
WYSP
To the airport
without anxiety
A vision on future travel
experiences for MOBGEN
DEPARTURES
MASTER THESIS
LUCAS VAN DEN ELSHOUT
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To the airport without anxiety

A vision on future travel experiences

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Preface

After having done the Automotive Design Minor I found challenges to work on that excited me yet always gave me the feeling I could do better. I am convinced that sharing can lead to more efficient car use and reduce the parking space needed (Martin & Shaheen 2016). Therefore, I want to improve this form of transport and improve acceptance. I think this can result in a more efficient form of travel that is less worrisome for its users.

The mobility industry is undergoing changes, like electrification and automation of driving. One of the areas of innovation is called ‘connected car’. The first application in 2014 by GM and Onstar makes an emergency call when an airbag was deployed.

A vehicle that is connected with the internet enables people to share cars, plan their trip better or experience a seamless journey, personalised travel information and automated valet parking. It where these possibilities that inspired me to start this project.

During this graduation I designed a vision that helps to understand what new technologies and digital exchange of information can offer travellers. A complex topic were the digital and physical world meet. This complexity has been my drive, and my pitfall at the same time. I am very happy that I had the chance to explore, get lost and rethink my steps on the way. I felt comfortable with the search and energised by the possibilities.

Acknowledgements

I would like to think Elmer for providing guidance during my study since I started the Automotive Design Minor somewhere in 1982. Your courses and education style were very inspiring. The honest straightforward advice always motivated me to rethink steps and design something better.

Thank you Katinka for your enthusiasm throughout this project, the eye for detail. You were really guarding the content that I produced. Also, I hope you will enjoy the beautiful village of Rossum.

Thank you Nick for giving me the freedom to work on this broad and complex subject. It was a great opportunity to graduate in a company like MOBGEN. I want to thank the awesome people from MOBGEN, Ting, the design team, I really enjoyed working with you guys in the attic.

I also want to thank the other people that helped me out with making an awesome film.
Lars for driving that cool car around and assisting in the shots. Meeuwes, for filming around the office although you were very tired. Rene for showing me some animations.

A big thanks to all the guys from Galatea. Great fun and deep talks! I want to thank Harm for all the long hours on the telephone, discussing our projects and reviewing my work. Nadieh, for the wonderful competition for Renault we worked on. Paula for the nice dinners and looking after my hairdo. Wendela for the great parties. And Sal for coming all the way to Rotterdam helping to make an awesome movie. I also want to thank you for your views on the design process.

I want to thank the people that helped ideating with me, Mike, Lisa, Sander, Anouk. Gina and Matthijs, thanks for reading my report and joking about my process. My train buddies Brent and Robert, with whom I could enjoy our favourite Belgium intercity.

My lovely roommates Thomas and Enno, that took great care of me. Also my previous house Bagijnhof G. Steve for the talks on transport.

And a big thanks to my parents and family. I is great how you allow me to follow my own path. The idea that you are always there for me gives me confidence.

Illustrations and film stills from the final concept: Wysp

EXECUTIVE SUMMARY

In this thesis a design vision was proposed for a service that supports:

"Young professionals, that want to act like an experienced business traveller on short trips within Europe in 2025."

In 2025 these people will be dealing with high expectations for themselves. This is as a result of seemingly endless possibilities and compare their own life with the highlights of others. New technologies will make their life easier, helping to reach these expectations. Yet it makes them more dependent on these solution, and it doesn't help with changing their idea of self-worth. Time to put these expectations in perspective can help, but they lack moments for reflection due to distractions.

In order to support people with this future, during travel, the design aims to:

"Relief people of anxiety caused by desired impressions, whilst momentarily creating awareness of their view on success."

It will do so by letting traveller experience something that feels like:

"Stepping into a cafe and getting your usual drink prepared, without having to ask."

Wysp is a service that supports travellers by; preventing mistakes, removing uncertainties and by improving the quality of waiting time. It makes a contribution from the moment of preparing the trip until the moment of entering the plane. In order to achieve this multiple assets, from different companies, are combined into a bundled service called Wysp. The service offers travellers:

- A personal tool to plan trips, with more clarity. Aiding in complex choices.
- Guidance during their trip making them feel assured.
- Combined ticketing and access by a wireless, digital, key. Making travellers feel less obstructed in their journey. The digital key enables access to the flexible, efficient and conscious transport options off shared vehicles.
- Relief from the process of parking and the option to exit the car at the entrance of the departure hall. An autonomous function navigates the car on a smart road before and after the traveller exits.
- A way to spend waiting time more useful and enjoyable
- The appropriate options to overcome problems. Depending on the complexity of the problem self-service options, a smart assistant, real life help will be offered.

The experience of "stepping into a cafe..." will be conveyed by a Wysp and Echo. A guiding light (Wysp) travels along with travellers; being their to help. The gestures in the interaction with Wysp are forming a rhythmic sequence. Moves are small and physical; tapping a push or pull, becoming a seamless flow that makes the traveller feel competent. Echo makes the flow understandable by visualizing each action, letting it last for a small moment.

This experience conveyed by Wysps shows a design language for all the touchpoints in the journey. It is concept that can be translated to digital and physical interactions. A way to create a coherent experience over all components in the ecosystem of the service.

The design goal and the use of new technological developments led to new improvements for the travel process. Wysp shows how the technology of smart roads and autonomous driving can improve the moment of arrival at the airport for travellers, by car. It also leads to new possibilities for shared car drop off and pick-up points.

The service Wysp is a vision on future travel. It serves as inspiration for navigating the complex world of connected mobility. It shows that travel should seen in the bigger picture, mobility, and not as specific phases like driving or waiting at the gate. The design goal and understanding the interaction helps to find coherence when designing for this larger scope.

CONTENTS

0.1 THE COMPANY

MOBGEN | Accenture Interactive

This graduation project is done in collaboration with MOBGEN as a means to gain knowledge of ‘connected cars’ and their role within an emerging digital ecosystem.

MOBGEN is a digital design bureau that develops mobile solution by combining strategy, technology and design. Their services focus on quick user tests and development, tinkering with new technologies and providing client with a complete digital solution. By hosting workshops or sprints they often co-develop the design brief with a client. After building the digital product they also implement and maintain it.

MOBGEN has a very young and creative culture where the development of ideas and experiments is encouraged.

The project revolves around the developments in ‘connected car, as their biggest project revolves around smart mobility services for fuel (MOBGEN, 2017) and this market is still growing (PWC, 2016). MOBGEN wants to remain actively involved in this industry and become leading in the design of digital services.

My assignment is to design a vision on ‘connected car’ both as body of knowledge and as inspiration for clients. This is also the reason why the design will not be brand related. Because the brand and problem remained open I had the opportunity to define my own graduation assignment. I decided to answer a very broad that finally led to a more specific assignment, namely:

HOW CAN THE ‘CONNECTED CAR’ IMPROVE THE FUTURE TRAVEL EXPERIENCE TOWARDS AIRPORTS?

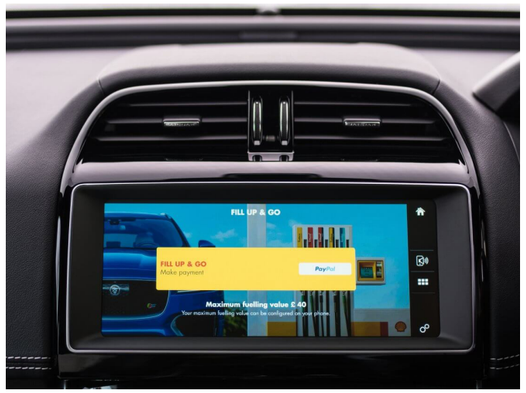


Figure 1: *MOBGEN group picture*
Figure 2: *Amsterdam office of MOBGEN*
Figure 3: *Fill Up & Go, a digital payment system for gas stations developed by MOBGEN for Shell.*

0.2 INTRODUCTION

"Connectivity, autonomous driving, sharing and electric drive systems – each of these four trends has the potential to turn our industry on its head. Yet the real revolution lies in intelligently linking the four trends."

- Dr Dieter Zetsche, CEO of Daimler AG and Head of Mercedes-Benz Cars (Daimler, 2016)

In this project the impact of 'connected mobility', one of this four trends, will be researched. In the coming years there will be new levels of connectivity, with new services inside and outside the car. (McKinsey & Company, 2014) The car will be part of a larger ecosystem, also called the Internet of Things.

The new developments in connectivity allowed growth in shared cars. Car sharing is able to serve people's transportation need, without drivers having to worry about ownership (Martin & Shaheen, 2016). One of the ways to improve shared mobility platforms is to seamlessly connect modes of transport with one another (Corwin, Jameson, Pankratz & Willigmann, 2017; Freese and Schönberg 2014) Many companies are moving to a business model where they are a service provider instead of a manufacturer. As part of being a service provider companies are developing service platforms (Mercedes DriveMe, Smart Read To, Jaguar InMotion) that offer drivers added value like finding a parking spot, listening to music or paying for fuel. Also, car manufacturers are innovating in autonomous driving. Developing software and sensors that allow cars to drive automatically.
KiM (2017c) describes two transition scenarios in terms of timespan in which the fast scenario has several level 3-4 cars (hands of the wheel) on the road in 2025 and the first robot taxis will arrive in 2045. This will offer new possibilities for improving mobility.

Many large digital companies have created a platform, and are now creating their business model around this (Accenture 2016). The most know examples of platforms are Facebook or the App-store from Apple. On a platform, businesses and users are able to collaborate and exchange information. The app-store for example, allows companies to develop digital applications that can be downloaded by users.

This thesis will look into these new developments to improve the journey of people travelling to the airport. The aim is to offer people a seamless and more personal journey without worrying about parking, high taxi prices, or asking a relative for help. Air travel is increasing rapidly and airports are expanding, low budget carriers have made a big impact by commoditizing flights. Airlines will need to provide a differentiated customer experience, using both segmentation and/ or integration. Also, seamless travel, supported by an easy-to-use travel management solution is seen as highly valuable by both travel providers and travellers (IBM, 2010)

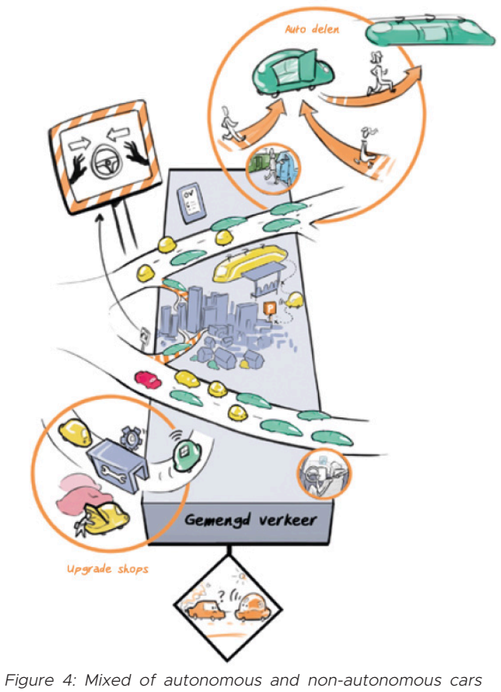


Figure 4: Mixed of autonomous and non-autonomous cars (KiM 2017b)

0.3 PROBLEM DEFINITION

This project will focus on: "Young professionals, that want to act like an experienced business traveller on short trips within Europe in 2025." (chapter: domain)

In this near future cars, products and services will become more connected with each other. This digital development offers new possibilities to improve the experience for travellers. A digital platform can provide a better travel experience by bundling multiple services into one (Cicero, 2016). This offers possibilities for MOBGEN, a company with expertise in developing digital product solutions.

This project aim to achieve a better travel experience from door-to-airport. The journey from door-to-airport is considered highly stressful (ACI, 2014). Also, delivering a good end-to-end travel experience is becoming the an important goal in the aviation industry. This can be provided by developing a virtual ecosystem that connects all the touchpoints (ARUP, 2016) This project will consider all the different components in the ecosystem that supports the travellers' journey as one. This means embracing the systems' complexity, and find ways for stakeholders to align their goals.

In order to deal with this complexity a vision will be created. By the design of bundled service for 2025 this project will create knowledge on 'connected mobility'. A gap that has also been indicated by the research department 'People in Transit' on the TU Delft, where this thesis is written. The research question they are answering is:

"How can we provide people in transit a seamless experience across all underlying interlocking systems fit for different types of travellers? By including various stakeholders, new technologies and embracing the systems' complexity, the experience becomes the focus of the journey."

Working on 'connected mobility' means understanding how the connected ecosystem of travel services will work. This ecosystem will be used for digital platforms, that delivers a bundled service with a coherent experience. The service and its experience should be based on a design-led vision (Cicero, 2016). Therefore a vision on how to improve travel the experience is necessary to answer what the phenomenon of 'connected mobility' can mean for our future, and for MOBGEN.

With this project I want to understand how people will live with new technological innovations to create strategic advice for businesses

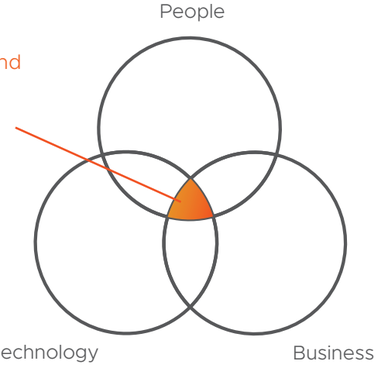


Figure 5 :The three pillars of the Industrial Design Engineering faculty

Figure 8: Mixed media explaining the developement of the future context. Pictures form Hosein Ashrafosadat and Kasuma Gruber.

0.4 DOMAIN

Where to make a contribution

Digital platforms enable companies to make multiple configurations of services and bundle them into an offer for a specific user profile. Therefor the first question is: 'Where to make a contribution with the my design?' In the design method ViP (Hekkert and van Dijk, 2011) this is described as the domain: "a lens or filter through which you look at the world" The domain explains three things: What people will the design be for. What place will the design function in. What moment in time will the design function. During the project the domain will serve as a guideline for decision making and reflection.

Domain

"Young professionals, that want to act like an experienced business traveller on short trips within Europe in 2025."

People

In this sentence is young professionals is defined as people in their first 5 working years. They are just getting used to the business culture and are discovering their attitude towards it.

For a new service with non-owned cars frequency of use is very important. Services like Car2Go and Uber draw power from the community and network, (van Alstyne) Due to the democratisation of air travel there is a large group on their way of becoming a frequent flyer, when becoming a 'prosumer' they will discover their most convenient and comfortable travel routine (Hulsebosch, 2013).

Young professionals have an ambitious mindset and are eager to express they belong with the more experienced professionals. Yet with commoditization being on the plane is not enough in order to express your status. Also, they are not as efficient as the experienced traveller and are in need of help to get the best journey without too much effort or expense. After all, they have just started working, and most businesses promote efficient travel (Lonis, 2017).

Place

The domain includes short trips, that have a shorter time between check-in and take-off than intercontinental flights. Schedules are often tight as people compare their trip with other options like rail or road. Around 500 - 700 Km people start to prefer flying over these other options (Vink, 2017)
This project looks into the future context of Europe for MOBGEN works with many european clients. Also, when designing for a complex problem in a future context it is easier to focus on the culture that matches with that of the designer.

Time

In the field of transport it is important to design with the future in mind because implementation and change is slow, development of a new car takes around 4-7 years (Unger, 2016) and it stays on the round for around 14 (Puylaert, 2017). However, because digital innovation is so rapid, predicting further than 10 years seems impossible. By looking at the near future I aim to design something novel yet realisable.

Assignment

DESIGN A SERVICE VISION FOR TRAVELLING TO AIRPORTS IN 2025 IN SHARED VEHICLES, DEALING WITH ANXIETY CAUSED BY IMPRESSION ON OTHERS.

0.5 DESIGN APPROACH

This project was based around "Vision in Product Design," ViP, an approach that help designers to develop the vision — reason of being — underlying their design (Hekkert and Van Dijk 2011). For ideation and the development of the concept the tools "customer journey mapping" and "storyboarding" where used (Boeijen et al., 2010) . This chapter explains 'why' and 'how' this approach, and these tools were applied in the project.

What kind of approach is ViP?

The ViP approach helps a designer to: Look at the possibilities in a future context. Define a reason for their design to exist. Combine personal intuition with method. And, create a valuable relationship between the user and the design.

Exploring future possibilities

Vision in Product Design is an approach that helps designers to define what to design, and why. It is about exploring the possibilities in the future instead of solving the problems of today. This is done by developing a future-context, in which the design will make its contribution. This future context is constructed through a combination of method, and intuition of the designer. It allows the designer to see problem in a new frame, the future context. And let go off the limitations of the current context.

The mission for a new design

The designer will write down the mission a statement based on the new context. A reason for the design to exist in the future that is based on its interaction with people. Developing this mission incorporates the values and opinions of the designer, stimulating authenticity in order to come with credible solutions.

Designing human interaction

The ViP approach will help the designer to translate their mission into a new concept. The designer should first understand what kind of relationship, will lead to the desired goal. This relationship between user and the design is called the interaction.

Why use ViP for this project?

The assignment for this project is gives direction to the solution but does not implicate the direct outcome that is required. The problems complexity and open endedness makes it impossible to find an optimal solution. It can be described as wicked (Rittel and Webber 1973), or complex, open, dynamic and networked. All the factors that influence the issue are constantly changing. That is why abductive problem solving will be used. A way to approach this is by finding a new frame, or context, in which the problem can be solved (Dorst 2015).

"A PROBLEM CAN NEVER BE SOLVED FROM THE CONTEXT IN WHICH IT AROSE."

More importantly is that a clear vision is needed that explains 'why' the design of a service for travelling to airports in shared vehicles is necessary. A vision based on human values. This vision gives direction to the experience and bundled service provided by a digital platform around travel. The ViP approach helps to define a user-centered vision and create a new frame for finding meaningful solutions.

Developing storyboards and mapping the customer journey.

The design in this project covers the journey from door to gate. A chronological process in with multiple touchpoints between the user and the service. In order to understand, create and communicate these interactions, storyboards were developed and the customer journey was mapped. Storyboarding helps to imagine the events and interactions by visualising these moments. The relation between the service and the traveller is shown as a sequence. With the information of this journey mapped out in multiple layers, each with a different topic.

0.6 DESIGN PROCESS

Domain, area of contribution

Before starting this project the domain was defined. This was done by deciding for who, when and in what place the design will make its contribution. The domain can be seen as a lens for looking at the world. It served as a reference point for evaluating and decision making.

Analysis of Developments in mobility

Explore the developments that are shaping the world of mobility.
Describe how we look at the problem currently
Insights that shape the solution.
Source of Factors for the future themes.

Factor Research

The future context was established by combining factors; observations and considerations from the real world. The impact of these factors on the people within the domain were evaluated in order to form a story about the future.
The factors I used were gathered from my literature research, lectures, talks with people involved, blogs and personal views (appendix:factors). Factors come from different from different fields of study and can be divided in four types:

- Principles, that will stay the same, like ‘people are afraid to make the wrong decisions’
- States, almost not changing, like ‘CO2 needs to be reduced.’
- Developments change slowly and steady, like the growth of a population.
- Trends change quickly and are unpredictable like ways of self expression.

Future Themes

The factors form a collection of building blocks for the future context. By combining factors, and interpreting their connection future themes were formed. They each tell a story about the things that are happening in the future context. Three main future themes were selected based on their influence on the people from the domain.

Design Mission

My final design will form a response to the future themes, that describe the new context. What this response will be is described in the design mission. A statement that describes the reason for my design to exist in this new context. It describes what I want people to experience to positively change their behaviour.

Interaction

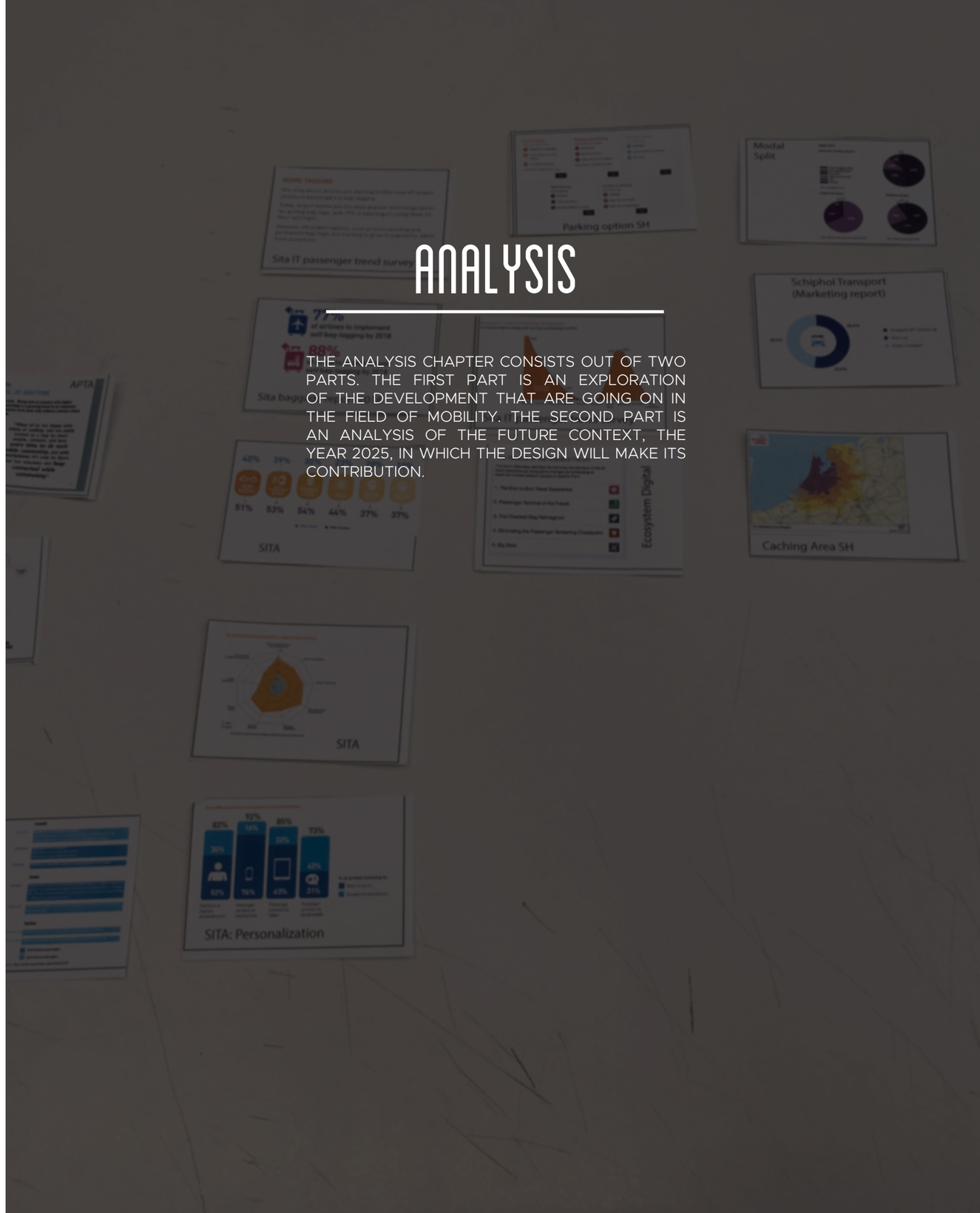
I determined what relationship between the user and the final design was needed to fulfill my mission. Understanding this relation, or interaction will form the connection between the new context and the design. ‘The interaction defines how the solution is used and experienced, and what value or meaning arises from the relation between the user and product’ (Hekkert & van Dijk, 2011).

Translation to product characteristics

In this phase the characteristics of the design were determined. These characteristics served as a starting and reference point for the ideation process and were derived from the interaction.
The interaction describes what relationship is needed to reach the desired goal. There are certain characteristics that cause this type of interaction. If we see the interactions a relation between two people, one could ask: “What kind of person inspires the other to behave and feel a certain way? What kind of characteristics does this person posses?”

Concept

The storyboard of the future vision is displaying the proposed solution for travelling towards the airport. This will help to identify the work to be done and the strategy for MOBGEN and its clients. The most valuable or novel touchpoints in the storyboard is then prototyped, tested and improved into a final design.



ANALYSIS

THE ANALYSIS CHAPTER CONSISTS OUT OF TWO PARTS. THE FIRST PART IS AN EXPLORATION OF THE DEVELOPMENT THAT ARE GOING ON IN THE FIELD OF MOBILITY. THE SECOND PART IS AN ANALYSIS OF THE FUTURE CONTEXT, THE YEAR 2025, IN WHICH THE DESIGN WILL MAKE ITS CONTRIBUTION.

1.1 ANALYSIS

Developments in the field of mobility

There are several important developments changing the field of mobility. It is important to understand these changes for they influence the way we will travel in the future. The analysis is based on literature, trends, several talks with people working on mobility projects and an observation. This exploration provided input for ideation and the decision making process. Also, many insights were gathered for the analysis of the future context.

Analysis of the future context

The design will make its contribution in a future context (chapter domain), the year 2025. So in order to understand this future context, predictions needed to be made. This was done by the generation and combination of 'building blocks', called factors. They are value-free observations of world phenomena, such as: "People avoid risk by following group behaviour". By combining these factors into clusters and interpretation of their connections, these cluster become stories about the future context.

These stories give an insight into the year 2025. The issues that people will be dealing with, and their attitude towards these issues. The design will be a response to this future world that is described. It will move people to change their behaviour and so, deal with the issues of this future. The contribution that the design will make is described in a statement called a 'mission'.
The term 'Connected Car' has been very popular lately in the discussion about future mobility. We are already able to connect our smartphone with the infotainment system of cars in order to make calls or play music using the interface provided on the dashboard. Or look for a nearby fuel station and pay remotely.

1.2 CONNECTED CAR

In the coming years there will be new levels of connectivity, with new services inside and outside the car. (McKinsey & Company, 2014) The car will be part of a larger ecosystem, also called the Internet of Things.

Internet of Things applications are not only able to connect all sorts of objects like phones, charging stations and road signs but also analyse the data to provide 'smart' solutions. (Ninan et al, 2015) As the car becomes part of this ecosystem new services can be provided. Some of these services will focus on the driving experience, by providing entertainment, e-commerce or social platform. Whereas 'smart mobility services' are a bundled option focused on travel in general, by including car sharing, public transport and navigation (McKinsey & Company, 2014).

In the past few years connectivity has become a very important topic in the automotive industry as it will play an important role in the future revenue stream. Connectivity has also opened the door for digital companies that had no prior relation to the automotive sector; think of Apple CarPlay that offers infotainment in cars (figure 9). These companies have a different view on cars - as just another connected device - which will shift image and role of automobiles in people's lives. (Ninan et al, 2015)

The shift in revenue and the emergence of third parties is making the search for profit more complex. Ecosystems with several consumer services will be established where revenue is shared between the parties that help offering the service.

The automotive industry is advised to look into the creation of new, yet unspecified, business models with a focus on multi-modal mobility services. Companies need to learn how to sell a premium experience, and not just the technology. This can be done by bundling multiple offers into several digital services (PWC, 2016).

Figure 9: Examples of connected car functionalities; navigation, entertainment and digital car access. (McKinsey & Company, 2014

1.3 THE SHARED CAR

access to electric pods. (figure 10,11) People could pick these up at stations by using a magnetic key. Much later, services like Greenwheels and Car2Go started to provide short term access to cars. The improvement of connectivity in recent years helped the growth of car sharing and allowed room for new business models.

What is car sharing?

The term ‘car sharing’ has many definitions, it can be seen as the legal use of a car that is not owned by the driver. One example is Snappcar, where people can rent cars from other individuals. Some also consider ‘ride hailing’, where people do not drive themselves, part of the sharing movement. This project will consider ‘car sharing’ as a service that allows people to rent cars on a short-term (hourly or daily), as-needed basis, paying only for the time they use the car and the mileage they drive (Tsrc.berkeley.edu).

The trend

Car sharing is seen as a very important trend in mobility. It will be largely driven by the dramatic cost reduction that is expected (PWC 2016). People will be able to have access to mobility on demand without having to worry about parking and the burdens of ownership. Cars will be used more efficiently reducing the amount of vehicles in the city (Renault 2018).

The Dutch government predicts that car-sharing will expand by fleet owners (Greenwheels, Car2Go) and ride hailing platforms (Uber, Lyft). Secondly they state that shared cars will become part of multimodal journeys, as they are able to pick up and drop off at public transport hubs, where they self-park. When sharing grows the transformation towards autonomous driving will accelerate, because cars can be paid off quicker (KiM, 2015; KiM, 2017a). The promise of shared mobility in combination with automated driving is shown in various future concepts (Hawkins 2018; Renault 2018; IDEO 2017).

Currently

Nowadays people use shared car mostly for irregular visits to — for example — family, or for transporting large goods. Motives for car sharing are its convenience, not being dependent on public transport and the economic benefit. (KiM, 2017c) Yet the service is too pricy for daily use and serves as a mobility solution for non owners, or as a second car. (Observation, 2017; figure 12-15)

People using shared cars are mostly young singles with a high education, urban couples with young kids or older couples without kids. Some see car sharing as an ideal for the future and convey this statement. (KiM, 2017b) But in general there is still a large gap between the attitude towards car sharing and the actual behaviour of people (KiM, 2017c.)

Urban residents in Western markets appear to be losing interest in owning their own cars, a trend exacerbated by their desire to move to urban areas, where cars simply aren’t a requirement, and where public transport and ride-sharing apps can easily fulfil their needs.

Urbanisation

It is no wonder that shared mobility is taking off in urban environments. The car is becoming a mismatch in the city due to the low effective speed. The amount of people moving to cities is still increasing, resulting in more congestion and expensive parking fees. Cities plan to ban cars from city centers (Kohlstedt, 2017), invest in bike sharing plans and transform streets into walking or cycling areas. Instead of using the car, urban people travel by bike or public transport (strategy& sharing). Trams and bikes offer convenience within the city and trains can bring people from core to core (KiM, 2017b) (Puylaert, 2017). Lately shared mobility platforms have been growing in the urban context. The city is a good environment for shared mobility platforms due to its mass, the inconvenience of owning a vehicle and the open and flexible mindset of the people (Ninan et al, 2015) (Observation, 2017).

Sharing will be accepted among many people living in an urban environment, and become a significant form of travel

Car ownership will still remain stable in less densely populated areas

Figure 10: Witkar

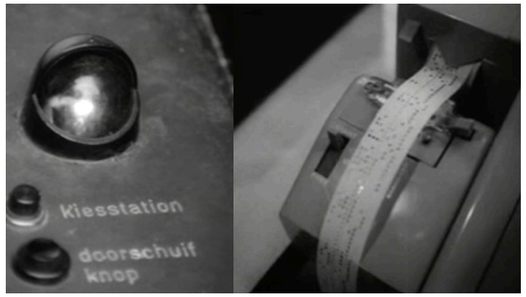


Figure 11: Access and payment system for the Witkar

Figure 12: Finding the shared car

Fig 13: Checking if baggage will fit.

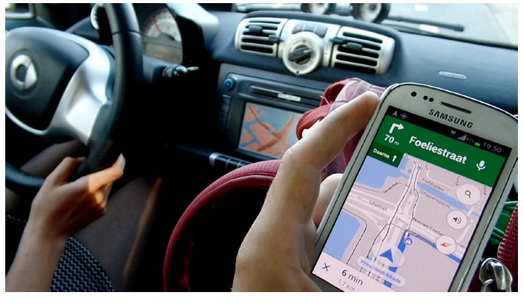


Figure 14: Using the phone for better navigation

Figure 15: Charging the car

Stills from shared car observations (Observation, 2017)

1.4 AUTONOMOUS CARS

In order to define what mobility will look like in 2025 I analysed Autonomous vehicles. This helped me to make assumptions for my future context. ‘Transition’ is the main theme of these assumptions; Not everyone will use the same transport and not every place facilitates autonomous driving or shared mobility.

With level 4-5 Autonomous driving (figure 16) already underway as Tesla presents their new model 3 the question is where ends reality and where starts skepticism? In his talk Dr. Maarten Sierhuis (2016) explained the work to be done to enable autonomous driving. He is working on multi-agent modelling. In which the car knows what others are doing, and going to do, it reads interaction of pedestrians, animals, cyclists, the whole scala. The big hurdle is urban environments where traffic relies on subtle interactions.

Alexander Busse (IKA, Institute for Automotive Engineering) explained how the highway is the best environment for autonomous driving. It is a controlled area without any pedestrians or cyclists, and a place where manoeuvres are easy. Level 4 anticipates on this and is described as autonomous parking and autonomous driving on highways. Something that can be done with modern technology already. KiM (2017c) describes two transition scenarios in terms of timespan in which the fast scenario has several level 3-4 cars (hands of the wheel) on the road in 2025 and the first robot taxis will arrive in 2045. This means that some cars only expect drivers to take action when the autonomous driving system fails. They state that level 4 vehicles will take over driving on highways but not fully on other roads. They expect that the infrastructure will start to provide lanes for autonomous vehicles. First on highways and later also roads connecting cities. Later infrastructure for autonomous vehicles entering cities like veins will connect with the urban environment (KiM, 2017c).

SUMMARY OF SAE INTERNATIONAL’S LEVELS OF DRIVING AUTOMATION FOR ON-ROAD VEHICLES

SAE level	Name	Narrative Definition	Execution of Steering and Acceleration/ Deceleration	*Monitoring* of Driving Environment	Fallback Performance of *Dynamic Driving Task*	System Capability *(Driving Modes)*
***Human driver* monitors the driving environment**						
0	No Automation	the full-time performance by the *human driver* of all aspects of the *dynamic driving task*, even when enhanced by warning or intervention systems	Human driver	Human driver	Human driver	n/a
1	Driver Assistance	the *driving mode*-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	Human driver and system	Human driver	Human driver	Some driving modes
2	Partial Automation	the *driving mode*-specific execution by one or more driver assistance systems of both steering and acceleration/ deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	**System**	Human driver	Human driver	Some driving modes
***Automated driving system* (“system”) monitors the driving environment**						
3	Conditional Automation	the *driving mode*-specific performance by an *automated driving system* of all aspects of the dynamic driving task with the expectation that the *human driver* will respond appropriately to a *request to intervene*	System	**System**	Human driver	Some driving modes
4	High Automation	the *driving mode*-specific performance by an automated driving system of all aspects of the *dynamic driving task*, even if a *human driver* does not respond appropriately to a *request to intervene*	System	System	**System**	Some driving modes
5	Full Automation	the full-time performance by an *automated driving system* of all aspects of the *dynamic driving task* under all roadway and environmental conditions that can be managed by a *human driver*	System	System	System	**All driving modes**

Figure 16: SAE 2014

1.5 AIR TRAVEL

Air travel is already a travel experience offered as a bundle of different services. The ecosystem of stakeholders each provide different services; like booking, luggage handling, parking and in flight entertainment. With no ownership of a physical product, in contrary to most automobiles, the main focus already lies on the experience of the journey.

Low budget carriers have made a big impact by commoditizing short haul trips (CBS, 2017) and currently also long haul flights, WoW for example offers 250 euro return trips between Amsterdam and New York. In order to compete with low budget carriers, airlines aim to stand out by providing the best service. Providing a better service means improving the processes and travel experience. (Vink, 2017)

The current airport experience causes many people, 42% to feel stressed. (CPP Group Plc survey results 2011) Also, the amount of waiting time in airports for business travellers leads to a great productivity and financial loss for business companies. (The Times 2015). The PASSME project is taking steps to reduce passenger stress while enhancing people’s experience and interaction within the airport. The overall objective is to reduce travel time by at least 60 minutes by integrating information between all stakeholders and transforming airport and aircraft operations and interiors to make the passenger journey time efficient, seamless, robust and accessible. (Santema and Vink, 2015; Kefalidou, 2015) Seamless travel, supported by an easy-to-use travel management solution is seen as highly valuable by both travel providers and travellers (IBM, 2011). And people value things like smart parking, combined ticketing and, check-in and luggage drop-off at the curb-side (fig 17).

What can be done?

Safety and security play an important role in the aviation industry. Changes at the Airport are difficult to make when in conflict with the current security regulations. Airplanes are remaining relatively the same due to high investment costs and high risks (Vink, 2017).

Yet within these boundaries there are enough possibilities. Digital solutions for booking or check-in are already used by many customers (Sita 2016). Delivering a good end-to-end travel experience is becoming the goal, this can be provided by developing a virtual ecosystem that connects all the touchpoints (ARUP, 2016) (figure 18). Almost 80% of the airlines are focussing on personalisation by the use of digital media and applications Another solution to improve the process and experience of air travel is the implementation of door-to-door luggage services like Travel Light, and self bag-tagging. (Sita, 2016). Travellers’ needs are met at an earlier stage in their journey. This is done by connecting package, in this case luggage, transport to the booking process. In this case the bundling of multiple companies and their assets is improving the service offer for travellers.

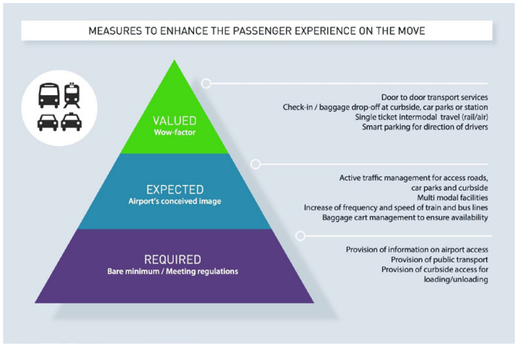


Figure 17 ACI 2014

The Connected-End-to-End travel Experience

Figure 18 ARUP 2016 , The connected-End-to-End travel Experience

1.6 DIGITAL PLATFORMS AND ECOSYSTEMS

In this project I aim to develop a service vision for travelling to the airport. In the journey from door-to-gate people will make use of multiple service offers. Parking a car, getting a coffee, using Wi-Fi. In this project I will look at how these services can be combined into one ecosystem. And how this combination can reduce the anxiety and improve the travel experience. When talking speaking of the 'connected car' or digital innovation it is hard to miss this term; ecosystem — or digital platform. But what is a digital platform or ecosystem? Why is it relevant? And how can we approach it with design?

"A DIGITAL PLATFORM IS A TECHNOLOGY-ENABLED BUSINESS MODEL THAT CREATES VALUE BY FACILITATING EXCHANGES BETWEEN TWO OR MORE INTERDEPENDENT GROUPS." (MORVAN, HINTERMANN AND VAZIRANI, 2016)

In an ecosystem several parties exchange value and information, but when this connection is facilitated and managed by a certain party it becomes a platform. This means that services on a platform are usually strongly bundled and channeled. They often represent the characteristics of certain brand. (Cicero, 2016) (figure 19)

The most know examples of platforms are Facebook or the App-store from Apple. Many large digital companies have created a platform, and are now creating their business model around this (Accenture 2016). On a platform, businesses and users are able to collaborate and exchange information. The app-store for example, allows companies to develop digital applications that can be downloaded by users.

Successful platform owners have gained power through network effects, bringing customers and suppliers together in a large scale community. These platforms become more successful as more people join. Customers will have more choices and suppliers will have a bigger market to sell to. Quick growth of these platforms is made possible by digital technology. It enables on-demand services that are accessible almost anywhere, and it allows quick scalability for a very low price. Data plays a key role in platforms as it allows companies to make better decisions and improve their service offer (Morvan, Hintermann and Vazirani, 2016).

Platforms have to find a balance in order to offer an experience that is coherent with the brand. They need to combine a design-led vision: "what should the experience be" with a user-led feedback: "what customers want". (Cicero, 2016) Even more, there also needs to be clear conditions that protect intellectual property, data ownership and that fosters trust among participants (Morvan, Hintermann and Vazirani, 2016).

Becoming successful by developing a platform as a company requires a new way of thinking. Companies need to embrace systems thinking; exploit the assets the posses while explore new services and revenue streams. The company should become a responsive organization. Meaning that they become more experimental, entrepreneurial, customer driven. (Cicero, 2016)

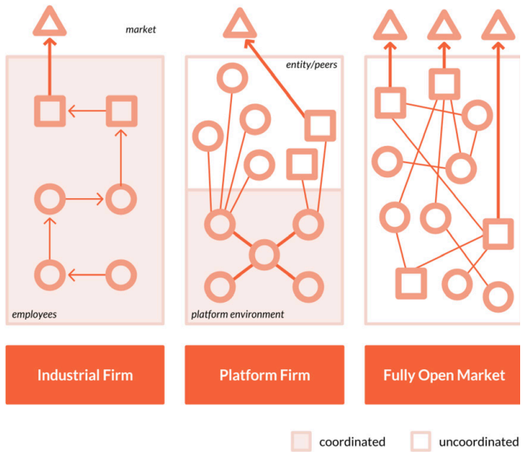


figure 19 : Platform firms explained, showing how the product is developed. (Cicero, 2016)

1.7 CONNECTING CARS WITH AIR TRAVEL

Already some airports collaborate with shared car providers to improve the mobility offer for travellers. Companies like Car2Go give people access to shared vehicles at the airport that can be used to drive into town (figure 20, 21). Some start-ups came up with ways to improve mobility around airports by car; Abel, that offered mobility as a service, and park-fly-rent that facilitates peer-to-peer sharing. When it comes to parking, a pilot from Bosch and Mercedes-Benz shows how autonomous cars are able to navigate through parking garages with the help of beams (Mercedes-Benz 2017).
These examples show the possibilities of the car as an integral part of air travel services, offering new alternatives that can improve the travel experience and make people's journeys more seamless.

Figure 20: Car2Go and Lufthansa combining mobility at the airport

The reason that cars are not as connected as our personal devices or home entertainment systems has partially to do with cyber security and technology. But one other important factor is that car manufacturers fear that profit will shift towards software and service offers, instead of the physical car. In this case cars will become commodity and they will lose their brand appeal. (McKinsey & Company, 2014) Instead, the brand experience will be dictated by the service or platform-owner. This also explains why many car manufacturers aim to become a service provider or platform owner themselves.

Within this ecosystem cars will play a different role as it will become part of a bundled service. It risks losing function of expressing someone's identity and giving the feeling of power. But it can gain new functionalities that fit the journey; like package delivery (Daimler 2018), space to relax or work (IDEO 2017).

Figure 21: ParkFlyRent, a startup providing Peer-to-Peer car sharing at airports

1.8 CONCLUSION

Connected Cars
The car will be part of a larger ecosystem, also called the Internet of Things allowing to provide ‘smart’ solutions. (McKinsey & Company, 2014) Connectivity has also opened the door for digital companies that view cars as just another connected device - which will shift image and role of automobiles in people’s lives. (Ninan et al, 2015)

The automotive industry is advised to look into the creation of new, yet unspecified, business models with a focus on multi-modal mobility services. Companies need to learn how to sell a premium experience, and not just the technology. This can be done by bundling multiple offers into several digital services (PWC, 2016).

Car sharing
The trend of shared cars will be largely driven by the dramatic cost reduction that is expected (PWC 2016). People will be able to have access to mobility on demand without having to worry about parking and the burdens of ownership. Cars will be used more efficiently reducing the amount of vehicles in the city (Renault 2018). Shared cars will become part of multimodal journeys, as they are able to pick up and drop off at public transport hubs, where they self-park. When sharing grows the transformation towards autonomous driving will accelerate, because cars can be paid off quicker (KiM, 2015; KiM, 2017a)

Currently car sharing is mostly done by people in an urban environment. Trips are mainly irregular; visits to — for example — family, or transport of large goods. Motives for car sharing are its convenience, not being dependent on public transport and the economic benefit. (KiM, 2017c)

Autonomous Driving
Alexander Busse (IKA, Institute for Automotive Engineering) explained how the highway is the best environment for autonomous driving. It is a controlled area without any pedestrians or cyclists, and a place where manoeuvres are easy. Level 3-4 cars (hands of the wheel) will be on the road in 2025 and the first robot taxis will arrive in 2045.

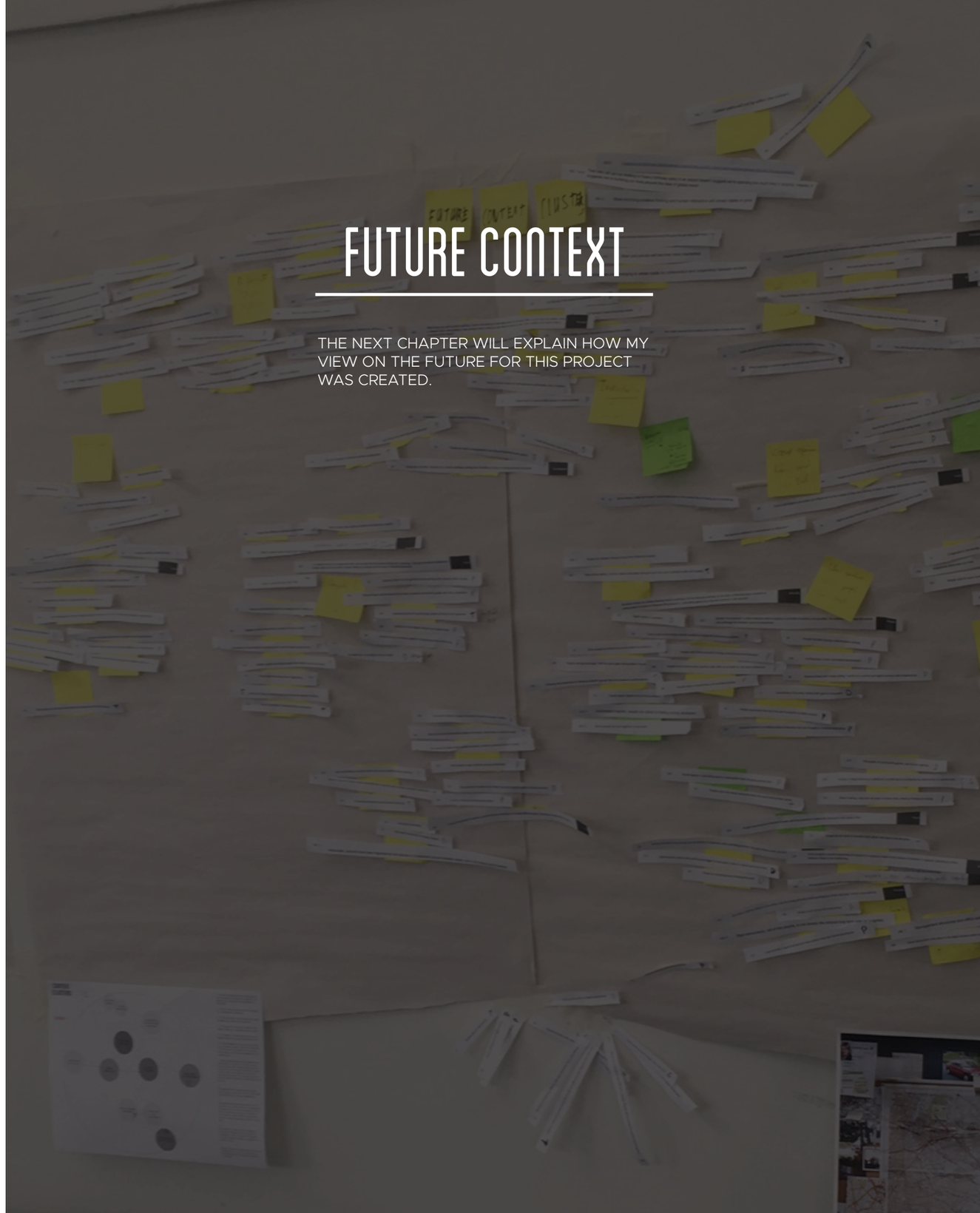
Expectations are that specific lanes for autonomous vehicles will be created. First on highways and later also roads connecting cities.(KiM, 2017c).

Air travel
The current airport experience causes many people, 42% to feel stressed. (CPP Group Plc survey results 2011) Changes at the Airport are difficult to make when in conflict with the current security regulations (Vink, 2017). Yet within these boundaries there are enough possibilities. Delivering a good end-to-end travel experience is becoming the goal, this can be provided by developing a virtual ecosystem that connects all the touchpoints (ARUP, 2016) Travellers’ needs can be met at an earlier stage in their journey.

Digital Platforms
In the journey from door-to-gate people will make use of multiple service offers. Parking a car, getting a coffee, using Wi-Fi. In this project I will look at how these services can be combined into one ecosystem. Many large digital companies have created a platform, and are now creating their business model around this (Accenture 2016). On a platform, businesses and users are able to collaborate and exchange information.

Successful platform owners have gained power through network effects, bringing customers and suppliers together in a large scale community. These platforms become more successful as more people join. Platforms have to find a balance in order to offer an experience that is coherent with the brand. They need to combine a design-led vision: “what should the experience be” with a user-led feedback: “what customers want”. (Cicero, 2016)

Implication for this project
This project will provide a vision for companies. It serves as inspiration for navigating the complex world of connected mobility. The future will be analysed and a design goal created. With this goal I will be able to determine how the new developments from this chapter can help people in the future.



FUTURE CONTEXT

THE NEXT CHAPTER WILL EXPLAIN HOW MY VIEW ON THE FUTURE FOR THIS PROJECT WAS CREATED.

2.1 FACTOR RESEARCH

Finding building blocks for the future

The future context of 2025 was constructed from multiple 'building blocks' called factors. These factors are value-free observations and considerations of world phenomena; such as "People avoid risk by following group behaviour."

The factors I used were gathered from my literature research, lectures, talks with people involved, blogs and personal views (appendix:factors). Factors come from different from different fields of study, like psychology, culture, technology and economy. They can be divided in four types:

Principles will stay the same, like 'people are afraid to make the wrong decisions'

States are almost never change over time, like 'CO2 needs to be reduced.'

Developments, change slowly and steady, like the growth of a population.

Trends change quickly and are unpredictable like ways of self expression.

Bundling factors into future themes

The future context is a composition of the multiple factors. In order to develop future themes factors were bundled based on their connection with one another (figure 22). Factors could have a common quality, form a contradiction, or have a different meaning when combined. After some time each bundle of factors will start to form a story, a future theme (appendix:theme).

Some stories are less relevant for the people in the domain than others. Therefor, a selection of future themes was made (appendix:theme selection) and combined into three main future themes. These three themes were used for developing the design goal.

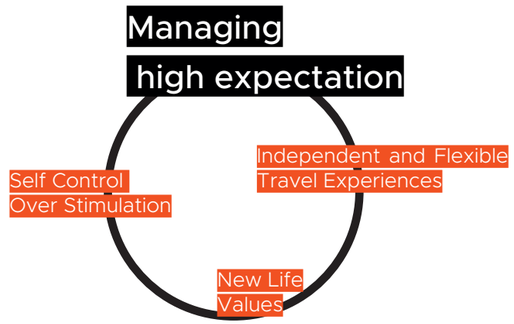
MANAGING HIGH EXPECTATIONS

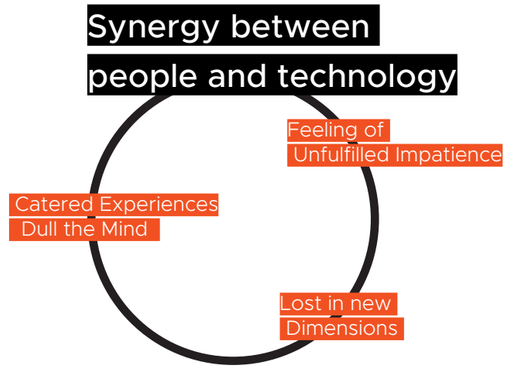
SYNERGY BETWEEN PEOPLE AND TECHNOLOGY

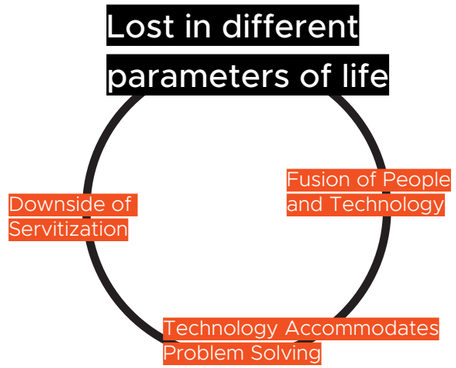
LOST IN DIFFERENT PARAMETERS OF LIFE

Figure 22 Clustering the factors

2.2 FUTURE THEMES







2.3 MANAGING HIGH EXPECTATIONS

The people in the domain have been living in a time where possibilities seem endless, and where people presume that ‘you can become everything’. The individual comes first, and feeling good about yourself is a prime virtue. It all comes down to attitude and persistence. They believe that people on top have deserved this by hard work or cleverness. This results in high expectations about their own life and coping with different realities.

People not only have ambitions like buying a house or landing a good job. They also focus on fulfilling their expectations about life like having interesting life stories, wonderful travel experiences and multiple talents. This is because people can express every moment of their life on social media to convey image and status. One identity is not enough; people are a lawyer, surfer and world explorer at the same time.

In order to live up to the expectations and become the ideal self people try to combine work, social moments and leisure as efficiently as possible by reprogramming behaviour, becoming determined and self controlled. Control over their surroundings to make this lifestyle possible is part of this.

The themes that were used for this story are:

- Self control over stimulation
- Independent Free travel
- New Values in Life

Abstract representation of the future theme (mixed media)

2.4 SYNERGY BETWEEN PEOPLE AND TECHNOLOGY

In order to live up to their expectations, people want to become more capable and efficient as a human, by the use of new technology. They are willing to pay for these improvements; also as it serves as a show of status and convenience. Technology is not the goal, but it does help to reach goals. New tech helps to solve problems, making people more independent. People start to expect more flexibility, precision and trust from services. They want multiple available options and the information to make the right choice. This also causes people to be more dependent on technology.

The themes that where used for this story are:

- Fusion of people and technology
- Downside of Servitization
- Technology accommodates problem solving

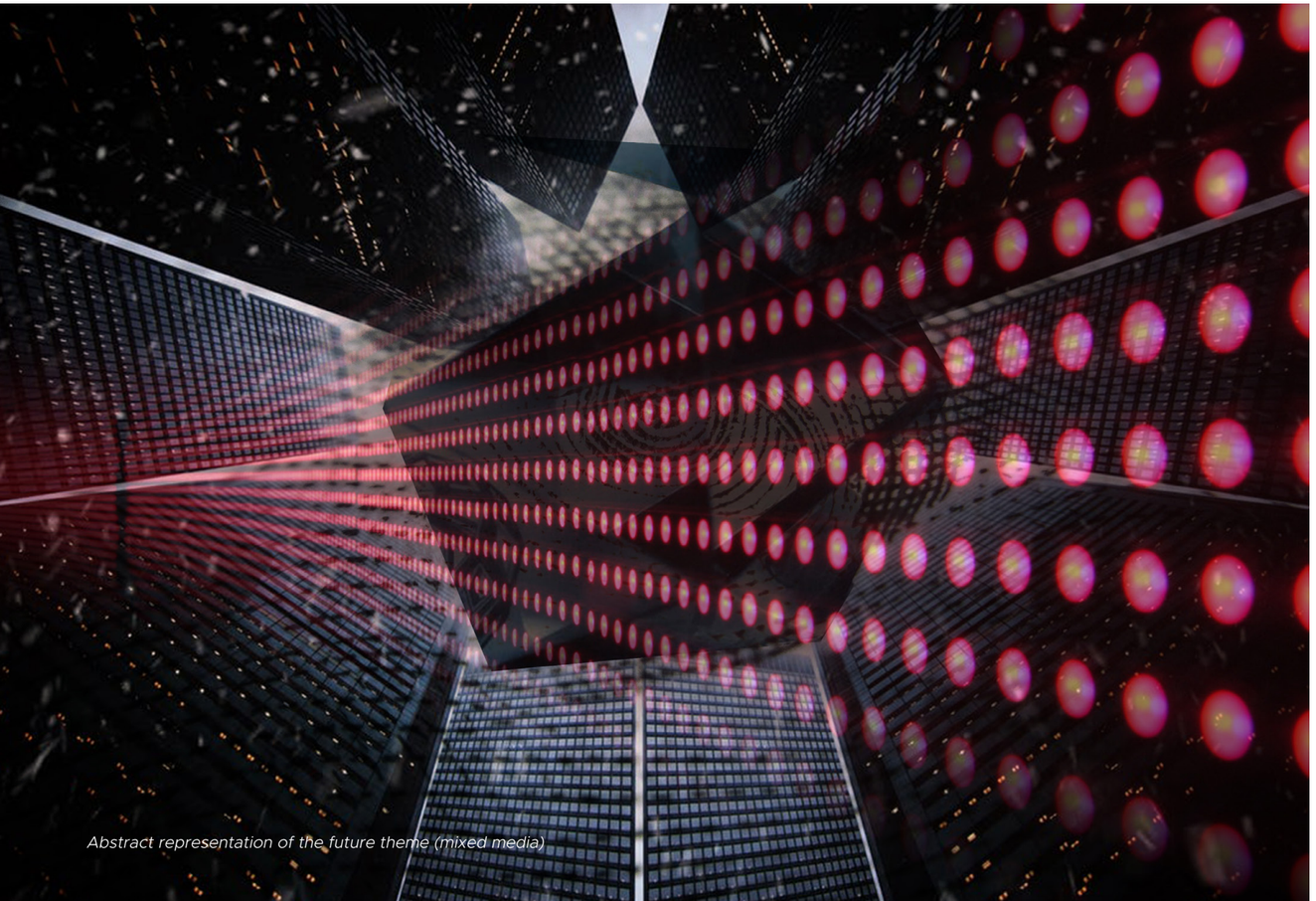
Abstract representation of the future theme (mixed media)

2.5 LOST IN DIFFERENT PARAMETERS OF LIFE

The growing tendency to put the ‘self’ first leads to an unparalleled freedom, but also creates an enormous pressure on people to stand alone. This results in people that want to use every second well. With real time access as the new standard and the need for instant gratifications people become restless and impatient.
As travel becomes more comfortable, and efficient. The perspective on speed and distance for passengers is changed. The experience of going to a new foreign place is less impressive as distances become easier to travel.
People’s perspective on time and place are changing making it difficult to find moments where people can really calm down.
As a reaction some people take an interest in meditation, yoga and mindfulness. Mostly not for the traditional enlightnment or belief but for personal relaxation and improvement of daily life.

The themes that where used for this story are:

- Feeling of unfulfilled impatience
- Lost in new dimensions
- Catered experiences dull the mind



Abstract representation of the future theme (mixed media)

2.6 CONCLUSION

In 2025 the possibilities seem endless. People still believe that success all comes down to attitude and persistence. They compare themselves with the highlights of others and exceptional stories of success. This causes people to set very high expectations for themselves.

People want to become more capable and efficient in order to fulfil these high expectation. New technology helps them with this. Their problems can be solved faster and more easily, making people more independent yet more dependent on technical solutions.

The perspective on speed and distance changes, and people tend to spend every second effectively or looking for distraction online. This makes it difficult for people to calm down and find a moment to reflect on life.

The high expectations can make people feel unsuccessful, incapable anxious. The help from technology meets their goals, but it does not change their idea of self-worth. That can be done by moments of personal reflection.

DESIGN MISSION

THE DESIGN MISSION IS DEFINES THE GOAL THAT THE FINAL DESIGN NEEDS TO ACHIEVE. IT IS THE REASON FOR THE DESIGN TO EXIST IN THE FUTURE CONTEXT.

“During travel, I want young professionals to be relieved of anxiety caused by desired impressions, whilst momentarily creating awareness of their view on success.”

3 DESIGN MISSION

Design Mission

“During travel, I want young professionals to be relieved of anxiety caused by desired impressions, whilst momentarily creating awareness of their view on success.”

Explanation of the design mission

...relieved of anxiety caused by desired impressions...

One of the biggest threats for people in the domain is that their desired impression is becoming unrealistic. Growing up in prosperous times with the message that they can become everything when working hard resulted in high expectations about jobs, life goals and their personal capabilities.
Possessions and classification is less important in order to express status. Due to social media people are now focused on living and portraying an interesting life full of highlights. These unmet expectations lead to anxiety and unhappiness.

...momentarily creating awareness of their view on success.

At the root of this anxiety lies their view on success. I want people to take time to consider what success means for them instead of comparing and competing with others. Due to the ability to spend time by consuming digital media, people have almost no time to deeply think or reflect.

TRANSLATING THE MISSION

IN THIS CHAPTER THE DESIGN GOAL IS TRANSLATED IN CUES, BY UNDERSTANDING THE RELATIONSHIP BETWEEN THE TRAVELLER AND THE SERVICE. THESE CUES WILL DEFINE THE ATTRIBUTES AND FEATURES OF THE FINAL DESIGN.

4.1 INTERACTION

The previous chapter ended with the mission of my design. In order to fulfill this mission people need to partake in an interaction that will influence their behaviour and feelings. It reflects the mission as a relationship between the user and the design. 'It simultaneously describes user concerns, needs and desires, and matching product qualities. (Hekkert and Van Dijk, 2011)' In order to better understand the interaction, It is framed as an analogy.

The analogy

This analogy describes a stage where people normally come to relax and socialise without worries. Good cafes give you the feel welcoming or homely. On the other hand it can also be a place where people can act very judgemental towards the person that is entering through the door.

In this particular situation the bartender pours your drink without needing instructions. He understands what you want. With this gesture the bartender shows others that you belong here; taking away the fear of judgement. It has more effect when the bartender shows that you are a regular then conveying this yourself.

The preferred interaction feels like:

"stepping into a cafe and getting your usual drink prepared, without having to ask."

The qualities of this interaction can be described as:

Uncomplicated Independence
The young professional in the domain wants to act like an experienced traveller. Self-esteem achieved by being independent can help overcome anxiety. The traveller is able to prove to himself and others that he is capable person. But independence can be very uncomfortable and uncertain. 'Uncomplicated Independence' makes people feel competent without worrying.

Confidently Loosening Up
Loosening up and not worrying about impressions helps with anxiety but also creates a moment for awareness. It is important that people find a way to confidently loosen up, otherwise relaxation can be seen as 'slacking' and create guilt. The moment of relaxation must look and feel as something the traveller has deserved.

4.2 PRODUCT CHARACTER

Before coming up with the design itself is important to understand what elicits the interaction of 'stepping into a cafe and getting your usual drink prepared, without having to ask." In this case the bartender gives you a certain feeling. If the design has the same characteristics as the bartender it can give you a similar feeling.

To help guide the search for fitting product characteristics the Myers Briggs test was used. (Appendix)

Assuring Certainty

The barkeeper is acting straightforward and with certainty, knows you and is confidently taking action before asking. The certainty he emits is serving as a reference point that assures the people around him; a stand up guy that can be decisive.

Synergetic alert

When walking into the cafe the barkeeper exchange a look or nod of recognition. A form of non-verbal communication asking if you want a drink. That in return can be answered and understood by a nod, two taps on the bar or a facial expression.

The barkeeper is alert, sharp, knowing about everything that happens in his cafe. This alertness is expressed by...
But his alertness is in sync with you, therefor creating fluent non-verbal communication.

Supportively accommodating

The barkeeper supports and caters you. Pooring you a drink, helping with a question. Not supporting in an imposing way, but accomodating. Setting the scene that makes people feel they belong in the cafe no matter their background or looks.

4.3 DESIGN CUES

The design cues serve as a translation of the product character to starting points for ideation.

Using the service

Making the right choices by assuring certainty
The main task is to make the traveller assured and able to make the right choices. Therefor the service communicates with clarity; meaning no ambiguity or information overload. The level of detail during the use must match to the level of attention of the traveller. People should also receive feedback that assures them.

The service should be alert of the movements that traveller makes. Actions from the service should occur in this synchronised way, resulting in a rhythmic sequence. The traveller and the service should work together like two soccer players doing a fluent one-two pass.
The gestures that the traveller makes to control the service will be inspired by non-verbal communication with a bartender; nod, two taps on the bar or a facial expression.

In order to be supportively accommodating the service should trust the independence of the traveller, but accommodate a situation where the traveller feels safe to act independently. Showing the information of a current to-do or location to make sure that one glance reminds and reassures them.

The use of technology

The aim is to keep devices on the background, letting people focus on the real world instead of the digital domain. Objects that take part in the journey will communicate with people in a low key way, supportively accommodating them.

All devices will be part of an ecosystem that creates a personal experience. The service relies on the communication between these devices as it observes users and tries to sync with their flow. During the entire process the service will act as a mediator between the user and the systems of stakeholders like the airport or shared car platform.

The system has to prepare and assure with certainty by communicating clearly. It should accommodate quick self-service solutions, but also provide detailed help by artificial intelligence or the ability to talk with a personal assistant.

The experience of the service

These experience will need a design language. Something that gives calming support by showing that the service is active on the background for people to fall back on. It should display a sense of recognition by synchronizing with the user. The experience will be based on the non-verbal communication with bartender. Action made by the traveller are reflected by the service. Different types of movement and ways of reflecting were explored in ideation.

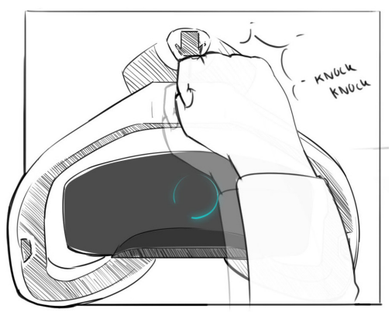


Figure 23: Activating the car
Ideation based on the design cues

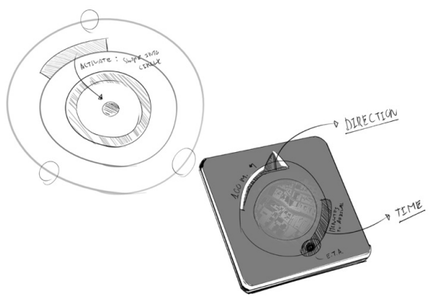
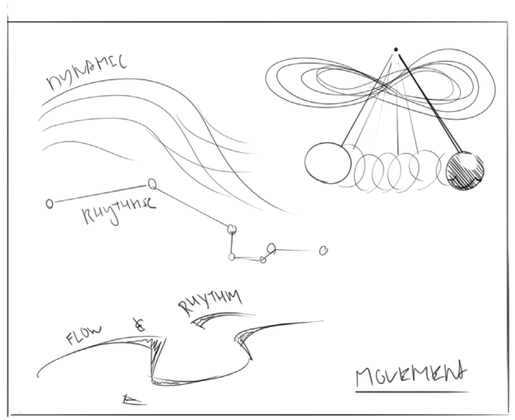


Figure 24: Digital interfaces
Ideation based on the design cues



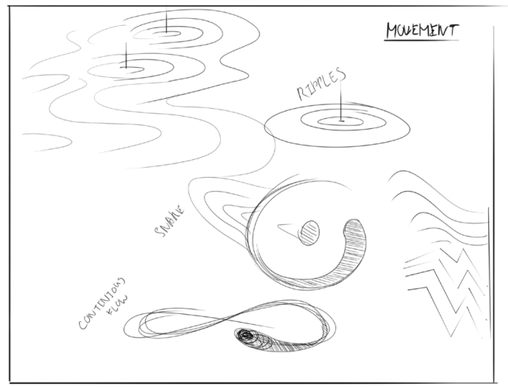


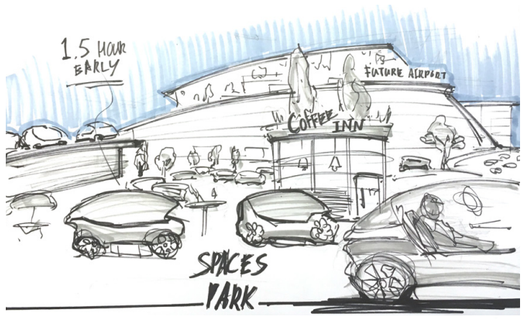
Figure 25 & 26: Rhythm and flow
Ideation based on the design cues

Figure 23: Clustering the factors

4.4 CONCEPT CREATION

The design must be fulfilling the mission during a passengers trip. This means that the design could interfere at any moment of someone's journey. In order to understand the situation and imagine the possibilities a storyboard was sketched (figure 27 & 29). The actions, needs and expected feelings were mapped out.

This current structure served as a starting point for ideation. New ideas (figure 28) where sketched out as storyboards as well forming future customer jouneys. It made it possible to understand if the interaction created by these ideas would fit the preferred interaction for this project.



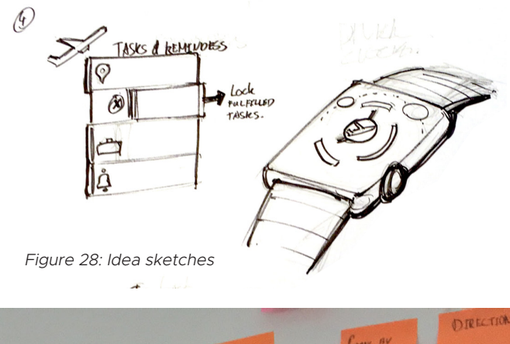
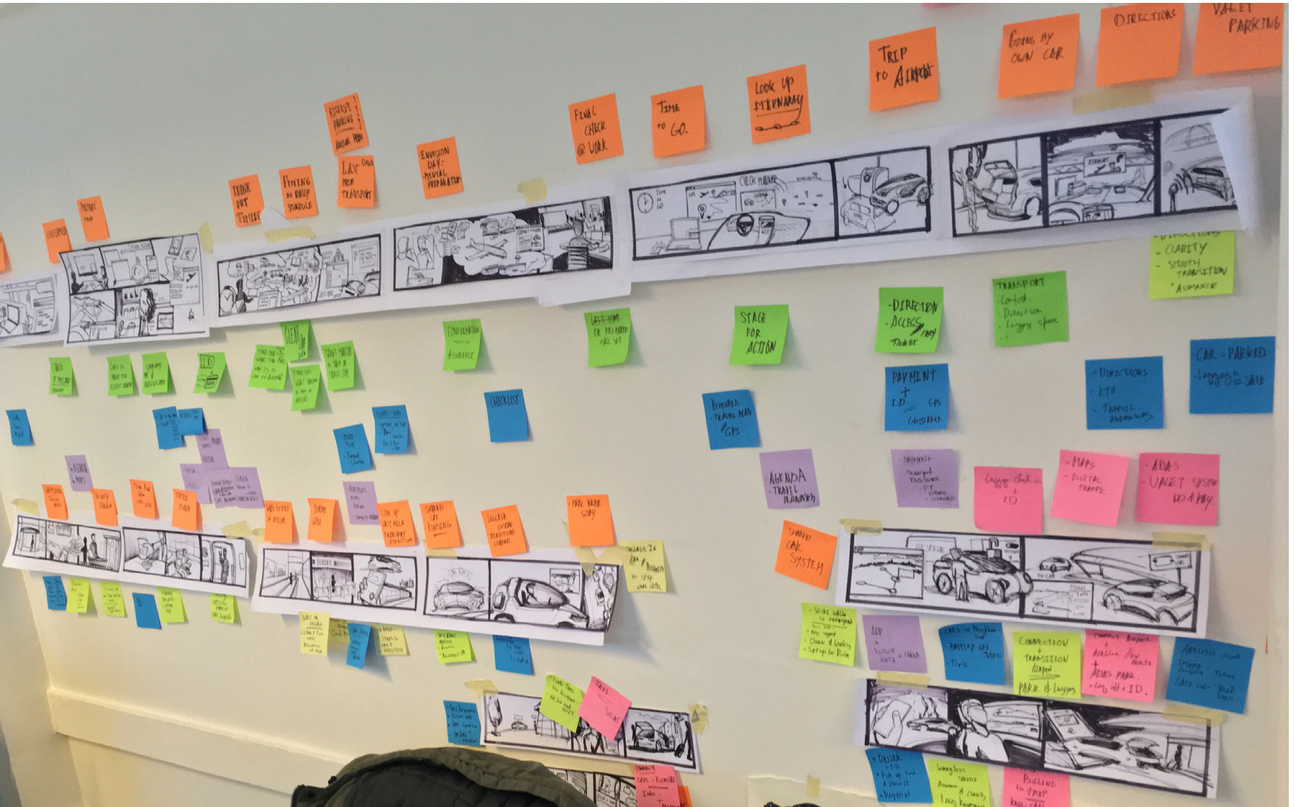


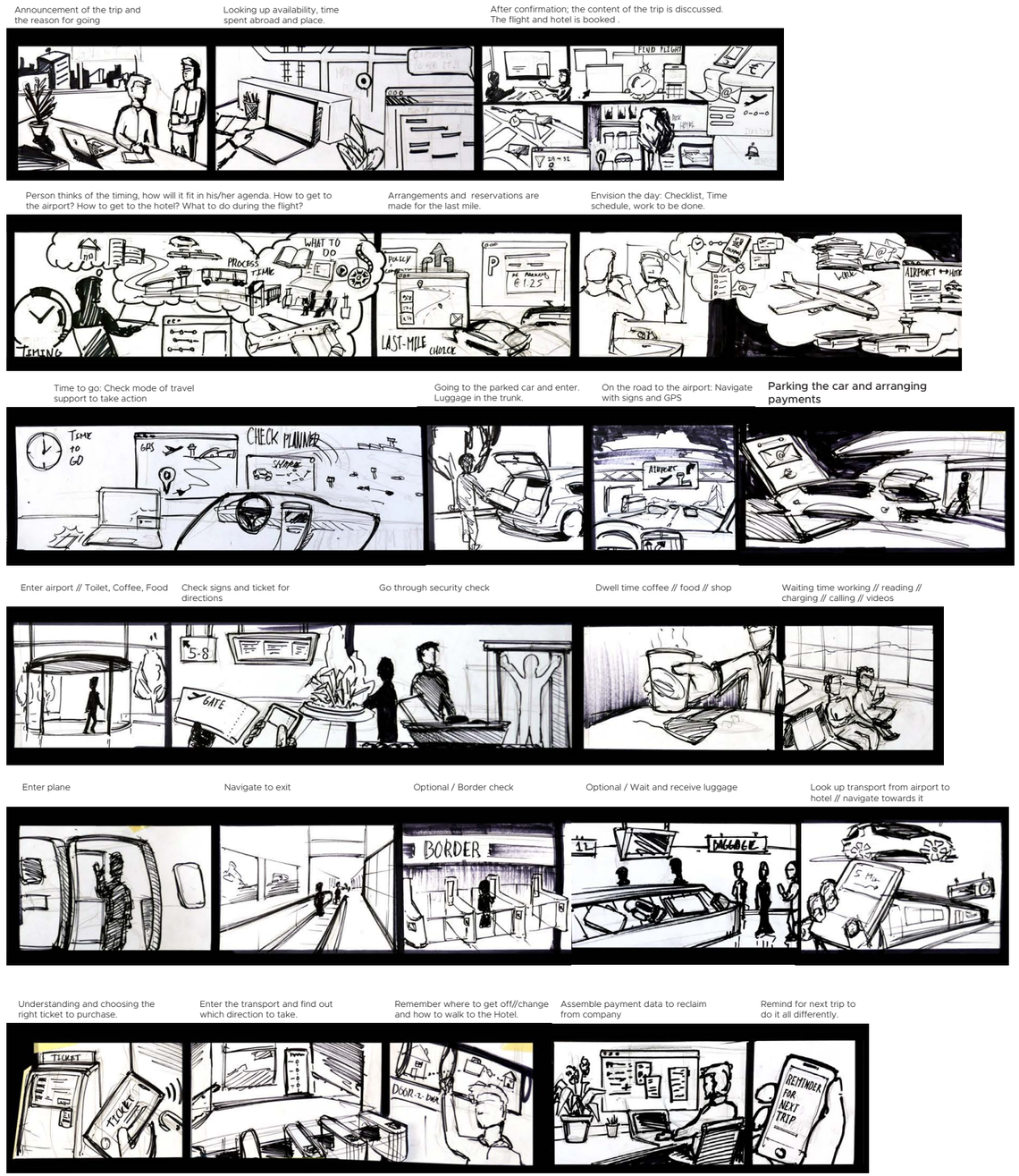
Figure 27: Ideation with storyboard as guideline

Figure 28: Idea sketches



Storyboard of the travel process

Figure 29



4.5 CONCLUSION

By exploring the relation between the traveller and the design an interaction was determined. If this interaction is reached the design goal can be fulfilled. Using the service should feel like:

“STEPPING INTO A CAFE AND GETTING YOUR USUAL DRINK PREPARED, WITHOUT HAVING TO ASK.”

By exploring this feeling characteristic for the service were determined.

ASSURING CERTAINTY

SYNERGETIC ALERT

SUPPORTIVELY ACCOMMODATING

These characters were implemented in the design by cues. The design language should embody something that gives calming support by showing that the service is active on the background for people to fall back on. It should display a sense of recognition by synchronizing with the user. Action made by the traveller are reflected by the service. Non-verbal communication translated in actions that occur in a synchronised way, resulting in a rhythmic sequence. The service should help the traveller to make the right choices by assuring him. Giving the designer information and accommodating a situation where the traveller feels safe to act independently.

Due to the complex nature of this bundles service. New ideas where sketched out as storyboards. By evaluation on multiple levels, like functionality and experience, they formed future customer jouneys. It made it possible to understand if the interaction created by these ideas would fit the preferred interaction for this project. A couple of iterations on this journey led to the final concept.

THE DESIGN

THE SERVICE THAT WILL HELP TRAVELLERS IS CALLED WYSP. IT COMES FROM ‘WILL-O’-THE-WISP’, AN OLD MYTH ABOUT MYSTERIOUS GUIDING LIGHTS IN FOGGY SWAMPS. IN THE TALES TRAVELLERS ARE ATTRACTED BY THESE LIGHTS AND MISGUIDED. YET IN THIS SERVICE THE LIGHT IS OF A POSITIVE NATURE AND GUIDES PEOPLE IN THE RIGHT DIRECTION.

THE DESIGN WILL BE EXPLAINED IN THREE PARTS. FIRST, HOW WYSP SUPPORTS TRAVELLERS. THEREAFTER, HOW WYSP INTERACTS WITH TRAVELLER AND THE EXPERIENCE THAT IS CREATED. AND FINALLY, THE STRUCTURE THAT IS NEEDED TO PROVIDE THIS SERVICE.

THERE ARE SIX FEATURES THAT SUPPORT THE TRAVELLER, AND FULFIL THE PROMISE THAT HAS BEEN MADE TO THE TRAVELLER. THESE FEATURES WILL BE PRESENTED SEPARATELY IN THE SERVICE SUPPORT PART OF THIS CHAPTER, BUT ARE IN FACT INTERTWINED.

5.1 THE DESIGN: WYSP

The assignment for this project was to:

"DESIGN A SERVICE VISION FOR TRAVELLING TO AIRPORTS IN 2025 IN SHARED VEHICLES, DEALING WITH ANXIETY CAUSED BY IMPRESSION ON OTHERS. "

With the following mission:

"DURING TRAVEL, I WANT YOUNG PROFESSIONALS TO BE RELIEVED OF ANXIETY CAUSED BY DESIRED IMPRESSIONS, WHILST MOMENTARILY CREATING AWARENESS OF THEIR VIEW ON SUCCESS."

This chapter will explain solution that is designed to reach the design mission. It will explain what the service offers to support the traveller during its journey. How different stakeholders need to bundle their information and assets in order to provide this service. This bundle will form the service structure. The service experience shows how the relationship should be formed between traveller and service.

Service Support

The service called Wysp will relief travellers of their anxiety during travel. This part answers the question: "What" does Wysp do to relief travellers from anxiety. Showing the practical part of the service. Because every moment is different and calls for specific support. A bundle of six different features are offered to the traveller as one service; Wysp.

Service Experience

The features that Wysp offer are supporting the traveller during travel. Yet the manner in which this is done this is the key to reaching the design mission. The experience created is what makes the relationship between traveller and service happen. This shows in a general theme that recurs in small interactions throughout the journey.

Service Structure and Technology

The service support showed 'what' to do, in order to relief travellers from anxiety. The service structure shows how this can be done. In the sense that it considers the connections between stakeholders in the journey and the information that will be exchanged.

Figure 30: Visual representations of the aspect that will be discussed; based on the service ecosystem

5.2 SERVICE SUPPORT

The service offers support that relieves people from anxiety by; preventing mistakes, removing uncertainties and by improving the quality of waiting time (figure 31). In essence these solutions are all of a focused on functional improvement, solving small issues throughout the journey.

These solutions were build on the prediction that the use of personal technology will grow in travel. (ACI, 2014) Also, the increase of connection between devices and the exchange of data will make it possible to rebundle assets from multiple companies into new services (Cicero, 2016). Resulting in more personal solutions.

"The services offers personal support during travel from doorstep to the gate"

"The support aims to relieve people from anxiety for a more enjoyable journey"

1. Trip Connect

A personal tool to plan trips, with more clarity. Aiding in complex choices.

2. Trip assist

Guidance during their trip making them feel unhindered and assured.

6. Problem Assistant

Offering the appropriate options to overcome problems

3. Digital key

Provide ticketing and access by a wireless, digital, key. Making travellers feel less obstructed in their journey. The digital key enables access to the flexible, efficient and conscious transport options off shared vehicles.

5. Up Time

A way to spend waiting time useful and enjoyable

4. Up Link

Relief from the process of luggage check-in and parking.

Figure 31: Visual representation of the support that Wysp offers as a bundled service.

5.3 TRIP CONNECT

A personal tool to plan trips, with more clarity. Aiding in complex choices.

Trip Connect can be viewed as the main platform that supports the service. It connects external information from stakeholders in the process like airlines, shared vehicle providers and the airport. During the preparation, Trip Connect provides a clear overview to relief people of uncertainties and supports them in their choices (figure 34).
In later stages Trip Connect links the data necessary for the other components of the service, like the digital key or Up Link. The information is communicated to the traveller by personal devices (figure 35) and the vehicle dashboard.

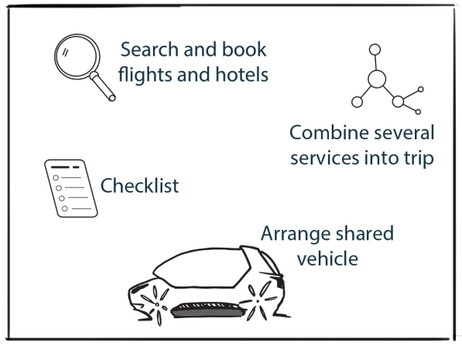


Figure 32: Trip connect, combining information on a single digital platform

Figure 33: Interface showing the menu of Trip Connect

Figure 34: Interface showing the overview of booking a flight

Figure 35: Interface for connecting digital luggage tags with Trip Connect and planning specific moments in the journey

5.4 TRIP ASSIST

#2 Trip Assistant

Providing short concise guidance during the travel process, for people to fall back on when dealing with uncertainties.

The Trip Assistant will give guidance during the journey. It communicates time schedules, helps with navigation and wayfinding and notifies when changes occur (figure 37). The traveler is guided in such a way that he or she still feels autonomous and confident, by providing clear information on different levels without imposing. Travelers can indicate what time margins they would prefer and how quick they are able to walk.
While walking the travelers can check their watch for directions and gate number. There is also the possibility to receive short audio messages. More detailed information can be viewed on phones, displays of the vehicle or at personal display columns.

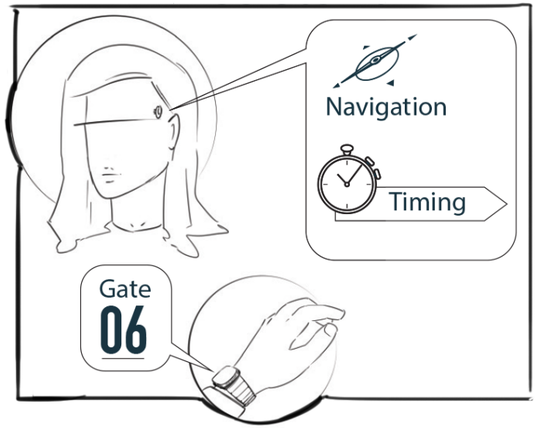


Figure 36: Methods of guidance

Figure 37: Interface showing the compass on a smartwatch and a notification for boarding.

5.5 DIGITAL KEY

Providing unobstructed access to mobility.

The Digital Key allows the passenger access by remote, for example to their vehicle or to the security check. Their personal devices sends out a digital token. When necessary a digital representation of their biometric data is transmitted by using the finger scan or camera on their personal device.

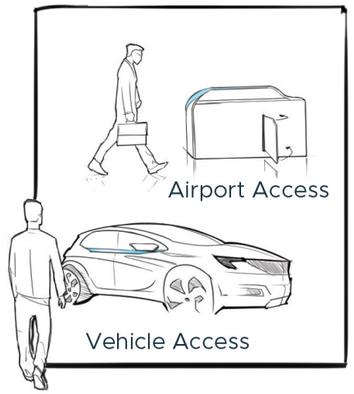


Figure 38: Identification by biometric data, and reserving a shared car

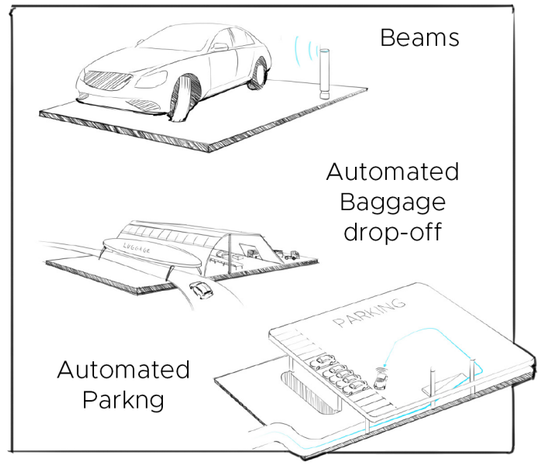
5.6 UP LINK

#4 Up Link

Relieving people from the process of parking and checking in luggage.

Up Link is based on the automated valet parking. The system takes over the wheel when travellers are taking the exit to the airport. The driver does not have to navigate the last mile and will be dropped off at the curb of the gate. The vehicle will than drive itself to a luggage drop of point where the luggage is collected from the trunk. Finally it will be parked (figure 39).

Up Link is able to control and predict the traffic flow around the airport. It helps passengers by relieving them of the anxiety when navigating on the airport. By taking over the wheel the vehicle is becoming part of a bigger system. This system takes over the process of luggage check-in and parking, making the arrival at the airport more seamless.



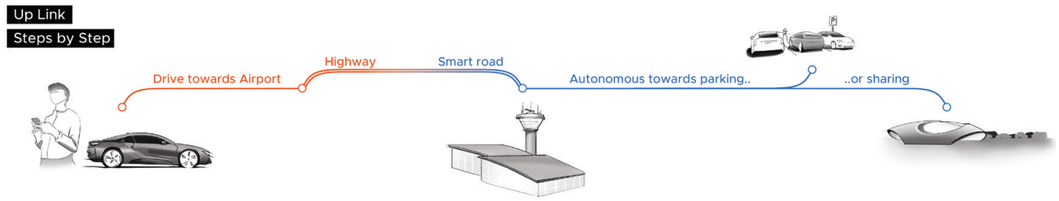


Figure 39: Step by step process of Up Link

5.7 UP TIME

Makes waiting time feel useful and enjoyable

Up Time is aimed at using time well that is normally spend waiting by providing a space to work, read or kick back. Travellers are able to plan and find some personal space using Trip Connect. Here they can spend time like it is ‘just another day in the office’ or a ‘Sunday morning brunch, with the papers and a coffee’.

Some travellers worry if they will be able to enjoy some food or a coffee before the flight. To relief them from this stress they are able to order in advance. Also, they will be given time schedule advice. Their order will be served at their table by using the digital device as a beacon. For the more spontaneous people a physical menu with chip enables to order at the table as well.

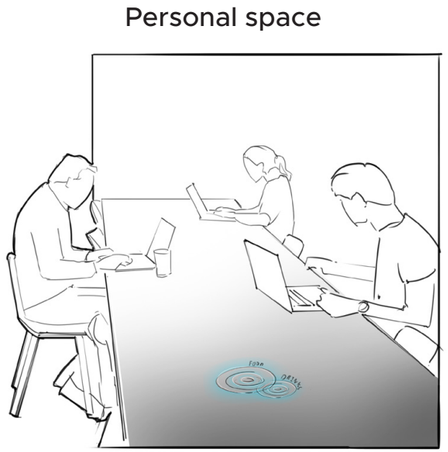


Figure 40: Sketch of the light marking your reserved spot.

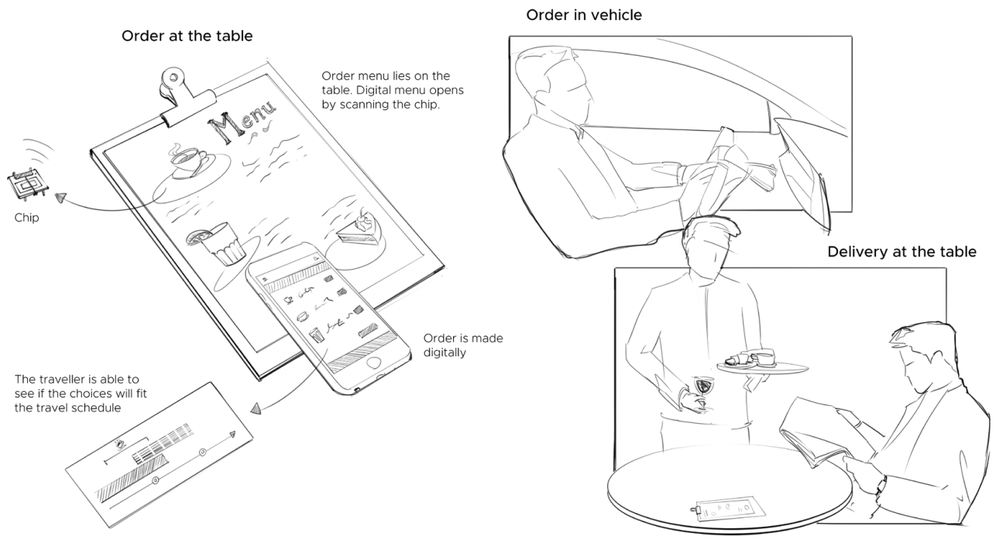


Figure 40: Sketch of the process for ordering food or drinks

5.8 PROBLEM ASSISTANT

Providing help with problems, supporting quick self-service options and personal assistance.

During travel there is always a moment where things do not go as planned. Troubleshooting is supported in a way where people are able to independently and quickly solve their problems. This be done by using their personal devices or a display column. This helps people to feel capable of overcoming boundaries in traveling themselves.

Still, there are problems that require more specific and complex solutions. A chat bot will serve as an intelligent troubleshooting system helping our with uncertainties. When people are in need of real personal assistance they are helped to locate a service desk or request assistance by agents walking around with handhold devices.

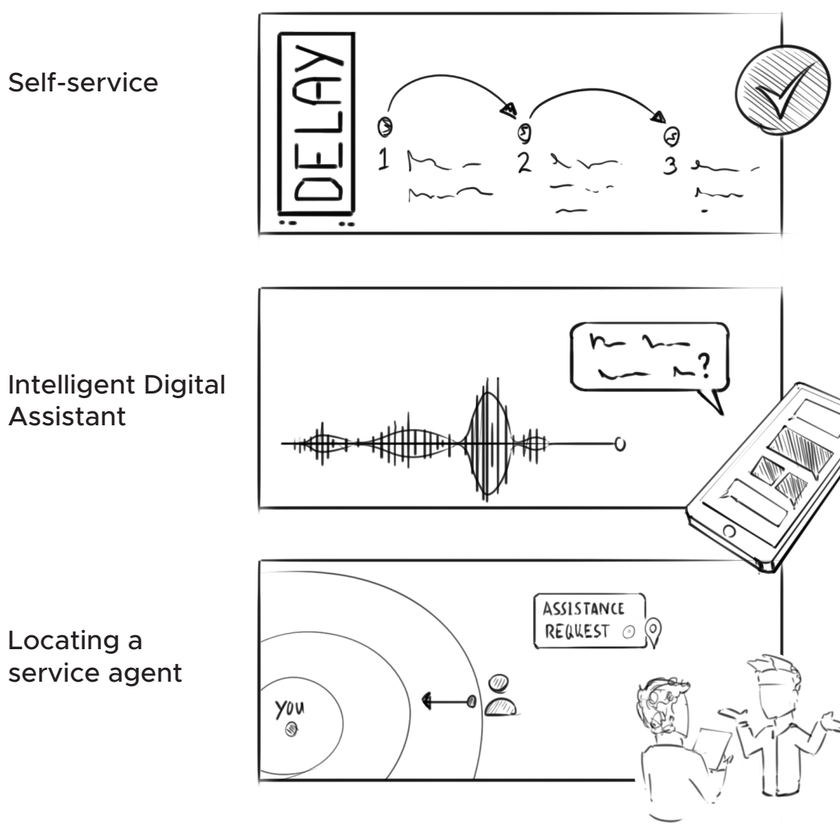


Figure 41 Sketch of the three ways of assistance

5.9 SERVICE EXPERIENCE

The Service Experience will explain how the feeling is conveyed of: “stepping into a cafe and getting your usual drink prepared, without having to ask.” The experience is based on two principles called Wysp and Echo. They form the themes on which the touchpoint of the service are based. The experience of touchpoints is explained by several interaction moments.

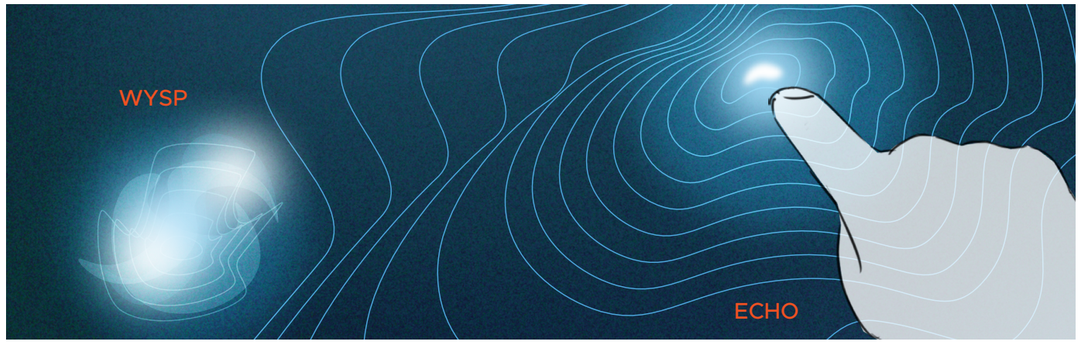


Figure 42: Representation of Wysp and Echo

Wysp

Wysp is the personality or soul of the service that assures the traveller. It shows people that something travels along with them; being their to help. Wysp will be active in the car and on personal devices. It has no physical shape, like a ghost. Wysp should not have a very distinctive personality, nor be very present. It does not impose and stays on the background. By doing this it supports the independence of the traveller. Wysp is inspired by an old myth about mysterious guiding lights in foggy swamps, ’Wale O’ Wisp’. In the tales travellers are attracted by these lights and misguided. Yet in this service the light is of a positive nature and guides people in the right direction.

Echo

Echo makes the actions people take last longer. By echoing, Wysp shows that it recognizes and connects with the movements of the traveller. The echoes will synchronize with their walking rhythm. It gives feedback of their actions by a calming echo, a ripple of light. Echo is inspired by the ripple that is created when a raindrop hits the water. It creates a history of a previous event that slowly fades.

Transitions

The interactions between the traveller and the service is explained more specifically. It shows how Wysp and Echo are applied in moments around the car. These moments are transitions, like starting the car, or letting Up Link take over the task of driving.

5.10 OPENING THE CAR

When the traveller walks up to the car, the car shows a pulse of light. The pulse will be in sync with the footsteps of the traveller. It creates a feeling of recognition and shows that Wysp adapts to people’s actions and movements. It also helps to identify the car that is reserved.

As the traveller comes closer the door opens slightly, still on the same rhythm. The light moves to the door handle. It starts the action of opening the car, initiated by the travellers presence. Yet, the action is completed by the user. This way, Wysp serves but does not take full control. It still allows people to act in a flow, a sequence of actions, making them feel competent.

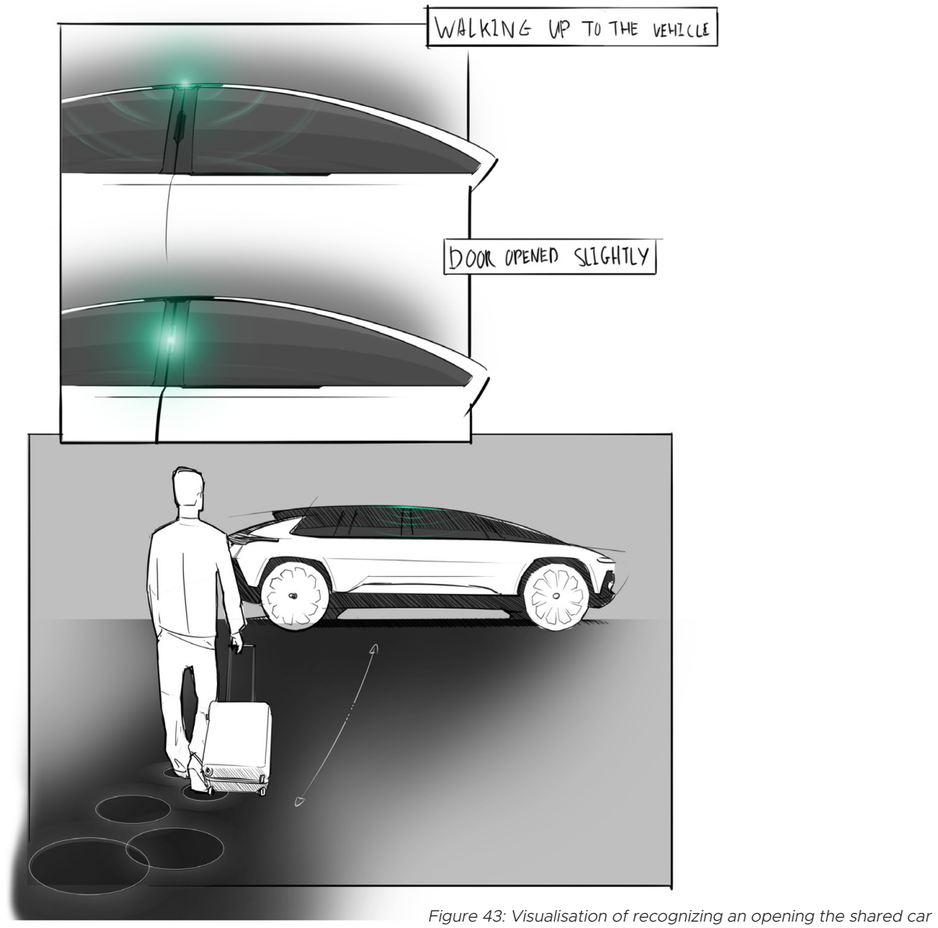


Figure 43: Visualisation of recognizing an opening the shared car

5.11 STARTING THE CAR

As the traveller steps into the car the only visible activity is the light of Wysp on the steering wheel (figure 45). It emphasizes the difference in space between outside and inside by damping sound and blurring the windows.

The light of Wysp on the steering wheel shows that it is alert, waiting to be activated. The car is activated by tapping the top off the steering wheel (figure 44). The gesture echos like a ripple on the water (figure 46). This moment makes the traveller aware of the start of driving. Tapping the steering wheel fits in the rhythmic sequence of actions.

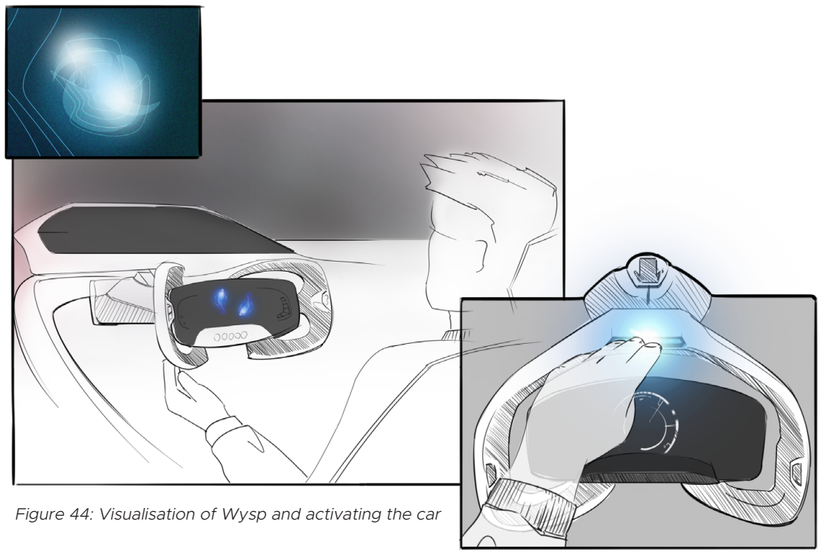


Figure 44: Visualisation of Wysp and activating the car

Figure 45: Animation of Wysp

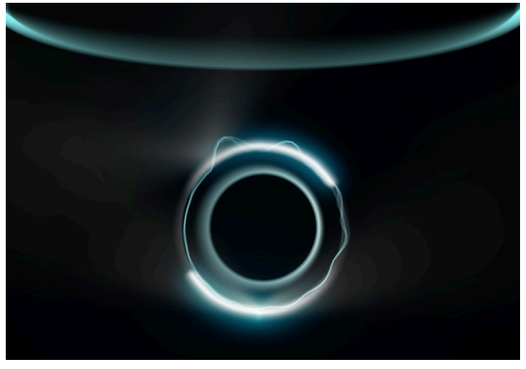


Figure 46: A ripple echoes after the steering wheel is touched

5.12 PREPARING EACH PHASE

The traveller is able to prepare at the beginning of each phase. Before driving of information about the ride is shown and changes can be made to the travel plan, like making use of the automated baggage drop-off. When Up Link takes over the wheel, people can prepare for the airport (figure 47). Check their walking route, find the nearest toilet or make sure their hair looks good. It takes away uncertainties and makes them able to act, which helps expiring an experienced image.

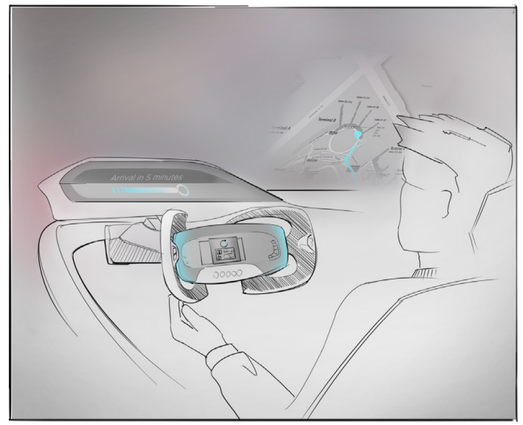


Figure 47: Information for preparing the exit at the departure hall

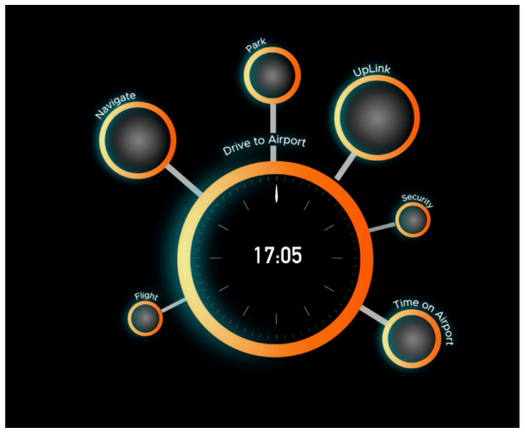


Figure 48: Animation of the menu after activating the car

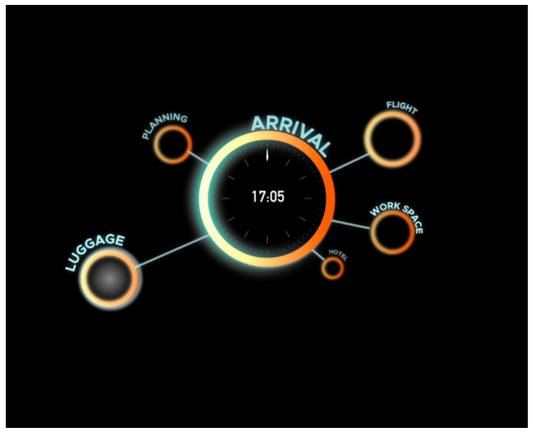


Figure 49: Animation of the menu when arriving at the airport

5.13 DRIVING MODE

Activate the car

When the car is activated information about the journey is shown on the window screen and dashboard. The traveller can prepare for the drive and make changes by using the touchscreen on the steering wheel. Starting the engine and switching to driving mode can be done by pulling the steering wheel into the driving position (figure 50). The ripple of light on the screen shows an echo of this action and the information fades. The screen on the steering wheel is turned off to avoid distraction (Figure 52).

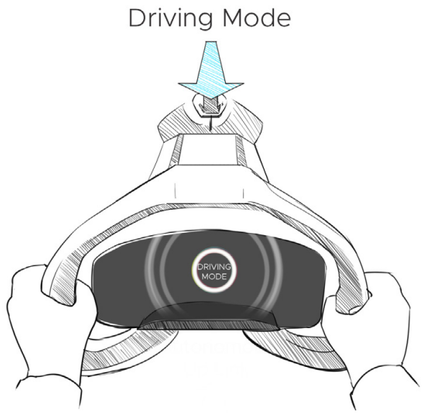


Figure 50: Visualisation of the gesture for driving mode

Figure 51: Animation of activating driving mode

Figure 52: Animation of activating of the fading screen with ripple

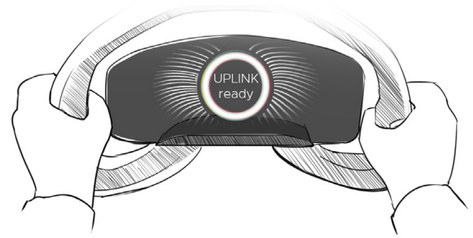
5.14 AUTONOMOUS MODE

Up Link: Autonomous mode

As the traveller approaches the airport it reaches the smart road. It allows autonomous driving, and Up Link can be activated. The steering wheel shows an animation (figure 54) of an inward movement and by pushing the steering wheel away the driver hands control to the car (figure 53). When Up Link is active information about the next part of the journey, at the airport, is shown. Functionality on the steering wheel reappears and the traveller can prepare for the transition from car to departure hall.

Control

The actions around the steering wheel are build around a feeling of autonomy for the driver. Taking control by pulling the steering wheel and giving it back by pushing are intuitive gestures. The animations on the steering wheel are aimed to show the impact of each step. The steering wheel remains the medium for actions, even when not driving, by the touchscreen. It fades to black when drive mode is active. This lets people focus their attention outside on the road.



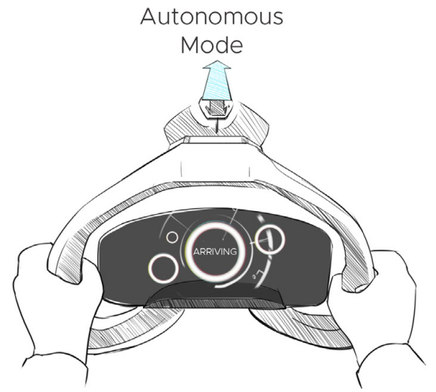


Figure 53: Sketch of activating Up Link.

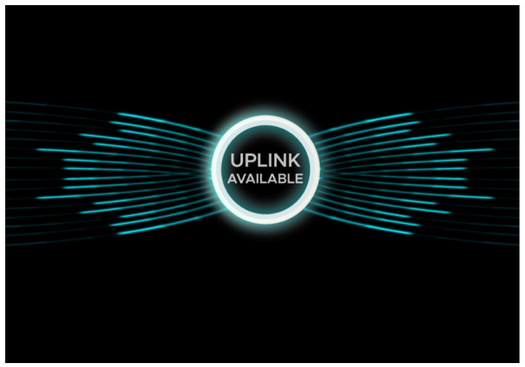
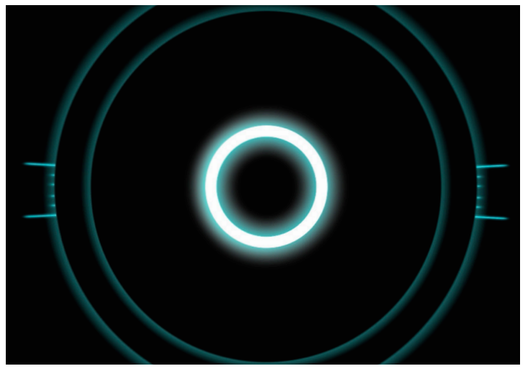


Figure 54: Animation showing Up Link is available



5.15 EXIT AT THE DEPARTURE HALL

When exiting the car as it arrives at the departure hall the traveller enter the context of the airport. Before this moment, the car expressed the image. Now, the traveller will express the image, anxious for the impressions on others.

As the traveller exit the car and closes the door the light of Wysp will echo, an move to the top of the windowsill. By tapping the top of the car twice the traveller communicates the transition. Up Link is allowed to drive to the automated baggage drop off, parking area, or its a new traveller. Meanwhile the traveller enters the departure hall and receives an assuring update about baggage and parking. The car drives off into a zone where vehicles have no passengers. In order secure this area people need to be prevented from walking into it. A natural boundary is created by a shallow layer of water that allows vehicles to drive through. This relates back to the ripples created by Echo.

The gesture of tapping the car lets the traveller experience a rhythmic sequence of small actions. The impact of the small tap last longer as an echo. Now, the traveller can walk away, knowing the car will drive off automatically (figure 55).

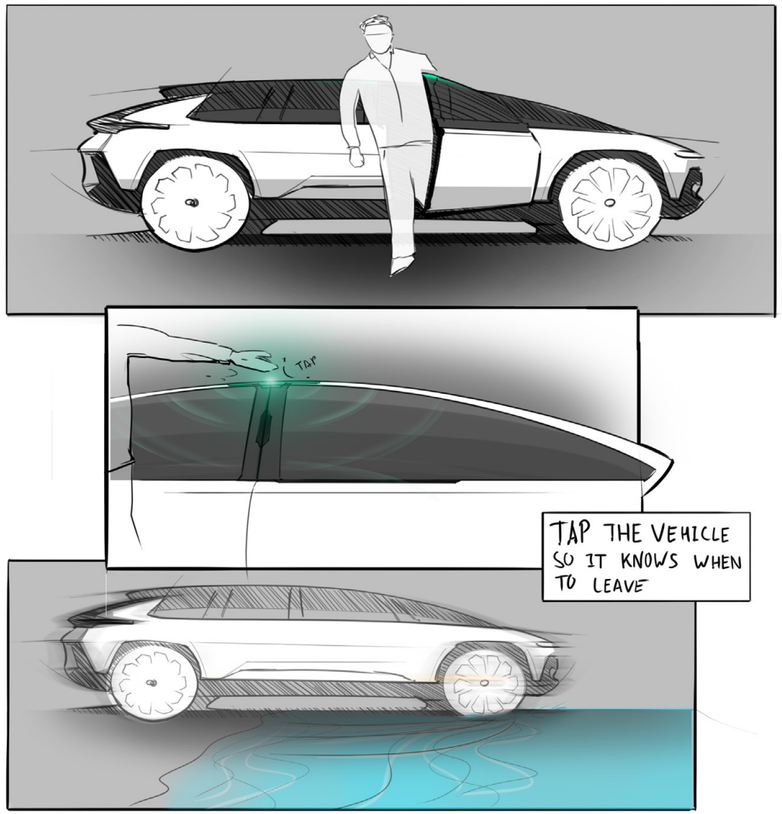


Figure 55: Sketch of leaving the car, allowing it to drive autonomous without passenger.

5.16 CONCLUSION

Their will not be many technological boundaries when developing Wysp when considering hardware. Most devices and functionality are already used today. But when it comes down to infrastructure there are some difficult challenges to overcome. Of course, the physical infrastructure to allow more autonomous vehicles to drop off travellers close to the entrance will take a large investment. It also means restructuring the route towards the airport and the parking areas.

Transforming the digital infrastructure will be a complicated process. The service structure shows that the information and assets of many stakeholders needs to be curated and communicated to the traveller over several different devices. Not only building the data network, using blockchain and cloud connection will be challenging. Companies need to share data and work towards the same goal. But they will also need to consider the change in control over their brand, once they join a service like Wysp. For Wysp aims to provide a coherent experience that supports the traveller.

5.17 SERVICE STRUCTURE AND TECHNOLOGY

The Service Structure

The service offers door-to-gate help for travellers that relieves them of anxiety. By playing the role of a connecting platform in the ecosystem of involved businesses the service can provide a combined offer for the traveller. This position can become quite complicated. Throughout the journey touch points from different features of the service interact with the user. These moments overlap and reoccur, making it hard to grasp the underlying relationships.

Therefor, the structure shows six different aspects of the service and how they exchange information with the user, and involved businesses.

Technological requirements

The service, Wysp, is not able exist without some crucial technologies. Their presence in the design will be shortly discussed. Most of these technologies do already exist in the world of today and are expected to become more common in the following years (see analysis chapter).

Car sharing

Wysp connects with free-floating shared car fleets. This means that a car can be found and parked anywhere within a large area. Their location is communicated to the traveller and they can be unlocked digitally. The traveller will not be responsible for maintenance and ownership.

Cloud connection and Internet of Things

Wysp is providing a service based on a digital platform. It requires devices to communicate with another and information to flow between multiple stakeholders. Devices will have an internet or bluetooth connection, and different stakeholder will exchange information by APIs, application programming interfaces. This digital data will be combined and analysed ‘in the cloud’, online. It will be used to support the traveller and improve the process.

Artificial Intelligence (AI): Bot

When travellers have a question or complex problem they will be encouraged to make use of the Problem Assistant bot. It will react on question, ask for information to help solve the problem. This resembles a conversation, which helps to find the solutions to a complex question quicker. The bot will improve by analysing each ‘conversation’.

Artificial Intelligence (AI): Predictive Analysis

In order to improve the support the traveller, predictive analysis can be used. By self learning algorithms Wysp is able to process travel data and improve the support based on the travellers behaviour. For example flight preference can be used to improve decision making, or average walking speeds can improve timing.

Blockchain and Encrypted Tokens

A lot of information will flow between multiple stakeholders. Blockchain allows information to be stored in multiple places instead of one.
Blockchain technology is a decentralised database of digital information. It stores information across a peer-to-peer network (Warburg, 2016).
This means that not one party has control over all the information. If a piece of information is altered, comparison from other databases will show this. This allows: digital keys to be exchanged without getting lost or copied, safe digital transactions. Together with the use of encrypted tokens it enables access and payments, while protecting personal data.

Personal devices

The service uses multiple existing devices to interact with the traveller; the computer, smartphone and smartwatch. The car will have a smart steering wheel (touchscreen) and a larger screen or heads up display. Navigation will also be possible by audio on headphones.

Autonomous Driving and Smart roads

When arriving at the airport Up Link is able to take over control of the car and drive the traveller to the departure hall. Later it can self-park or pick up another passenger. The technology for autonomous driving within a controlled environment is already put to use. And experiments with beams that guide the car to a parking spot has already shown successful. (Bosch,)

Digital luggage tag

The digital luggage tag enables people to weigh their bags and link them to their trip.

Service structure

This illustration maps out the service concept around the traveller. The six different service offers and their relation to user and business is shown. The ‘trip connect’ can be regarded as the overall communication structure that connects information from third parties with the features of the service.

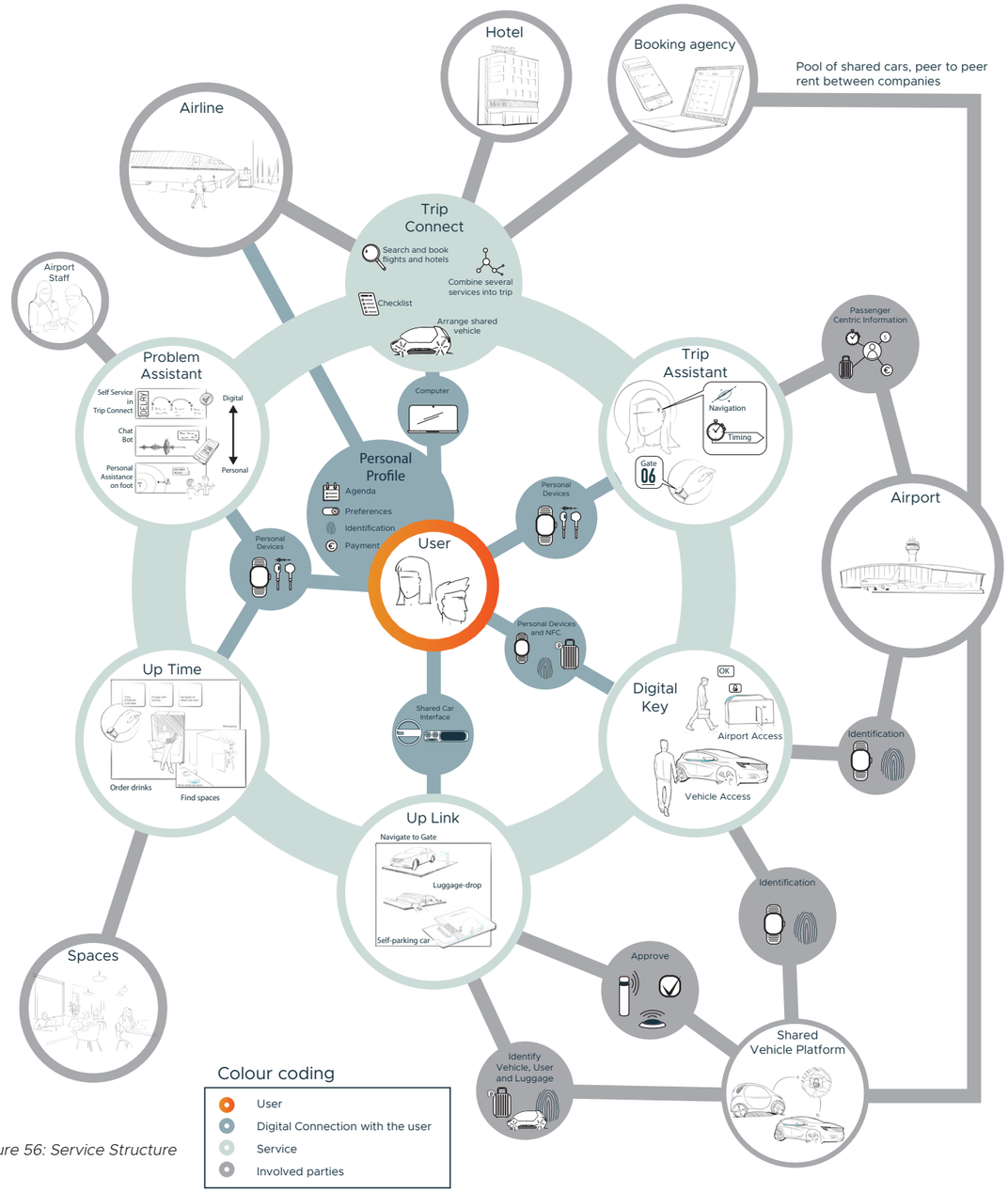


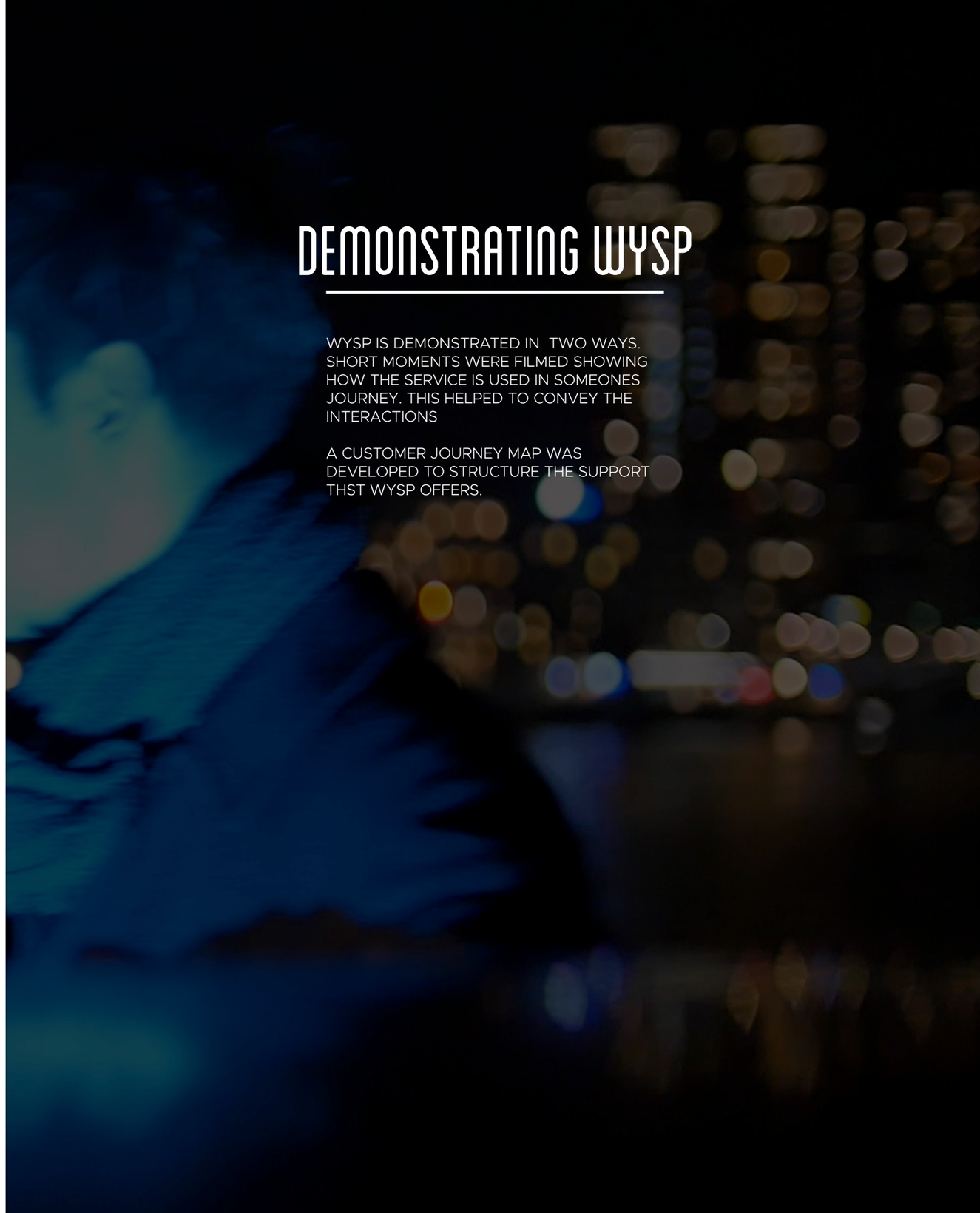
Figure 56: Service Structure

5.18 CONCLUSION

Wysp is the personality or soul of the service that assures the traveller. It shows people that something travels along with them; being their to help. It does not impose and stays on the background. By doing this it supports the independence of the traveller.

The gesture that are used are forming a rhythmic sequence. Moves are small and physical; tapping a push or pull. They become an seamless flow that makes the traveller feel competent. If things would happen fully automatic people would have no part in the process. Echo makes the flow understandable by visualizing each action, letting it last for a small moment.

Many emphasis lies on transition from one phase to another. Stepping from the environment of the car into the departure hall. Or, changing from driving mode to autonomous mode. Wysp guides travellers through these transitions by making them visible and tangible. The service prepares them with the right information, focusing the upcoming part of the journey.



DEMONSTRATING WYSP

WYSP IS DEMONSTRATED IN TWO WAYS. SHORT MOMENTS WERE FILMED SHOWING HOW THE SERVICE IS USED IN SOMEONES JOURNEY. THIS HELPED TO CONVEY THE INTERACTIONS

A CUSTOMER JOURNEY MAP WAS DEVELOPED TO STRUCTURE THE SUPPORT THST WYSP OFFERS.

6.1 PRESENTING WYSP

Film

Wysp is a service that supports the traveller during their journey from the door to the airport gate. The support and experience that Wysp offers reliefs people of anxiety. In order to convey the overall solution as well as small interactions a film was made. This film follows the traveller from the office door to the gate and shows the touchpoints with Wysp.

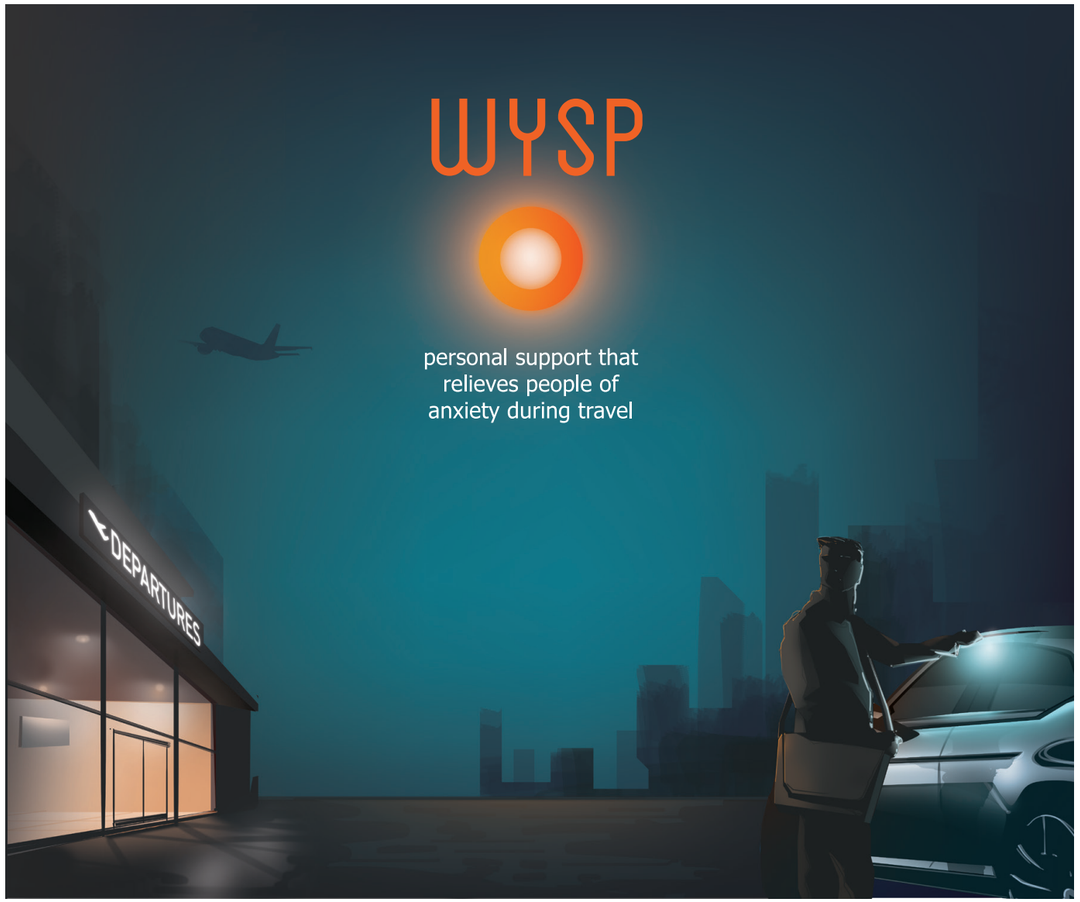


Figure 57: Movie poster for Wysp

6.2 FILM

Short moments of the journey to the gate were filmed to showcase Wysp. Moving picture was chosen because, gestures and experience play an important role in the design. Also, the scenes show moments with real people. This makes it easier to imagine the contribution the Wysp will make.

Interfaces

Multiple screens are developed that communicate the digital content of Wysp. Three interfaces are also made interactive and shows in the film. Every interface is used on a different device, based on the attention span of that moment.
The web application used during the preparation of the trip shows a detailed and complete overview. The application on the smartphone is used before walking towards the shared car and gives information about one specific task. The smartwatch application guides people by a compass. Only a quick glance is enough to find the right direction.

Animations

The experience provide by Wysp and Echo are active during several transitions, like starting the car. To communicate these interactions animations are made and displayed on the steering wheel screen.

Objects: Steering wheel

The touchscreen and autonomous driving feature required a new type of steering wheel. This was created by a wooden (lasercut) frame wrapped with leather bicycle tape and black book covers. A large smartphone was placed on the steering wheel functioning as screen.

Objects: Airport sign

Arriving at the departure hall was not shot at an actual airport. A sign was made by putting a light in a cardboard box that had a coloured cut-out on side. The light was reflected in the car window during filming to mimic the presence of an airport sign.

Figure 58: Making the steering wheel and the content for the film

FILM

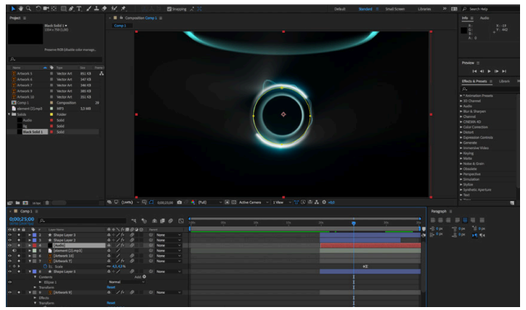
Lighting

Wysp is a guiding light that recognises the travellers reacts to their actions. Coloured lights were used to show the echoing rhythm of footsteps in the car. And to indicate that the car will proceed to parking when someone taps on the roof.

Location

The Amsterdam office of MOBGEN provided most of the indoor shots, but filming with the car happened in Rotterdam by night. Apart from practical reasons like lending someone's car and scouting locations this location was chosen for its modern architecture. Because the context for the design is 2025, the current street image was avoided. Instead, empty, modern locations were used. Walking was filmed in a very old neighbourhood for these houses will not change, due to their historical value.

Preparations for filming like the storyboard and shotlist can be found in the appendix.



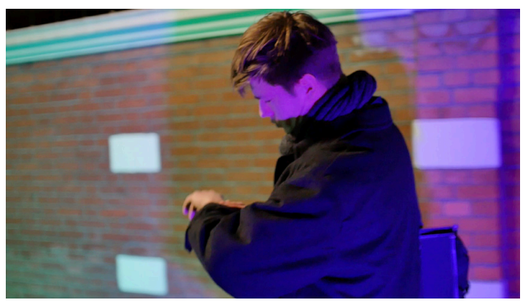
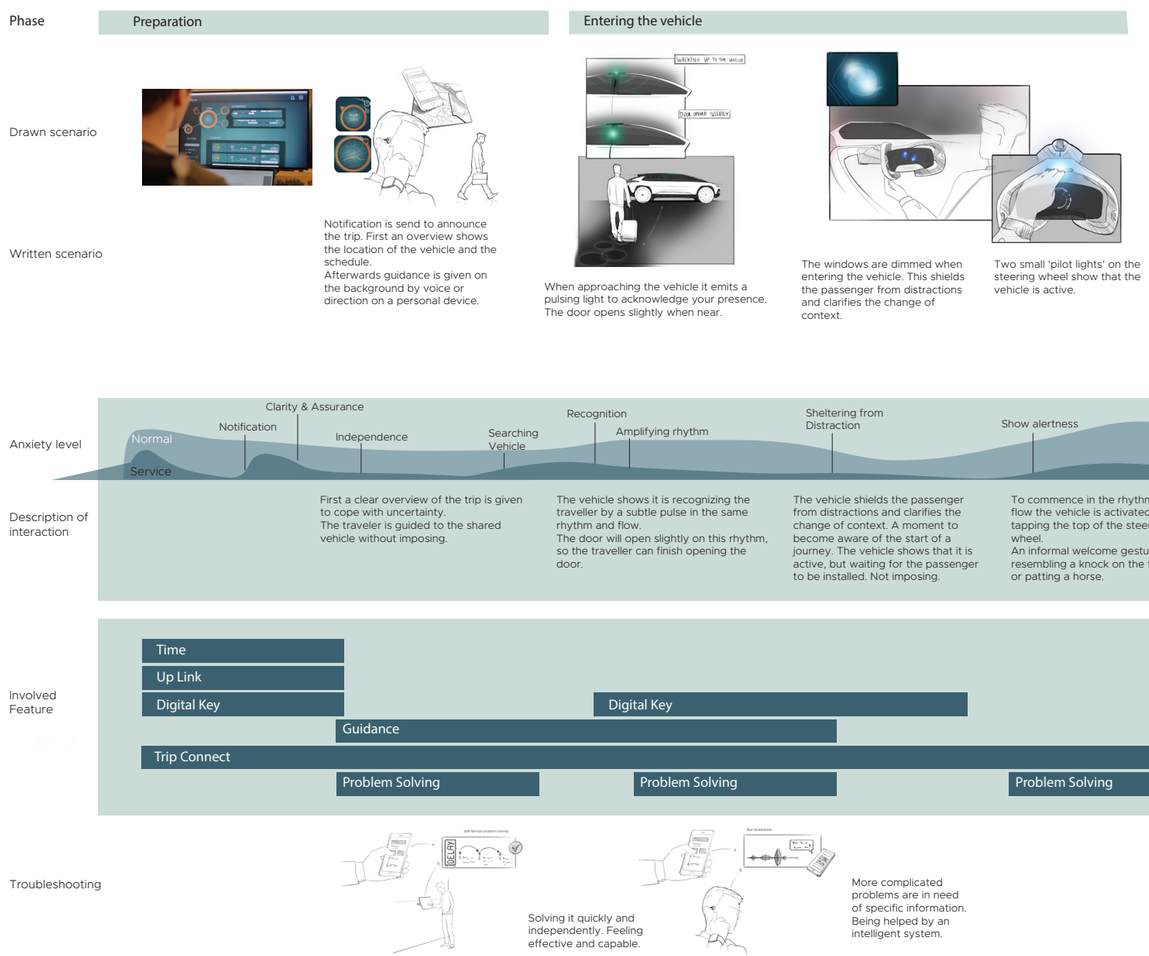


Figure 59: Developing the animations and shots on location

6.3 JOURNEY MAP

To analyse and structure the support that Wysp offer the traveller as customer journey map was developed. This journey map is a visual representation of the design, and how it integrates with the process of travelling. Mapping it over time helps to understand how the sequence of events influences the user.

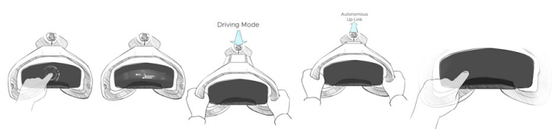
The levels underneath the scenario explain the created experience and how it influences the anxiety level of the traveller. At last, the features that are involved at each moment are shown. (Fold out)



After the vehicle is turned on an overview emerges preparing the passenger on the trip.
The passenger is able to make changes or plan upcoming moments like Up Link and check-in

Driving and being driven.

Information is split onto three different screens. The touch screen on the steering wheel covers all choices and actions. While the dashboard shows information related to movement, like speed or time lines.
The windscreen displays more detailed overviews.

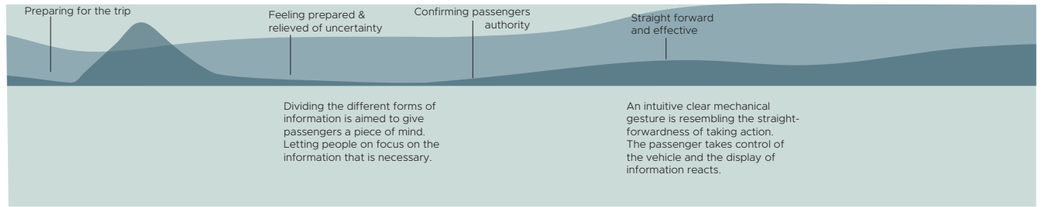


Turning on the vehicle is done by touching the top of the steering wheel screen.
Finger scanning gives access to the data.

By pulling the steering wheel towards the driving position the vehicle starts.

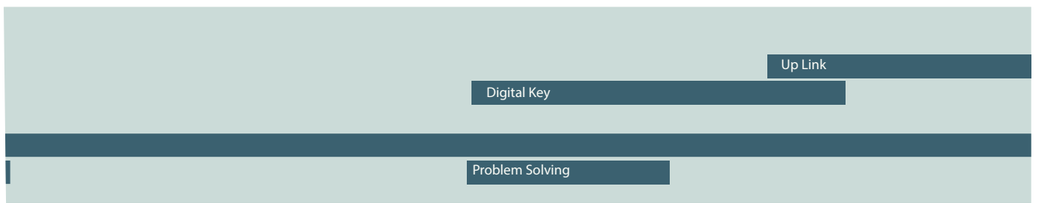
When arriving to the point where Up Link can take over the steering wheel can be pushed back to assign control to Up Link

While Up Link navigates towards the entrance of the airport. Activities can be planned/re-served based on the passengers schedule.
The activities range from basic needs such as toilets and coffee up till work spaces and resting pods.

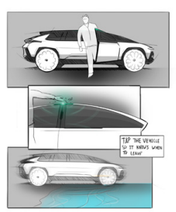


Dividing the different forms of information is aimed to give passengers a piece of mind. Letting people on focus on the information that is necessary.

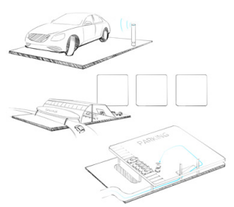
An intuitive clear mechanical gesture is resembling the straight-forwardness of taking action. The passenger takes control of the vehicle and the display of information reacts.



Exiting the vehicle

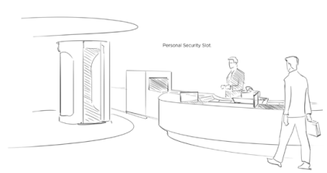


When exiting the top of the steering wheel is tapped to confirm arrival. The vehicle drives of towards luggage handling and parking.
A confirmation of these processes is communicated.



Beacons connect with the vehicle drive it to the luggage pick up, where the luggage is collected. Finally the vehicle is parked automatically.

Security check



The passenger arrives a the airport security.

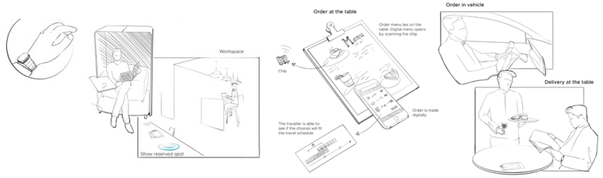
A friendly tap goodbye marks an end to the drive and a start of the rhythmic walk on the airport.

The passenger will be assured that all is well.

The passenger is guided by only the necessary information. The competence and autonomy if the passenger is still acknowledged.

Problem that causes a lot of anxiety and stress is in need of personal assistance. Assuring and personal aid.

Spending time on the airport



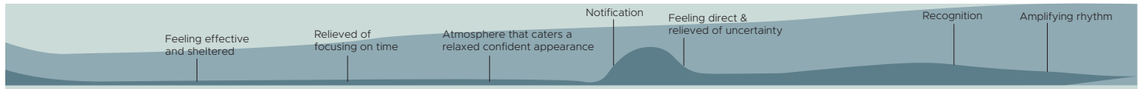
On the airport passengers are able to choose how to spend their time.
This makes it reserve a working space.

When in need of coffee or bite passengers can order up front or connect to a physical menu on the table.
If preparation takes time and the passenger has to hurry time advice is given.
Payment is done digitally and the order is served at the table.

Navigating at the airport

A notification tells the passenger it is time to proceed, by sound or vibration. A personal security slot is reserved based on their itinerary.

When approaching gates the light acknowledges the presence of the passenger. A confirmation is communicated by sound
The gates open before passing.



A comfortable spot that gives people some personal space. It can be aimed working activities making travel as 'another day at the office'. It gives people the opportunity to show how comfortable they are with the concept of travel.

The ordering and delivery service make sure that passengers can fulfill their needs without worrying about their schedule. They are still able to combine their activities. Giving them a confident and relaxed appearance.

Passenger do not have to keep focusing on their schedule due to the notifications and guidance. When their security slot is available the guidance service makes sure they will arrive right in time.

The gate shows it is recognizing the passenger by a subtle pulse in the same rhythm and flow.
The gate will open before passing to avoid the feeling of obstruction. An update is given through a personal deice to assure the passenger of his access

CONCLUSION

TO CONCLUDE THIS THESIS THE FINAL RESULT OF WYSP WILL BE EXPLAINED; ITS EXPERIENCE AND TECHNOLOGICAL SOLUTION.

THE DISCUSSION WILL COVER THE KNOWLEDGE THAT IS CREATED BY THE VISION AND THE AREAS THAT NEED FURTHER EXPLORATION.

A FINAL RECOMMENDATION IS WRITTEN FOR MOBGEN ABOUT THEIR ROLE AS DESIGN CONSULTANCY.

7.1 CONCLUSION

The assignment for this project was:

"DESIGN A SERVICE VISION FOR TRAVELLING TO AIRPORTS IN 2025 IN SHARED VEHICLES."

The goal of this service was to:

"RELIEF PEOPLE OF ANXIETY CAUSED BY DESIRED IMPRESSIONS, WHILST MOMENTARILY CREATING AWARENESS OF THEIR VIEW ON SUCCESS."

The Design

Wysp is the vision of a service and the outcome of this project.
It supports travellers by supports travellers by; preventing mistakes, removing uncertainties and by improving the quality of waiting time. It makes a contribution from the moment of preparing the trip until the moment of entering the plane. In order to achieve this multiple assets, from different companies, are combined into a bundled service. The service offers travellers:

A personal tool to plan trips, with more clarity. Aiding in complex choices.
Guidance during their trip making them feel assured.
Combined ticketing and access by a wireless, digital, key. Making travellers feel less obstructed in their journey. The digital key enables access to the flexible, efficient and conscious transport options off shared vehicles.
Relief from the process of parking and the option to exit the car at the entrance of the departure hall. An autonomous function navigates the car on a smart road before and after the traveller exits.
A way to spend waiting time more useful and enjoyable
The appropriate options to overcome problems. Depending on the complexity of the problem self-service options, a smart assistant, real life help will be offered.

The personality or soul of Wysp is conveyed by a guiding light that assures the traveller. It travels along with them; being their to help. The gestures that form the interaction with Wysp are forming a rhythmic sequence. Moves are small and physical; tapping a push or pull, becoming an seamless flow that makes the traveller feel competent. Echo makes the flow understandable by visualizing each action, letting it last for a small moment.

The Experience

The design does not focus on what people want today, but on deeper needs that will arise in the future. Wysp aims at young professionals that want to act like experienced travellers on their business trip. It fulfils needs that arise in the future context, the year 2025 – Anxiety caused by desired impressions on others. These needs are qualitative and based on human values. The experience people will receive from using Wysp helps them to overcome this anxiety.

This experience conveyed by Wysps guiding light and echo shows a design language for all the touchpoints in the journey. It is concept that can be translated to digital and physical interactions. A way to create a coherent experience over all components in the ecosystem of the service.

The Technology

Wysp shows what the ecosystem of travel services can offer to improve people's journey when it becomes more connected. Multiple other new development have been taken into account; like automated driving, connection between devices and a digital key.

The design goal and the use of new technological developments led to new improvements for the travel process. Uplink shows how the technology of smart roads and autonomous driving can improve the moment of arrival at the airport for travellers, by car. It also leads to new possibilities for shared car drop off and pick-up points.

Combining data from multiple provides travellers support for decision making and planning their trip. It is bundled in the solution Trip Connect. Knowing when and with what mode of transport travellers will arrive at the airport can provide data to improve process planning. The passenger flow can be predicted and personalized time slots for their security check can be offered.

7.2 DISCUSSION

The Vision

The service Wysp is a vision on future travel. It serves as inspiration for navigating the complex world of connected mobility. It shows that travel should seen in the bigger picture, mobility, and not as specific phases like driving or waiting at the gate. The design goal and understanding the interaction helps to find coherence when designing for this larger scope.

The video presents how this vision will be used and shows certain details. Making the vision concrete helps to understand how the experience can be applied, but it is one of the many ways to translate it. The main values lies in how these mechanisms can help to achieve the design goal. For example a lasting visualisation of an action by a ripple of light. Wysp and Echo could also be applied to new ways of navigation by senses other than vision. Or extended reality, like holograms or smart glasses.

Creating a coherent experience when digital meets physical.

The experiences developed for physical and digital products have evolved mostly apart from each other. Car design has great knowledge on materialization and form study whereas digital design is based around graphical design, processing information and usability.
In this thesis the traveller will not only interact with digital interfaces on mobile devices. But also use physical objects like the car. Developing an experience and interaction that translates both on screen as well as in car has been challenging. Using the screens inside the car will not be sufficient. Physical actions like opening the door, starting the car and turning to the autonomous driving mode will need to be considered as well.
Wysp and Echo form a concept that is translated to both a physical and digital experience. A clear understanding of this experience, stripped to the basic message, was needed to achieve this. Wysp is an abstract living light showing echoes with each action. The abstract nature of the concept allows it to be translated both to screen and product.
When products will become more connected, receiving digital features, companies will need to find ways to create unity in the complete experience.

User wants and needs in designing a bundled service.

Cicero (2016) argues that platform design needs to find a balance between a design-led vision for the experience and user input. This project has mainly focused on developing the vision. The service that Wysp offers was based on a vision for the future. This vision indicated the need. Based on the same, cliche, argument from Henry Ford: "If I had asked people what they wanted, they would have said faster horses." Although this project was not only based on self-confidence but also used an approach like ViP, I still think big improvements could be achieved by gathering user input. Designing an intermediate concept based on the vision led design and user research would have greatly improved the final result.

Still uncovered: Awareness

The design goal was to:

"Relief people of anxiety caused by desired impressions, whilst momentarily creating awareness of their view on success."

Yet what misses in this project is a better way of creating these moments of awareness. Up Time was seen as a starting point, with the aim to make the travel process a secondary activity. If it does not look like someone is travelling, it shows that this person is not obstructed or effected by the process. Like the figure of speech, "I can do this with my eyes closed." or "She's a natural", indicates someone's experiences.

Momentarily creating awareness was considered in the calming nature of Wysp and Echo, but not explored enough. These experiences try to stay on the background, not distracting the traveller to much. Also, the different levels of information aim to give the appropriate support, without creating information overload or choice anxiety.

7.3 RECOMMENDATIONS

For MOBGEN

As MOBGEN is working on digital innovation they looked for knowledge generated by design on the ‘Connected Car’.

Designing for the ‘connected car’ as well as for digital platforms that offer a bundled is a complex task. Many stakeholders, processes and innovations need to be taken into account, which can creates uncertainty. Design visions will become an important way to guide these projects. If MOBGEN aids companies in designing a bundled service, it will important to create a clear qualitative goal. Designers must understand the relationship between the user and the service. This is needed in order to create a coherent experience over multiple touchpoints, both digital and physical. The MOBGEN Lab is already exploring new technologies and the application of it. MOBGEN can use these capabilities in translating and showcasing brand experiences of bundled services.

MOBGEN could also start playing a role in alliances between multiple companies. When companies decide to bundle their assets into single service offer mediation will be needed. An design agency will be very suited to make sure that the right mission is pursued and a coherent experience created. The knowledge about co-creation MOBGEN already possess will be very useful in this case.

Many projects at MOBGEN are approached by sprints, a design pressure cooker off one week that creates fast results. The method for this thesis relies a deep and sometimes long thinking process. It is harder to schedule when things fall into place and the next phase can be started. The creation of a design goal for future context and exploring the relationship between users and the design will be very useful for complex problems from MOBGEN clients, yet effective process management needs to be considered.

For continuation of the project

The service Wysp can not be implemented directly as it is a vision. It can however be a starting for new design briefs that have a smaller scope.

This project was executed without any brand or owner of the design in mind. In a later stage, many people asked the question: “Who will own the service.” and “What company is able to develop this platform.”

Wysp overarches a very large part of the journey. It combines assets of different stakeholders into one service. It takes control of many touchpoint with the traveller meaning that the owner of this platform based service will have great reach for their brand. Meaning that companies that partake in the service will have trouble communicating their brand and become more dependent on the service owner of the platform.

Companies with a user base or power might offer enough benefits for other parties to join. Shared car services, airlines or airports are not likely to create a service that can be used over different trips. Large software companies like Google or Amazon might have enough users and existing software to bargain with stakeholders but will likely face resistance by car manufacturers and airlines.

Setting up an alliance would be the most viable way for creating a platform based service like Wysp. These alliances already exist within the airline industry. Daimler AG and BMW group have announced to combine their efforts mobility services. This shows the possibilities for joining forces.

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APPENDIX

SERVICE EXPERIENCE

Preparing moments

- Helps with the preparation of a trip. Making people feel that they have made the right choices without certainty and clarity. Leaves people assured and prepared before starting the trip.

<assuring certainty> structured packing, list, steps, military plan.

Navigating

Giving people a feeling of certainty by guiding and navigating them through the process. Being guided can cause a feeling of powerlessness ands dependency. Therefor guidance will not be imposing and keeping peoples authority.

<supportively accommodating & assuring certainty>

Analogy Grocery list/ using a compass

Active moments

The transitions in the travel process, and the moments that require activity from the traveller will happen with recognition, rhythm and flow. This makes the traveller feel unobstructed and capable during his trip. Not because the obstacles move out of the way automatically , but because small gestures in a rhythmic sequence cause an effective flow. <synergetic alert>

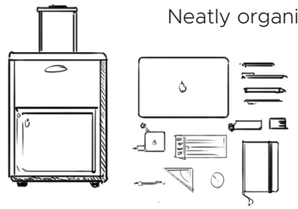
Analogy Jazz bar cocktail makers

waiting moments

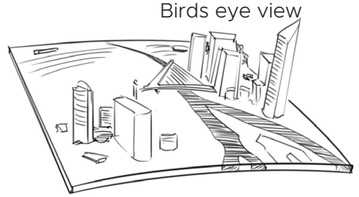
During moments in travel people want to act experienced. This image and experience is 'reached' by showing that travel is not the main activity. Two ways of showing this depending on your needs: Just another day in the office showing that you can work just as well during travel as in your office. Or making your trip look like a Sunday morning brunch moment, reading the paper/book with brunch.

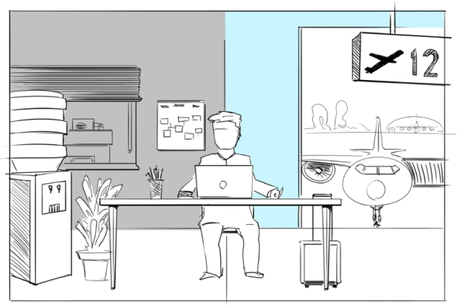
Analogy day at office / Sunday brunch.

Neatly organised



Birds eye view





PRODUCT LEVELS

ALREADY IN THE BEGINNING OF THE PROCESS I FOUND THAT THE INTELLIGENT TRANSPORT SYSTEM CONSISTED OF DIFFERENT LAYERS WITH DIFFERENT TOUCH POINTS. SOME COMPONENTS ARE PART OF THE INTERACTION, LIKE THE VEHICLE INTERIOR, OR THE DIGITAL INTERFACE. THESE ARE IN DIRECT CONTACT WITH THE TRAVELLER. OTHER PARTS OF THE TRANSPORT SYSTEM ARE ENABLING THESE INTERACTION, LIKE THE STRUCTURE OF THE SYSTEM OR THE PROVIDED DATA.

Service Blueprint

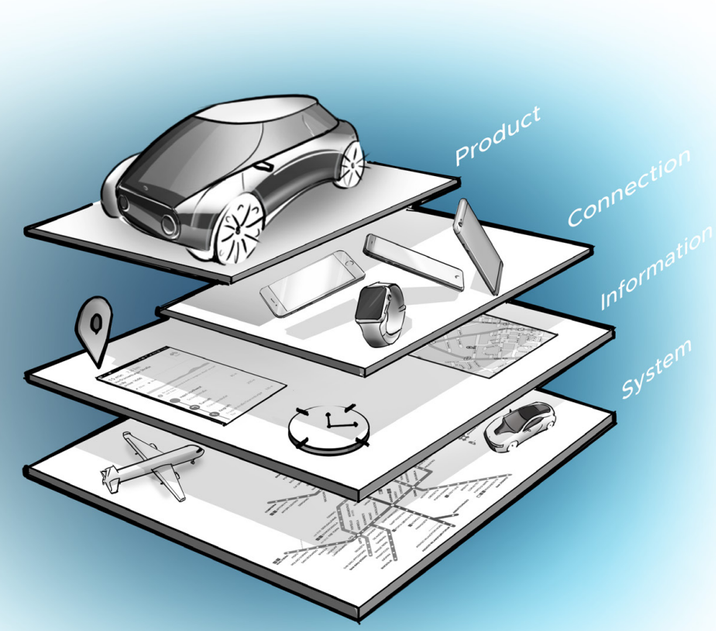
I found it necessary to consider these different layers in order to define what character traits it needed to posses. As a reference point I have used schematic tool 'Service Blueprint' that visualises perspectives of both user and provider, detailing everything from the points of customer contact to behind-the-scenes processes. (This is service design p.201) It considers the 'line of interaction' which separates the touchpoint with the user, and 'line of visibility' which separates the processes seen by humans.

The product is the physical product people interact with. The product has a certain character that is expressed in form, use and technology.

The interface is the digital touchpoint the user interacts with. "Desirability is king in the land of interface design". Is what (This is service design p.75) states. They that this can be achieved by three aspects; utility (is the service useful), usability (is the service easy to use) and pleasurability (is the interaction pleasurable). These are general principles for service design, yet it lacks the differentiation that (ViP) calls appropriateness.

The data and criteria are parameters for hierarchy in the system and enable a certain interaction. The data that is used and the way it is valued can be seen as a filter that determines the way of communication.

The system itself can be seen as how the essential value is delivered. In this case, how people are brought from A to B. For example, the service can not have flexibility as a character trait if the system does not support any sudden changes from travellers.



CHARACTER

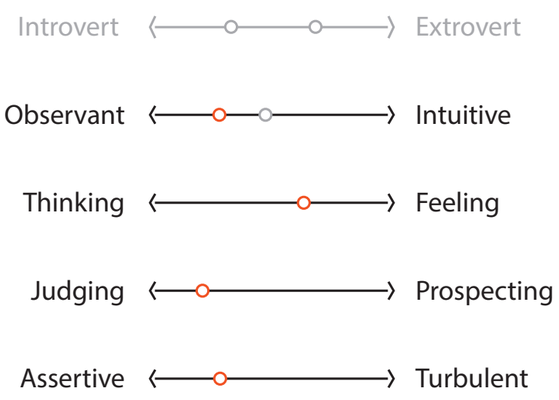
By envisioning what character traits the barkeeper from the analogy has, three personality types where selected.

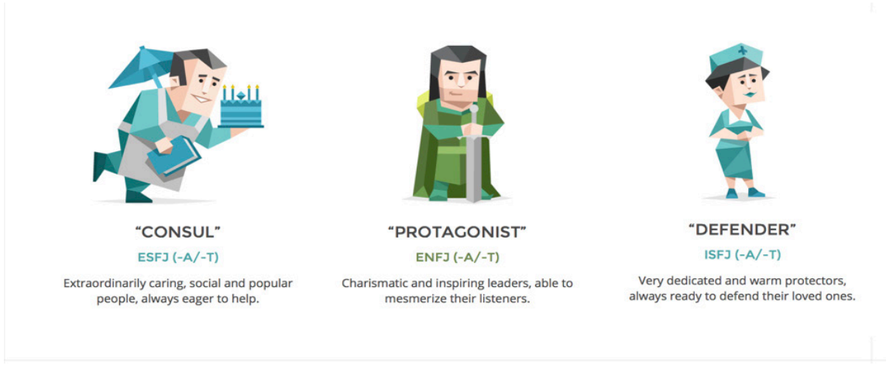
Reliable
Supportive
Warm
Practical

Character
Bartender and how he reacts on your presence covers the feeling.
What characterises the bartender and his behaviour should also be applied to the service/product.

Charismatic protector // Caretaking defender // Social helper, consul //

Reliable with a sense of duty
Encouraging, engaging and supportive
Practical thinking
Warm, sensitive and observant.





HIGHWAY SHUTTLE

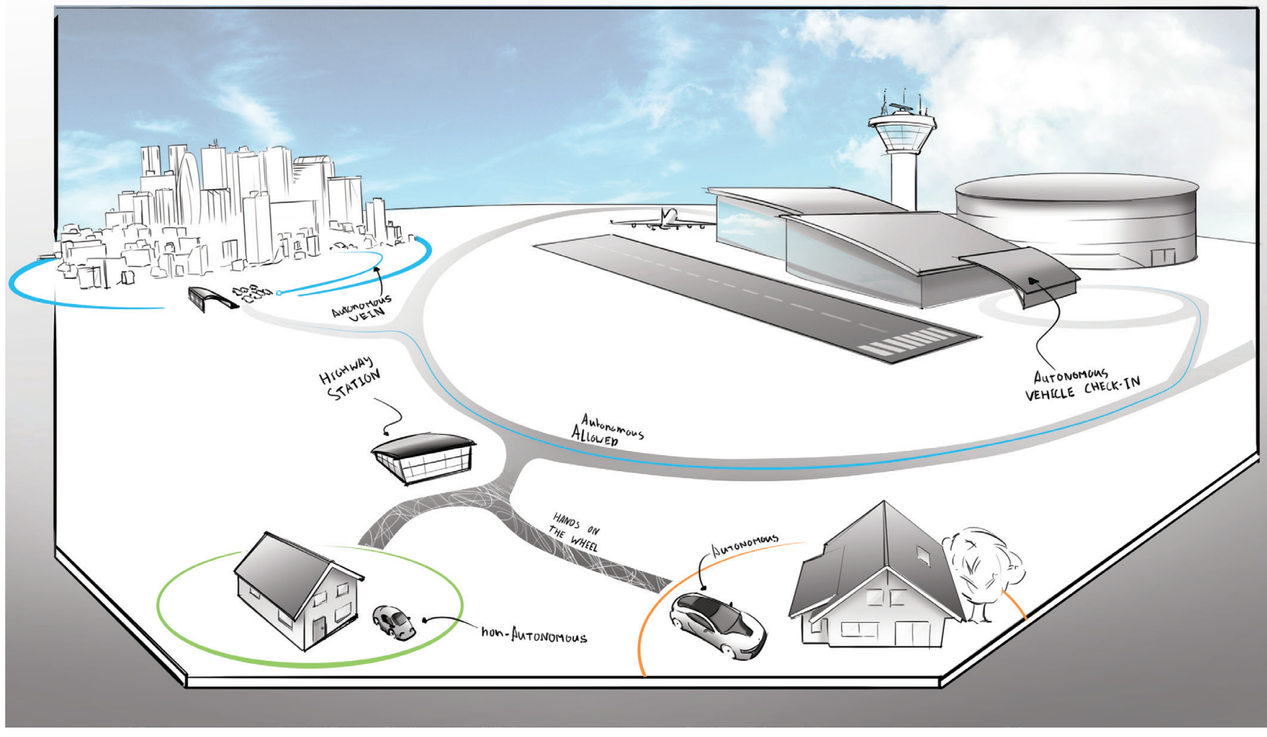
With the previous assumptions in mind I considered a way of getting from A to B. The highway shuttle is a possible system to move people on the infrastructure of highways. In this case moving people to the airport without owning a car. The aim is to make it different than just another public transport mode.

It does so by being more flexible than public transport; having no fixed time. Offering a private vehicle. Aiming for a door-to-check-in solution where you exit the vehicle at the luggage drop-off, or even continue in the same vehicle to your gate. Also in many occasions driving is faster due to transfers and non-optimal routes.

On the aspect of business the highway shuttle system is a large investment in autonomous vehicles, also the development of highway stations will be expensive task. The vision needs to be aligned among legislators in order to create this system. The highway shuttle will follow the same principles at other systems like Car2Go in which.

Linking with people in Domain

AUTONOMOUS OUTLOOK



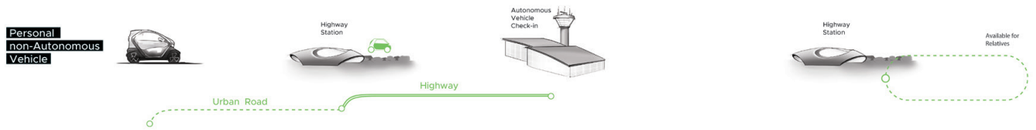
POSSIBLE JOURNEYS

Owning a autonomous car

Some people have the luxury of owning a personal autonomous car. This is either bought or leased. Especially occupations that make many kilometers can now also work in the car.

The user summons the car from the garage and drives to the highway. When reaching the highway the driver is able to let the car take over and do other activities. Upon reaching the airport the car moves to an autonomous car check-in where the baggage can be dropped and the car continues without the driver. The car without drive can go to a parking area away from the airport. And drive itself back later. Or when other people have to use the car it can drive back over the highway to a highway station, for them to pick it up.

+ Check-in from car
+ Service for putting luggage in the car when inbound
+ Automated valet parking, lower price
+ Family can use the car
- Car needs to be picked up and dropped of to use by others.



Owning a non-autonomous car

In rural areas the traffic density is low, therefore many shared mobility services will not be able to operate nor flexible enough to cater the needs of our passenger. People living in these areas will still own a car for daily travels. When going to the airport they prefer not to leave their car there due to parking cost and unavailability of their car for others.

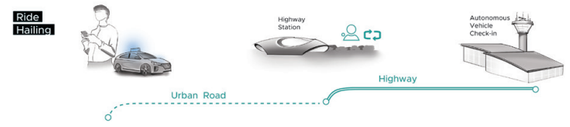
People owning an non-autonomous will drive to a highway station, where parking is less expensive than at the airport. And leave their car in order to step into a personal highway shuttle that drives them to the airport. They will use the autonomous vehicle check-in, the highway shuttle will pick-up inbound travellers or when there is no highway shuttles available in other locations, drive there (preferably in night time).

+ Check-in from car
+ Service for putting luggage in the car when inbound
+ Parking close to home/work
+ Family can use the car
- Car needs to be picked up and dropped of to use by others.
- Still paying parking fee, although less.
- You need to change vehicle at highway station.

Not owning a car, independent

People that do not own a car and want to go to the Airport can use public transport or alternative transport to a highway station. There they will step into a highway shuttle that takes them to the autonomous vehicle check-in to the airport. The digital system supporting their journey will assure a vehicle is available and arranges payment.

+ Check-in from car
+ Service for putting luggage in the car when inbound
+ Flexible private travel
- Still need to reach highway station



Not owning a car, ride hail

People that normally order a taxi or uber can still do this. The chauffeur picks them up at home and drives towards the highway station. The chauffeur then steps out, switches vehicle in order to pick-up another client. The highways shuttle with passenger continuous to the airport. This way taking a taxi or uber from cities further away from the airport is more economical.

+ Check-in from car
+ Service for putting luggage in the car when inbound
+ Less expensive than being driven the entire journey
+ No transfers
- Chauffeur does not drive his personal vehicle
- A chauffeur needs to be at a highway station for inbound passengers.

EXISTING INITIATIVES

Many companies are looking for oppertunities in the context of this project, therefor many examples of new innovations and start-ups came by. I picked out a few to understand what Is happening and what is still missing. There were more examples off similar concepts, yet these were left out.

Most interesting is to see how companies try to optimise value or efficiency by making a connection like renting out cars and showing ads. Using digital technology to make a connection in order to make life easier for the consumer. Clear offers like easier planning, paying less and carrying less. Yet an entire door-to-door solution is not yet available as most services are still exploring and learning.

Airport Parking

Car2Go Lufthansa

A cooporation between airport and car sharing service offer the possibility to access or park a car at the airport.

ParkFlyRent will rent out your car while you are on vacation, saving you parking costs while earning a share of the rent.

Luggage Pick-up & Delivery

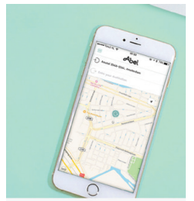
Is a start-up that offers to collect your suitcase in advance, so you will not have to bring it to the airport yourself.

Ready to Drop is a cooperation between Smart and DHL offering you the possibility to get packages delivered in the trunk of your car.

P3 luggage check-in

Schiphol offers luggage check-in at their off site parking area.

Planning Transport

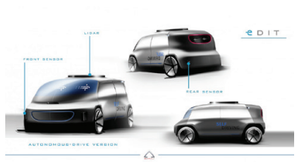


ou want to share

Abel is a Taxi service that allows you to share a trip with others, saving costs.

Google Trips makes it easier to plan and organize trips. It saves iterneraries and maps offline.

New Vehicles



EDIT is an electric shared car concept that offers a modular design that is accessable by anyone.

Waive car offers a reduced car sharing price by using the vehicle as an advertising board.

Olli is an autonomous public transport pod. For flexible transport.

FUTURE CLUSTERS

Fusion of people and technology

"People enhance their bodies by technology"

Technological humanism will arise, a progressive movement that embraces the fusion of people and technology. They believe in the early humanist values of intellectual freedom and individual expression. But also accepts mens creation and enhancement of the human body by technology. The fusion of humans and technology might bring problems but these are overcome by innovation and our ability to adapt.

Context Factors:
- *Biotechnical enhancements become fully acceptable. (Swain, 2017)*
- *Humans have an immense capability of adapting quickly and learning (De Volmaakte Mens: De Bionisch Mens, 2015)*
- *Airports experiment with digital tags (SITA 2015)*
- *Technology shapes the human kind (Mind of the Universe: De Maker, 2017)*

New life goals

"Fulfillment of personal values and happyness."

People care less about social conventions and become more international and open minded. Fulfillment of personal values and personal happiness become more important. This results in different work ethics and consumption of experiences. Showing status and personality by expressing your mindset and lifestyle will become more important. This development will continue over time but happens mostly within higher educated or urban groups.

Context Factors:
- *It is now generally recognized that the employee seldom works "just for the money" (Skinner 1952)*
- *People care more about personal views than social and societal values. (Mentality Mileus)*
- *Consumers don't want the products, but the fulfillment of the ir needs (Botsman, 2010)*
- *Car sharing user see it as part of their personality and status to think different. (Observation, 2017)*

Technology accommodates problem solving

"We get used to the liberating advantages of technology."

The web has almost infinite amounts of information, more options are available to achieve your goal. We like to have multiple options and the information that allows to make the right choice. When we encounter a problem the we try to find a new solution or influence the variables. Tech helps people to solve problems by themselves, making them more independent, yet also more dependent on tech.
Automation will make labour and jobs requiring basic decision making obsolete. Creative and human focused jobs will remain, and people will learn the trait of problem solving and decision making.

Context Factors:
- *C194*
- *54*
- *40*
- *32*
- *35*
- *123*
-
-
-
-

Independent and flexible travel experiences

"Travel should cater feelings of independence and freedom."

The car has always been a symbol of independence and freedom; being able to decide when and where you want to travel. Nowadays traveling further from home and wandering has replaced this same behaviour. As we grow more and more towards the idea of global travel with its feeling of independence and freedom we prefer a similar experience during our trip. Yet with many modes of travel control is limited. As we long to more flexibility and choice faster and smaller airports arise offering smaller air taxis. With longer trips people prefer to chose more catered options like a special work section.

Context Factors:
- *26*
- *39*
- *185*
- *140*
- *143*
- *75*

Getting lost in new dimensions

"Digital worlds and increased travel speed is changing our reference to reality."

We are not able to travel at warp speed or go to other dimensions. Yet relatively seen, we can travel 500 times as fast as 100 years ago, and phones and VR show us a different reality at the click of a button. We are constantly distracted by digital information as companies aim for our attention. We start look for information online before even giving ourselves time to think. Some play a game and escape life for multiple hours. Others consult their phone for stimulation every 5 minutes.
Travel itself is so comfortable that we do not notice speed or distance. Our world has become smaller and our social life, work and memories scattered over different places. Both digital dimensions and fast travel leaves us disoriented, lost of reference. It flattens the experiences around us. Far away places are less special as it becomes easier to reach, especially if we are constantly distracted by our phones.

Context
80,
82,
83,
90,
167,
12,
13,
110

Catered experiences dull the mind

"We find it hard to except the moments in our lives where nothing interesting happpens."

The economy becomes more focused on creating experiences that are memorable and personal. Every brand wants to be special and grab your attention, both offline as online. Online shopping and dating offers infinite possibilities, making us strive for finding perfection. Due to the on- and offline experiences we become afraid of 'boring moments' at home or while waiting on the bus. We become harder to entertain. As a way to overcome dullness and fake experience we look for authenticity. We look for real social interaction in urban living areas. We are attracted to nostalgic products, experiences and living areas.

The unfulfilled feeling of impatience

"We get used to a fast paced life where everything can be achieved in an instant."

Mobility is making improvements every year and is steadily growing. But when travel gets faster people tend to travel further. Increased travel and urbanization has put a strain on our infrastructure forcing us to invest in infrastructure and more efficient use of it.
With our lives becoming faster we also become more impatient. Due to the real-time access we have gotten used to fast 24h service. Constant digital simulations have made us restless. We dislike to process of flying and waiting, but the time saved makes it worth it. Independence in our travel process is valued especially when we have the feeling that we save time. This urge for faster travel is in conflict with our current congestion problems.

Self control over stimulation

"We begin to find ways to focus in order to enjoy life and achieve our goals."

In order to find balance in our fast paced lives full of media consumption and distraction we want more self-control. We look for ways to become calm and deliberate instead of restless and impulsive. Therefore we distance ourselves from distraction, physically, removing digital devices or removing ourselves. We withhold from social media, take weekend retreats, meditation courses or even flee our busy social life by traveling. These off grid moments are seen as important luxury.

14, 57, 158, 30, 108, 154, 37, 141

Context Factors
115, 47, 86, 87, 177

The downside of servitization

"Eventhough services improve our well-being, we become vulnarable due to our reliance on them."

Services help people to reach their goals without having to buy products. Digitalisation and connectivity has opened a lot of possibilities for non-ownership and services. When connecting products and systems this means that the companies and people also have to connect with each other. The differences in vision or perspective can cause obstacles and a lack of flow for the user. Especially when we consider systems to be mostly designed as binary while humans are ambiguous and emotional. When obstacles arise in the system people can become angry, nervous or bored. Especially when escaping the controlled situation is not possible. When more and more goals in our lives become supported by services we can feel less independent and in control.

LEFT OUT CLUSTERS

The clusters that where formed are not all equally important for the domain. After comparing the relevance of every cluster for the domain and the assignment a new perspective was created described as three Meta Clusters. The following clusters where left out.

We need a bigger brand

"Showing your status and finding self-esteem has gotten complex due to immaterial values as a status marker."

Cultures are hard to change. Passengers and staff in the aviation industry have trouble to let go of the jetset image. Cars still are still the status quo as means of transport. They keep providing hedonic qualities reflecting on the user's' personality and status. But in the recent years self esteem becoming about experiences and self-development.
The shift towards intangible values to gain self esteem is not always replacing materialism, it is coexisting together. Some people do not understand how to deal with this change and exaggerate old values like material luxury and exclusivity. Others show their experiences on social media to receive appreciation. In some cases the experience is inferior to the 'post' online.

Using altruism as an individual

"We become part of many differing groups. Portraying altruistic loyalty is expected of others, not ourselves."

People are used to live in groups, still following group behaviour is a way of avoiding risk. Naturally a group creates a certain moral or code, by approving behaviour or imitating behaviour. This code divides good or bad and draws no formal classification.
Digital communication has made people ever connected 'internet nomads'. They act as an individual but are connected with an online community of like minded people or friends. As people care more about our personal views than societal values you would think this makes people less group oriented, yet because it is so easy to find like minded opinion we are more group oriented than ever. Social media have made it very easy to ask for confirmation by others. Instead of loyalty and group control, we use groups for our individual goals making us believe in our own opinions.

Ecosystem of business models

"Our needs will be fulfilled by complex systems and service."

The integration of software in businesses is changing their value propositions rapidly. People enjoy full service solutions with a monthly description, yet they are reluctant to long term commitments for they prefer choice, flexibility and independence. In their effort to approach and create loyal customers services and marketing become more personal with a focus on long term customers. Some join effort in offering services as an ecosystem with shared revenues.
The shift towards flexible fast demand and digital businesses growing rapidly creates friction with large and rigid industries.

The cost of progress

"The progress we make as a society causes problems. It is the price we are willing to pay for improvement."
Technology is helping to make our life easier, faster and smarter. Technology improves our medical conditions, we are connected and have access to vast amounts of information. We have enhanced ourselves with technology making us more capable humans.
We have always thought progress as harmful or negative. We are afraid of digital safety, privacy and the psychological issues of social media. It is true that there is a cost to our current progress, yet we accept it or solve it with more technology. Just as we accept that the decrease of our privacy.

Context Factors:

- *Businesses are becoming more personal through mobile devices (SITA 2015)*
- *Consumers want door-to-door solutions (Linz, 2012)*
- *Easy Air Transport on demand without wasting time (Linz, 2012)*
- *People are more likely to comply when they are offered a choice*
- *Network business models grow rapidly (Van Alstyne, Parker & Choudary 2016)*
- *By showing us what we missed. Social media gives us the constant fear of missing out on something. (How to Live More Wisely Around Our Phones, 2017)*
- *Consumer services will become an ecosystem with shared revenues (Strategy&)*

Ecosystem of business models

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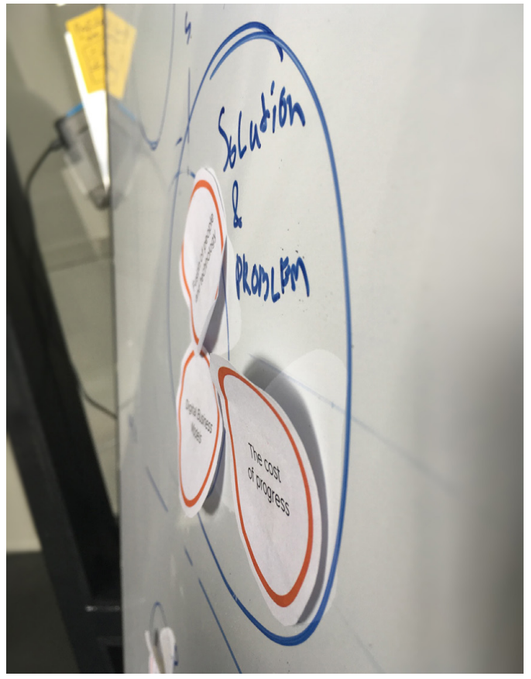
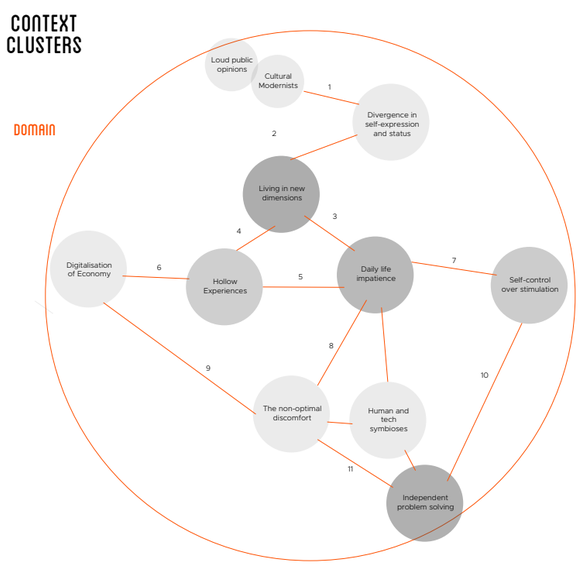
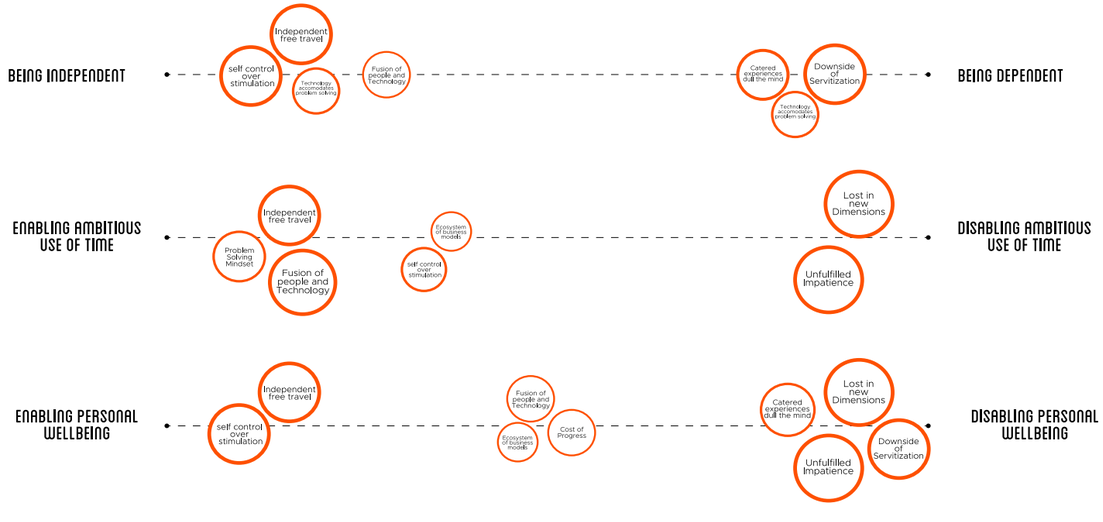
FINDING HIERARCHY

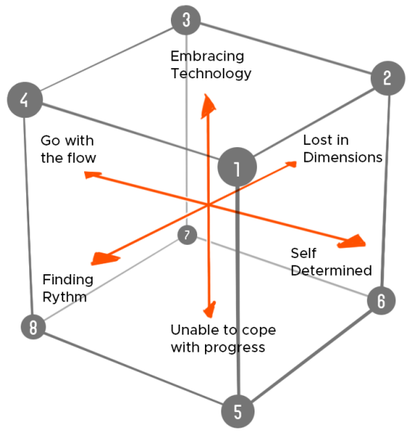


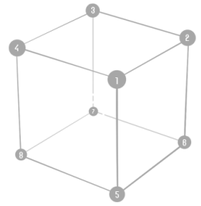




MINDSETS

IN ORDER TO UNDERSTAND HOW THE META CLUSTERS WOULD INFLUENCE THE BEHAVIOUR OF PEOPLE I MADE A FRAMEWORK THAT SHOWS HOW PEOPLE ARE DEALING WITH THE FUTURE INFLUENCES. THE THREE AXLES REPRESENT THE META CLUSTERS, AND THE EIGHT ANGLES REPRESENT DIFFERENT KINDS OF MINDSETS.





Optimistic Path Definers

This almost unrealistic personality is very self aware and has personal traits that make them stay true to themselves and their goals. They embrace tech to improve their life and accept or overcome the consequences of a distracting fast paced life.

- Embracing Technology
- Self Determined
- Finding Rhythm

Unguided rocket

The unguided rockets are very self aware and focused to accomplish their goals, they embrace technology and its possibilities to get where they need to be. Yet due to the changing dimensions, speed and distractions leaves them disoriented. In order to find balance they spend time and effort in methods of self-actualisation. By expecting that hard work can quickly solve their problems they maximise activities in life. This process is amplifying resulting in unguided rockets.

- Embracing Technology
- Self determined
- Lost between dimensions and longings

MINDSETS

Happy-go-lucky

People that go with the flow do not have a clear goal in life. They are uncertain about the long term and are easy to influence. Happy-go-lucky people enjoy the new possibilities that come with new technologies and are optimistic about progress. As they are easily to persuade there is a threat of getting lost in dimensions and distorted expectations yet this is not happening yet. The faster pace and new dimensions are not contradicting their optimism.

- Embracing Technology
- Go with the flow
- Finding Rhythm

Imbalanced escapists

Some people embrace progress and enhance themselves with the technological possibilities. They have trouble achieving goals that are set, as they are easily distracted and persuaded. Leaving them feeling dependent on technology and services. As a way to overcome imbalance they travel, or escape in digital dimensions. This makes them dull and need more fulfilling experiences possibly becoming a downwards spiral.

- Embracing Technology
- Go with the flow
- Lost between dimensions and longings

Authentic independents

These people have clear goals in mind and are determined and not easily distracted. The belief in personal development troubles them in embracing technological progress. The do not see advantages but decrease of privacy and lack of independence in digital services. Indifference is felt about fast travel, digital influences and need for experiences because they stick to their authenticity.

- Unable to cope with progress
- Self Determined
- Finding Rhythm

Strong Headed Sentimentalists

Being very self determined and independent to reach their own life goals and struggling with technology interfering with their life, these people become strong headed and resistant against progress. The faster pace that causes unfulfilled feelings and disorientation leaves them longing for old days.

- Unable to cope with progress
- Self determined
- Lost between dimensions and longings

Mismatching moderates

With no clear goal in a changing society these people have trouble to find how to deal with life, they have the feeling of being out of place. They are dependent on technology but when using it they feel annoyed or scared. They want change to be moderate and believe our current trajectory causes decadence.

- Unable to cope with progress
- Go with the flow
- Finding Rhythm

Lost in Nostalgic Dimensions

With trouble coping with new technologies and change these people do not see how to resist with sheer self-determination. They are lost in new dimension showing escapism to fulfill their distorted value system. Relief is found in nostalgia where there values of life still apply, but this does not solve their everyday problems.

- Unable to cope with progress
- Go with the flow
- Lost between dimensions and longings

Factors

1	Internet of things, connection and communication between machines	Trend	Technological	
2	Servitization of business model (offer goal to consumer)	Development	Economic	Livework insight
3	Experience Economy rises	Development	Psychological	
4	Digitalisation of the car	Development	Technological	
5	Network business models grow rapidly, Uber Lyft Airbnb	Trend	Economic	Network
6	Environment of earth changes due to humans	State	Demographic	Paris agreement
7	CO2 and waste need to be reduced	State	Policy	Paris agreement
8	Congestion is increasing	Development	Dempographic	
9	Parking space is dead space	Principle	Economic	Steven interview'
10	Digital safety is a problem	Development	Technological	ransomware
11	Mom Tech', New services and apps solve irrelevant problems	Trend	Cultural	Mom Tech article
12	Air travel is increasing	Development	Demographic	KiM
13	Air travel is becoming commodity, cheaper	Development	Economic	
14	Consumers become more independent, self services	Development	Psychological	Linz 2012
15	Consumers want door to door solutiosn	Development	Psychological	Linz 2012
16	Biggest Challenge for European Airports is capacity and quality	State	Economic	eu commission
17	People are more likely to comply when they are offered a choice	Principle	Psychological	
18	The more choice a person has, the more difficult it is to make decisions	Principle	Psychological	
19	People experience the trip from and to airports as highly stressful	Principle	Psychological	Stress map ICA
20	People prefer a car when traveling with luggage	Principle	Psychological	Steven Interview'
21	Cars are accessible on demand without owning them.	Trend	Technological	Uber, Blabla, Car2Go
22	Shared cars model makes you pay per minute	Trend	Economic	Observation
23	Car sharing is slowly becoming reliable	Development	Technological	Observation
24	People consider buying a vehicle when settling	Principle	Demographic	
25	Cars have hedonic qualities reflecting one personality or status	State	Cultural	
26	Cars are embodiment of freedom and independence	State	Cultural	
27	Urbanization will continue	Development	Demographic	
28	The car culture is difficult to change	State	Cultural	KiM keurt of uitstel
29	Digital services have made people more demanding for real-time reactions	Trend	Psychological	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge
30	Frequent flyers want to win time and be efficient	Principle	Psychological	
31	Business flyers have to communicate spendings with company, which is paying	Principle	Economic	
32	People want to have multiple options to solve a problem	Principle	Psychological	Observation
33	When people are flexible the service needs to be flexible to.	Principle	Psychological	observation
34	People want to be connected with data though their phone and laptop	Trend	Psychological	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge
35	People want to be informed at all moments of their journey	Principle	Psychological	
36	People want to be assured of timing, arrival of personal belongins	Principle	PSychological	
37	Processes at the airport are becoming faster	Trend	Technological	
38	Luggage can be transported as a service, from door to door	Trend	Economic	
39	Car sharing to the airport is becoming possible	Trend	Economic	
40	People look for new solution when bounderies in the system arise,	Principle	Psychological	Talk elmer & katinka
41	Vehicles will be able to navigate autonomously	Development	Technological	Levels autonomy
42	Closer parking near the airport means pricier	Principle	economic	Schiphol parking
43	Time is money	Principle	Economic	
44	People are becoming used to constant distraction, afraid of 'boring moments'	Development	Evolutionary	
45	Personal quality time is very valuabe	Trend	Psychological	
46	The boundery between social and work is blurring	Development	Psychological	
47	People have less privacy due to digital data	Trend	Psychological	
48	Businesses are becoming more personal through mobile device	Trend	Technological	Sita IT trends
49	Airports plan to improve WIfI	Development	Technological	Airpo
50	Airports develop more digital sensors	Development	Technological	Sita IT trends
51	Airports develop more cloud services	Development	Technological	Sita IT trends
52	Airports experiment with digital tags	Trend	Technological	Sita IT trends
53	Airports will experiment with wearables, smartglases	Trend	Technological	Sita IT trends
54	Companies will offer transport as a service packages, giving them flexibility to react on varying amount of travellers	Development	Economic	Steven interview
55	People would like combined pricing	Development	Economic	Sita are airlines ready to connect
56	Check-in will become mobile	Development	Technological	Sita are airlines ready to connect
57	Baggage drop off will be unassisted	Development	technological	Sita are airlines ready to connect
58	Safety processes will remain important and unchanged due to risk aversity and regulations	State	Cultural	Millenials public transport
59	Airplanes will remain structurely unchanged	State	Technological	Millenials public transport
60	Airplane interieur will undergo changes towards better capacity and experience	Development	Technological	Interview P. Vink 2017
61	People are used to independently searching and planning travel options	Development	Psychological	Millenials public transport
62	The boundery between travel and work is blurring	Trend	Psychological	Millenials public transport
63	People are willing to pay more for full automated than partially automated	Principle	Economic	Preference of travellers for using automated vehicles for last mile
64	First class train travellers are more open to self driving vehicles than second class travellers	Principle	Economic	Preference of travellers for using automated vehicles for last mile
65	Easy Air Transport on demand without wasting time	Trend	Economic	Delphi survey
66	People enjoy a natural flow and seamless process	Principle	PSychological	PYRAMID OF PASSENGER PERCEPTION LEVELS ON PR(
67	People expect updates on occuring problems	Trend	Psychological	PYRAMID OF PASSENGER PERCEPTION LEVELS ON PR(
68	People are becoming more individual focused	Development	Psychological	Mentality milieus
69	Ambitions on living life and personal developmetn instead of life goals like job status and house.	Trend	psychological	Mentality milieus
70	People care more about personal views than social and societal values.	Trend	psychological	Mentality milieus

71	People do not want to interfere with others and want to be left alone	Trend	psychological	Mentality milieus
72	Material status decreasing due to status of activities and experiences	Trend	cultural	Mentality milieus
73	People are more international, openminded and care less about moral and social conventions	Trend	cultural	Mentality milieus
74	Trust is one of the reasons people would not choose for autonomous mobility	Principle	psychological beteren van de last-mile in een ov reis met automatisch voertuigen	
75	Light flying taxis will move short distances	Trend	Technological	Delphi Survey
76	Beacons will optimize travel for passengers and providing system	Development	Technological	SITA
77	More precise data will be provided and collected on mobility	Development	Technological	Accenture connected vehicle survey
78	Combination of stakeholders in mobility and IoT will not always mean harmony	Principle	Political	Kietzmann & Cohen
79	We become addicted to smartphones by selfavoidance	Trend	Social	Book of Life, on smartphones
80	We are constantly distracted by digital information, distracting as a business model	Trend	Psychological	Book of Life, on smartphones
81	Some people withhold from their phones or social media for moments	Trend	Psychological	Book of Life, on smartphones
82	We search for information outside ourselves, consult our phones instead of ourselves	Trend	Psychological	Book of Life, on smartphones
83	A click of the button launches a screen and our attention to a totally different place, harming our social relations around us.	Trend	Psychological	Book of Life, on smartphones
84	Love life is becoming more individual, devorce and sexual preferances become an open topic.	Development	cultural	Lucas
85	Searching for a partner or fling becomes more digital and helps us strive for perfection. A new person is a only click away	Trend	Psychological	Book of Life, on smartphones
86	We can no truly lose ourselves in nature when our phone reminds us of our ego	Trend	Psychological	Book of Life, on smartphones
87	We are not able to calm down in our lives because we keep craving for stimuli.	Trend	Psychological	Book of Life, on smartphones
88	Humans have an immense capability of adapting quickly and learning	Principle	Evolutionary	Presentatie Nas, Panta Rei 2016
89	Many changes and innovations have been considered harmfull for people, like trains, newspapers	Principle	cultural	Presentatie Nas, Panta Rei 2016
90	Because digital life asks so much attention from us we miss ourt on other small daily realisations	Trend	Psychological	Book of Life, on smartphones
91	By showing us what we missed. Social media gives us the constant fear of missing out on something.	Trend	Social	Book of Life, on smartphones
92	Status and hedonic principles are influenced by the receive of likes and sharing of photo's. Making apreciation very binary	Trend	Social	Book of Life, on smartphones
93	Innovation in the car industry will become more sudden and rapid due to the full integration of software	Trend	Technological	Lucas
94	Specific use case cars will arise, sharing fleets, ride hail cars, off-road, ikea.	Trend	Technological	Strategy &
95	Revenue flows will change adding mobility as a service and digital services and cooperations.	Development	Economic	Strategy &
96	In car services will be sold as subscription; paying for heated seats only in winter , or software enabling more power from the engin	Trend	Economic	Strategy &
97	Diversification between high end long distance and high volume produced cheaper urban vehicles	Development	Economic	Strategy &
98	Car makers will have trouble maintaining identity	Trend	Cultural	Strategy &
99	Consumer services will become an ecosystem with shared revenues	Trend	Economic	Platform whitpaper
100	Companies will try to make you stick to their services or apply for longer time service	Development	Economic	
101	Autonomous car will come but develops slowly as the world around need to evolve with it.	Development	Technological	
102	Cars will have a mix of car based and mobile based features	Development	Technological	
103	Safety and cybersafety will remain and important human and economic need	State	Psychological / Economic	
104	Carmakers are consuming too much capital	Development	Economic	Confesions of capital junky
105	OEMs might not be the ones delivering the full package only the physical products	Trend	Economic	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge
106	Social interactions take place in the digital domain where people feel free to express opinions and attitudes	Trend	Social	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge
107	Increased mobility changes city layouts, broader living space, suburbia.	Development	Demographic	Lucas, suburb in america after car
108	Faster travel increases the distance people tend to travel	Principle	Dempographic	Marchetti's constant
109	People are attracted to nostaligc living areas	Principle	Psychological	Lucas
110	Fast travel flattens out the richness and way you experience places around you.	Principle	Psychological	Lucas
111	Segmentation within cities will become bigger in many parts, some on culture some on income	Development	Demographic	Lucas
112	Urbanization will continue and make space and expensive luxury	Development	Demographic	Lucas
113	The power of communitty grows, and action together	Development	Social	Lucas
114	The individual often comes to control part of his own behavior when a response has conflicting consequences—when it leads to bot	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
115	Physical restraint and physical aid. We commonly control behavior through physical restraint. Putting the clock in another room.	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
116	We put our hands for our mouth in order not to continue speaking.	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
117	When wanting to control against temptation we remove the stimuli	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
118	We might deprive from eating lunch in order to enjoy dinner more.	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
119	We control our emotion and behaviour to make a good impression.	Principle	Social	B.F. Skinner (1953) science and human behaviour
120	When making a decision we want to compare the variables	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
121	When making a decision we want to know what others or friends are doing	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
122	We discard or cross options off to tell ourselves a decision has been made	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
123	In problem-solving we look for ways to manipulate variables.	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
124	Some progress toward explaining participation in a group is made by the analysis of imitation. In general, behaving as others behave is likely to be reinforcing.	Principle	social	B.F. Skinner (1953) science and human behaviour
125	Physical restraint can detain physical behaviour but not thoughts or internal behavirour	Principle	social	B.F. Skinner (1953) science and human behaviour
126	Hurrying can be countered by hanging a mirror evoking other behaviour	Principle	social	B.F. Skinner (1953) science and human behaviour
127	A group thinks in good and bad but does seldom draw up a formal classification	Principle	social	B.F. Skinner (1953) science and human behaviour
128	Acting out good behaviour for a group can have negative personal benefit	Principle	social	B.F. Skinner (1953) science and human behaviour
129	The effect of group control is in conflict with the strong primarily reinforced behavior of the individual. Selfish versus altruism.	Principle	social	B.F. Skinner (1953) science and human behaviour
130	People avoid risk by following groups	Principle	social	B.F. Skinner (1953) science and human behaviour
131	Controlling agents use terms of legal and illegal, following a code, which is enforced by several constitutions.	State	Policy	B.F. Skinner (1953) science and human behaviour
132	Acting on illegal behaviour is done by considering circumstances by deprivation or punishment.	State	Policy	B.F. Skinner (1953) science and human behaviour
133	Some people escape control by physical withdrawel	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
134	Revolt against a controlling agency is exemplified when the group permits this	Principle	social	B.F. Skinner (1953) science and human behaviour
135	When controlled some simply do not behave in conformity with controlling practices. This often follows when the individual has be	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
136	Boredom arises not simply because there is nothing to do but because nothing can be done—either because a situation is unfavorable for action or because the group or a. controlling agency has imposed physical or self-restraint	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
137	Simple "nervousness" is often indicated when escaping a controlled situation is not possible. The individual is uneasy and cannot rest, although his behavior cannot be explained.	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
138	People tend to drive extra cautious right after an accident as risk averse behaviour	Principle	Psychological	B.F. Skinner (1953) science and human behaviour
139	It is now generally recognized that the employee seldom works "just for the money"	Principle	Economic	B.F. Skinner (1953) science and human behaviour
140	"With flying you can't control anything. Even in the train you have more control, you can walk a little, you can use your phone, more is allowed. But in the airplane, they decided times, when you eat, when you have to sit down. And in addition you have to wait a long time at the airport."	Principle	Psychological	Interview P. Vink 2017

141	People want to have control over their environment. But still more and more people choose for flying. Because it becomes cheaper	Development	Psychological	Interview P. Vink 2017	
142	"Then people have to endure for a while, but they will arrive quicker."	Principle	Psychological	Interview P. Vink 2017	
143	"Some companies are experimenting with predestined zones for silence, families, work and social. You can book a spot beforehand	Trend	Demographic	Interview P. Vink 2017	
144	"Behaviour of people is very difficult to change. People will be looking for comfort and recognition."	Principle	Psychological	Interview P. Vink 2017	
145	"Airports will become larger. With the same gates having tubes to the airplane."	State	Technological	Interview P. Vink 2017	
146	"At Schiphol there is an experiment with a fast security line for people carrying only a small bag. That way the airport is relieved of certain steps and the traveler is faster. Making it a choice can be a way of influencing behaviour."	Trend	Psychological	Interview P. Vink 2017	
147	Many times taking a Car2Go seems convenient and quick yet it isn't due to parking trouble and navigating.	Trend	Psychological	Observation Car2Go 2017	
148	People like to use their travel time more efficient by working or reading.	Trend	Cultural	Observation Car2Go 2017	
149	Some people dislike public transport for they are dependent and have to wait.	Principle	Psychological	Observation Car2Go 2017	
150	Some people dislike taxis or uber for the lack of control, indepenence, and the akward talks	Principle	Psychological	Observation Car2Go 2017	
151	Car sharing user see it as part of their personality and status to think different.	Trend	Social	Observation Car2Go 2017	
152	Mobility systems are being designed from multiple perspectives being more inclusive.	Trend	Social	London claustrophobia map	
153	Enjoying the experience of driving an electric 'go-kart' like car is reason to use the service	Trend	Psychological	Observation Car2Go 2017	
154	Using a car sharing service requires a flexible mindset	Trend	Psychological	Observation Car2Go 2017	
155	When a system expects users to act a certain way, customers expect that the system will also act accordingly.	Principle	Psychological	Observation Car2Go 2017	
156	Strong social networks, with corresponding social support, are deminishing with secularization	Trend	Sociological	Smouter, K., (2014). 'Is de participatiesamenleving er ook voor wie	
157	Patience is an act of self-determination	State	Sociological	Burkeman, O., (2015). 'Why patience really is a virtue' Retrieved 12	
158	Impatience dominates our lives	State	Sociological	Burkeman, O., (2015). 'Why patience really is a virtue' Retrieved 12	
159	Interaction technologies will get more sophisticated	Development	Technological	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge	
160	The human brain is wired to achieve maximum effect with minimal means	State	Evolutionary	Hekkert, P. (2016, March). Lecture	
161	People have difficulty accepting radical change	State	Evolutionary	Hekkert, P. (2016, March). Lecture	
162	A car is a statement	Principle	Sociological	Grondelle van, E. (2015, March). Lecture	
163	A car is a moving controlled environment	Principle	Sociological	Mellegers, E. (2015, March). Lecture	
164	Architecture is static controlled environment	Principle	Sociological	Mellegers, E. (2015, March). Lecture	
165	People have become internet nomads, with the potential to always be connected to their global tribes	Trend	Cultural	Whiteley, N. (2005). The Digital Age: the Fourth Machine Age. Retri	
166	Approaching the 5th machine age, people will never be not connected	Trend	Technological	Whiteley, N. (2005). The Digital Age: the Fourth Machine Age. Retri	
167	The comfort of modern cars makes it we don't feel the speed of driving anymore	Development	Technological	Mellegers, E. (2016, May). Lecture	
168	A city road is where society is presented to society	Principle	Social	Mellegers, E. (2015, March). Lecture	
169	Modern luxury values are: self-expression, individuality, and co-creation	State	Sociological	Adam, N. (2016). Key Success Factors for Automotive Premium Brar	
170	New luxury values are: immaterial luxury, sustainability, social responsibility, and experience orientation	Development	Sociological	Adam, N. (2016). Key Success Factors for Automotive Premium Brar	
171	Luxury is still about the pursuit of exclusivity and differentiation	State	Cultural	Adam, N. (2016). Key Success Factors for Automotive Premium Brar	
172	People will require transport at a specific time	State	psychological	Sopjani, L. (2015). User-centered service design for sustainable mot	
173	Exclusivity (or 'status tests') can increase a products' value (prove yourself to the brand)	Trend	Sociological	Trendwatching.com (2015) 5 CONSUMER TRENDS FOR 2016: Status	
174	Consumers don't want the products, but the fulfillment of the need	Principle	psychological	Botsman, R. [Tedx Talks] (2010, May, 31st). TEDxSydney - Rachel Bo	
175	Business travel will become a valued luxury	Development	Economical	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge	
176	Travel will become more individualized.	Development	Economical	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge	
177	The off-the-grid getaway will become a luxury	Trend	Economical	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge	
178	The world becomes fully modeled in 3D	Development	Technological	Friedrich, R, Peterson, M, Koster, A & Blum, S. (2010). The rise of Ge	
179					
180	Jet set comes from the group of international people with enough money to travel by jet oftenly. The term is in decline by cheaper f	Trend	Social	Igor Cansini	
181	People are always trying to keep their batteries loaded.	Trend	Psychological	able-at-airports/news-story/84cfd6fa56d00eda01c8b7db22647a76	
182	17% rise of anti social behaviour in airplanes. Of which 23% is alcohol related	Development	Social	Gaurdian : Plane rage 2016	
183	More people are put together in one plane	Development	Economical	Gaurdian : Plane rage 2016	
184	Historically, airports have been regarded as non-places or a necessary pause between where one is and where one is		Social	http://www.airport-world.com/item/2182-culture-and-function	
185	hat one can go ice skating or host a birthday party in an airport doesn't suggest we're spending too much time in airports. Instead, it suggests we're buildin			http://www.airport-world.com/item/2182-culture-and-function	
186	global transport.				
187	A new wave of cultural liberalism arrives	Trend	Cultural	Strange telemetry	
188	Biotechnical enhancements become fully acceptable	Trend	Tech	Strange telemetry	
189	Smaller airports will change the domestic flight industry				
190	Small electric airplanes will take over the short haul business.			//www.fastcompany.com/40401803/this-startup-backed-by-jetblue-and-boeing-plans-on-flying-electric-planes-by-the-early-2020s	
191	Real democracry, will of the people, is not always the rational long term vote on progress.				

Journey overview, functional

Action	**Searching, Deciding and Booking**	**Last arrangements**
State of mind	Overhelmed & Unclear, Choice overload, Fear by uncertainties	Worried, prepared? Ineffective
Prefered state of mind	Clear, Assurance to make the best choice, chose comfortable	Prepared, focused, assured
Functional Solution	Combined search and planning platform, link with personal agenda, combine with payment, provide last mile info, packing list, pick a seat, plan arrival transport, luggage service	Pack list check, Agenda notification, Plan transport, scan luggage size
Behavioral Solution	Work insurance option, Personal settings, Packing advice/lists, Define time margin,	Clear steps, personal settings, Action shortlist, notify when to leave, insurance option

Action	**To the vehicle (office bus)**	**In the vehicle**	**On road**
State of mind	rushed, uncertain when looking for car, unfimiliar	Strange car, expectations about the car, What do people think	Focus on traffic, finding route, being on time
Prefered state of mind	certain, assured, confident image	Feel comfort of closed space, confident, vehicle conveys status so you don't have to.	Drive in flow, feel prepared for the airport bus
Functional Solution	Personal car, Prompter navigates to shared car, Prompter navigates to office bus, car data is connected to airport & parking	car prepares driver for upcoming drive. Estimated autonomous time + actyivity	Take over driving/navigation when reaching airport. Han off luggage during drive. Parking done by car, digital lu
Behavioral Solution	Navigate to car with watch/prompter, assure reservation and back up options,	when sitting down car comes alive, unlock personal settings	Calm time & info to prepare for the Airport.

Action	Entering Airport	On airport
State of mind	Relieved to fullfill needs (bathroom, food), Overwhelmed (bustle) Searching	Action focused, Bored (in line), Grain of sand
Prefered state of mind	Relieved, calm and clarity, confident image	Act competent, Feel special, Frictionless process
Functional Solution	New entrance for autonomous drop off. 3 ways: gate, sitting/office room, needs (toilet, info, kiosk)	Waiting becomes valuable working, leisure vs consuming, process time (no need to hurry)
Behavioral Solution	Wear prompter or watch, enter special 'waiting' room, reserved work space.	Physically show special badge, prompter

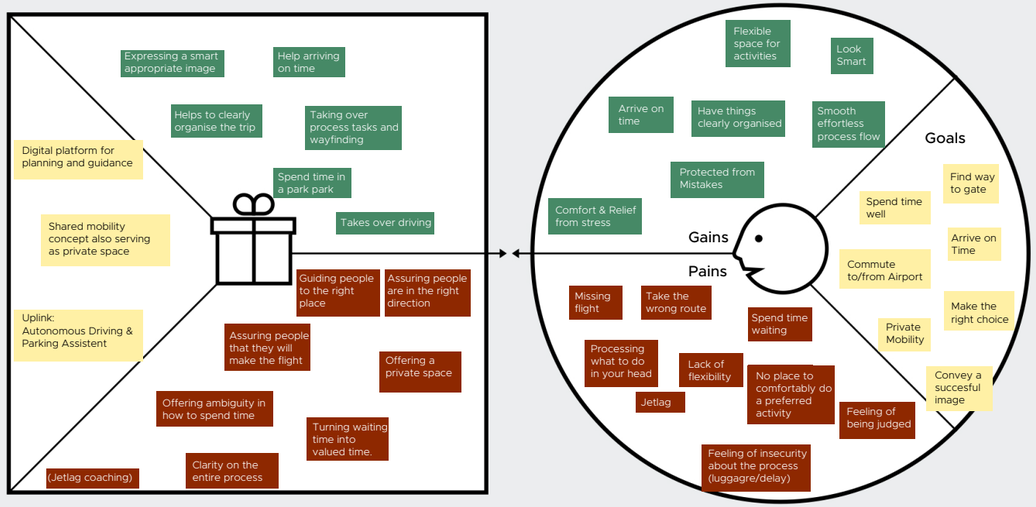
Action	Waiting and or working	Boarding and in plane
State of mind	Bored waiting, lack of esteem, focused on action/distraction	Sit or stand in line? Worried about luggage, seat. Comfort?
Prefered state of mind	Feel independent and in control, Effective or occupied, Mesmerized	Comfortable, Concentrate, Personal space
Functional Solution	Working table (wework), personal booth, Order digital, predict timing process	Able to take handluggage aboard, in plane personal info about arrival and arrangement there. In-car luggage pick-up, show tip videos
Behavioral Solution	Order brought to your table (acknowledge as in bar) and able to show good choice, Table provides active leisure (act busy) , Mesmerizing objects to evoke thinking without anxiety	Simple entry/id. First/last to board?

Action	Exit plane
State of mind	Have I made the right choice? Unfimiliar. Puzzled.
Prefered state of mind	Confident like a local, Know the right choice to make, Assured
Functional Solution	Review and improve personal settings, Guide to transport, waiting for luggage while being informed and already taking steps or relax.
Behavioral Solution	All is handled in app > improve next trip

The Value Proposition Canvas

Value Proposition

"Young professionals, that want the image of an experienced business traveller on short trips within Europe in 2025."



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Design Principles

Setting up rules to design by

Convey Smartness
Help people to convey a smart, stylish image by being competent, appropriate and modest.

Clear Confidence
Make the user feel assured and relieved by communicating with clarity and confidence.

Calm Choices
People must be able to make choices effortlessly at any level of focus.

Configuring Control
Let people configure clearly understandable variables instead of giving them full control.

Considerate and personal
The service needs to consider the user and it's environment by being observant, adopt the users' perspective; and encourage responsible behaviour.

Care for ambiguity
Recognizing that the world does not fit into a neat set of categories. We will always encounter inconsistency that standard systems have to cope with.

Ideation session

Schedule

15:30 Presentation, project.

16:00 Ideation on **Mission “Balanced perspective”, “Follow own path”**
- 5 min Flower
- 15 min Ideate 2-3x how can + crazy 8

16:25 Ideation on **Interaction**
- 5 min Flower
- 15 min Ideate 2-3x how can + random + crazy 8

16:50 Cluster to directions, give themes, discuss

17:10 Go for 1 theme
- How can...
- Use other templates + factors

17:30 Present Round Up

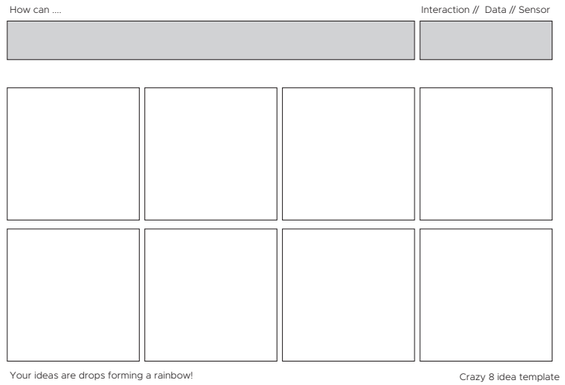
People
4 = 2x mission, 2x interaction
8 = 1x mission, 1x interaction
Everyone gets small stack of cards

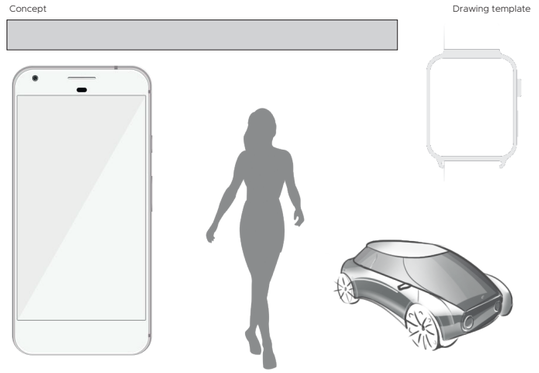
Material
Data cards set
Templates
Reminder > domain, mission, interaction, layers
Post-ts
Markers
Video/Photo

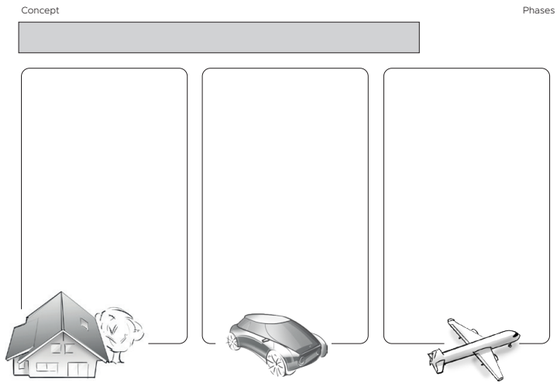
Start out with mission, getting to know why we are designing a solution. Flower to rid people of obvious ideas and start the creative flow, use questions and fill in the gaps with possible tech/data & technologies for interaction. Create 8 ideas per question on post its.

Later cluster this into directions for further ideation. Choose one direction/theme.
Rephrase the problem to solve into a new How2. Use the templates to visualize the idea and make it more concrete: Drawing template, Journey steps, Product Layers, Use of data

Ideation templates



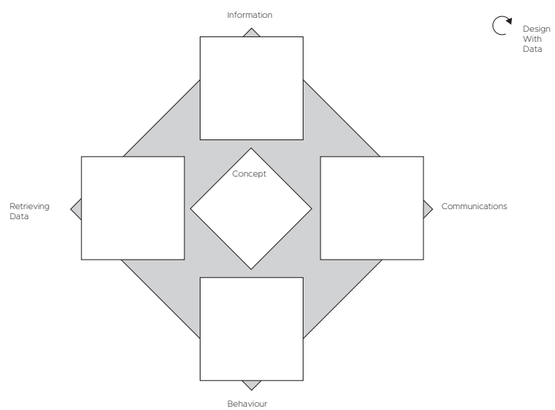


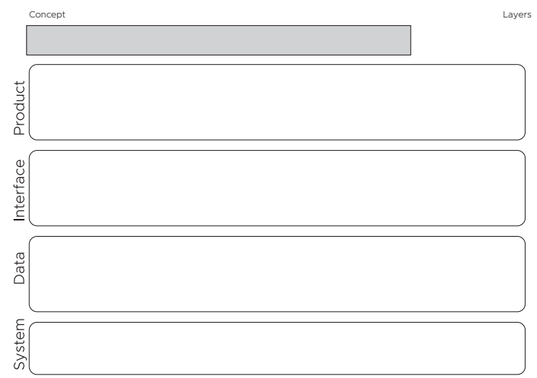


How can ..... achieve ..... by making use of .....

How can ..... achieve ..... by making use of .....

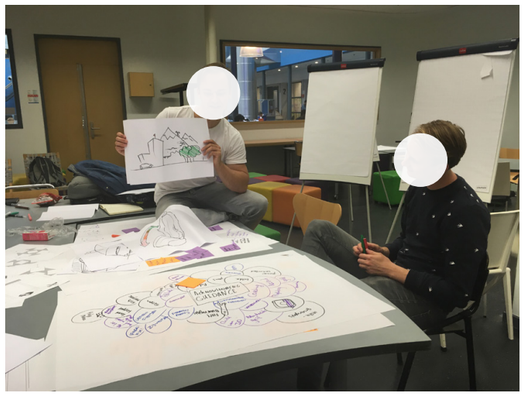
How can ..... achieve ..... by making use of .....





Session at Mobgen

Session at Industrial Design Engineering in Delft



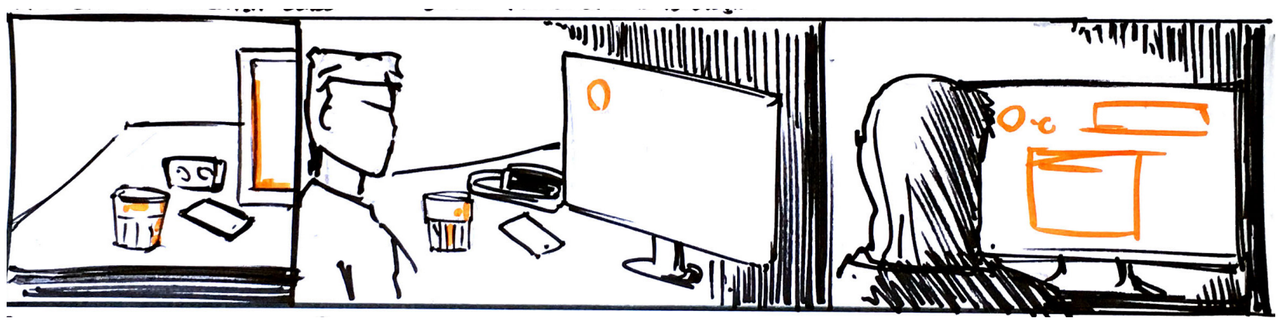
STORYBOARD MOVIE

1 Booking & Preparation

What happens: Traveler is shown at the desk. Booking screen shows a few steps in searching the right flight. Start with filming the reflection in the glass, no information yet. Continue by shooting over the shoulder.

When: Preferable late in the day or evening. During daytime.
Where: Office Amsterdam

Fx: Interface of booking on screen. Small animation. Coloured light.
Materials: Desk, computer screen, future prop. Interface.



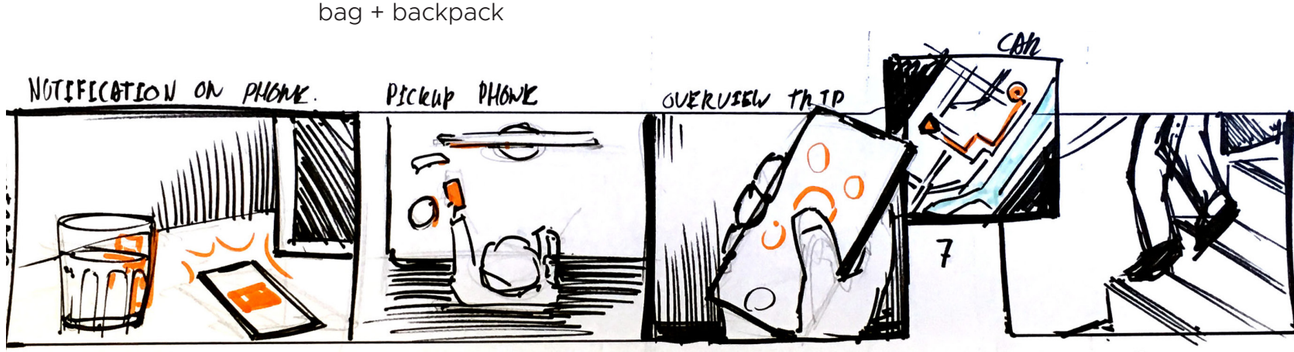
2 Going outside

What happens: Filming the desk and the reflection on the glass of water. Notification is shown on phone/watch. Looking at the information on the phone to prepare leaving by packing stuff from the desk. Where to find the vehicle. Time schedule. Walking down the stairs.

When: Same moment in day as when walking outside to the car.
Where: Office Amsterdam

Fx: Pop-up/Notification on phone(charging).
Overview of trip displayed (invision) Coloured light.

Materials: Desk, phone, future prop. Interface touch. Animation circles. Small travel bag + backpack



3 Navigating

What happens: Filming the street. Traveler enters the shot, walking on the street. Hint of doubt where to go. Looks shortly at the watch to navigate. Then contin ues walking. Turns corner and walks away from the camera out of the shot.

When: Same moment in day as when walking outside to the car.
Where: Street without shop or advertisement that indicate the year.

Fx: Animated screen on the watch. Add reflection in the car window.
Materials: Small suitcase + backpack. Smartwatch + animation.

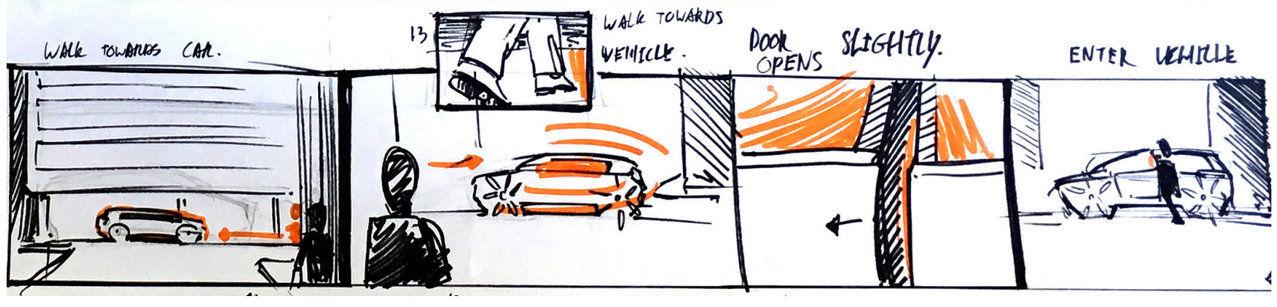
4 Entering the vehicle

What happens:

The car is shown in front of a lobby/store/modernistic building. Filmed form a distance in another street. The traveler walks into the shot. Vehicle is shown from the other side, traveler walks along the camera up to the vehicle. Close ups from walking shoes and an opening door are made. Scene ends with traveler closing the door.

When: Preferably at dark to make the lighting pop. Same moment in day as when walking outside to the car.
Where: Street with modern building. Large sidewalk or parking area.

Fx: Lighting from inside the car, or on the car window. Light on the door.
Materials: Car: Renault Avanttime or VW up.
Small suitcase + backpack. Light+ colour + animation.



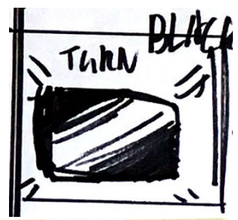
5 Starting the vehicle

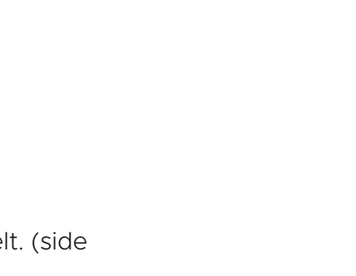
What happens:

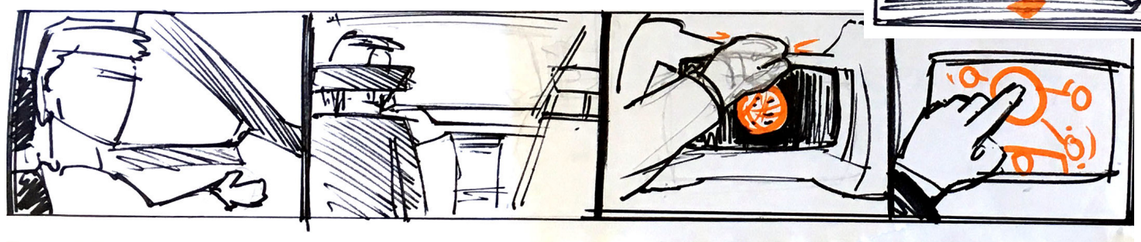
Traveler is filmed inside the vehicle, fastening seatbelt. (side and back angle not showing steering wheel)
Traveler taps the steering wheel in the top, vehicle information shows.
Interaction with the program on steering wheel, preparing arrival at the airport.
Traveler pulls back steering wheel (animation drive mode)
Fades to black screen. Vehicle drives off (take from scene 4)

When: Preferably at dark to make the lighting pop. Same moment in day as when walking outside to the car.
Where: Inside vehicle. Through passenger seat window, from the open trunk. +close up steering wheel.

Fx: Steering wheel with phone/touch screen and interface.
(lighting)
Materials: Car: Renault Avanttime or VW up.
Steering wheel > Made to fit phone.
Interface + Animation







6 Starting Up Link

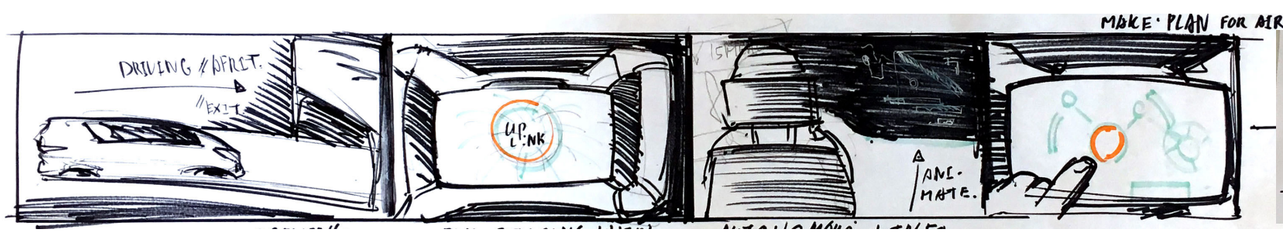
What happens: The is filmed driving on something looking like a highway exit. Close-up of steering wheel shows animation (uplink available in 1 min>now)
Steering wheel is pushed back a little and animation fades into informa tion on screen about arriving at airport.
Info is shown on window/interaction with steering.

When: Preferably at dark to make the lighting pop. Same moment in day as when walking outside to the car.

Where: Verkeersgoot. From the open trunk. +close up steering wheel. Fake movement with lights? Or real moving vehicle.

Fx: Steering wheel with phone/touch screen and interface. (lighting)

Materials: Car: Renault Avanttime or VW up.
Steering wheel > Made to fit phone. Interface + Animation



7 Stepping out of the vehicle

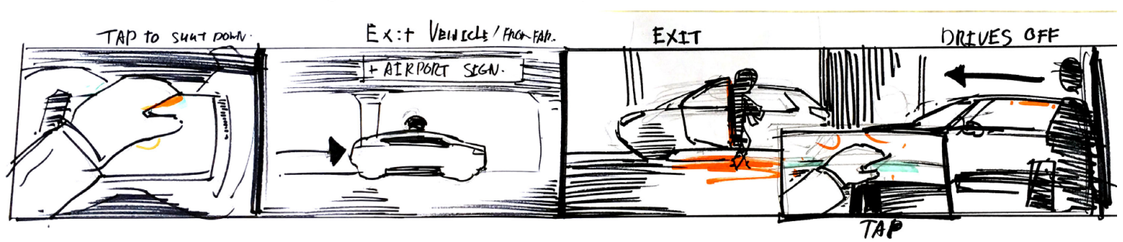
What happens: Start shooting a hotel lobby or modern glass building with rotating door from a distance. Vehicle drives into scene. Traveler taps on steering wheel. Closes application. Exiting vehicle. From other side, person is shown stepping out, tapping the top and walking out of scene.
Vehicle drives off.

When: Preferably at dark to make the lighting pop. Same moment in day as when walking outside to the car.

Where: Modern building, light, glass. Looking like an airport lobby/hall.

Fx: Steering wheel with phone/touch screen and interface. (lighting) Lighting on top of vehicle door.

Materials: Car: Renault Avanttime or VW up.
Steering wheel > Made to fit phone. Interface + Animation



8 Waiting in a personal space

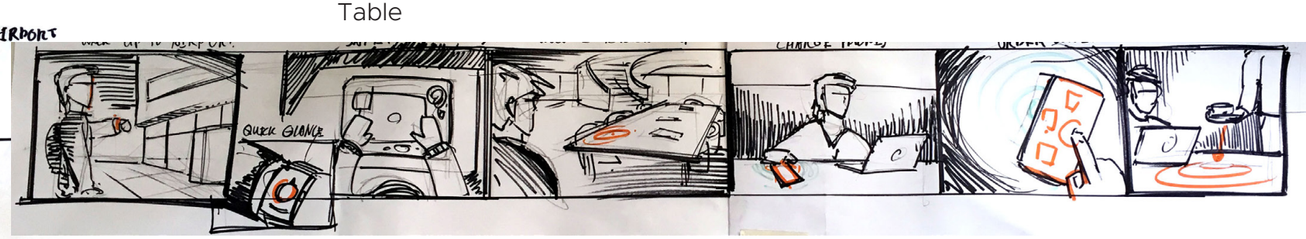
What happens: Start shooting a hotel lobby or modern glass building with rotating door from a distance

When: Preferably at dark to make the lighting pop. Same moment in day as when walking outside to the car.

Where: Same building as scene 7. Steel table (at kitchen). Flex working space (lantaarn venster)? Large table.

Fx: Smartwatch + nav interface.
Circle on table.
Phone + watch interface.

Materials: Security crate (plastic box)
Circle light, charging spot
Coffee + croissant
Table



9 Notification towards gate.

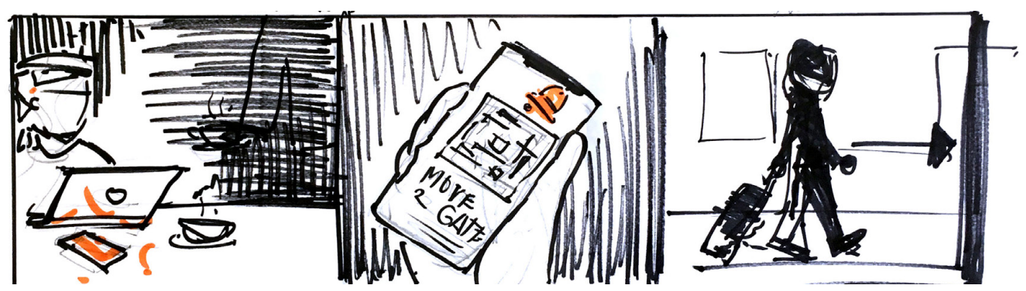
What happens: Notification > towards gate
Check phone / watch and see gate + ticket
Walking towards gate.

When: Preferably at dark to make the lighting pop. Same moment in day as when walking outside to the car.

Where: Clean and open hallway. Lantaarnvenster (film from outside.)

Fx: Smartwatch + nav interface.
Circle on table.
Phone + watch interface.

Materials: Phone + suitcase.



Shotlist for filming

Scene	Shot	Camera	Material
Booking screen clicks			
	Close-up, stuff on the desk.	Focus on reflection on glas	Screen + Desk
	Person from the side	Light on face	Digital Mock-up
	Over shoulder shot of interface	Focus on screen	
Notification and walking outside			
	Close-up, stuff on the desk.	Focus on reflection on phone	Phone
	Phone notification	Phone lights up (send text, name: Wysp)	App mockup
	Pick up phone from desk	Hand grabs phone, static shot	Pack bag
	Close up hand + Phone, check map and schedule	Click through app mockup	
	Take stuff from desk for leaving	Close book . Laptop. High angle.	(Light on building)
	Walk down stairs	Only show legs.	(Suitcase)
Navigating			
	Walking on the street, moment of doubt	Across the street outside the office,	Smart watch
	checking watch and continuing walk.	Static shot of walking & looking at watch	Digital mock-up / gif
		Close up of watch, dark to light screen	(coloured light on building)
		moving arrow animation	(Suitcase)
		Person walks around the corner out of sight.	
Entering the vehicle			
	Car stands still, person approaches	Film from a distance	Car
	Person walks towards the car	Person filmed from behind. Walks towards the car	RGB light (puls)
		Pulsing light inside the car	Rails
	Walking in rhythm	Close-up of the legs (rails)	(reflector)
	Door opens	Close-up door. Person opens from inside.	
		Light shining through door opening.	
	Person enters car	Same frame as first shot. Stepping inside	
Inside vehicle: Starting trip			
	Person enters car	Shoot from side (no dash board) stepping in.	Steering wheel
		Close-up seatbelt.	Phone (attached to steer..)
	Activate steering wheel	Tap on top. Screen fade by touching screen unnoticed.	Mock-up
	Plan trip	Show menu on screen of steering wheel (activate uplink)	Animations. Many.
		(show schedule)	Dark background
	Pull wheel towards	Pull steering wheel in/out of focus, ad click.	
		Fade animation to black..	
Starting up link			
	Driving on highway exit	Stock/ From inside vehicle /	Stock video
	Giving steering back to the car	Animation on steering wheel (uplink)	Steering wheel
		Push steering wheel away (focus)	Phone
		Screen changes towards menu for airport	Mock-up / animation
		Show windowscreen + animated map on window	
Arriving at the Airport			
	Stopping car	Shoot backwards + Reflection of Airport/ gate sign	Gate sign
	Car stands still in front of entrance	Shoot vehicle from distance in front of windows	Light
	Close program on steer	Tap on top of steering wheel while clicking sleep button.	Reflector
	Step out of car		Suitcase/bag
	Tap top, to send car off	Close up of roof + window. Inside light shines on plafond.	
	Car drives off wihtout driver	Cose up of roof ^ or wheels.	
	Car driver off	Shoot car from behind, driving out of focus.	
	Walking inside building	Enter door, walk up to door. Shoot from inside.	Location + automatic door.
Spend time at the airport			
	[time slot security]	[glance at watch]	
	[uppacking securiyt']	[metal kitchen top + tray] shoot from above	
	Walking towards booth, open door	shoot from inside, animate on window	
	Go sit at table	Take booklet from bag / start call	
	Put phone on table + Circle		Round sticker on table
	Circle lights up and phone shows menu	Close up phone	Table animation circle
	Order coffee + crossant by phone	Hand touches screen (new screen pops up)	Person walking by
		On new screen orders are selected without fingers	
	Coffee is brough to table		Animation
	Phone notification		
	Leaving for flight	Phone lights up (send text, name: Wysp)	
		Show phone in hand + boarding screen	Animation

EXPLORATION

THE STARTING POINT OF THIS PROJECT WAS VERY BROAD AND OPEN. BY EXPLORING THE CONTEXT, A BOUNDARY COULD BE DEFINED, AND INFORMATION GATHERED FOR LATER STAGES. EXPLORATION HAPPENED IN THE FORM OF LITERATURE RESEARCH, TREND RESEARCH, EXPERT TALKS AND AN OBSERVATION WITH A LEAD USER.

Trend Research

Already initiatives and startups are working on the problem for this project, or parts of it. Therefor a look was taken into current projects, in order to establish possibilities or gaps.

Expert Talks

Talks with experts were done to consider other perspectives, gain new insights and give value to current information. Most talks were 30 to 60 minutes.

Prof. dr. Peter Vink
Professor of Environmental Ergonomics, Head of Design Engineering Departme**nt**

Steven Puylaert
Mobility advisor at Studio Bereikbaar, with specialized on smart mobility

Celine Lonis
Real Estate Developer at Schiphol Real Estate, responsible for Rotterdam the Hague Airport.

Observation

To get a better understanding of car sharing platforms a observation was done with a lead user. The participant used different kinds of sharing platforms regularly. The observation was executed by filming the participant for the entire journey with a Car2Go in Amsterdam. During driving the participant was interviewed about her experiences and reasons for car sharing.

Literature Research

Literature research was conducted on the following topics:

Connected car
Digital platforms
Telematics
Parking support
Telematics
Package delivery
In car payments
Industry reports
Panel discussion between CEOs from OEMs

Shared cars
First car sharing service, Witkar
Acceptance and Impact study
Future scenarios
Case studies

Autonomous Driving
Scenarios
Levels of Autonomous technology
Hurdles to overcome

Airports
Movement to the airports
Trend reports on airport innovations
Information Technology at airports
Recent graduation projects

Public transport
Symposium, public transport payments
Millennials in transit
Trains as access to airports

People
Reports on generations (-Y, -C, Millenials)
Mindsets in Dutch society
Human behaviour
Segmentations in airline industry

Design
Service design
System design
Platform design
Frame creation

Insights from interview with Peter Vink

“With flying you can’t control anything. Even in the train you have more control, you can walk a little, you can use your phone, more is allowed. But in the airplane, they decided times, when you eat, when you have to sit down. And in addition you have to wait a long time at the airport.”

“You don’t have that with cars.”

“People want to have control over their environment. But still more and more people choose for flying. Because it becomes cheaper and it is fastest. Around 700 to 800 km people choose to travel by plane. Even often with 500 kilometers (Amsterdam - Paris, Amsterdam - Hamburg).”

“Then people have to endure for a while, but they will arrive quicker.”

“Some like the airplane because they don’t have to do anything.”

“Working in the plane is difficult, especially with short distances for you will be interrupted often.”

“Some companies are experimenting with predestined zones for silence, families, work and social. You can book a spot beforehand.”

There are many different types travellers.
Some people are experienced and arrive an hour before take-off, and he succeeds nicely.” Someone that doesn’t carry suitcases.”

There are inexperienced people, groups or elderly that want to be at the Airport way in advance. They don’t want to miss the plane.

“ 28 percent of the people travel in groups.”
“Young people used to go to the ardennes, but now they travel for a weekend to Berlin or Mallorca, because it has become cheaper.”

“For groups, the aviation industry is not that suited. Everything works individually, also if you see the alignment of chairs in the airplane or at the gate.”

“If you have a suitcase it is a hurdle to go by train. And when you travel in groups, the price difference between train and taxi does not matter anymore. And the taxi drops you in front of the door.”

“Behaviour of people is very difficult to change.”

“People will be looking for comfort and recognition.”

“Being brought by car in your youth causes you to prefer the same thing at a later age.”

“Airplanes will stay similar for the coming 20 years, there are no known new frames in development.”

“Largest will stay on 400 people and average size will be 150 people.”
“The largest airplane changes will be interior, changing the experience of the plane.”

“On airports safety will always be an issue.”

“Airports will become larger. With the same gates having tubes to the airplane.”

“You could work on guiding people beforehand. With an app that offers a faster route if you have prepared several steps already. For the airport the benefit would be that things are already fixed beforehand.’

“At Schiphol there is an experiment with a fast security line for people carrying only a small bag. That way the airport is relieved of certain steps and the traveler is faster. Making it a choice can be a way of influencing behaviour.”

Insights from talk wit Celine Ionis

“There is a trend in the business world with companies encouraging their employees to travel by public transport.”
“There are large companies with employees flying very frequent that arrange their own transport in cooperation with mobility providers.”
“Shell, Ikea and EPO are doing this when public transport is not sufficient.”

RTHA is growing with the conditions that the region profits. The aim is to fly ‘thick’ lines with larger planes, 737, as sound is the main constraint for growth.

“Around 70 percent of the income of Airports is non-airline related, such as retail, catering, ads and parking. Parking is by far the largest chunk of the four.”
“The amount of customers coming by car will remain, we think parking will become more short term.”
“We don’t want to lose that income but are interested in other business models.”
“Parking space can also be used to build offices and lease these out.”

“The aim is to improve business flights to RTHA by cooperation with the companies in the area of Rotterdam.”

“We are experimenting with two things, we look at the interest of Mobilty as a service and are receiving positive feedback and we are planning an autonomous line to Meijersplein to connect with public transport.”

“We are starting with Mobility as a Service among airport employees. Also asking them how good everything works.”
“Mobility on demand can make a big difference as people are not willing to wait 10 minutes anymore for their transport.”
“As we look at car sharing systems, insurance is an issue. We think this can be overcome with a quick scan of the car before taking off.”

Domain
Business trip are an interesting case as many employees have to arrange their own transport. Many have to pay for their own parking or are encouraged to stop using taxis. Flights are usually planned early or late, not being part of working time but private.
Company policies mostly decide what kind of flights are best, then the traveller aims to be as efficient as possible otherwise losing personal time.
Generations older than the Millenials are very used to driving a car, it is engrained as a symbol of status, freedom and independence.
Many medium to small companies or start-ups have to travel for business as well, with many younger employees.

Insights from talk with Steven Puylaert

“The aim of infrastructure is to cater the needs of the public. We could want everybody to go by train yet if everyone drives we have to increase roads and parking.”

“Airports are considered important for the country. When the quality and connectivity is high it will mean more economic benefit through business and trade. But it is also socially important. You want people to go and enjoy their vacation, or visit relatives.”

“The Airport is like a portal. People disappear and others arrive ‘fresh’. It is interesting that you arrive without anything.”

“In order for a plan like this to work you need to consider people that are incoming as well. They are new to the Airport, and the system.”
“They need to be able to use in in multiple occasions not just once.
Although Schiphol owns quite a few other airports as well.

An airport should sell mobility. That’s what mobility as a service is about. If you have a deal with Ikea and just one person arrives on Malmo airport you arrange a taxi. But if 10 arrive you can use a bus.”
“You should arrange packages with companies to start with.” “A fleet of Airport cars offering mobility.” “For a fact, Rotterdam is wanting to profile itself as an airport for business.”

“The weirdest thing on Airports for me is that mix of stress and boredom. You are stressing in line at the security while the man in front of you is utterly bored.

Schiphol is a mixture of travellers, apart from the travellers there is also 200.000 people working there. Many people doing night shifts. Are travelling with all the passengers as well.

Cars are a slow changing system. The lifespan of a car is around 14 years therefore changes in the automotive infrastructure are slow. Software however can change whenever you want it, that can go really fast.

“As of connection what they can still do is elongate the metro line that they are working on. You have to think ahead with these projects.” “Before the first Maasvlakte is finished you should already be planning the second.”

“It is more interesting to ask people in cars about their opinion on trains than the people using them.”
“Why are you not in a train?.”

“When looking at traffic streams you want to flatten out the peaks, divide it over time but also over different modes or routes. Someone that drops you off will enter and exit, stressing the infrastructure more than a taxi that brings and picks people up.”

Working with pods or extending travel to an airport could be interesting. You would be making a giant park and ride for people from the eastern provinces for example.

Parking space is off course dead space.

Observation & Interview. Car2Go, Amsterdam.

C is around 30, living in Amsterdam and owner of a start-up company.
She does not eat meat, likes social initiatives and uses: Car2Go, Drive Now, OV-Bike, Greenwheels and Snappcar.

The Trip
During the trip C misjudged the luggage space making the plan useless. With some work the bike fit. We drove two circles around the city centre of Amsterdam because the navigation was not up-to-date any more. We almost got a ticket for driving into a one direction road. Halfway we discover that walking would have been faster.
We switched to Google Maps. And opened the Car2Go app in order to find a charging spot, because the navigation did not show any. After parking we still had to walk around 5 minutes. The trip took more than 40 minutes in total, costing more than 30 euros. The distance from start to end was 3 kilometer and would have taken 30 minutes walking.
Still C was very happy throughout the journey.
Convenience
Shared cars extends the range of trains. In the case of C it reached a level of working well enough. C sees shared mobility as an extra option she has in order to solve mobility problems or help other people.
Parking takes around 10 minutes with Car2Go, so is 10 euro already. When the battery is too low you have to bring it to a charger. That often causes a lot of trouble. Actually many times taking a Car2Go seems convenient and quick yet it isn’t due to parking trouble and navigating.
Trust and reassurance
I would not don’t count on free floating cars for daily drives, for example to work. They are parked to irregular and to expensive for daily use. Also when having a tight schedule it often happens that you will be late, due to navigating problems and finding a parking spot. It is often less convenient than it seems.

Control
C says she does not need a car later. She dislikes public transport because you are so dependent on it. You have to wait which is awful. Trains however are very nice for you can do stuff while traveling.

There is a dislike towards Uber and Taxis. Because you are not driving yourself, you are not in control. There is also (unwanted) social contact. That is why C also loves to use ov-bike, you can go whenever you want, by yourself. She admitted that Car2Go took usually longer and was sometimes more expensive than a Uber or Taxi.

Flexible
C really enjoys to be flexible. Sharing gave he more options to solve her mobility problems. Once in Utrecht the trains did not go and she can bring someone home by car. “I sometimes used it in order to be on time for an appointment when I missed the train.”
Being able to park everywhere is great for it can be a hassle to bring the car back.
It is a plus that sharing is internationally and C hopes it will come to more cities.
The idea was to bring a folding bike. This almost did not work, making the entire plan C thought fail.
Status
C had the opinion that the world needed to move to shared consumption. It is part of her personality to be flexible and being able to come up with new solutions. She likes to show off a little with that, and tries to convince other people that you do not need a car. Especially to people that rely on cars as part of their status. She does not see cars as a status marker. Luxury is nice to have but price overrules that factor.

C likes to wave at other Car2Go or greenwheels cars. Even when nobody is in it. She has a community feeling with car sharers. She thinks they are showing show car owners a better solution. She promotes sharing as an ideal among friends.
Experience
Enjoyment
Small things, like finding something from the previous owner, or the fact that the Navigation sounds like the queen.
Luxury
It is an occasional luxury to be able to use a car. You can help people that otherwise need a taxi or PT. You can stay dry on a rainy day.
Driving
C enjoys driving, and enjoys the ‘go kart’ feeling of the electric car. The enjoyment of driving is an important reason for using the service. Just as she used to take an electric scooter when that service existed.

Dissatisfaction

The radio is often on when I start the car.
When something goes wrong you remember that every minute costs money.
Having customer 24h-service is important. Calling the Car2Go is easy by clicking a button. C thinks they are nice people. The service requires flexibility from users. That's why C thinks companies need to be flexible as well. Greenwheels service however are grumpy and judgemental. They think you did something wrong but instead you are using it often. They do not acknowledge that. You don’t even get your money back.