three strategies, shown in figures 42, 43 and 44.
The passenger experience in the reclaim hall is a complex affair. Airports Council International (ACI, 2014) identifies three elements of the passenger experience, namely ‘the look and feel of the premises’, ‘the efficiency and passenger focus of the processes’ and ‘the encounters between people’. But when searching a more general term, user experience, it shows that it is also affected by the current internal state of the person, earlier experiences, as well as the current context (Law et al, 2009). Although this research was focused on the user experience of products, services, systems and objects, it does show that the passenger experience of the reclaim hall is not only affected by the reclaim hall, but the passenger experience of everything leading up to the reclaim hall also plays a part. The process of reclaiming baggage is labeled as a processing activity, which passengers have to go through when they have checked-in baggage (Kirk, 2013; Popovic et al., 2010). The activity itself is something that needs to be done and not necessarily what passengers want to do. But that doesn’t mean that a processing activity evokes a negative experience.

Research performed for Schiphol by Beautiful Lives (2016) divided different aspects that influence the passenger journey in three levels of a pyramid. The lowest level represents the necessary aspects, like hygiene, facilities and technical aspects. The middle level shows where an airport can make a difference, namely with natural wayfinding, attention to the passengers state of mind and empathic personnel. While the top level shows the aspects of the passenger journey that can help an airport to excel, these are the ambience and waiting time. Waiting time is generally divided in actual waiting time and perceived waiting time, from which the perceived waiting time is considered to have more impact on the passenger experience (Baker & Cameron, 1996; Nie, 2000). In figure 1.36, the elements that affect the perceived waiting time positively and negatively are listed, which are based on a study by Maister (1985). Underneath three strategies are grouped that influence the perceived fairness, by providing passengers with more certainty and an explanation of the wait. Keeping occupied, giving patients a voice and provide an expected waiting time increases the perceived level of control and level of service, and indirectly decreases the experienced anxiety (Naumann & Miles, 2001).
When people are experiencing a negative emotion, they can deal with that in two different ways: problem-focused coping and emotion-focused coping (Folkman & Lazarus, 1988). Problem-focused coping means that the stimulus of the negative emotion is removed or altered. If that is not possible, one can cope by focusing on the emotion. Folkman and Lazarus identify two problem-focused forms, namely confrontive and interpersonal, and planful problem-solving. The emotion-focused coping include six forms, namely distancing, escape-avoidance, accepting responsibility or blame, exercising self-control over the expression of feelings, seeking social support, and positive reappraisal.

For the situations with a dominant negative emotion that cannot be solved or taken away, Fokkinga (2016) proposes three emotion-driven strategies that accept the negative emotion instead of trying to solve it. He uses the basic emotion model (Desmet, 2002) to explain the strategies. The model (see figure 1.37) shows that the appraisal of a concern and a stimulus leads to an emotion. A concern is anything people need, want or desire. The stimulus can be an event that happens, a product that is perceived or even a thought. A response to the emotion is the action tendency. People have a positive emotion when the stimulus benefits their concerns, and a negative emotion is experienced when a stimulus harms or threatens their concerns. The three strategies are called: ‘Empowering the action tendency’ [action tendency], ‘Adding a mood-congruent decoy stimulus’ [decoy], and ‘Evoking a reappraisal using virtues’ [virtue].

The action tendency strategy (figure 1.38) is performed by exploring the action tendency of the dominant negative emotion and designing something that facilitates a constructive or meaningful expression of the action tendency. A meaningful purpose improves the experience even more than just facilitating the expression (Fokkinga, 2016).
The decoy strategy (figure 1.39) is there to design a new stimulus that evokes the same type of negative emotion, but in a more manageable or enjoyable way. This should distract the person's attention away from the other stimulus. Fokkinga found research that show that people's attention and preference goes to stimuli that evoke the same emotion as they are experiencing (Fokkinga, 2016).

The third strategy, virtue (figure 1.40), focuses on the appraisal. Virtues are 'a quality considered morally good or desirable in a person' (Oxford dictionaries, 2016). Fokkinga (2016) considers emphasizing virtue in an experience with negative emotions a good way to help people reappraise the situation as less bad. In this strategy virtues that are relevant and appropriate for the situation are explored and implemented in the situation. That can be done by making the person aware of an existing virtue in himself, a design that embodies a virtue, a design that inspires a virtuous activity, or a design that encourages to be used in a virtuous way.
WHICH DIFFERENT MOMENTS CAN BE IDENTIFIED DURING THE PROCESS OF BAGGAGE RECLAIM?
WHAT BEHAVIOR ARE PASSENGERS SHOWING DURING THE DIFFERENT MOMENTS IN THE BAGGAGE RECLAIM HALL?

During the time spent in the reclaim hall, passengers go through different moments that form the reclaim journey. Based on observations of passengers in the context, six different moments are identified that form a regular journey. When during one of the moments a problem occurs, the journey may look different. The six moments are: orientating, positioning, waiting, anticipating, collecting, and exiting.

When passengers enter the reclaim hall, their first objective is to find the right belt and see if their baggage is already there. For this they orientate themselves where they will find the information on the baggage belts and where the allocated belt for their baggage is located. Some passenger, from who it is expected to be the first time at Schiphol, walk past the information screens and end up in the reclaim hall not knowing where to go. While for these passengers it is not clear where to find information about the allocation of the belts, most passengers know where to find that information.

The most common behavior is to first make sure their baggage is not already on the belt, then check the screens above the belt to find out when they can expect their baggage, and then choose a place to wait. This choice differs for passengers, some passengers choose to stand somewhere around the belt, preferably where the baggage drop on the belt and/or where they can keep an eye on the screens. Others find a place to sit down. This is also dependent on their travelling companions. Families and groups tend to split tasks during this moment. One takes the children to a seating area, while the other gets a trolley and waits at the belt. Or one waits for the baggage while the others go to the restroom. But in all cases, at least one passenger has a view of the baggage belt. Something that was noticeable is that there are passengers that can expect to wait for 20 minutes, and choose to wait besides the belt. The word ‘expected’ already says that it can also come earlier. It is possible that these passengers are experienced in this process and know that their baggage can actually arrive any time. Of course, they wouldn’t want to miss an opportunity to leave earlier.

The third moment in the journey is labelled as waiting. This part takes until the belt starts to run and the first baggage drops on the belt. That means that in this period nothing happens on the belt and the passenger has to kill time till something does happen. Because any moment the belt can start to move and baggage could arrive from the drop out, passengers are still focused on the belt. Passengers are either checking the screen whether anything has changed on the expected time of arrival or a new message is showing. Or they wait till they notice a change, like the belt starts moving or the first bag drops. Passengers are also seen walking around the belt, looking for a better place to wait. A better place would be to have good view on the baggage drop out or to have better access to the belt to be able to collect their baggage. During the wait passengers have little interaction with each other, but are seen interacting with their phone. They could be contacting friends, family or work related contacts.

The next step in the journey is to move towards the right belt and position in the vicinity of the belt.
this moment. The moment starts when the belt starts moving and the first baggage drops on the belt. This activates passengers into full focus and attention, their baggage could be next to appear after all, and passengers move closer to the belt when possible. When it gets crowded passengers are seen to be leaning over to get a good view of the baggage that is arriving. The start of this moment is the first moment of relief, since it feels like there is light at the end of the tunnel. However passengers remain anxious until they have spotted and reclaimed their baggage.

The longer it takes for their baggage to come, the more anxious passengers become. When more and more passengers leave with their baggage and theirs hasn’t arrived, the possibility of their baggage being lost becomes more likely. At this point, passengers keep an eye on the screen to see what it says. The message ‘all baggage is unloaded’ creates some confusion: ‘Does this mean my baggage is indeed lost?’ or ‘is there still baggage coming?’.

now. When their baggage is indeed not coming, passengers need to look for the right baggage handler and inquire at their desk for further information. The moment when they have to look for the baggage handler is not always clear: ‘Do I go there now?’ or ‘should I wait for another while, maybe it is still coming?’.

The fifth moment is when passengers have identified their baggage and are able to collect it. Sometimes passengers mistaken a piece for their baggage, so often passengers are seen to examine a bag for identifiable characteristics that show it is theirs. This examination and lifting it from the belt can be a struggle, because the belt keeps moving. Passengers either lift the bag off the belt or walk along the belt during the examination. When passenger have more than one piece to reclaim, they rush back to the belt after they collected the first piece. Passengers might expect the other piece(s) to come shortly after, for instance because they were checked in together. The possibility of missing out on their other baggage or someone else taking it when they take their first piece away from the belt, is giving passengers a peak in their stress-level.

The last moment in the journey in the reclaim hall takes place after all baggage is reclaimed and passengers are exiting the reclaim hall. While some passengers go directly towards the exit, sometimes passengers look for an open space on the floor or the seating area to rearrange their baggage between their checked-in baggage and carry-on baggage. Also seen, is that passengers take out papers that may contain information on where to go next or the contact details of the person they need to call.
Performing observations and interviews with passengers have given insights into the interactions and emotions that passengers have during their reclaim journey. These insights are seen in the passenger journey in figure 1.41. The indicated emotions are mostly an interpretation of the observer, based on the expression of the passenger and a (considered by the observer) likely emotional response to the current situation or event. In the figure, it can be seen that the waiting and anticipating moments are considered to be the moments with the most negative emotions. In these moments anxiety, distress and desperation are the most dominant negative emotions. The positive emotions, fascination and anticipation, are also present. But although labeled as positive emotions, one can argue whether the focus and attention this process requires which leads to fascination and anticipation is always experienced as positive. Especially in the second and third moment these emotions are more likely to be experienced as negative and unwished, therefore they are indicated with an asterisk. Based on this, waiting before the baggage will arrive is considered the moment when passengers’ emotions are most negative.

**Figure 99** Emotions and Interaction in the passenger journey
Orientating. During this moment passengers are very goal-orientated, and want to get to the right belt as soon as possible and need the right information to get there. They want to know whether their baggage is already there or how long it will still take to arrive. It should be fair and make sense. The concern about whether their baggage will arrive and whether their possessions have remained safe was already there, but during this moment it becomes more relevant and it is becoming stronger.

Positioning. Still very goal-orientated and focused. At this point, passengers want to know that they are at the right place and there is a need for having an overview of the situation, a situation where they know what to expect. Passengers arrive with some hope and expectations regarding the expected waiting time. When they have been walking for a while to get there, they expect the baggage to arrive soon. When the expected waiting time is longer than expected, passengers are disappointed, frustrated and dissatisfied.

Waiting. When waiting, passengers still want to know how long they will need to wait, but when it takes longer than their expectations or what they consider fair waiting time, passengers also want to know why they are waiting that long. They want to understand it and this is resolved not only determines their current experience, but also affects their future experience. When passengers know that when something has gone wrong and it is resolved carefully, they will be more relaxed the next time. But when it turns into a struggle and the service is poor, passengers will be even more anxious next time, because they really don’t want things to go wrong again.

Collecting. At this point, passengers have identified their baggage and the only concern about their baggage could be that no one else grabs it or whether the content has remained secure. During collecting, passengers want to collect their baggage without feeling rushed. At the same time, they want to get away from the stressed out crowd as soon as possible.

Exiting. In this last moment, passengers want to leave the hall as soon as possible. Some passengers can finally meet with their friends and family again. While passengers also haven’t arrived at their final destination yet, so they have a part of the journey still in front of them.

Anticipating. This concern is peaking even more during the moment of anticipating. When baggage starts to drop, passengers are most concerned about whether their baggage is there and whether it is all in one piece. Odd size baggage, like bikes, golf clubs and strollers, are important to passengers. Not knowing where exactly they have to reclaim these is a big concern for passengers. Passengers don’t want their process to be controlled by what other passengers are doing. Therefore passengers try to find a gap in between other passengers, in order to be able to grab their baggage when it arrives and not be dependent on other passengers.
Figure 100  Anticipating (1)

- Focus on the belt
- Anxiety
- Appraisal
- I want my belongings to be returned to me safely
- Not knowing whether baggage will arrive (safely)
- I like to do everything myself, but only as long as it goes well

Figure 101  Anticipating (2)

- Helplessly looking around for help
- Distress
- Appraisal
- Not knowing what to do when baggage is not there (yet)
- I want to avoid people and things that make me stressed

Figure 102  Collecting

- Trying to get away as soon as possible
- Annoyance
- Appraisal
- Other people that are in a hurry and that feel stressed
APPENDIX D: CONTEXT FACTORS

The factors below are collected, based on trends and developments, personal thoughts and observations, and human universals. The factors in bold are considered interesting for the context and are used for the vision of the world in 2040.

CULTURAL
• People only want relevant information, personalized to them
• In 10 years, there are more security checks
• In 10 years, there are more atheists
• Ownership of possessions is less important
• In 10 years, we are constantly multi-tasking
• In 10 years, people want to spent their time even more useful
• In 10 years, we don’t do development aid or military interventions any more
• There is more need for real time information
• Tensions between western and Muslim civilizations
• Old traditions are abandoned by new generations
• People turn to psychology and other sciences instead of religion (see self-help books/Apps)
• Social media, a platform of expression
• Daily life is quick, hasty and rushed
• Need efficiency and productivity, but also sustainability and wellbeing
• Always-on backlash
• Back to basic/old school
• Protection of privacy
• People want to have full control over their journey
• People want to determine what, when and where things are happening, flexible service
• People are more lonely
• People are becoming less patient
• People like to have a choice
• People want to live their lives the way they want to
• People want to understand, make sense of what is happening
• People want to feel significant, worth
• People like to experience joy
• People like to use one’s abilities
• People like to experience awe
• People like to experience diversity
• People like adventures
• People like to experience emotional well-being
• People overestimate objectivity of thought
• People like planning for future
• People attach meaning to products, experiences and locations
• Self-help books and Apps are popular
• People pick up information that is relevant for them or what is considered interesting
• Calmness gives feeling of security and trust
• People strive to be the best they can be
• People want to be heard and understood
• People judge their situation based on expectations and the situation of other people
• Self-actualization, is people’s intangible status
• People’s perception is decisive for their experience, not the actual reality
• People only entrust companies with personal data, when they provide a value-adding product or service to them
• People fall back into routine and old habits after returning home

PSYCHOLOGICAL
• People don’t like it when their pace/progress is controlled by others
• People don’t like waiting

DEMOGRAPHIC
• In 2025, there are more people over 65 (17% of population), with money and travel wishes
In 10 years, there are still families, but with less children
Difference between rich and poor is increasing
In 10 years, there are more combined families
People are having even more divorces
Cities are growing bigger and expanding more
Demographics no longer determine consumer target segments
Blurred gender roles
Work and private live mixed
People emigrate for work, family or to escape from an unstable environment
Global population grows to 8,1 billion in 2025 and 9,6 billion in 2050

SOCIOLOGICAL
- People are even less social
  Trust of people in companies and strangers is low
- People are even more self-centered
  People live on their ‘own island’
  People are living a hurried life
  Less contact with staff
  More self-service
  People like to beat others (competition) or beat a system
  People feel offended very quickly
- A world of interruptions, distractions and stimulations
  People want to show the beautiful side of them to others
  Crowdsourcing and peer-to-peer increase in popularity
  Doing something for someone else makes people feel good
- People want to have significant relationships, feel belonging
- People want to feel valued and respected
- Self-image is important

ECONOMIC
- Budget service
- People don’t mind to pay for quality, personal service
  People spent more of their money on luxury, exclusive brands
- Consumers have higher demands, wishes and expectations
- Consumers want to be independent
- Empowered consumers
  Relationship between consumer and brand important
  More people can afford to fly
  In 10 years you pay more for your baggage
  In 10 years, China is the economic leader
- Sharing economy
  Circular economy
  Chain shops vs concept/ pop up stores
  Pay for what you use
  Subscription on services, product use
  Rejection of the political establishment
  Everyone has possibility to book flight ticket, not just for elite
  Consumers embracing brands that excuse their consumption, due to sustainability or social contribution
- On-demand economy changed our expectations
- Economy recovers further
  7,2 billion people expected to fly in 2035

BIOLOGICAL
- In 10 years, people are unhealthier and more obese
- In 10 years, everybody is eating biological food
- In 10 years, the climate is more extreme than now
- Longer flights are more tiring
- Traveling is tiring and exciting
- Deceases are detected in an earlier stage
• People enjoy physical pleasure

EVOLUTIONARY
• In 10 years, people can take in more information
• In 10 years, 16 year olds are (considered) adults
• People are losing some of their skills and senses (it is done for them)
• People are learning new skills
• People don’t write any more
• Human capacity is limited to 7 bits of information
• People’s attention span decreasing, 12s in 2000 and 8,25s in 2015
• Increased ability to multitask
• People’s life expectancy rises further
• People always want better and bigger things

TECHNOLOGICAL
• Home-print bag tag
• Permanent bag tag integrated
• Baggage pick up/drop off service
• More flights means planting more trees
• People spent more time of their lives online
• In 10 years, flights are more common use as commuter travel
• Offer of flights for all over the world
• In 10 years, everybody has a chip in their arms
• Virtual reality allows us to be all over the world from wherever you want (e.g. meeting in another country)
• Self-driven cars are common
• Connected street
• Internet of things
• Connectivity
• Cashless society
• People don’t take any baggage along, but a 3D printer
• Robots are taking over tasks
• Computer-based control systems
• People have insight into their own health
• Airplanes fly faster
• In 10 years people fly more and further than now
• Companies and governments know who we are, where we are and what we are doing
• Processes and services are more automatized and require less interaction and communication
• People are accepting wearable technologies, like currently the smart watch
• Products (technologies) help people to focus on the things that need their attention, or that people want to focus on (augmented reality, aural augmented reality)
• Cybersecurity is worrying
• AI of smart devices direct our lives more autonomously, making decisions for us
• World of connected objects
• Bots and devices suggesting people what their needs are
• Voice control of our devices
• Controlling multiple things from one device/chip/scan
• Constant stream of stimuli
• Advertising, information supply and product usage only when relevant or needed
• Services and content available independent on location
• Controlling products and devices from a distance
• Companies offering omni-presence, online and offline fully integrated
APPENDIX E: DESIGN GUIDELINES

PROCEDURAL

- The reclaim journey is based on the complete passenger journey. Passengers experience baggage reclaim as part of their journey and which affects their complete journey. This creates a more seamless arrival journey.

- Process is flexible to the passenger’s journey and needs. The process can be adjusted to the passenger’s personal journey and situation, making the reclaim process adjusted to the passenger, instead of the passenger adjusting to the reclaim process. As well as giving passengers the feeling that they have a voice in the process.

- The baggage is transported to the location where the passenger is waiting, arriving at the small scale reclaim or even personal reclaim areas. The passenger feels that the baggage is coming to him, instead of himself looking out for his baggage.

- The design should make the process experienced like a service. Combining smart self-service that is convenient with service that is perceived more personal, where support is always available and involvement of Schiphol is experienced.

- The design should re-establish the connection with baggage. Passengers will focus less on the process when they feel connected with their baggage and know its status.

- The design has to be accessible and open (instead of binding) and not feel like adding an extra step or make the process take longer. An arriving passenger is less focused on enhancing their experience and has less urge to go out of his way to look for experiences than departing or transfer passengers. If they feel the process is less efficient or more complicated, passengers might avoid it.

PHYSICAL

- The waiting area layout fits the waiting time and number of passengers. Waiting facilities in line with the waiting time and space to prevent blocking and crowded areas.

- Reclaim area is a collection of small areas. Providing a more personal (small scale) waiting area that is part of a whole.

- Waiting area fitting to passenger journey, that focuses on adding to the passenger wellbeing. Prepared for passenger’s arrival in the reclaim area, adds to personal, thoughtful and welcoming.

- Waiting area is flexible to passenger needs, and therefore open to private waiting and enabling communal waiting. Passenger feels freedom to wait in a way that fits his needs, in both cases feeling connected to their baggage and reclaim location.

COMMUNICATION

- Information, that is relevant to the passenger and the remainder of his journey, is provided to the passenger. Relevant information makes the time in the reclaim area more useful, and it has all the qualities that are envisioned. Allowing passengers to feel prepared for the rest of their journey.

- The layout of the reclaim area provides visual feedback for focus areas (like for information point or exit). Passenger understands what the reclaim area has to offer and where to leave the area. This adds to feeling familiar.

- Information relates to the complete passenger journey; flight/ baggage, Schiphol, journey, and destination. Care about the complete journey of the passenger, welcome passengers at Schiphol and in The Netherlands and providing the possibility to look ahead in their journey.
HUMAN

• Airport staff is available and visible to all passengers in the reclaim area. Welcome passengers in the reclaim area and show that staff is available when necessary.

• Airport staff acts proactive for passengers with special needs or with odd-size-baggage. Showing the passenger that Schiphol is prepared for their arrival and cares about providing passengers with the right service.

SUBLIMINAL

• Ambience is influenced by how the other interaction categories are actually being addressed. The way these are conceptualized, influences how passengers experience the ambience in the reclaim area.

• The reclaim area shows the important features on key areas. The passengers should notice the important features, like information, immediately when entering the reclaim area, without having to look for it.

• Small scale reclaim area, but still overview of complete picture. Small scale fits better to human size, making passengers feel they are significant rather than small and irrelevant.

• Layout allows the flow of moving passengers, preventing obstructions due to interior or waiting passengers, and include natural attraction on focus areas. Welcome passengers in a reclaim area where they feel familiar.

• Use natural light as much as possible, together with natural materials, light colors and greenery. These elements add to a welcoming ambience, which works calming and creates an intimate (personal) feel.

• The reclaim area shows a ‘local’ personality, recognized as arriving at Schiphol in the Netherlands. A local personality is welcoming and thoughtful to make passengers feel arrived and welcomed in the Netherlands.
APPENDIX F: HOW-TOS

HOW-TOS

1. How to distinct features from each other, that passengers feel familiar with them?
   - Size
   - Location
   - Arrangement
   - Relevant grouping
   - Form
   - Light it
   - Color code
   - Relate to familiar sign
   - Connect together
   - Filter irrelevant signals
   - Add relevant signals (augmented reality)

2. How to take away question marks with passengers?
   - Give confirmations
   - Help desk
   - FAQs
   - Staff
   - Provide information
   - Demonstrate in advance
   - Update

3. How to make a process feel like it is especially for them?
   - Add their name
   - Have it ready for them
   - Bring/serve it to them
   - Relevant for their situation
   - Downscale to personal process
   - Time the interaction to a relevant moment
   - Involve their personal preference

4. How to prepare passengers for the rest of their journey?
   - Give information
   - Show where to go
   - Allow to book tickets
   - Help desk

5. How to give passengers the feeling that they are expected?
   - Welcome them
   - Have something ready for them
   - Confirm their arrival
   - Prepare for their arrival
   - Time the service to the moment it is relevant
   - Show work was already done
### APPENDIX G: IDEA EVALUATION

<table>
<thead>
<tr>
<th>Feature Description</th>
<th>Waiting deck with dedicated reclaim area</th>
<th>Smart personal reclaim</th>
<th>Organize journey</th>
</tr>
</thead>
<tbody>
<tr>
<td>The reclaim journey is based on the complete passenger journey</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Process is flexible to the passengers journey and needs</td>
<td>2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>The baggage is transported to the location where the passenger is waiting, arriving at the small scale reclaim or even personal reclaim areas</td>
<td>3</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>The design should make the process experienced like a service.</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>The design should re-establish the connection with baggage.</td>
<td>1</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>The design has to be accessible and open (instead of binding) and not feel like adding an extra step or make the process take longer.</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>The waiting area layout fits the waiting time and number of passengers.</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Reclaim area is a collection of small areas.</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Waiting area fitting to passenger journey, that focuses on adding to the passenger wellbeing.</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Waiting area is flexible to passenger needs, and therefore open to private waiting and enabling communal waiting.</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Information, that is relevant to the passenger and the remainder of his journey, is provided to the passenger.</td>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>The layout of the reclaim area provides visual feedback for focus areas (like for information point or exit).</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Information relates to the complete passenger journey; flight/baggage, Schiphol, journey, and destination.</td>
<td>1</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Airport staff is available and visible to all passengers in the reclaim area.</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Airport staff acts proactive for passengers with special needs or with odd-size-baggage.</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ambience is influenced by how the other interaction categories are actually being addressed.</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The reclaim area shows the important features on key areas.</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Small scale reclaim area, but still overview of complete picture.</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Layout allows the flow of moving passengers, preventing obstructions due to interior or waiting passengers, and include natural attraction on focus areas.</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Use natural light as much as possible, together with natural materials, light colors and greenery.</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>The reclaim area shows a ‘local’ personality, recognized as arriving at Schiphol in the Netherlands.</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Score**

- **Waiting deck with dedicated reclaim area**: 48
- **Smart personal reclaim**: 68
- **Organize journey**: 41
APPENDIX H: VIDEO SCENARIO

Arrival

Every day thousands of passengers arrive at Amsterdam Airport Schiphol, each with their own journey.

Arrival

Let’s meet a few of them.

Sophie

Is returning with Emma from visiting their friend Tess, who lives in Berlin.

Mara

Arrives at Schiphol with a delayed flight, while she has a business meeting scheduled in the afternoon in Rotterdam.

Jeff

Arrives with his wife Denise at Schiphol for a weekend in Amsterdam. Unfortunately, their baggage will arrive later than is considered reasonable.
Welcome Jeff!
You have arrived at Amsterdam Airport Schiphol.
Your baggage will be collected from your flight and transported to the reclaim area as soon as possible.

Your baggage is expected to become available for reclaim in 12.15 minutes.
You will be notified when your baggage is available. At that moment you can choose an open reclaim spot in the reclaim area and scan your device to collect your baggage.

Since your baggage is unfortunately taking longer to arrive than what we were aiming for, you are offered a free coffee from the coffee place in the reclaim area while you wait, or you can choose to enjoy the shops and restaurants of Schiphol Plaza and reclaim your baggage in the main lounges.

I like that! We are offered a free cup of coffee for waiting. That’s a nice gesture. And we can get coffee right here.
Jeff & Denise prepared their journey in the Travel App beforehand. This means they already booked the 3-day Amsterdam Travel Ticket and included their destination in the App.

Now they have information on each step of their journey in one overview and they can see how each step connects and affects their time of arrival at their destination.

Due to the delay of your flight, you arrived 5 minutes later than you were expecting. In order to make it to your meeting in Rotterdam, we can arrange that your luggage will be transported directly to a location in Rotterdam.

Now that her baggage is taken care of, Maya can continue her journey to her meeting straight away.
airport information

Welcome to the recharging area. There are plenty of water fountains around. Drinking water is important to minimize the effect of air travel on your body.

Please feel free to fill your bottle with our fresh water.

Enjoy!

I really do feel like a cappuccino. We were going to have one anyway, right?

Ah, it looks like our baggage is ready. That was quick!

Sophie loves the idea that she can enjoy her coffee while she discusses with her friend how much fun they had on the trip. A lovely end to a great trip.
Excellent. Let's go!
APPENDIX I: QUESTIONNAIRE

I am arriving for / returning from a trip

Nationality ____________________________

01. From what I have seen in the video, Schiphol wants to...
Choose one option from the list below that describes best what the core is that Schiphol would want to accomplish.

- Make sure passengers can leave as soon as possible
- Make sure passengers enjoy their time they have to spend at the airport
- Make sure passengers feel welcome when arriving at Schiphol
- Make sure passengers are treated as individuals
- Make sure passengers feel cared for during arrival
- Make sure passengers make use of the services at Schiphol

02. I think reclaiming baggage as shown in the video is...

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Reasonable</th>
<th>Very</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exciting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predictable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
03. Below images from the video are shown. Please indicate which emotion would describe best how that situation would make you feel.

- Rejected
- Annoyed
- Worried
- Confused
- Indifferent
- Neutral
- Interested
- Confident
- Relieved
- Surprised
- Valued
- Other __________

Ah, it looks like our baggage is ready. That was quick!
04. I agree...

Just the idea that Schiphol will offer me service based on my journey is already enough to make me feel more valued

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

It is fair that passengers that experience inconvenience, are compensated with extra service

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

If I am offered a service, I expect it to be free

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

I am willing to share details about me and my journey with Schiphol, in order to receive service that fits my journey

<table>
<thead>
<tr>
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<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
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