It has been a long journey. In 2015, when I started my studies in UID, I could have never imagined how it feels to be where I am right now. Mixed feelings of relief, wistfulness and most of all gratitude. Along the journey, I have met awesome people, made everlasting friends and got guidance from people that I will look up to forever. This project was only a tip of the iceberg of all that I mentioned above.

I want to say thank you for all of those who I worked during these three amazing years. All of those who stood beside me through tough times (there were many). All of those who challenged me to be a better designer and no matter what I did, always asked for more. The feeling that the result is never enough, is painful, but it is the only reason why we keep developing.

My special thanks go to Demian Horst. Without you, UID and TD wouldn’t be what it is today. Your devotion is something that I truly admire. Needless to say, where ever my career takes me, I will always owe you one. Like you once said to me: Never change!

To Volkswagen. Thanks for giving me the opportunity to develop my skills during my first internship in Wolfsburg, and later on for feedback and support during my degree project. Special thanks go to Jan Haacke and Fernando Hillman. Without your constructive feedback, I wouldn’t have been able to succeed with the project as well as I did.

Last but not least, thanks to my family. The support I got from you is far greater than feedback, sketching tips or technical support. The support is to have a place to come home, a place to forget it all for a while and for your unconditional love.
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I started this project with a mindset that I want to design something for younger generations living in the future megacities. After a while, trying to figure out their urban mobility needs, I came to this conclusion: Already today we have so many different options for urban commuting as well as several different car sharing services. I couldn’t find a way to create something new. I changed my approach and I started thinking; what is it that they don’t have? I pretty soon understood it. They have no nature.

By the year 2040, 70% of world’s population is expected to live in urban areas. This, in turn, is diminishing the natural environments around the globe. Needless to say, that people are becoming more and more disconnected from nature. In my research I quoted George Monbiot from The Guardian: “If Children lose contact with nature, they won’t fight for it.” This describes the problem to the core. Coming generations need to know where all that we have comes from. This is why I decided to create a way, people in megacities can connect to nature instantly.

Volkswagen V-Trek offers an instant escape to nature from megacities to conservation areas around the world. With an immersive full-body experience, V-Trek engages people with nature, as well as with Volkswagen as a brand. The concept is demonstrated in a visual story. The scenario of the events was created based on predictions and possible events in the future.

Most of the time in my process I used for research about VR and other technologies related to the topic. As the physical movement is an important part of the concept, and because I wanted to enhance it on the platform, I spent time trying to figure it out. When things started to get together, I began to shape quick mockups in 3D for development of the form and architecture. Later on in the process, it was easy to transform those mockups into sketch models and for testing in VR.

The most important part of the project was the story and scenario, which justifies and explains the whole concept. I started planning the scenario and the details early on which made it easier for me to visualize it in finalization phase.

This project also raises a question: What comes next in the field of transportation and mobility? For years’ cars and transportation have remained the same. We move from place A to B, this is what I call: Physical transportation. Right now we are living times of change as autonomous technology is finally breaking through. However, cars have always been about the driving experience and in autonomous future; traveling experience. Because of the changing attitudes towards cars amongst youth, cars are not seen as a pleasant experience anymore. Rather as a necessity. Experiences engage users with brands, whether it is a smartphone or a car, and this is what young users appreciate. When Physical transportation is no longer delivering that experience, car brands need to figure out a way to engage the users. This is where Mental Transportation changes the game.

Mental Transportation is a term I came up with along the process and as the name suggests, it enables users to travel in their mind. With the idea of mental transportation, I want to challenge everyone to think differently and with an open mind about the future of mobility and transportation.

Enjoy the story.

ABSTRACT

I started this project with a mindset that I want to design something for younger generations living in the future megacities. After a while, trying to figure out their urban mobility needs, I came to this conclusion: Already today we have so many different options for urban commuting as well as several different car sharing services. I couldn’t find a way to create something new. I changed my approach and I started thinking; what is it that they don’t have? I pretty soon understood it. They have no nature.

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Enjoy the story.
My thesis project is a vision for the year 2040, aimed at young users in future megacities. It is a study of a new form of transportation and it aims to connect the people living in these enormous urban areas with no physical connection to authentic natural environments. If coming generations lose the connection to our only valuable asset, nature, they won’t fight for it. With open mind and boldness in thinking, I created a future scenario with speculative design approach and I am aiming for discussion about the direction to which we are heading with the future of transportation.

WHY?
I grew up in a beautiful village in Finland, where nature was always present and accessible, just in our backyard. Later in my life, I have been living in bigger cities and what always strikes me, is the urge for forests, lakes and everything else but the concrete jungle we have built around ourselves. When I was figuring out the topic for this project my first objective was to create something for urban commuting and solve problems within that area. However, I came to understand that in the future our public transportation will be efficient and young people have many different possible transportation solutions in their hands, but what they are lacking is the way to escape the suppressing city environment.

HOW?
From generation to generation, the role of a car has changed. Already today, a car is becoming a necessity for moving and it is losing its symbol as freedom and joy. Technology is the most important thing for younger generations and this is why tech giants like Apple, Google, Amazon and many more are taking the role of ruling companies in everything we see and use daily. Car companies need to adapt and show their ability for using latest advances in technology and utilize them to create new experiences to attract the future users. If the role of a car is changing, can we find a new perspective for transportation in general?

“The companies that best position themselves as the vanguard of the latest and greatest technology—supporting not just the vehicles themselves but rather the entire digital vehicle ecosystem—will find themselves winning the game of powerful brand storytelling.”
-Kristal Overmyer (Skyword.com 2018)

My concept – V-Trek – offers a quick escape from cities to authentic natural environments. The list of positive effects of nature is too long to be written here, but some of the most important things that the concept will offer, are awareness of our actions to nature and the opportunity for everyone to see what these environments are all about. Ultimately the concept is aiming to create a personal connection to nature for each of its users and through the experience, it will also bring back the emotional relationship between people and Volkswagen, the emotion and thrill that Volkswagen used to stand for. All this in a sustainable, responsible and innovative way.
Volkswagen is the largest car company in the world and it has a rather colorful history. From Third Reich to emission scandal, it has always been able to maintain its position at the top of the markets.

1.1 PEOPLE’S CAR

In the early 1930’s Germany’s car industry was mainly consisting of luxury models and people were mostly not able to afford to buy a car. Due to this, companies started to seek new markets with a philosophy of “people’s car”.

In 1934 Adolf Hitler stepped into the picture by ordering a vehicle, which would be able to carry two adults and three children. He wanted all the German families to have access to personal transportation and people’s car would be a way to fulfill this requirement. This “products for all” mentality did not only apply to cars, but also to different products like “Volksempfänger”, a radio receiver for households. This talks about the semantics behind the name Volkswagen, products that are available for everyone.

The first and the most well-known Volkswagen Type 1, also known as Beetle, was designed in 1938 by engineer Ferdinand Porsche and his team. Due to World War 2 and other complications in Germany’s history, Beetle still didn’t reach high sales numbers until the early 1950’s. In 1955 the sales of the Beetle increased dramatically to over 1 million units (Paul Hockenos, Beetle Mania, 2013).

The second model, that deserves to be highlighted is Type 2, also known as the “van” and many other names. Like Beetle, Type 2 did not immediately rise to the top of the sales list. It became popular during the counterculture movement in 1960’s and that is when it also gained the nickname “hippie-bus”.

Beetle and its numerous variants remained as a flagship for Volkswagen until 1974, although its production would still last many decades. Beetle was succeeded by Golf, a model that would be the most sold car of the brand until today. Golf was a part of Volkswagen's new generation with Passat, Scirocco, and Polo. They were Volkswagen’s first air-cooled and front-wheel drive cars. In 1999 Type 1 was nominated to be the fourth most influential car of the 20th century, after the Ford Model T, the Mini and the Citroen DS.

1.2 EXPANDING EMPIRE AND EMISSION SCANDAL

After introducing these new models in 1970’s, with few ups and downs, Volkswagen started to gain a strong foothold in the car industry. Volkswagen bought Auto Union in 1964 and NSU in 1969. These two companies merged into Audi. In 1990 Volkswagen Group bought Spanish car manufacturer Seat and since then Volkswagen has bought companies like Skoda, Bentley, Bugatti, Lamborghini, Porsche and motorcycle manufacturer Ducati.

Volkswagen made a steady job for years being one of the biggest car companies in the world, but on September 8th in 2015 a storm arose. United States Environmental Protection Agency (EPA) found out that Volkswagen Group had intentionally manipulated their diesel-engine emissions in laboratory emission testing. In January 2017 Volkswagen was pleading guilty to the emission scandal and to pay $4,3 billion in penalties. Volkswagen as a brand took an enormous hit, but the only way was up.
1.3 STRATEGY 2025

In 2015 Volkswagen AG kicked-off a comprehensive process to change its strategy and their ambitious goal was set to be a leading provider of sustainability, safety, and integrity. The strategy highlights also the importance of electricity, automated driving, improved user-experience and smart mobility offering. Re-gaining the trust from their customers and investors is also important and Volkswagen is being very transparent with their future plans and all the info and strategies are accessible at Volkwagenag.com.

“The New Group strategy is not the work of external consultants. It came straight from the heart of our company.”
- Matthias Müller, Chairman of the Management Board

Company’s product portfolio is going through an update and Volkswagen AG is pushing to have more future driven electrified models in their product line-up. Until the year 2025 Volkswagen AG is focusing on offering more than 30 new electric vehicles, but at the same time, it is looking to strengthen its conventional product portfolio in some specific markets.

As Volkswagen AG is looking into future with alternative drive trains, it does the same with autonomous driving technology. Their initiative is to bring highly automated driving technology to market as early as in 2021. This vision involves privately owned cars, car sharing systems, and commercial vehicles. Volkswagen set up a mobility company called MOIA in 2016, which is an exclusive shared transportation system. In all this, user experience plays a big role and Volkswagen AG is aiming to be one of the top companies in perspective of UX design.

“Under the direction of Audi, a company is currently being founded that will develop a Group-wide self-driving system. Strategic partnerships are also being explored.”
- Volkswagen AG, Strategy 2025

Volkswagen Cars itself is aiming to bring the brand back to its place among the leading car makers in the world. This strong vision is summed up in the company’s strategic goal:

“We will bring the future into production – as the world market leader for electric mobility. We will advance society and our customers’ business – with ingenuity and passion. We will bring our strengths to the job – to shape our transformation together.”
- Volkswagen AG, Strategy 2025
What is generation Alpha? Alphabet ends at Z so the question has been, what comes after. TEDx speaker, futurist, and a demographer Mark McGrindle started to call anyone born after 2010, to be part of generation Alpha. According to McGrindle, there are over 2.5 million Alphas born every week and this generation will be the biggest known.

Alphas will grow up using iPads, smart phones, and technologies which others are just starting to get used to. They are always connected all around the globe in a matter of seconds. All this will reshape Alphas ways of interacting with the world around them and with each other. Interaction will be easy, seamless and instant. This new generation will bring challenges and danger along with them, but also hope.

“In the past, the individual had no power. Now, the individual has great control of their lives through being able to leverage this world. Technology, in a sense, transformed the expectations of our interactions.”

- Mark McGrindle (www.businessinsider.com, 2015)

This chapter will look at generation Alpha as a target group, without contemplating too much about their attitude towards cars and transportation. The project’s objective is to design a next Volkswagen mobility service for them, so it is necessary to know how to attract and connect with them. The question is, how to meet their expectations and arouse the emotional relationship to cars, once again?

2.1 DYNAMIC GENERATION

Generation Alpha will be the most dynamic generation seen so far. For them, the world is just one click away from their smart devices and there is no place where they could not reach out to it. Today China and India are the most populous countries and they will just strengthen their position in that matter. The generation-terms that most of us are used to is just mostly concerning the western countries and their economic structure. This labeling does not work so well with developing countries and in the past, their generational structure might have been different or even lag behind.

In the next few decades, this gap between generations in western and developing countries will most likely fade away. Because of the affordable and accessible technology and connectivity, Alpha generation will fuse into one unified Global generation. They will share same trends, ideas, and visions worldwide. According to Mark McGrindle, this global connectivity will make the leap from generation Z to Alpha, biggest in the history.

2.2 HOW ALPHAS THINK?

For the past generations, most of the actions and interactions have been based on physicality. As an example paper and pen. For Alphas everything will turn into digital form and this will change the way they interact with their surroundings and each other. This forces car makers and other brands to adapt to this new way of experiencing, learning and communicating.

It is always difficult to predict and understand how all technology will affect the coming generations. Millennials were told not to use a calculator too often, because they won’t carry it everywhere they go. Yeah right. Now the youth are being told that Google will make them stupid and social media will turn them to un-social and excluded. Some of these claims can be true and of course, there is a need for caution. However, all this new technology and platforms will also develop them. It needs to be told that it is alright if people change from generation to generation. Alphas will be different than Generation Z and Millennials, it needs to be embraced.

Technology can also have positive effects. A study from 2003, carried out by Nature, shows that teenagers who played video games on a regular basis had better visual skills and even higher scores on intelligent tests. Still, Millennials were told that they are only harm and should be restricted. As a matter of fact, the study by Nature shows that as a result of gaming and use of digital media can cause something called the Flynn’s effect. This effect is used to describe the effect when generations by generation people will grow smarter. We should embrace the technology as an opportunity and not be scared of it.
2.3 PROBLEMS OF DIGITALIZATION

Alphas will eventually give more and more power for computers. This can result in a scenario where they don’t need to remember or know anything themselves. When all the information and knowledge is at their fingertips can make Alphas dumber and reliant on computers. So to say, this topic of digitalization is a double sided sword.

Another problem is the lack of real-life and social interaction. A Psychologist Jean Twenge says: “Teenagers now spend an average of six hours a day on the internet, social media or texting” (Source: US Monitoring future). The survey also tells that teenagers now drink less, date less and go out less. However, this survey by US Monitoring future is only based on correlation and not on causation.

Several studies also show that digitality can also have the opposite impact. Proving this kind of relationship between teenagers and technology is almost impossible and more important is that how technology is being used. Alphas will grow up using social media and in fact, those platforms can also boost their self-esteem and make them happier. The best case scenario for Alphas would be to connect social media and digitality with physical and real-life interactions into one place.

2.4 PREDOMINANT TECHNOLOGIES

As Alphas grow up, technology will grow and develop alongside them. AI (Artificial intelligence) and voice will become common and easy ways of interaction between human and machine. Keyboards and screens will make room for gestural interfaces and other innovative alternatives.

So what will be these major technological trends? According to Ofcom’s report, 41% of five to fifteen-year-old children own a smartphone and 44% own a tablet (Source: Ofcom, Children, and parents: media use and attitudes report, 2016). Especially tablets are popular among three to six-year-old children and no less than 55% are using them.

While these technologies are still strong, they are quite old. Smarter technologies are on their way and for example, AI will be a norm for Alphas, as they grow up using it. AI will offer even more personalized experiences because of the complicated algorithms that it collects from its user. AI will shape this generations expectations and hopes for the future technology.

Because of AI, devices will not be only machines anymore. The AI systems that we have seen so far, cannot show emotions and they are only shooting out facts and information. Next step with AI-driven devices will be their ability to show emotions and read them. This is made possible with face recognition and an ability to understand different tones of speech. One example of a system like this is called Cozmo. It is developed by a company called Anki and it can communicate with movements and emotions. Emotions are expressed through eyes which are displayed on a screen on its face.
2.5 INTERACTION TRENDS

Screens will probably disappear during coming years and voice will increasingly take over as a major communication channel with devices. Already now we have systems like Amazon Echo, Google home, and Apple Siri. These systems are affecting Alphas already now while they are still playing games. It is actually quite exciting that screens will make room for something else. After all, they are limiting their users from the environment. For example, voice interaction will allow roomier and fulfilling experience with devices and also with the environment. Voice will also allow young users to interact with these devices whereas keyboards were limiting them due to lack of skills like reading.

Voice will not be the only rival for screens and keyboards. Physical interfaces are breaking the surface as well, although at their present state they are not as popular as voice. Physical interaction also adds another dimension to the interaction we have with our devices and environment. Augmented reality (AR) will also be a big thing for the future and it opens up totally new playgrounds and interesting areas for innovation. It gives us interesting possibilities to explore and experience our surroundings. More about AR in the next chapter.

2.6 HOW TO REACH ALPHAS?

Companies and brands need to reach out and connect with generation Alpha. In this sea of different platforms and super-connected users, it can be challenging to choose the right channel and engage with.

Brands and marketers have had a hard time to figure out the expectations and needs of generation Z and Millennials and Alphas won’t be any easier, vice versa. If brands are hoping to stay on top of their game and remain relevant and appealing, they will need to adapt to this rapidly progressive network of technologies.

Meaning that companies even with less experience about technologies and platforms, which are popular among youth, will need to be able to use them for marketing and connecting. As an example AR. Snapchat is extremely popular for young people and also some companies are offering shopping possibilities with this technology. When Alphas are shopping by using AR, they will start to expect the same from any service they buy, no matter what the company is.
When people from rural areas are moving to urban areas and cities and so enabling cities to grow, it is called urbanization. Urbanization is common in developing and developed countries as people move in order to get better social services, healthcare, jobs, and education. When urbanization is increasing, rural areas are often seen as unattractive and difficult places to live as lots of businesses and services move to cities as well. This just increases the speed of this phenomena and despite the positive effects of this movement, it also brings along several issues and challenges.

In 1960, only 30% of world’s population was living in urban areas. Today the number is approximately 60%, which is equivalent to 3.7 billion people. The trend is not showing any signs of slowing down and by the year 2050, 75% of the world’s population is expected to live in cities. From today’s 60% the number is expected to double by the year 2050. (Sources: Max Galka, Huffingtonpost.com / 2016 & Daniel Runde, Forbes.com / 2015)

3.1 URBAN TRANSPORTATION

Transportation is one of the biggest topics of urbanization. As we all know, the world is already filled with cars and an average American spends 9 years of their lives in their cars. (Source: Gaia Vince, BBC.com / 2013) China has even bigger problems and their six-lane roads are already clogged with traffic. It is obvious that urban areas and cities need to rely on different forms of public transportation and other smart commuting options.

Public transportation is constantly developing new systems and services are created from time to time. As an example is the Hyperloop. Super-fast train system and a brainchild of Elon Musk. First Hyperloop connection is expected to be launched by the year 2021 between San Francisco and Los Angeles and many more connections worldwide are planned.

Like in many other areas of services, sharing is a big thing in the future. At the moment car sharing services in big cities are popular. Let alone bike and other small forms of urban commuting services. There is a conclusion to be made out of this that maybe our cities will be better off with fewer cars. Urban transportation is made easy with many different options and we should be focusing on what the future generations are lacking in the future cities.

“We started transporting ourselves in a much more organized and coordinated way when public transport became easier, quicker and more convenient than the car. Now I can hardly believe that we accepted congestion and traffic jams, not to mention the air pollution from combustion engines. What were we thinking?”

– Ida Auken (Welcome to 2030. I Own Nothing, Have No Privacy, and Life Has Never Been Better)

3.2 MEGACITIES

Megacities are cities or metropolitan areas with a population larger than 10 million. In 2017 there are 47 megacities worldwide and the largest cities are Tokyo, Shanghai and Jakarta and each one of them with a population more than 30 million. China alone has 15 megacities and the US has two; Metropolitan areas of New York and Los Angeles.

Projection and research conducted by the University of Ontario suggest that by the year 2050 there will be close to 60 megacities. Most of them in Asia and South-America. This projection tells that the number of megacities is not going to rise exponentially, but some of the largest cities are going to get even larger. It is also possible that some of the megacities come together with their metropolitan areas and fuse into enormous megacity complexes. This scenario is also painted in a comic book “Judge Dredd”. In this book, Megacity-One is one connected city covering the whole Eastern US. Although this scenario is fiction, in theory, it is possible. Anyone can imagine that living in a place like this can be suffocating with no way to escape the concrete jungle and surrounding crowd.
3.3 MEGACITIES AND NATURE

It goes without saying that when urban areas are enlarging, natural areas are diminishing. Just like today, cities will have their green areas and parks in the future. Because of increasing education and awareness of sustainability and climate change, the future cities can be even greener and more sustainable than ever. Still, the parks and green areas within cities can never be authentic and equal to natural parks and wilderness. This is because they don’t have real ecosystems in them and they are lacking all of the things that make our natural environments precious to us and earth.

Already today we have youth that is born into big cities and spend their whole life inside the city borders. They might have never experienced real natural environments and smelled fresh forest air or seen wildlife in general. This can have a serious effect on their health and development. TV channel Eden conducted a survey which found out that more eight-to-12-year-olds can identify a Dalek than an owl. In Tokyo, kids were asked to draw sea creatures and along with fishes and seahorses, some kids drew fish sticks. However, Stephen Moss, naturalist, broadcaster and author claims that more and more kids are interested in the natural world, but yet far fewer ever actually experience it.

From big cities, it can be hard to get out there and travel to these locations. Many just won’t see the effort and many won’t have the funds to do it. In the future traveling will probably just get more expensive due to increasing price of oil and just because it is not sustainable. The biggest reason is just that because of expanding urban areas, natural environments are out of reach.

“If children lose contact with nature they won’t fight for it”

- George Monbiot (Theguardian.com, 2013)

The coming generations are taught to be sustainable and they will be aware of the consequences nature is facing because of our actions. However, when nature becomes a distant concept for them, they will lose the connection to it. Needless to say, that when we lose the connection to what we should be fighting for, we won’t fight. Coming generations are in danger to be estranged from nature and something should be done to prevent that. Children and youth are our hope and we should be counting on them. Today most of the people that are fighting for nature are the ones that spent their childhood exploring it.

So why it is so important to be connected to nature? First of all, seeing how nature is suffering because of pollution and our actions, will raise awareness. It will create a personal connection to those consequences for each one of us witnessing it. Seeing how ice is melting and taking away the natural habitat of polar bears will certainly make you think twice, how you could have a positive impact to save those animals. Or seeing how rainforests are cut down in the Amazons will probably make you understand that little actions can have big impacts.

Nature also has lots of positive effects on our health and mentality. Biophilia hypothesis is a term that suggests that people have an urge to seek connections to nature and living forms of life. Naturally, lack of biophilia will disconnect us even more from nature.
Digital realities are computer generated and simulated experiences and realities that in some level are realistic and people can interact with them. These realities can be embedded into virtual environments or merged with the real world environments. Experiences that are totally based on the virtual world are called VR (Virtual reality) and experiences that are happening simultaneously in the virtual and real world are called AR (Augmented reality). There is also a mix of these two technologies; MR (Mixed reality). At first, this might sound confusing, because it is really close to AR, but they two differ from each other.

For all of these technologies, the goal is to create a lifelike experience. The entertainment value of these systems is clear and they are most popular in video game and movie industry. However, in businesses where objectives are too dangerous, expensive or impractical to achieve in real life, these technologies are the answer. Some fields like this are healthcare, education, military uses et cetera.

4.1 VR

Virtual reality is at the moment the most developed of digital realities. At its current state, VR can be experienced through immersive multimedia data like 360° video, where the user can look around in any direction, but cannot move freely. VR, as its name suggests, is mostly used in totally virtual environments, where the user can interact with one’s surroundings and objects. The most important thing in VR is that the real world is shut out entirely. This makes it possible for the experience to be as authentic as possible.

Virtual reality is implemented by using powerful computer technology and is being used through different systems like Headsets, Omni-directional treadmills and some wearables like gloves for example. The goal of these systems is to stimulate and create a realistic experience as possible.

Some of the major players in VR at the moment are Oculus Rift, Facebook, Samsung, and Google. Oculus Rift was one of the first companies to introduce VR into the game industry. Originally founded in 2012 the company was bought by Facebook in 2014 and has been since the additional priority of the company, to combine social experiences with VR. Most of the VR companies are focusing on combining headsets with powerful computers. Samsung’s approach to the technology has been different. Samsung Gear VR lets the user get rid of expensive computers and allows Android-based phones to act as stereoscopic screens for the headsets. Google Cardboard is as its name suggests, literally a cardboard headset. It uses the same idea of mobile VR as Samsung’s GearVR, but only with 20 dollars. Although the experience is not as immersive, Cardboard allows more and more people to get in touch with VR.

These were just some of the major players in VR industry and developing computers and competition in the field is bringing in new companies all the time. This can only be a good thing as it speeds up the development of Digital realities in general.

4.2 AR

Like mentioned before, AR is a mix of VR and Augmented reality. It places virtual content on top of our real environments. AR must allow users to see the world as it is right now and interact through virtual features within the physical environment. One form of AR is really simple.

When users watch football for example and see the scores on the football field, it is AR. More specifically, it is called projected AR. The other type of AR is a bit more complicated. In it, a separate screen overlays virtual content to our environment. Once something has been overlaid, computers and form recognition allows users to manipulate the content with physical objects. This is called layered AR.

Examples of layered AR are when some retailers are using it for creating a new shopping experience for customers. Customers can look through products on their phones or other devices, let’s say curtains for example. Once nice curtains are found, the customer can drag them
from the phone and see the curtains through the device’s screen in their own living room and evaluate how it would actually look. Also, one really simple example of layered AR is Snapchat. All the filters that the users can use while taking selfies are using AR technology. Like VR, AR is also used in many different fields like medicine, tourism, at workplaces, maintenance and many more.

4.3 MR

Mixed reality, like the name, suggests is a mix of AR and VR together. It can be difficult to categorize MR as its own, because like AR, MR is also overlaying virtual content into the physical world. However, the main focus of MR is that the virtual contents are anchored to real physical objects. For example, the user would be in a room where virtual characters are sitting on a real couch and the user can interact with the characters in real time.

The primary goal of MR is to allow users to interact seamlessly with the real physical world with the virtual objects projected on it, like holograms. By using transparent lenses, spatial sound and total understanding of the environment and its shapes, MR allows the holograms to sound, look and behave just like in the real world and also interact with each other. As an example, communication: Holoportation would allow users in different locations to sit in a same virtual space and interact with each other. As bringing immersion into the virtual world takes a bit more effort and it is not only about imagination. It requires physical simulation as well.

4.4 HOW TO CREATE IMMERSIVE EXPERIENCE?

Firstly, what means immersion? The dictionary defines it “The state of being deeply engaged or involved”. So naturally, when talking about virtual reality, it is about being present in the virtual world. All people can feel immersion while watching a movie or reading a book, but bringing immersion into the virtual world takes a bit more effort and it is not only about imagination. It requires physical simulation as well.

We humans know and experience the world around us through our five main senses: Taste, touch, smell, sight, and hearing. These senses, however, are just the most obvious ones. There are also several other not so obvious senses. Senses like balance. All these senses ensure that we have a good experience of our environment and in contrary, lack of simulation of these senses ensure that we have a bad experience. So when we need to create an immersive virtual experience, we need to make sure all of these senses are taken care off.
This can be more complicated than it sounds. Some of these senses are easier to take care of, like hearing and feeling winds and temperatures, but some of them will bring challenges. If anything in the virtual world is little off, when can usually notice it. Just as an example, human vision is not like a video frame. We have basically 180° field of vision and although the last degrees are blurry we would notice if it wasn’t so. Vision at its current state in VR is a big problem. The depth of vision in our current headsets is only on the horizon in the VR world, so as soon as we move our heads the illusion breaks. We see that the world is moving with our heads even though it should be the other way around. This, in particular, can cause motion sickness, the biggest enemy of VR. The problem is about the development of volumetric environments and positional VR.

A company called Lytro is already working to solve this problem and their Immerge cameras are recording depths and distances of objects in an environment. Then rather than stitching all frames together like normally would be done, it recreates an environment in 3D space. This way it is possible to create 3D virtual spaces based on real locations where all objects are rendered in real depth and position.

Touch and haptic feedback are also creating challenges in VR industry. If we would try to touch something in the virtual environment, we would immediately be detached from that other dimension, because the objects are not really there. With technology that captures and 3D maps all textures and shapes of a given environment, we could get pretty close to tackling these challenges. Wearing gloves that give haptic feedback depending on what the user is touching or wearing shoes that vibrate differently depending on the texture the user is walking on. However, in the end in VR world it is not crucial to be able to pick objects or move anything or anything like this can also be done with gesture controls.

MOVING AND BALANCE

Moving in VR is always challenging and in VRs current state it is almost impossible. In the markets we have Omni-direction treadmills and all kinds of platforms for racing, flying et cetera, but the key to moving is that it should be seamless and natural. Especially if we wish to create virtual environments where there would be differences in the geometry of the ground, this can become a huge obstacle. Movement and sense of balance are in a way tied together. Those both are experienced in our inner ears. Project done by Samsung, called The Entrim 4D, is a headphone concept that in addition to work like normal headphones they use galvanic vestibular stimulation. It is a process which sends very low-voltage electric current into user’s inner ears. The signal allows the user to feel like they are moving. The concept works, but without physical movement and only tricking inner ear, they only cause motion sickness.

SMELL

One of the most important and challenging senses to solve is smelling and recreating scents. Smell is a central sense in our everyday life, and it is a sense which we use to perceive and remember the world. In our real life, those who cannot smell anything are proven to be suffering from poorer quality of life and even depression. Documentary maker Elizabeth Zierah lost her sense of smell and has since been describing how she feels disassociated from the world around her and she said: “It was as I was watching the movie of my own life”.

The sense of smell is also directly linked to a part of our brain that is closely involved with our feelings. Meaning that scents are closely related to our emotional life and memories. We all have those moments when we smell something which takes us back to a place and time which we might not even remember any other way.

So there is no doubt that in order to create an immersive experience in VR, we must be able to add scents in there. Recreating scents is still difficult, but possible. A Valencia-based company, Olorama, is producing kits of different scents and selling them with a retail price 1500 dollars. An environment where we would have many different scents is problematic because separating scents from each other can be challenging. For this reason, it is important that the environment and the scents in it are simple and easy to be separated. Once the scent is sent to the nose of a user, it needs to be rotated back and away from the nose, as soon as possible and this way to create a natural circulation of scents, especially if the environment and scents are changing.

When the VR environment is not open and scents are tied to specific locations, it makes it easier to be in control of them. People must also see what they are smelling in order to not misleading the users. A smell of something incredible and seeing it at the same time create a best possible memory and emotional relationship.
By the definition of Oxford Dictionaries, travel is: to make a journey, typically of some length. Like in many other matters, traveling also has many forms. It can be for leisure, work or perhaps visiting friends or family. This can be done by foot, plane, car or any other moving vehicle. Most of the times in traveling, people go someplace unfamiliar to learn, see and experience something new. Through these experiences, people can learn about the environments, themselves and most importantly: broaden their perspective about the world.

### 5 TRAVELING AND TRANSPORTATION

#### 5.1 FORMS OF TRAVELING

Perhaps the most common form of traveling is tourism. Tourism means traveling to new places and being there no longer than a year. Some people travel to warm places to get a tan and take it easy for two weeks. Some like to travel to cold mountains and hike for a week. First one is purely for relaxation and the second is to experience something totally new. Of course, these both are experiences, but the second one is active. Experience by doing and moving and it is commonly related to nature and natural environments.

#### 5.2 VIRTUAL TRAVELING

With new developing technologies, traveling is also getting new forms. Nowadays, different types of VR traveling experiences are letting people roam this planet without leaving their homes and this might be the first step towards the future of traveling in general. Why would you pay a lot for something you can experience from home and with a fraction of the money? Of course in its current stage, VR traveling is nothing like a real experience, but it can also offer experiences that you can’t have in traditional traveling forms.

Mostly these experiences are created with 360° videos and panoramic images, and in some cases within virtual environments. Perhaps the best example of virtual traveling is Google Street View. It literally lets you travel anywhere and see every neighborhood in the world, provided that the Google Street View–car has been there first. This can’t offer a view to natural environments, but Discovery VR is an app that takes people to Scuba diving and flying through canyons on a zip line. There are also apps that are offering experiences in individual places like museums, beaches, and concerts for example.
When talking about transportation of people in ways as we know it, there are two main purposes to do it. Practical - and recreational transportation. Practical means that the process starts from A and ends to B. This includes events like daily commuting to work. Recreational is the opposite as it starts from A and ends in A. This form includes traveling by a campervan, going off-road with a car or seeing nature by using some other vehicle. In these times when we need to cherish our environment and nature from pollution, we should question if recreational transportation ethically right? Could it be done in some other way, like VR traveling? It is all about the experience. In the future nature can be the only place where you can drive vehicles by yourself, but like said, it is not necessarily the right thing to do. Driving in VR can be limitless and not tied to ground, air or water. It can be anything. Recreational transportation can be done virtually with no limitations and with things that you can only dream of in the real world.

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In 2025, the earlier mentioned Strategy 2025 ends for Volkswagen and the company has to step into define themselves new objectives and strategy for years to come. Volkswagen’s aggressive development of EV’s and new cars has paid off. Also, development of autonomous driving systems has brought the company to a level in which a major car manufacturer has to be. However, changing expectations of customers have been raising the bar even higher and there won’t be time to relax. Sustainability has remained as top priorities of the car industry and EV’s or other alternative powertrains won’t be enough to promote the company’s good intentions.

6 VISION 2040

6.1 EXPERIENCES OVER HARDWARE

By the year 2025, Volkswagen has also acknowledged that selling cars directly to customers won’t be enough to keep the cash flow high enough. Young people, especially in urban areas, has become the major target group of each industry and they have all their transportation needs covered with developed public transportation systems and smart mobility services. Targeting young buyers in their next strategy “Vision 2040” is one of the biggest topics.

Understanding the needs of this group of users has lead Volkswagen to understand that they value experiences over hardware. Car sharing services and public transportation are experiences indeed, but to get engage with the users Volkswagen needs to think new innovative ways. In Vision 2040, Volkswagen sets the value to the process of advertising the company. This will not mean using billboards and TV advertising but selling Volkswagen as a unique experience. It is important to notion, that selling an experience is not seen as a way to make a profit, but as an investment for the later process of engaging users with the brand.

All the technological advancements and interaction trends have become an everyday thing. Seeing VR, AR and all things we didn’t see in 2015 are a thing for companies to be able to offer, in one way or another, to meet the expectations of the users. In Vision 2040 Volkswagen will acknowledge that cars are seen as past and necessary way of moving, but using new technologies it can offer much more.
CREATIVE PROCESS

_GOALS_

_Create a new holistic concept of a new form of mobility._

_Using speculative design approach, create a dystopian future scenario. Aim for a debate among the audience whether the future scenario is something we want and are going towards._

_Go wild with thinking, and provoke the audience._

_Highlight the experience and illustrate the user journey with visual storyboards._

_Consider the experience also in the context of traditional cars and how it could help to shape the future of autonomous vehicles and Volkswagen cars._

_WISHES_

_Maintain healthy way of living during the Spring._

_Stay positive and inspired, if not, change things so that staying motivated through the whole process is possible._

_Ask for feedback and react to it. However, be able to make decisions independently and stick to them._

_Develop 3D skills and aim for material which is good enough for presentation purposes._

_With the result I am hoping to show the quality of my visual skills, but most importantly to excel myself in design thinking and philosophical side of design._
YEAR 2040

Earth, 2040. Over 70% of world’s population is living in cities and urban areas. The population of Tokyo has been steady after reaching record 15 million in 2025, whereas the metropolitan area of Tokyo has been growing exponentially. Several smaller regions around Greater Tokyo Area have been grown to one gigantic Megacity with a population over 50 million residents.

After the late 2020’s climate disaster, Tokyo barely managed to stay above the sea level, but since the climate change has slowed down and future is looking brighter again. However, the situation got so bad, that the bigger ecosystems around the world were about to collapse. In 2040, most of the diminishing natural environments worldwide are under conservation and people, except researchers, have no access to them. The situation is worrying nations around the world and even the climate change has been gotten under control, it won’t be enough for the future of our most valuable asset, nature. The problem was also addressed in the State of the Union by the president of the United States in 2038:

“Our future lies in the hands of youth. Their future lies in the hands of mother nature. Without understanding and co-operation these two won’t get along. If we lose connection to nature, we don’t know what we are fighting for. We need to educate and provide a way for our children to stay connected to nature, now and long into the future.”

Despite the situation, the life in the big cities is greener than ever. New innovations and technologies are making life easier in these dense environments. In Tokyo, the public transportation has developed and expanded from the streets, also under and above it. All major car manufacturers have started to offer subscription-based mobility service models within big cities and their autonomous car sharing systems are the choice of the majority of the people. However, the companies are struggling to deliver services that meet the expectations of the customers. Many of these people have already started to use other alternative ways of commuting.

These customers are valuing experiences over everything else and cars are not seen as one anymore. Experiences have become a way to engage with users, buy them in and make them commit to service providers.

During the years of floods and natural disasters in 2020’s, Volkswagen was already aware of the fact that autonomous cars won’t be a long-term solution for building a strong customer base, and because of the sense of responsibility for the climate change, the company started a project in collaboration with the Conservation International. In the project, the goal was to combine the future of mobility with education and conservation of nature. Using latest technologies and knowledge, these two organizations are aiming to revolutionize the future of transportation and mobility services.
Ken, 21, orders transportation using Volkswagen mobility service. He orders it by using the Commuting section of the Volkswagen App.

On the way home, his on-board AI notices that Ken’s stress levels are high. The AI suggests something that might relieve that stress.

AI: Ken, I can see your stress levels are high. Would you like to try something exciting?

AI: There is Volkswagen V-Trek on our way, would you like to visit Amazon?

Yeah, why not!

The car pulls over to the Volkswagen V-Trek platform. Booking of the platform is done by the AI.

The platform recognizes the approaching user. It lowers itself to the ground level and opens the doors.

AI: Alright Ken, I’ll be waiting inside the platform, see you there!
STORYBOARDS 2

**5.**
Alrighty, let’s do this!

Al: Okay Ken, buckle up and we are ready to go!

For safety reasons, the doors and roof will only close after the seatbelts are fastened and the user is safely seated on the platform.

**6.**

Meanwhile, in Amazon, bio-mimicking drones are buzzing around their hive. Drones are biogradable, and they are constantly maintained and produced in the hive. The whole system is self-sustaining.

**7.**

Thanks to cameras and sensors all over the drone, the platform offers a great view to the surroundings. The user is able to see everything from 3D displays that are covering the interior of the platform. Using eye and motion tracking, the user gets real-time information of the environment. The AI works as a on-board guide during the flight. It can be visually present, or set to be only audio.

Because of the size of the drone, the user is able to get close to everything and actually feel like being part of the bigger ecosystem in nature. When landing on a flower, for example, the Scent Generator at the back of the platform will provide a real scent of the flower for the user.

**8.**

Ken: Hey, let’s land on that flower!

AI: This flower is a part of Orchidaceae family. It is spread...

It smells really great!

Ken: Hey, let’s land on that flower!
To provide a truly exciting experience, users are able to fly themselves. The system uses assisted control system in which the AI will assist the user in all maneuvers and so making sure there won’t be unwanted movements and crashes for example. Steering unit is located behind the seat and will come out when the user wants to take the control.

Operating time for the drone is long thanks to its lightweight structure. The drones are using 100% green energy which they harvest from sunlight.

Meanwhile, in Tokyo, the platform is in full motion. The Platform works like a gyrosphere and it has 3 axis’s to provide movements in all directions.

Hey, can I try to fly by myself?

AI: Yes, of course. Just grab the steering handles. I’ll guide you through the process!

- Okay AI. I would need to get home soon. How do we end this journey?

- Alright, Ken. Let’s find a nice spot to land this drone.
The drone lands safely to a chosen location.

For the experience to be rewarding and memorable, it is good to have something for users to contribute.

AI: It is time to leave our mark to this place and do something good for nature. There is a red lever between your legs. When you are ready to go, pull that lever towards you.

When the user pulls the lever, the drone will disable itself and start dissolving to nature. Each drone carries a seed within them, so all of the users will plant a new tree before they leave.

AI: Congratulations! You have no planted a new tree and created a living space for wildlife. There is a car waiting for you outside.

When the user plants a new tree, he will be rewarded with credits, to be used for Volkswagen mobility services. From several different locations of V-Trek, the one visited, will get ticked.

When the user plants a new tree, he will be rewarded with credits, to be used for Volkswagen mobility services. From several different locations of V-Trek, the one visited, will get ticked.
LOCATIONS

This technology offers limitless possibilities. Every location has its own ecosystem and specific species living in them. This is why all locations have their own individual drones. This way, the user will be provided with a best possible way to get close to the wildlife and feeling of being part of the bigger system.

ANTARCTICA: Wandering Albatross

GREAT BARRIER REEF: Butterfly Fish

CONGO BASIN: Driver Ant

EXTENDING THE EXPERIENCE

For engaging the users with the whole Volkswagen mobility system, it is important to extend the experience to outside the platform to everyday commuting in Volkswagen Cars.

SCENTS

Visiting different locations will store the scents in the user’s personal library. Smell is one of one of the most powerful senses and experiencing it later on in Volkswagen car, will always take the user back to their V-Trek experience.

LIGHTING

Lighting is different in every location. How would it feel to experience an evening sun of northern summer in dark city while commuting?

360 VIDEOS

All experiences will be recorded as 360 videos so the users can experience them again in VR.

AUDIO

Sounds of nature can be extremely relaxing. To complete the post-experience set, what is better than enjoying the calm sounds of the forest in the heart of busy future megacities?
THE PLATFORM: INITIAL IDEATION

From the beginning, it was obvious for me that the platform, where this experience would happen, would be the focus of my design process. Designing something new was challenging and exciting at the same time. Challenging part of the process was that I had no actual reference of similar products in the market. So my first initial references were VR Experience platforms and training machines for astronauts.

As an inspiration I decided to use a flower. The platform needs to be familiar and something that people around it can relate to. After exploring different themes and inspirations for the platform, the flower turned out to be the right one.

An Aerotrim. Aerotrim is a gyroscope large enough to fit a human inside. Aerotrim was the strongest reference to the image that I had in my head about the platform. Providing smooth movements to all directions and sensation which I was looking for.
THE PLATFORM: DEVELOPMENT

The platform had many moving parts, which made it challenging. Openings of the doors, diameters of the rings and axis's so that all movements are possible. The initial shape and design language of the platform was simple and in the end I wanted to spice it up a little.

Strong reference to a flower:
Doors open up like a blossom.

Entry mode: When user approaches the platform, it will lower down to the ground level and open its doors.

The final direction: The final design direction of the platform has more edge to it and it resembles flower more than the initial direction.
I started the process from the outside, but as the experience and the interior design was my focus in the overall process, I used most of my time for the interior. The platform is for one person and it meant that all functions can be built around the passenger. For this reason, the seat and the space around it was the starting point for me.

The things I had to consider in the process: Seat, Scent generator, Steering unit and the overall architecture.

THE INTERIOR: INITIAL IDEATION

Early ideation of the steering unit. In 2040, the users are not used to drive themselves. This is why the steering needs to be easy, immersive and adaptive for each passenger. I was exploring different directions and this sketch shows a steering pad.

I had hard time deciding whether the experience should be delivered in a VR environment or in real nature, but in both cases the user should wear a VR headset. However, in 2040 we should have other alternative ways to experience 360 Videos and VR spaces.

In my concept, the surfaces surrounding the passenger are screens for VR data. This is a way to utilize the space inside the platform as well as a way to free the user of separate headset.
I started the design process of the interior from details, which turned out to be a little problematic later on. To prevent each part looking like a separate object I felt that I should have started from a bigger architectural theme and then start working on smaller details.

However, I managed to merge all parts together in to a theme that follows the theme of the exterior. Flower like shapes and structures that create a safe feeling for the passenger.

**INTERIOR THEME**

The platform has an autonomous mode as well, which means that the steering unit needs to be hidden most of the time. This is why I decided to make it a symmetric piece, that can retreat behind the seat and come out again when needed.

Steering unit: The final direction for the steering unit is a bit subtler than the original pad-idea. My first idea was that the steering should work like a control stick of a helicopter.
The seat design focuses on the experience of physical stimulation. The obvious way was to fit audio and galvanic vestibular stimulation systems as close to the user’s head as possible. Head rest includes all of them.

Seatbelts were also something that needed to be considered. The platform is in motion most of the time and it can also make radical movements and this is why the safety has to be visible in the design as well.

Because of the motion of the platform, seat has to support the user in a best way possible. This is why I was focusing on ergonomic factors like side- and shoulder support.

The seatbelts were also something that needed to be considered. The platform is in motion most of the time and it can also make radical movements and this is why the safety has to be visible in the design as well.

From the beginning the most fascinating and interesting part of the experience was the scents. It was tricky, because scents have no shape. However, the place where the scents come from has to have a shape. Because the scents were so important to me, I decided to dress them up in an interesting way.

The shape of the computer unit follows the same theme as the overall interior architecture.

The main computer of the platform is located behind the headrest. It holds inside all the computing power and technical parts as well as the scent generator.
3D DEVELOPMENT

For 3D development, I used probably 2 weeks of time. I started mocking up with a basic wire-models from which I started building surfaces later on. For the interior I used about 70% of the time and for the exterior the rest. The model is done with using the Autodesk’s Alias Autostudio software.
PRESENTATION OF THE PLATFORM

Just an interesting shape and design will not be enough to attract the people. Where and how the platform will be displayed was giving me headache. My first though was to place them in parks and natural places within the cities. However, that would have had too little contrast between city and nature. I decided that the platform will be displayed in city and in a way that it communicates the purpose of the concept.

Having the platform in the busy heart of the city and seeing it as a gate to peaceful nature was something that struck me an interesting thought.

The best way to communicate the core idea of the concept is to display the locations the users can visit. While displaying a forest for example, the platform indeed looks like a port to a different world.

The presentation of the platform is important. The best way to communicate the core idea of the concept is to display the locations the users can visit. While displaying a forest for example, the platform indeed looks like a port to a different world.

FOG SCREEN: Different ways to display the platform would have been to have a stand, which would display the VW logo as well as the name of the concept. However, to avoid unnecessary material around the platform, I decided to do something subtle. Fog screen is a perfect way to communicate nature and freshness. Steam curtain with a projection of the logo or a forest, communicates something exciting, innovative and natural.

Fog screen can be used to advertise the brand.
THE INTERIOR: ACTIVE

Image shows the view as the platform is in active mode. Big monitor surfaces bring open and fresh atmosphere to the interior.
THE PLATFORM: CUTOUT

1. Outer Ring (Y-Axis)
2. Middle-Ring (Z-Axis)
3. Inner-Ring (X-Axis)
4. Capsule Clamp
5. Scent Generator
6. Door opening system
7. Roof Unit
8. VR Monitors
The original plan was to use flexible tubes running from the Scent Mixer to the Roof Unit, but at that time, there was no roof opening system. I decided to make the tubes as a hard structure, which will also open the roof.

**SCENT GENERATOR**

Six main scents are stored in the Scent Capsules (1). From Scent Capsules, chosen scents are delivered to the Scent Mixer (2). After the right scent has been mixed, the scent travels through Scent Channels (3) to the Scent Output (4). After the release, scents exit the interior through the Scent Exit (5).
VISUALIZATIONS

STEERING UNIT

This image visualizes how the Steering unit works. The frame is built with flexible materials which enable the user to bend them.
VTREK
CARRY THE NATURE WITH YOU
The path and the process that lead me to this eventual concept can be called a happy accident, or actually a conclusion of a hard and painful thinking process. The list of things I learned along the way is a long one, but here are few most important ones.

Firstly, I learned not to settle too early. Whether it is about the topic, design or a detail, if something doesn’t work – change it. Even when I was running out of time I had the courage to go back and mix up things. That is what kept me faster later on in the process. It increased my motivation and because I was working on something that I really believed in, I was excited about each day in the studio.

Of course, there were difficult times as well. To create something that hasn’t been done before is scary. It is easier in a sense, but at the same time super challenging. My process was slow for a long time as I was trying to solve everything. Going back and forth with different ideas is frustrating, but then suddenly everything clicks and comes together. Now when I look back to the early ideation, I feel silly and ask myself: What was I thinking? But I also see that all those silly ideas in the early process just made my concept stronger and more well-grounded.

My goal was to design a holistic concept consisting of the interior, exterior, and a service. I managed to do that quite well. The service built around the concept was just as important as the exterior and interior. If one of those three was missing, the whole concept would feel incomplete. The only thing I regret is that I didn’t get this idea earlier and so I didn’t have that much time to use for the styling of the concept. However, because of the nature of the topic, I managed to create something that is interesting, regardless of the time used for styling.

Apart from the goals I set for myself at the beginning of the design process, here are few of the most important learnings. The thinking process was something that taught me a lot. I learned to be more open-minded and to narrow down design opportunities. What also struck me was the importance of a story in any design project. This is something that I can definitely take with me when I move forward to my professional career.

3D modeling has always been a pain in the a** for me and during this project, I managed to overcome that pain and step out of my comfort zone. At the end of the day, I realized that it isn’t so bad and I was actually pretty fast and able to succeed in it. What I learned from modeling is that I shouldn’t start it too early, because it limits my ability to create forms. Next time I will know the right time to start it and how to take most of it. This will definitely make me more efficient and that is really important when I start working and the efficiency actually matters.

All in all, I am very satisfied with the way this project turned out to be. There are always things I could have done differently, but it is the case in every project I have done and so it will be in the future as well.
REFERENCES
THE END