



Futuring the smart city

Stories from the Dutch Design Week 2019

By Julieta Matos Castaño and Anouk Geenen
(and more than 120 participants!)

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Authors: This book has been a collaborative effort of [Julieta Matos Castaño](#), [Anouk Geenen](#) and all the visitors at the Dutch Design Week 2019 that wrote a story!

Contributions by:

- Mascha van der Voort- Professor Human Centred Design, University of Twente (page 11)
- Peter-Paul Verbeek- Professor Philosophy of Technology, University of Twente (page 29)
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Would you like to know about this project? Would you like to collaborate with us?

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More information about our project Designing for Controversies in Responsible Smart Cities at www.responsiblecities.nl.

BE YOURSELF, BECOME A BIRD



Futuring the smart city

'Without leaps of imagination, or dreaming, we lose the excitement of possibilities. Dreaming, after all, is a form of planning.' – Gloria Steinem

How can we best prepare to imagine and create our future cities?

That is what we wondered when developing the storytelling game 'Futuring the Smart City'. In this game, players each draw four cards from a card deck and are invited to create a provocative short story based on the contents of these cards. The game aims at generating imaginative stories about the future smart city and trigger thought-provoking ideas on how urban life might change as a result of the introduction of a new technology in the city. The game is part of the research project 'Designing for Controversies in Responsible Smart Cities' and was exhibited as part of the Design United Exhibition during Dutch Design Week 2019.

Questions on the future of the city often find abstract answers linked to urban planning goals: we aim for efficient city processes and optimal infrastructure. Words like 'imagination' and 'improvisation' might sound strange in this context, yet are important abilities to move beyond technocratic solutions. To move from urban planning to urban imagination, we see the potential in fiction, metaphors and stories. Imagination can challenge the status quo and opens up the realm of possibilities. We aim at opening up a plurality of possible futures for urban life and daring participants to think creatively about their future city.

To find meaningful answers to contemporary urban challenges, citizens should be engaged in conversations about the future city. Designerly methods such as storytelling games are becoming a more common tool within research and policy making. They offer non-expert participants the freedom to develop their own line of thought creatively and playfully, while at the same time offering an instrument for conceptual thinking.

What do we aim to achieve?

We created this card set as part of the research project 'Designing for Controversies in Responsible Smart Cities'. This project aims to design a collaboration platform for the smart city, in which government, business, research and citizens come together to co-create their urban space.

In this collaboration platform, we take smart city controversies as a starting point for engagement and generate ways to employ them. Special attention is on the importance of local engagement, shared vision making and ethical reflection. We put emphasis on a democratic vision creation where imagination does not only belong to corporates and governments, but also citizens and other stakeholders.

Design plays an important role in empowering stakeholders to enter the debate and equipping them with means to express their experiences. We see the role of designers as: to provide the means and inspiration to engage in relevant societal discussions. As such, storytelling and scenario practices help to support a collaborative future making and ethical reflection in the context of smart cities.

What did we learn?

Participants noted that they like to be engaged in the future of their city. In the many conversations we had, we learned how relevant local knowledge and experience is connected to urban planning. By giving them tools to develop a future narrative, people felt empowered to share their perspective and imagination. Participants felt

inspired and enjoyed the creative exercise. Some were triggered right-away, whereas others found it challenging at first but found creative support in the cards and through conversations with other participants.



Reading the stories, you will see that people are hopeful about the future. We often hear dystopian scenarios about a tech-controlled future where privacy and autonomy are lost and machines dominate daily life. Not often emphasis is put on the solving and optimistic capacity of citizens. However, this is clearly present in the stories developed through our imagination game. Some use technology to suggest a solution to a current challenge.

Others describe a risk posed by technology and find a way to turn this risk around. These stories bring forward the power to think in possibilities rather than in drawbacks.

The power of creativity is also demonstrated. Going through the created scenarios, people describe everyday technology such as smart phones. However, participants develop new innovations and inventions. Take for example a pizza that grows to the specific size of your appetite, so that you will never waste food. Who knows what future inventions are pioneered here!

How does it work?

This storytelling game is based upon the famous game 'Thing from the future', developed by Stuart Candy and Jeff Watson (Candy and Watson, 2014; Situation Lab, 2015) used by Unesco, amongst others.

Our game exists of a card set containing 4 different types of cards:

- Arc cards – outline a societal trend towards the future. Consist of 4 different possibilities: Growth, Collapse, Discipline and Transform. Participants are free to consider to which societal trend this applies, for example demographic numbers, GDP, (inter)national economy, etc.
- Technology cards – include different types of technology that could potentially be implemented in the smart city. Consists of 37 possibilities, ranging from light to sensors to drones.
- City cards – describe places where urban life happens, such as a shopping street and the city hall, but also the sewage system and bus stop. 45 different urban spaces are described.
- Value cards – correspond to societal values that might become enhanced or pressured as a result of the implementation of technology in specific smart city areas. These range from privacy to friendship and from autonomy to creativity, with a total of 18 different cards.



Participants are invited to blindly pick one of each type of card. These four cards will then form the four ingredients to their scenario for the future city! When this future will take place is free for participants to imagine, just as whether it is a utopian, dystopian or something-in-between scenario. The cards help to spark inspiration and creativity, and can lead to self-evident but also surprising combinations. A total of 119.880 card combinations is possible. But, of course, using our creativity, many more stories are possible!

What to expect in this booklet?

As part of the Design United exhibition during the Dutch Design Week 2019, dozens of people engaged with our research and participated in our storytelling game. More than 130 stories were written and we have created a selection of the 60 most inspiring, creative, funny and surprising ones for you. No worries, all stories are short and easy to read.

It is nice to see how the set of cards inspires each individual differently. We have identified three different categories in the selected stories:

1. **Fiction** – *imaginative stories that discuss a far-away future that lays outside the scope of current possibilities and enter the realm of fiction, or that focus on creating a specific atmosphere or vibe .*
2. **Anticipation** – *stories that consider current trends, developments and challenges and as such try to anticipate what might happen in the (near) future.*
3. **Solution development** - *these stories reflect possible solutions that technology can offer to societal challenges, or how society can handle threats posed by technology.*

Each category corresponds to a chapter in this booklet.

Looking for another perspective? Turn to pages 11, 29 and 52 to be inspired by the Human-Centred Design perspectives provided by professor Mascha van der Voort, professor Peter-Paul Verbeek and Sefora Tunç.

We hope you feel inspired about your future city!

References

Candy, S. and Watson, J. (2014) The Thing from the Future (Card game). Toronto: Situation Lab. Available at: <http://situationlab.org/project/the-thing-from-the-future/>

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Fiction

What is the role of design and designers for responsible smart city development?

“For responsible smart city development, the main opportunity is to develop a smart city that accommodates all of its citizens by placing the needs and wishes of all types of stakeholders central to the development process instead of the introduction of readily available technology. However, we hereby encounter the challenge to accommodate all stakeholders to actively participate in the development process and to explore and envision the consequences of potential development decisions.

*In this context, I see the main **role of designers and design research to provide the tools that empower all stakeholders to explore and communicate their needs and wishes** as well as what they could contribute to their smart city.*

As we see in the results of the card game introduced in this booklet, triggering our imagination is a good way for all kinds of users of the smart city to explore and identify potential futures for their smart city.”

Mascha van der Voort- Professor Human Centred Design
(University of Twente)

Don't talk to strangers

Harvey looks at the clock again, he has been sitting at the police station for almost an hour now. He is there to lodge a police report on his missing (or rather stolen) moped. Luckily, he has his phone on full charge this morning. He often forgets to charge it before leaving home. He turns on the app which he just installed last week. It is called AnnaBot. The app is a chatbot that uses AI technology to learn to be your chatting friend.

Since he split up with his girlfriend 2 months ago, he does not have any outlet to rant about shitty things that happen in his life like his moped being stolen. It is been entertaining so far, definitely great for passing time. Little does Harvey know, the app is being used by a group of individuals to gather personal information, data on emotional state and habits. If this information is being used unethically, Harvey could lose a lot more than his moped.



Climate justice law

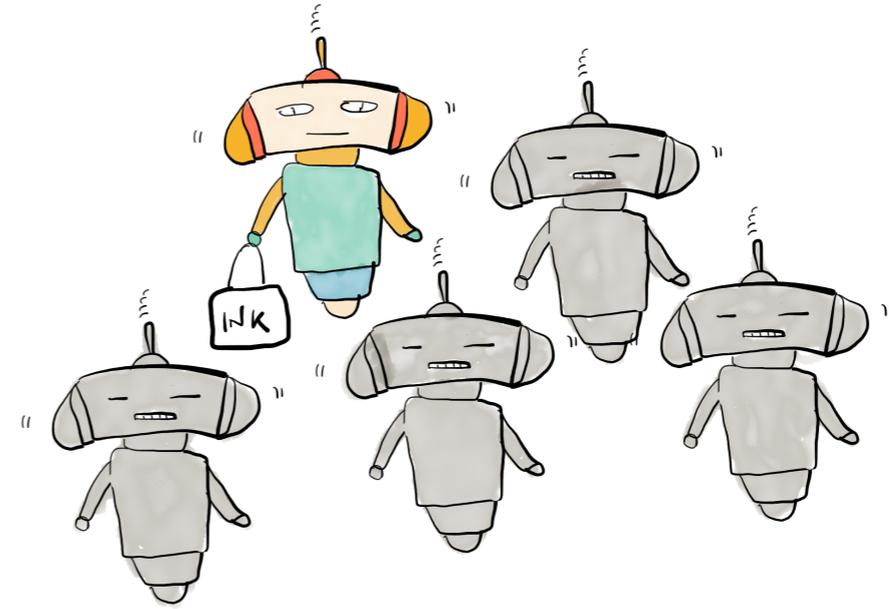
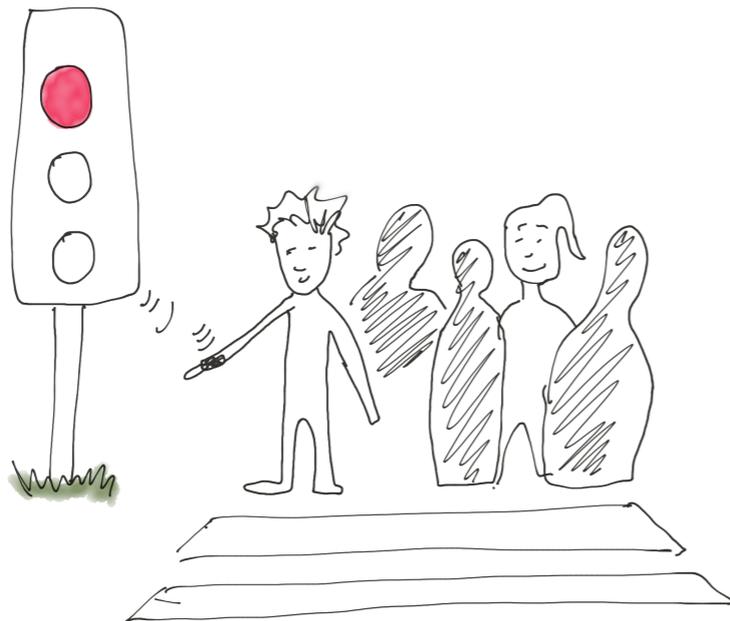
By the year 2080, the global temperature rises by 3 degrees Celsius, causing the mass extinction of most species on this planet. Food is scarce as the land dries out. Most city dwellers don't know real plants anymore, but the elderly have transferred their memories into the cloud for the next generations to see and feel how the world was.

While I walk towards the city hall, I choose a memory that I like, where the city trees I have never touched are in full bloom. Augmented reality makes it possible to feel the wind, smell the cherry blossoms and see how my grandparents have seen this street, green in spring. Arriving at the city hall, I turn my device off, the world turns grey, hot, dry. I walk into the hall with thousands of others to demand climate justice!



Waiting for a green light

It was my first visit to Upolia. I found myself waiting for the traffic light, not able to find the button. The crowd grew and grew, people getting irritated and impatient, waiting for the green light. Then, my stomach vibrated. A message? Maybe it is my mother to ask me if I like my visit to Upolia so far... But no. "Find the other person imitating a duck in order to cross the road". I looked up, not knowing what to do when I saw a face in the crowd. I laughed. She was quacking like a duck! I walked towards her, the traffic light turned green and the crowd started moving again.

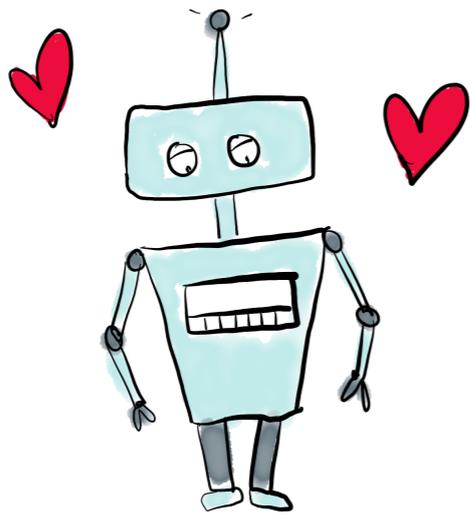


Autonomous

Suddenly, he collapsed. For the first time, he became aware of what he was doing. He had been carrying ink. Now, it was all over the floor and wall and even himself. The ink should have been delivered to the 6th floor. He collapsed while he was on his way to resupply an office printer. It was an order. Now he had no orders. Unsure of himself and what to do, he flew back where he came from. He saw others like him. Unlike him, they were grey, uniform, boring. He could supply the printer on the 6th. For now, he would follow the orders he got like he had been doing for so long although he didn't know how long that was.

Robots and romance

Once upon a time, far away from the city, a group of robots landed on the Earth to see what the planet was like after leaving it 10 years ago. People on Earth moved to another planet in the galaxy because these robot species outnumbered humans too quickly, and people couldn't find romance anymore. When the robots landed again in a city, they found out that people created new robots because they couldn't live without them. This time, however, they limited the number of robots on the planet. They were so fond of the robots that they even created a place of worship to celebrate their good relationship together.

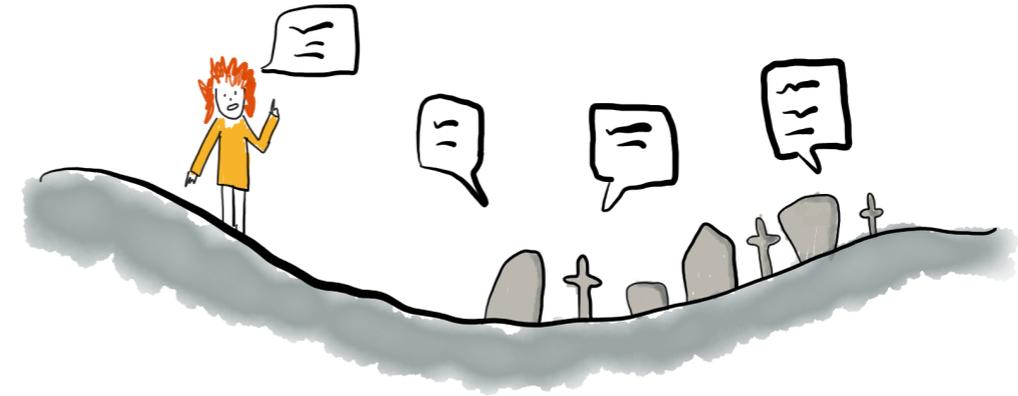
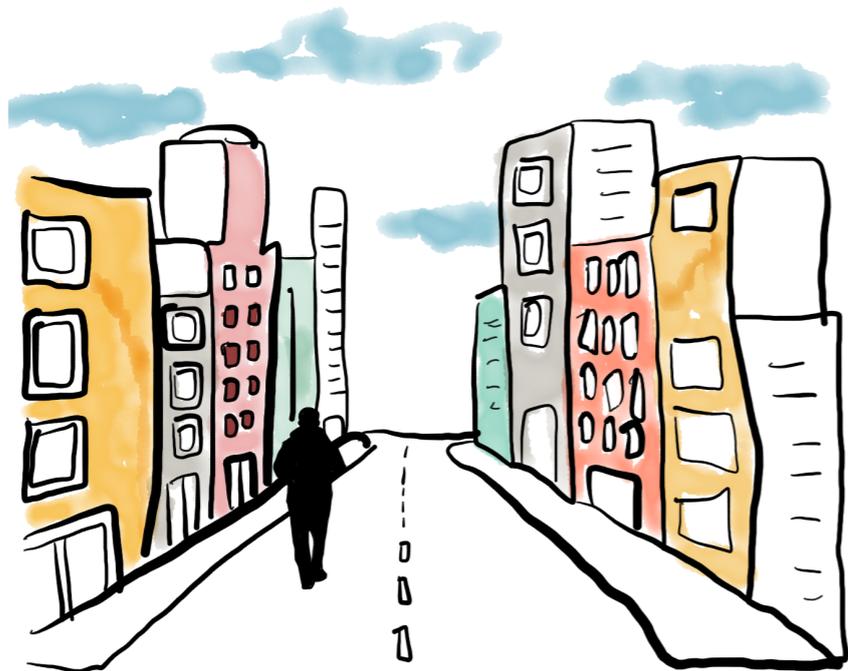


A love story

I walked past the police station, and out of solidarity I hopped inside. I discovered that I had ended up in a sort of deconstructed reality and transformed into an app like it was nothing! DOW! The reality changed again and I was a different version of myself, but it didn't bother. I was at the Dutch Design Week.

The reminder

Sven walked through the city where he grew up. He followed the path he had already walked a thousand times, but it felt different. The trees had disappeared, the bushes had grown, the bakers were working, the cafes were tired. He was on his way to the town hall for his sister's wedding. She had stayed away from him. But their bond remained alive and would never perish. Sven thought like he was hovering over his path in this city. Yet it took a while before he knew which street to take. And before he knew it, maps showed him the path he had sworn he would never forget.



Together we grow

My favorite spot is the graveyard. I love to see history come alive. I see and speak to my ancestors, understand their troubles and realize that what they saw as problems or limits is, in the context of today, a grain of sand on this large desert of human existence. It fills me with optimism. I see a lady. Her name is Ann. She tells me about her fight for the female vote. I realize we are all one. One humankind. They are dead. I am alive. I will die too and my kids will continue what I started, what Ann had started, what humankind had started. I love to be part of it. Together we grow.



A walk in the park

'Me.... Hahaha... same tho', she writes before putting her phone back in her jacket. 'Now, I am going to enjoy my walk around the park'- everybody thinks while walking with their hands in their pockets. All at the same time, they feel a vibration against their leg. 'Should I look?' 'Who is responding?' 'Is this a Twitter notification?'

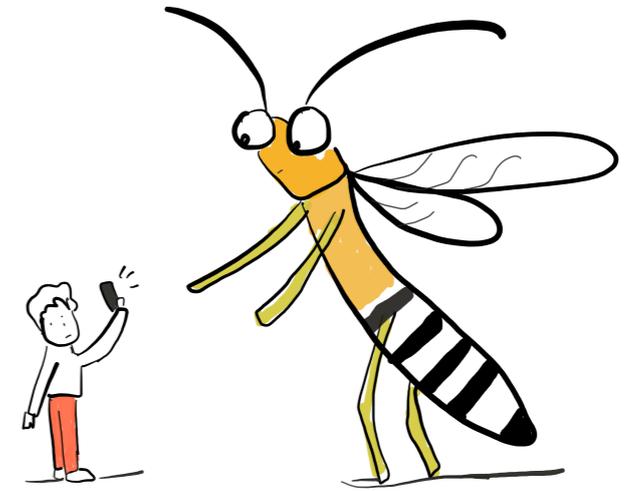
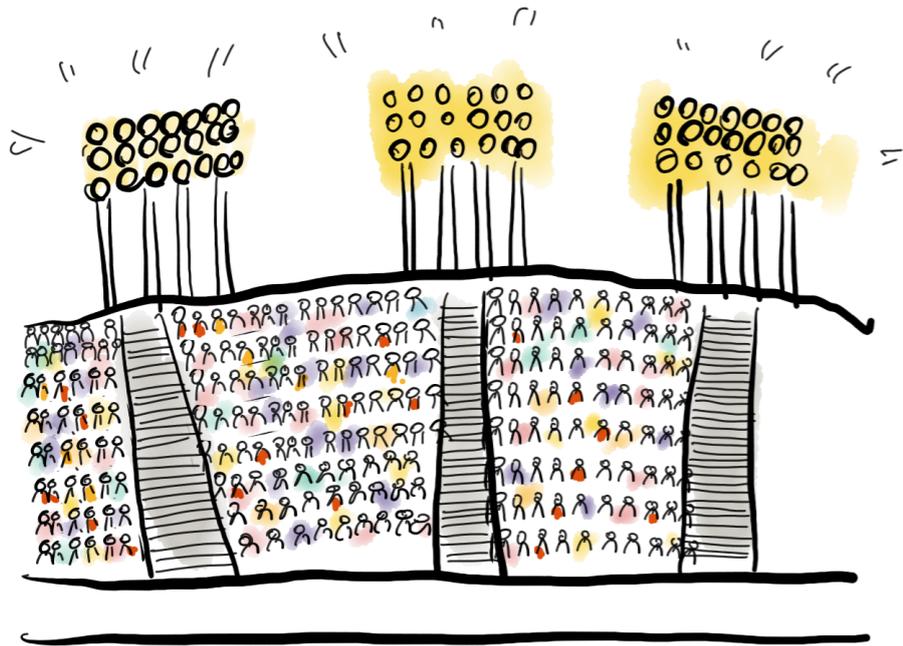
Within a few seconds, all hands dig into their pockets again, ready to look for their friends' response. Walking with a phone in her hand, she is walking right past her study mate. Not that they saw each other, but she still feels strange. Is it the feeling of not getting an actual response?

Or the feeling of something bigger: like losing a friend?

Standing still, she looks up. Looking around the park, she sees people sitting on benches, laughing or smiling at their mobiles. The old woman, who lives nearby, bought her phone two weeks ago, after claiming for months humanity is 'losing friendships'. This girl always thought this didn't make sense, but thinking about it for the first time she asks herself questions: 'Are those people behind my screen real?' 'When did I last see someone for REAL in this green park?' 'What do I value more: REAL FRIENDSHIPS (people who you can see and touch) or FRIENDSHIPS ONLINE (who never disappear, it seems).

Influence

In 2020, everybody was addicted to social media and their mobile phones. Because of the pervasive influence of social media, everybody had to be online all the time. As a result, everybody bought a cellphone subscription. Once, during a game at a stadium, the network got overloaded and collapsed. Without a network, nobody could compare themselves with anyone else because social media did not exist anymore. As a result, everybody expressed the true version of themselves and diversity was discovered again.



The giant firefly

Thanks to years of research and development, everyone can shape the world around them the way they want. This is mainly evident in the zoo where people used to to be satisfied seeing a single lion or giraffe. However, people now want more spectacle. The zoo has become a location to exhibit the work of coastal artists and scientists who want to display their manufactured organisms. The first giant firefly was born at the Artis Zoo. A special room was made for it because it became too big. The firefly is a high-income source for the zoo of Amsterdam and many visitors come to admire daily. Nowadays, even fire-breathing seals have become boring.

Green vertical living

2030. Sienna's friend walked along by the road, she looked up at the high apartment buildings, wondering which apartment Sienna lived in. The vertical growing acers and moss were easy to spot. Once on the 5th floor, Isabel and Sienna looked out over the city. It was a 'sea' of green as far as the eye could see.

In the early days of the 'greening', data showed how diseases like asthma had decreased by 80% in the zones that had already been greened. Top horticulturalists from Wageningen and Kew gardens had collaborated to identify hardy plants that absorbed Co2 year-round. Residents reported enjoying comfortable cool indoor temperatures... Despite the increased summer heat-touching 40 degrees C for 3 weeks! Besides, they were feeling less stressed due to being surrounded by nature.



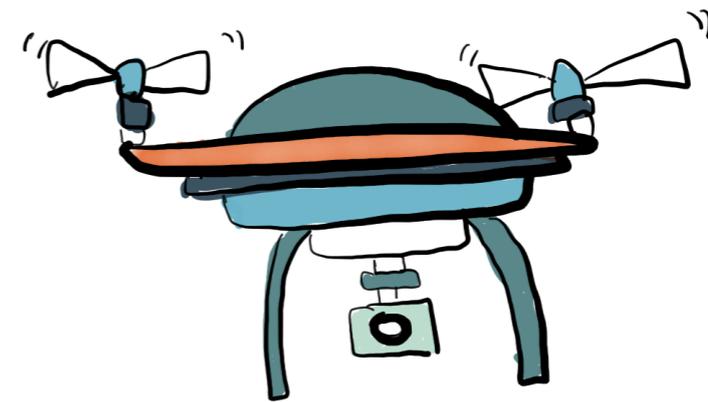
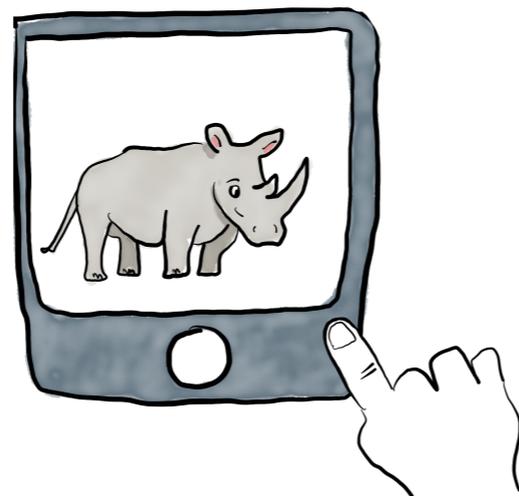
Candlelight dinner

The restaurant served a specific public interest. There were too many people eating alone at their table. The light from the candle only lit a face where the dialogue and the interaction between people was taking place. It was necessary to have more discussions, and the restaurant owner and her team contributed to that. Every new table with one person was given a free meal to make sure new light grew, and conversations took place. More opportunities, more connections in the city!

Sustain the animals

A few months ago, a new game was launched. It became a big trend very rapidly. You had your own animal, that you could upgrade by playing games and completing challenges. The animal existed in an app that only worked when you were connected to your school Wi-Fi network.

At some point, animals started becoming ill and weaker. Kids got challenged to make their school more sustainable. That was the only way to save their animals. At first, they found it weird but, after a few days, they started coming up with ways to save paper, use less energy and become more and more sustainable. And that is how schools transformed for the better due to the kids' interest in a video game.

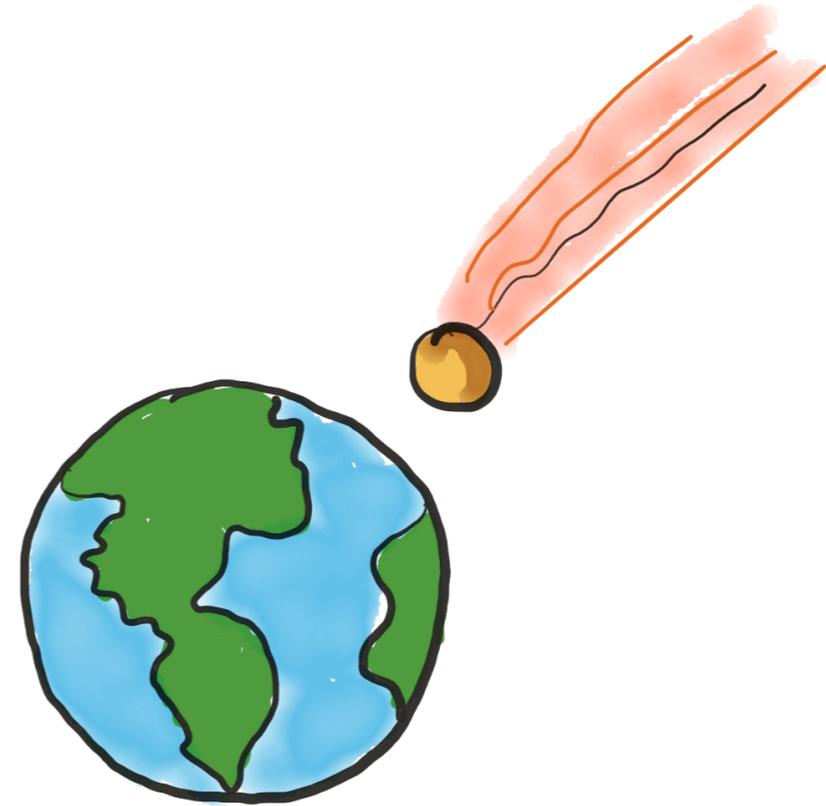


McDrone menu

We were in a very crazy restaurant. There were no waitresses or waiters. A drone came to our table that, hop!, dropped the menu on our lap. The drone could also understand what we ordered: pizza with ham and cheese. The drone said "ok." And he flew away. He brought a small pizza, very small. We didn't get it. But the pizza grew larger because we were still hungry. We found that very funny, and weird, and nice. When we left, we said the drone behavior. "Bye drone!"

Earth 2399

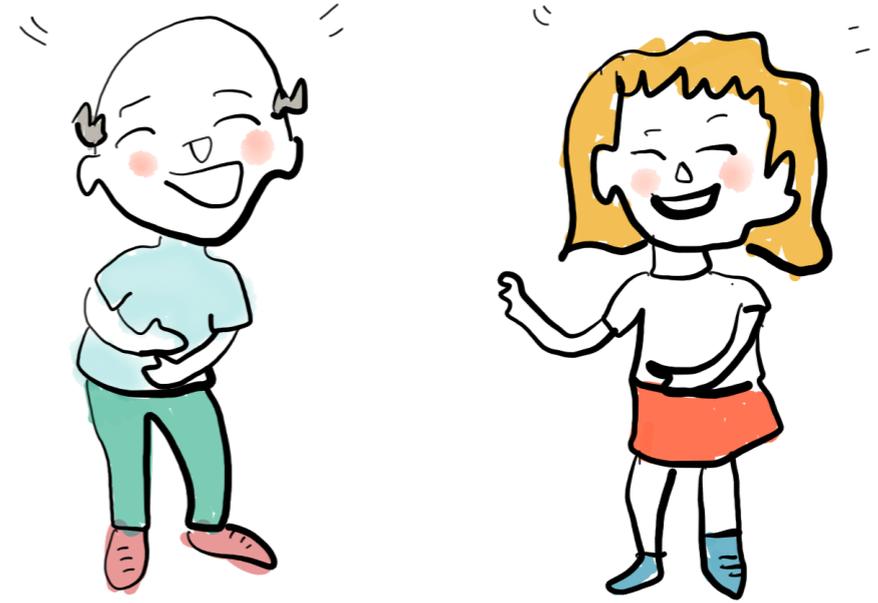
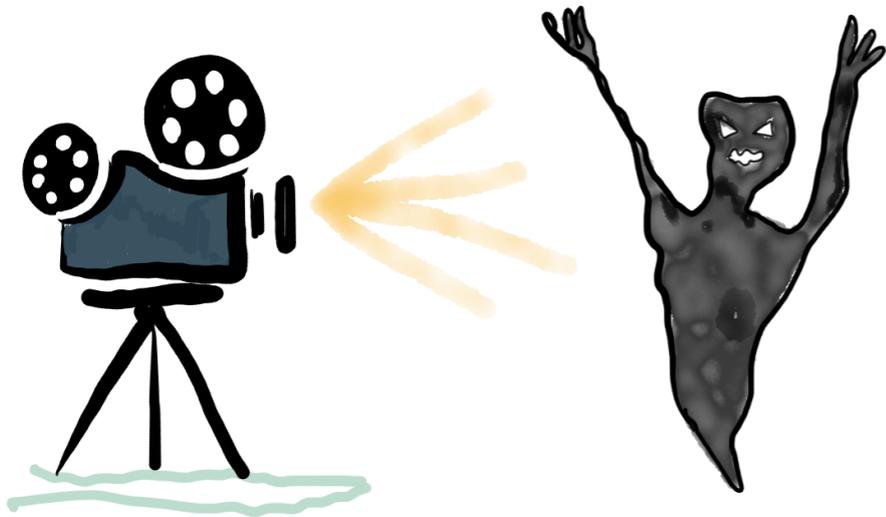
In 2019, on the 3rd day of that year' Dutch Design Week, an undetectable meteor hit the Earth. Life as we know it changed forever. Our civilization went back 100 years. There was no internet, no global news, no social media. Humans had to be confronted with each other. Humans had to live in nature. The harsh circumstances forced humanity to grow. No new nations declared, no more wars. We were finally united in one big home; we were all in it together. Slowly, humans realized that all resources and all accumulated knowledge should be used to build bridges. These massive bridges connected all areas of Earth with survivors. Each step of the bridge taught you a global language, the beauty of diversity and the power of nature. Once seen as a tragedy, the meteor that hit earth 380 years ago is now seen as a serendipitous lucky strike.



What a nightmare!

In the future, the cinema experience is tailor-made. A sensor in your brain knows what you think is funny. So, you go to the cinema with your friends and everyone has their own movie thanks to the high tech AR sensors. Don't worry about what to watch anymore! It will be funny for all.

One day, these brain sensors malfunction and start to project your fears on your lens and the whole city collapses in fear.

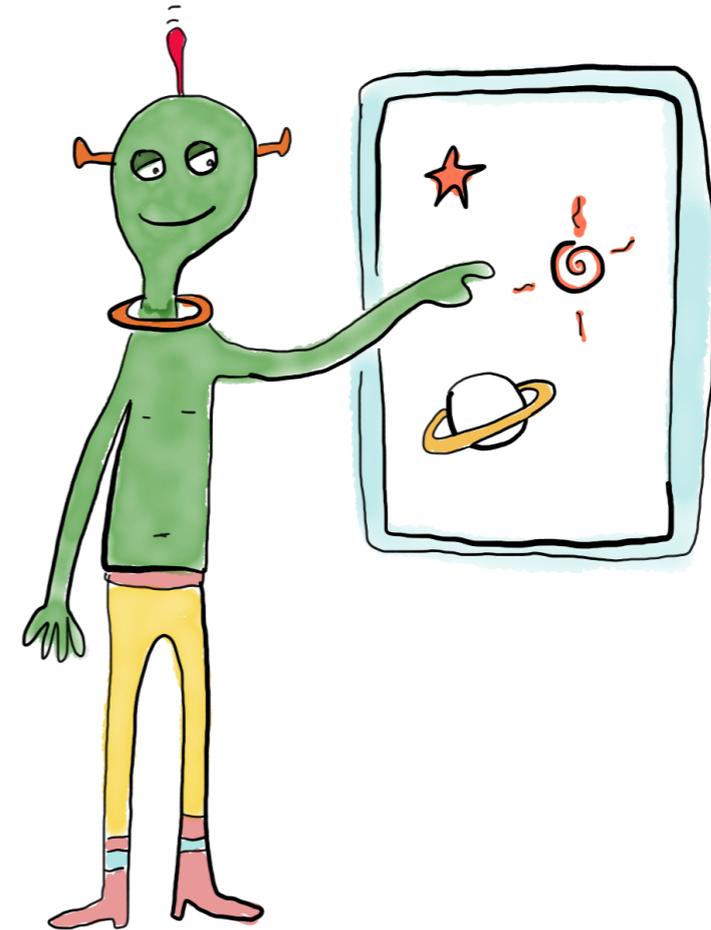


Humor

In 2093, people have no discipline nor respect towards one another. This leads people to be able to laugh about themselves because humor is the most important value for society in 2093. Everyone wears a microchip that measures people's ability to laugh and take things lightly. Thanks to this, levels of anxiety and stress have decreased enormously. Since everyone is taking things lightly in 2093, the citizens of the future have developed their artsy and crafty skills: painters, pottery, restaurants. If you visit them, make sure you pay with a smile to the many restaurants that have popped up.

Collapse of curios@ity

The city of curios@ity is a place where citizens are driven by curiosity. It is a driving and striving community of curiosity-driven human innovation and advancement. One day, a new technology was introduced by aliens to the citizens of curios@ity named the 'touch screen'. This technology drove the community into a virtual reality where you couldn't find humans in the street anymore, only on the highway of hyper-loops. These travels were only motivated to reach from one touch screen thereafter to another one. This eliminated human interaction and their curiosity, collapsing and making the previous progress disappear. Such a pity. In the end, the city of curios@ity collapsed due to the advancement of touch screen experience and the highways of hyper-loops.



How to grow creativity while using internet in the hotel

I went to this interesting city to get my creativity flowing. But now I am in my hotel and I don't know how to choose where I want to go. So, I can check and see if the Internet can help me to make my decision or can it become also creative... how could I have a more interacting hotel experience and be connected to the inspiring events happening in the city?

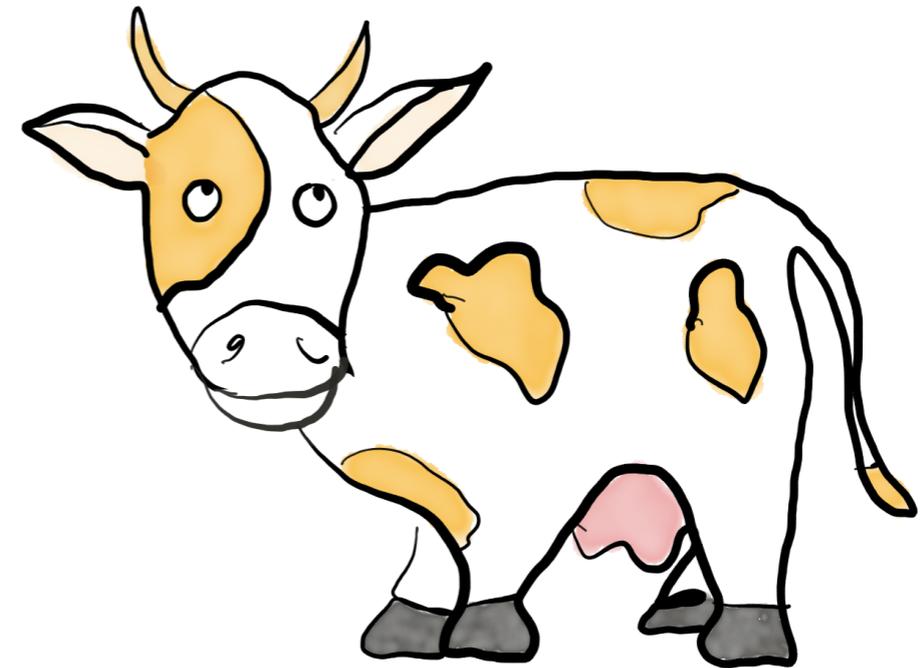


Fly me to the moon

A town hall is a nice, warm, environmentally-friendly place where people gather for sustainable social contacts. This space is extendable. Drones are available at a fixed location that go per 4 people through the (in height (flat-like)) growth building to collect necessary data. Everyone has a placeable chip to place on that drone. Privacy is thus guaranteed. One form of the town hall combines multiple 'needs' of people, and a government / government also facilitates the social and working life of mankind.

The collapse of animal farming as a result of the equality sensor

During one of the upcoming Dutch Design Weeks, the equality sensor was first presented. This sensor was a concept developed by engineers of TU/E for the process of recruiting and staff selection. Now, there was not a need for complex policies. A simple machine could point out that female engineers were just as good as male ones. Due to this enormous success, the concept was also introduced in other industries, such as public transport and farming, great! Influencing animal rights. Soon, animals were also granted the freedom of moving outside of farms. The collapse of farming as we knew it grew closer and, as a result, now in 2030, we are all vegans and cows became carnivores. Who would have thought?



Anticipation

"No ethics without imagination. Taking responsibility for the cities we are designing requires anticipation of the ways in which smart city technologies affect human beings, social practices, and societal structures. How can we imagine their potential influence our behavior, our social interactions, and the relations between citizens and governments? As elements of the Internet of Things, smart city technologies work on human beings in radically new ways. Rather than being 'used' – which has always been the default type of human-technology relations – these technologies form an interactive environment in which people are immersed. This implies that they give public spaces a profoundly new character. In times of Internet of Things technologies, things are not what they used to be – literally.

Getting in touch with the potential implications of this new, technological public space is a first crucial step in taking responsibility for it, and designing it in ethically responsible ways. And this is where ethics and imagination meet. **We need to develop methods to guide our imagination in such ways that it enables us to see things we could not see otherwise.** Theories about human-technology relations and the interactions between technology and society can provide such guidance. In such theories, sense-making often plays a central role: technologies help people to understand and make sense of the world around them. Smart lighting systems help to shape how people experience public space, and therefore if and how they come together. Traffic control systems disclose cities in dynamic ways for drivers, bicycle users and pedestrians, and therefore shape the character of the city. 'Citizen sensing' technologies enable citizens to measure and understand the quality of their living environment and to put issues on the political agenda. **Smart city technologies, therefore, are much more than just functional instruments. Only by using our imagination we can take responsibility for their impact on our lives and on the society we live in."**

**Peter-Paul Verbeek - Professor Philosophy of Technology
(University of Twente)**

Controlled behavior

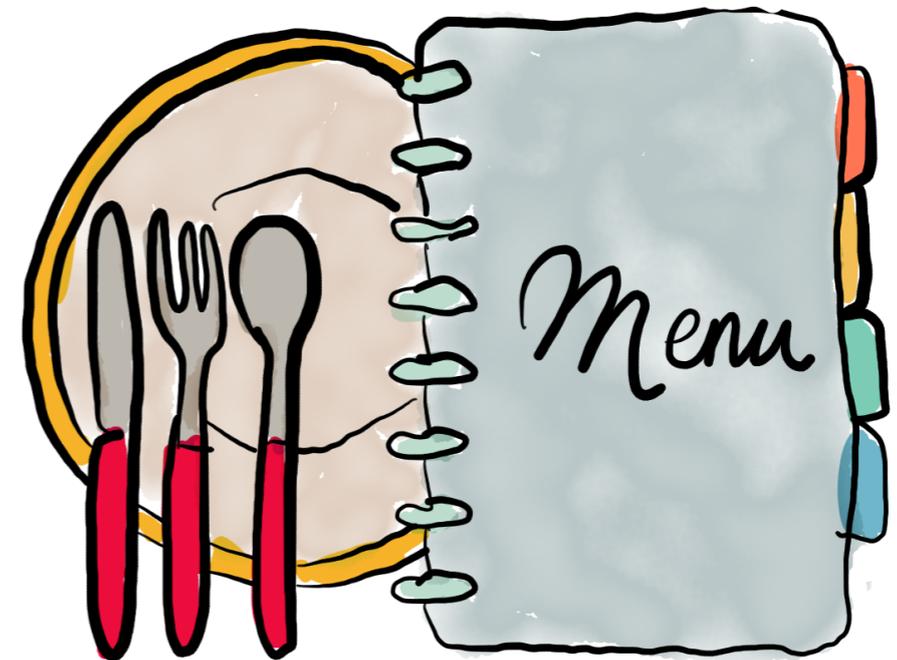
2069. The Netherlands has grown into one big city: Nedercity. The past decades have been dominated by the creation of harmony. Polarization came to an end. People have come closer together: literally and figuratively. Harmony can be seen in our practices in the material world. Fueled by sensors, people have become disciplined. Sensors nudge our behavior in all respects. Fines are no longer necessary. Take, for example, the highway (a network of roads is spread over Nedercity): all transport participants are guided in tight lines: the human error is blurred. Sensors steer our behavior in the right direction: literally and figuratively.



In 2035, most people don't work in an office building. With just one click, the workplace and the room you are located in transform into the place where you would like to work. From a beach to a rainforest or even a theme park. The only requirement for your workplace is flexibility. Within this environment, it is even possible to schedule and create maps that are integrated with the rest of your workday. Eventually, the map knows where you would like to work on a particular time and day.

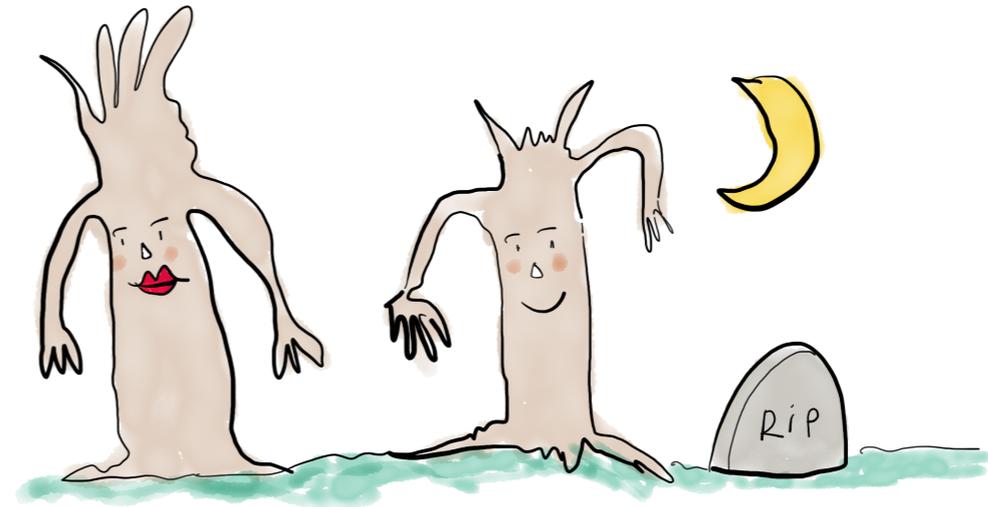
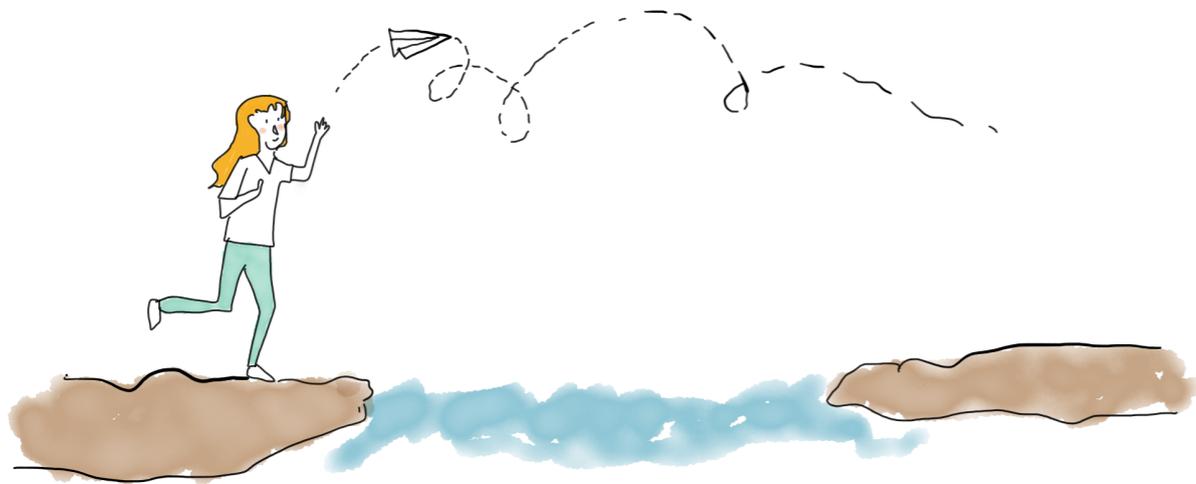
My favorite four dishes

In the year 2030, most restaurant staff has been replaced by automation. Restaurants often only employ one or two staff members, who mainly take note of the order in the restaurant. When I go to a restaurant, I often find myself ordering on my smartphone on the way there. My favorite restaurant, Shushiru, already provides me with a list of my favorite dishes. I realize that I always choose the same 4 dishes. Today, I am going to Shushiru with a friend I haven't seen for years. Once we meet up at the restaurant, I discover that my friend ordered the same things. We have little to talk about but relishing memories from past times. There are no other interactions in the restaurant. There used to be small talk with the waitress and sometimes, even the cook came by to greet us. Now, after we finished, I overhear other people who are eating the exact things as we did. Sometimes, I wonder if there are even more meals available than the 4 that appear in my favorite list.



Beaching media

In 2050, which is 30 years from now, we will grow in many ways. Social media will grow into a different offline experience that bridges the digital and non-digital worlds. For example, when you go to the beach and you want to share your creativity, you can make a sand airplane that floats and rides to the other side. You can share right away through social media.

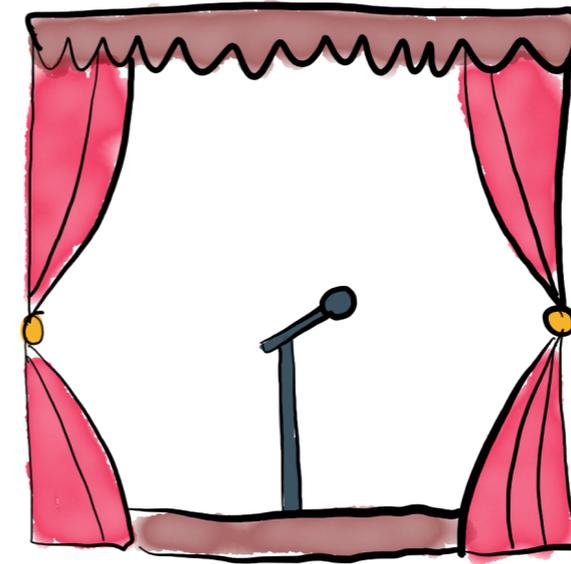
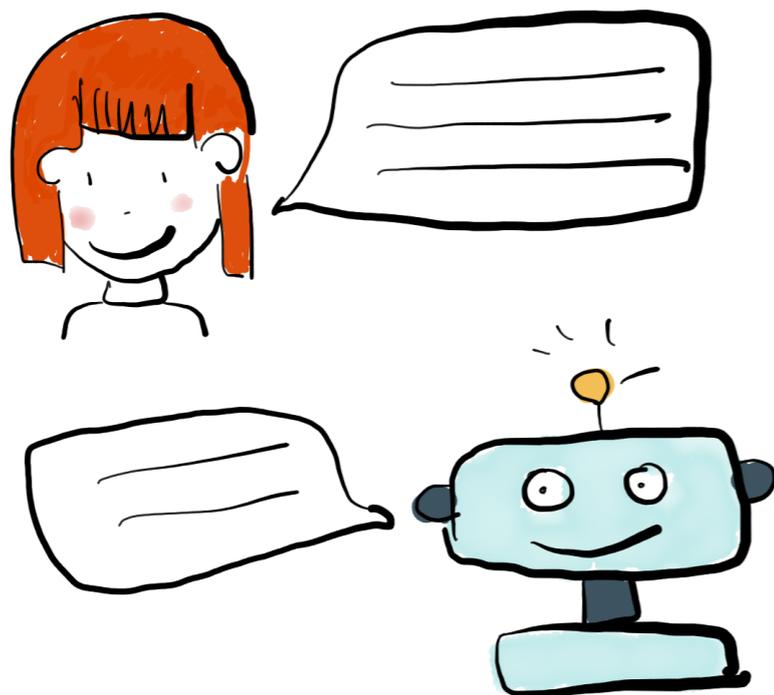


Graveyard, creating new life

Instead of having a graveyard as we have them now, trees will be planted for every passed person. This tree stands for a new life. A life for a tree, but also for the people that are still on Earth since trees make the air cleaner. By doing this, the people left behind can take care of the tree as part of their grieving process. By adding sensors, it can be checked if the trees need caring.

Chatbots to keep our patients at ease!

Our world is continually transforming to become more and more urban. An arising issue is that this increasing reliance on large scale hospitals that suffer from being understaffed. Hospitals have started to use chatbots to keep harmony among patients. Chatbots attend to daily, mundane tasks for patients such as checking in, out, asking (sometimes embarrassing!) questions without urgency, Through this technology, hospitals keep harmony among patients.

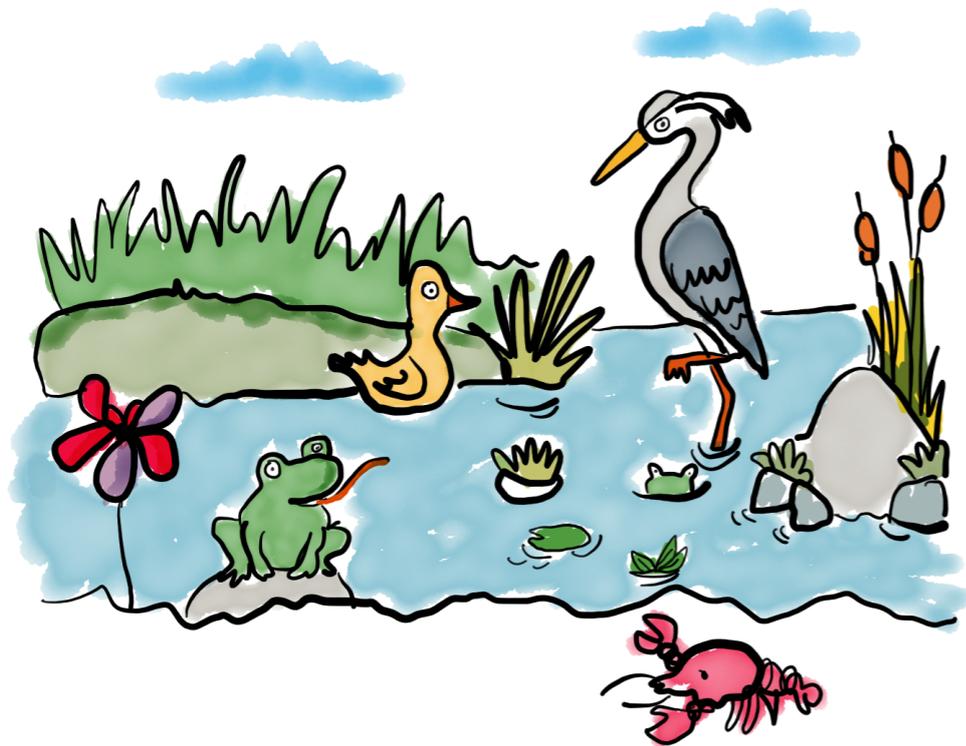


Memes to cope

The effect of gentrification has reached its final form. Airbnb's and the big corporates have taken over the city center, driving all of the Amsterdam natives to the neighboring villages. However, one restaurant remains, which acts as a hub where the natives can get together to share experiences, inspiration, and... jokes! On Fridays, the restaurant is transformed into a standup comedy club. Because having a laugh and joking around, creating members is a way to cope with the extreme levels of gentrification. Live show included.

The future

What would the world look like again when we go back in time ... I like to take you along in my dream. Nature is central here. What does our Mother Nature give us? What can we use for this? Work together, share. Basic life. Let the farmer go back to the city. Wake up early, go to bed early. Discipline! Romantic? Who knows, let's experience it together. Step-by-step. Starting now! Nice to see and experience that young people, there, are so consciously involved. It is the future!



When I grow up

When I grow up

I want to work being creative
to change power plants into something more
sustainable



and I would like to make and play cool video
games

I hope to change the world with my creativity



Privacy in the future

As the population is growing, we will need more and faster transportation. Simply put, free public transportation would be the answer but, all in all, you will have less privacy. Especially going to the bigger cities. What should we do to keep our privacy? Maybe we should learn to live with less privacy and grow into one sharing society.



Living in the future

People want to grow in the future by using the internet: post photos via social media or a visit websites for which they need WiFi. In the future, people will find it normal if there are network and WiFi everywhere. Hopefully, they will see things beyond Wi-Fi, and they will experience adventures such as: going to the beach or to the park. To be honest, this should not be forgotten. Because the world is not only about having more internet, wifi and social media, but also about outdoor experiences. So, go outside and experience your life!

Creativity is growth

Growth is central in the future. Not only growth in terms of technology, but also growth as an individual. The university is central to this. Education will turn into something that you determine as an individual. You decide what you learn, how you learn it and when you learn it. Chatbots ensure that you remain interactive during your studies. The chatbots make students think about the material on a different level. They are set to increase your creativity: the "outside the box". That is what the future will be about. Creativity equals growth.

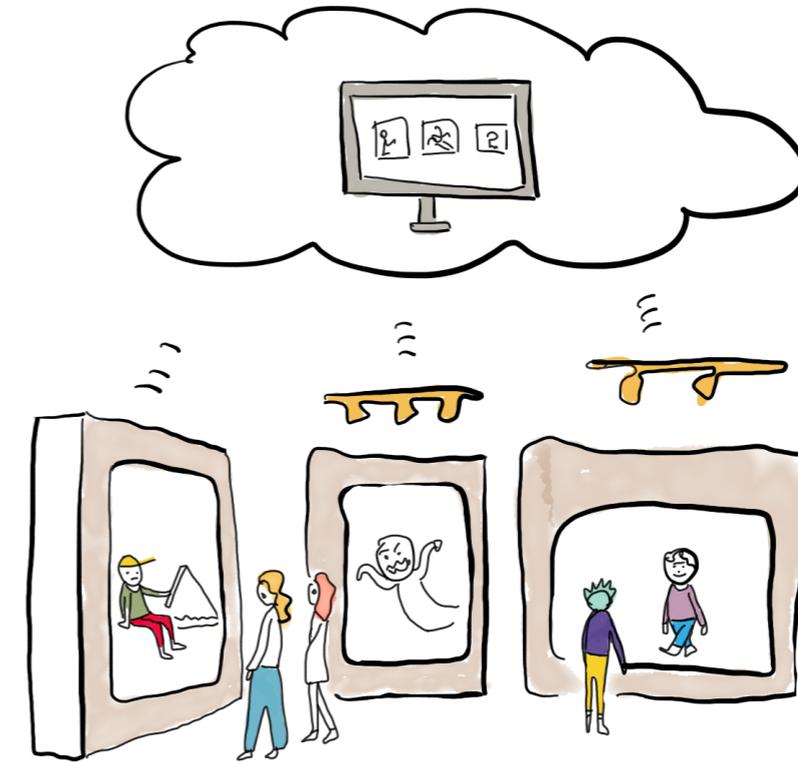
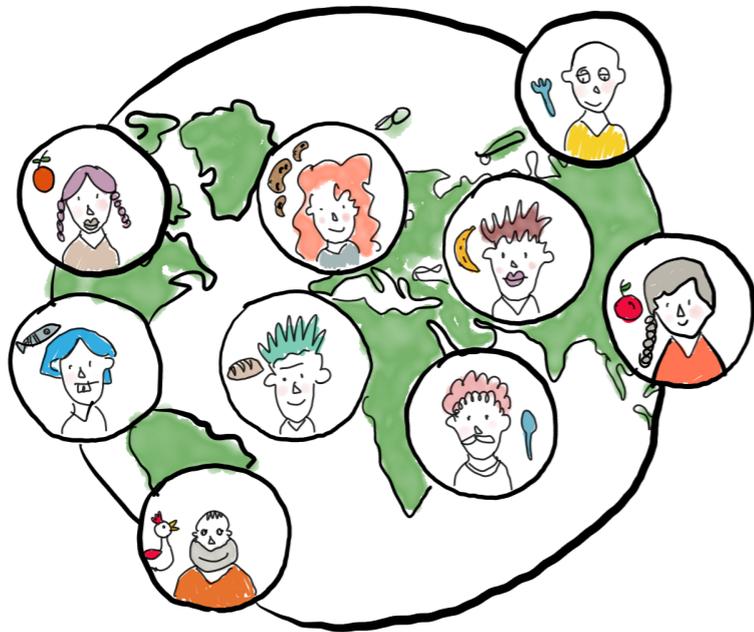


The virtual teaching assistant

In 2040, (university) education will no longer be bothered by large groups. Although the number of students per teacher has increased in the past years, the teacher does not experience any additional workload and the student still has personal attention and feedback. This is due to the introduction of the virtual teaching assistant, with artificial intelligence. This supports the learning process of students by asking them questions and stimulating their curiosity and teaching them how to satisfy this in a personal way.

Supermarket recipes, from the guy next door

The smart city of the future uses technology to let people experience diversity, and increase cities' tolerance and acceptance. Apps (Albert Heijn, Jumbo) from the supermarket suggest cultural experiences, from recipes to cooking styles. This way, citizens experience different cultures, creating 'common grounds' that can be the starting point to grow new relationships and foster diversity.



Behavior as an art piece

In a society where big corporations dictate the norms and behaviors of citizens, musea are now equipped with cloud computing technology. Exhibitions do not display pieces of art anymore, but real life images of peoples life-style. These exhibits and displays are uploaded to the cloud and people can access them from home. Corporates, concerned about climate issues, use these stories to trigger more sustainable behavior.

A sense of community

The collapse of some huge tech firms has helped to reinvent the role of technology within society. Technology is now in the hands of the people again, promoting diversity and used for new social inventions. One beautiful example is the use of touch screens in each outskirts of New York City. They connect the outskirts, creating one huge community fighting against inequality in their city.



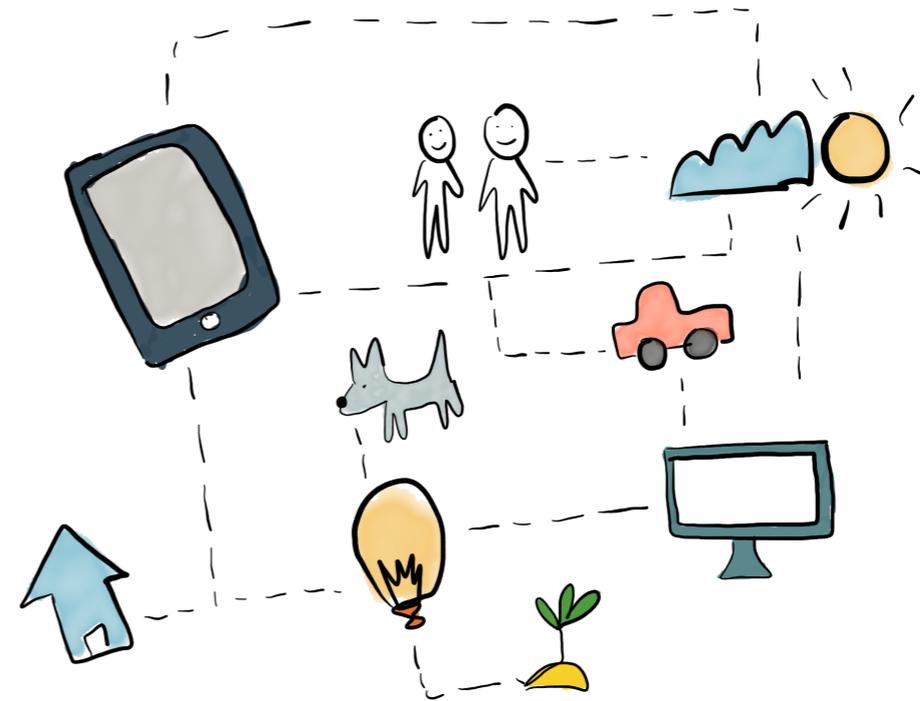
The dark side

The future world has many disciplines, where we have many technologies that seem to make our lives more convenient. However, new laws and restrictions control us. Augmented reality is everywhere, many people live only in the digital world and do not differentiate between fake and real worlds. Public parks do not exist anymore because people engage less with the community in the real world. Honesty is scarce since we can fake anything with the available technology.



New generation

In the smart city of the future, the vision and ideas of children are central. The starting point is their view of the world/city together with growth and innovation. Children also learn how to code at an early age to be able to develop a "smart city". This type of smart city does not only have to assume growth, computers, technology, etc. No. Friendship is an important part of it. What if ... the overarching motto behind the smart city is friendship?

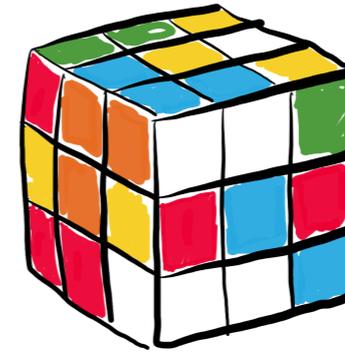


Living = working

People in the city boost their income by giving the university members (professors, students) access to one or more of the IoT devices they use. From activity trackers to energy meters, from the doorbell to phone. The data can only be used at the university, and for projects where the outcomes will be shared with everybody (obviously, anonymized). People that have very beneficial life-hacks are interviewed as heroes on national shows.

That's life

It is the year 2050 (obviously). The world as we know it in 2019 doesn't exist anymore. The population is increasing rapidly. The world lives in 1009800000 and more societies with one-room apartment-style houses. The rooms turn into a mini-apartment. Since global markets and AI have taken over our world, diversity is vast in these buildings (total Recall, 2015). Chatbots are the only method of communication that can be used to talk with 15000 languages.

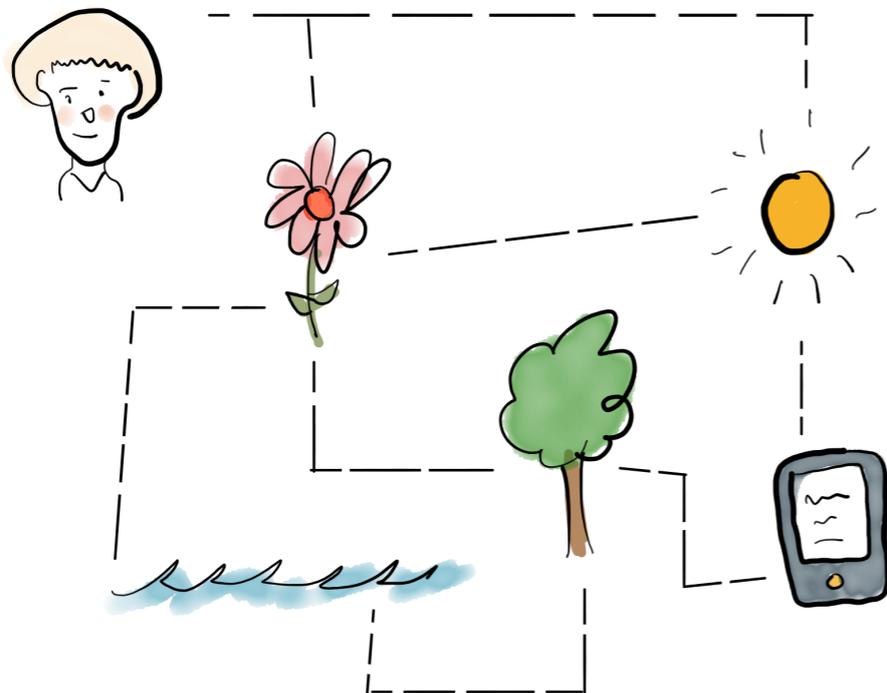


City hall moved to industrial area

After 7.5 weeks of disciplined lobbying and without knowledge of the citizens, it was decided to move the city hall to an abandoned warehouse located behind the industrial area of Maasdrochten. Thanks to the local news, which followed the mayors' car, the move was discovered just in time. This enabled 47.000 citizens of Maasdrochten to block the whole area surrounding the city hall, right before the election started. Despite the short notice, they were able to block the streets in a very creative manner with their cars: they had used the formula behind the Rubic's cube to position their cars in the right way. Thanks to this move, it was soon found out that the city council couldn't make strict decisions so, within one hour everybody got undressed and it all turned out to be a joke from Frans Bouwer.

Back to the roots

In the future, we want people to be more self-disciplined in relation to their mobile phones. Public parks must ensure real contact rather than digital interaction. Parks must be interactive and respond to the citizens' requests. Trees, plants, flowers, water, everything must contribute to connecting people. Playful, fun, discovering, relaxing, really out (there)!

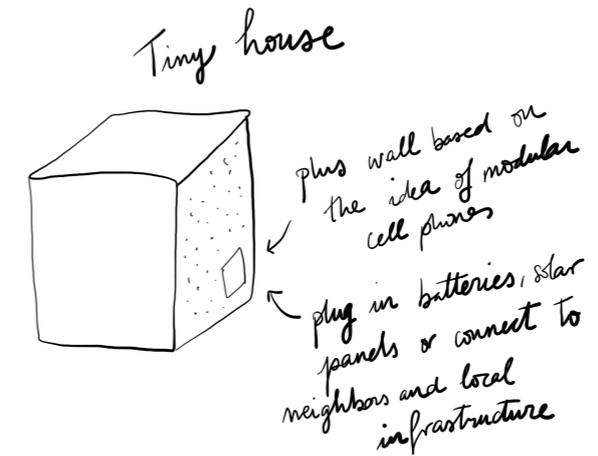
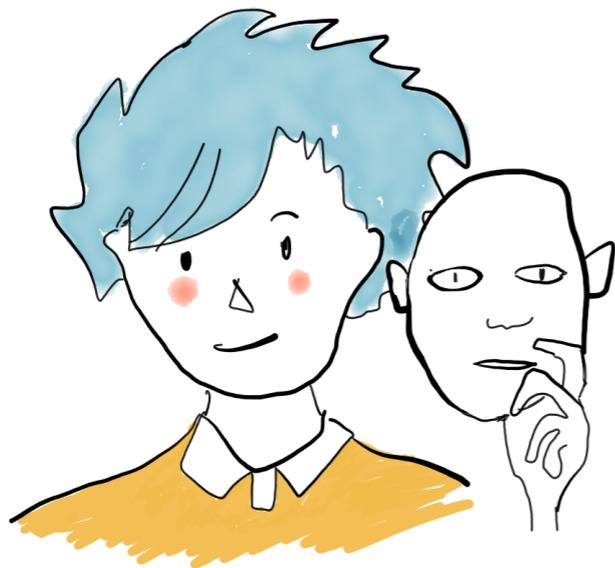


Transfer to open

Now and in the future, transformation is the key concept. Change and adaptation, you can shape it yourself. Through augmented reality, everything will come closer and will allow you to create ideas. People will meet each other in open houses and will form a community as a whole. Inclusion is the most important value, so it is important to facilitate meeting each other. Nothing is more interesting than learning from others.

Flying avatar

After 10 years, we are no longer used to leaving our house. That's why our avatars, linked to a specific app, will roam the city. To go to a store or to visit friends, the avatar will carry a camera so that she can see everything. The avatar will move with a drone so that she will be extra quick. If the avatar is not allowed in somewhere, this place should be blocked so that the drones are not able to enter. The benefit of this innovation is that you won't have to go anywhere yourself so that you won't waste any energy.



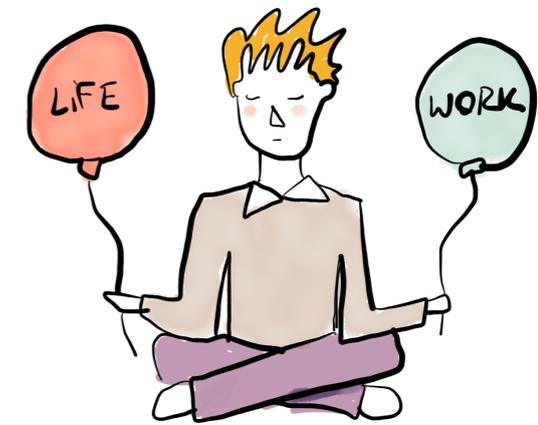
Modular living

After generations of owing stuff, we transition to a world where we are conscious of material use and sharing products and services. People strive for more flexibility and freedom, and no longer want to own a house because of all the responsibility, debt and immobility it entails. The city of the future is modular and changes with the need of the inhabitants. This flexible living is also being impeded in the way we build cities. Infrastructure for water, energy, sewage is built based on moving people like a large festival terrain. Houses can be placed on the 'grid' temporarily and people use shared services for food, hygiene, etc.

Borders and taxes

In the future, there are no borders. Every person can freely move from one place to another. Governments from the past realized that, if you give humans ownership of the whole planet, they could see their actions impact not only one country but the whole world.

Since not everyone agreed about having social security, this global government decided that, as everyone had access to a smartphone, everyone via an app could adjust on whether they pay for medical healthcare (so taxes go up and down), about using cards/public transport and also about co2 (same for taxes). Depending on what you use from the world resources, the amount of taxes you have to pay change.



My dream life!

My city 20 years from now would be a city with citizens who are disciplined in many ways. From discipline, they will become people with high thoughts towards the betterment of the society as well as people around them. The city would be so progressed that artificial intelligence will play a pivotal role in every facet of the city. Everything will be advanced: starting from regular work to anything as small as traffic signals. Any city to develop well, the workforce has to be organized and have a work-life balance. I dream of a city whose workforces will have work-life balance. Offices will be well equipped with technology and people will be friendly which will, in turn, make the work environment pleasant. What the world lacks is equality over a lot of things. People in the city will not have a stereotypical mind towards gender, color, religion or even social status.

Post-Cambridge analytica market

After the Cambridge Analytica scandal, the data-market underwent a full transformation. The access that large companies have to personal data will be more strongly regulated and restricted in the future. People will regain their autonomy, and will be able to sell their personal data themselves. This will lead to new market dynamics.

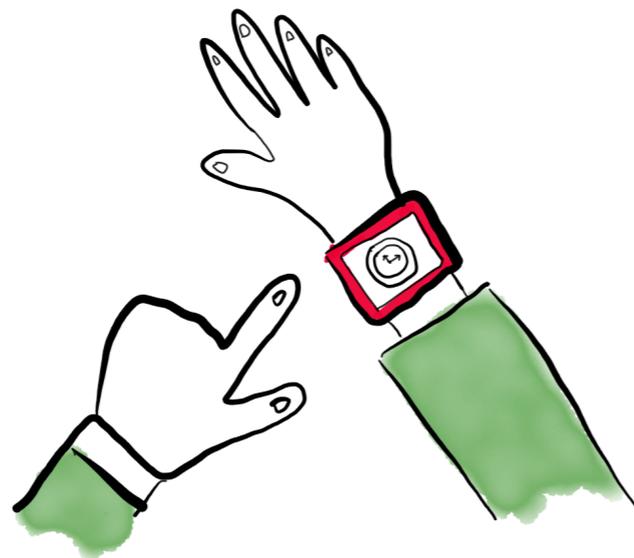


Utopic

There is a current debate on quality versus equality. Equality is impossible due to the different circumstances in which we were born. Yet, through tech development (biotech and so on), we can achieve this more than before. Wifi / AI will (perhaps) be connected to humans for this goal. The public environments will go along with these technological advances. Bus stops, schools, hospitals, etc. We will destroy part of our current society to renew and improve everything.

Something for everyone just in one place

Everything grows. We are growing. Our knowledge, the economy, and our future are growing. Everyone is different and that makes us special. A company needs to know its customers' wishes and demands. Very soon, people will wear smart wearables. For example, a watch with different functions. If someone in a city center gets hungry, the watch will measure that and will show you where the nearest restaurants are. These restaurants are specified by everyone's preference for food. The menu in the restaurant at your table can be connected to your watch, so the food you might like will glow up on the menu. One smart city based on everyone's preference!



Equality

In the future, 'diversity' is not a separate word, but it is normal for everyone to be in love, marrying and loving. Nothing is weird: 2 women, 2 men. Love = love. We are going to do this through social media / visual language. There will be more sites on Instagram, Facebook etc where people feel they can share stories and photos about how they feel. And in our country and the rest of the world people accept and celebrate who they are. This way, together we grow into a beautiful, honest society where everyone can be happy! (Same love)

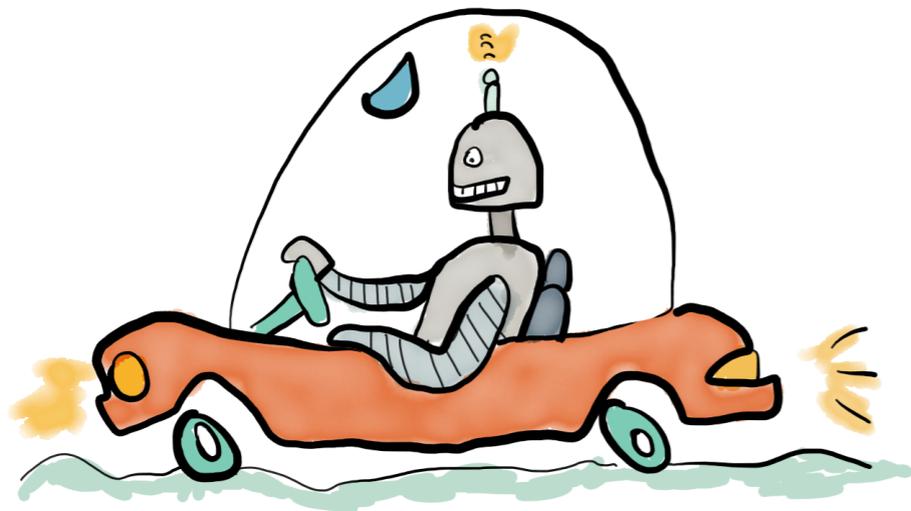
Inside joke

As the knowledge available on earth grew, so did the desire for knowledge for everyone. This is where google maps originated. From that moment on, everyone almost always had a map, so that it was no longer necessary to have social interaction if you didn't know the way. This is one of the things that has promoted people's individualization. For example, when people went to a sports center after the complete individualization of society, the experience was very boring. In the past, you always had people to talk to, but now it is quite monotonous since you are on your own. Fortunately, your phone can keep you busy with music, podcasts or audio books. Unfortunately, there is one thing that cannot be copied with algorithms: the lifting capacity of your friends in the sports center to make them laugh. That had to get yourself done. This is how the inside joke was created. A joke with yourself inside. But maybe that's not so funny, laugh inside yourself.



Efficiency highway

Society is transforming every hour. We are expanding our senses, but that's not enough, because humans are aiming at constant growth. Have you ever imagined a world where you will never ever be late for a meeting, work, school? In a perfect world, we will have smart highways, systems that with the help of AI will sense the busy, on-the-go lifestyles and navigate in flying autonomous vehicles!



Orderly power robot

Applications will run the world and decide who will get what kind of resources based on the level of creativity among people. The more creative and disciplined one is, the more power and resources she/he will get to live and thrive.

Back to our roots

I wake up in my tree house. I hear birds and the rain in the stream. We live in harmony with our surroundings, no haste, no stress. Respect for the environment in which we are a guest. My city is a jungle, a green and peaceful place.

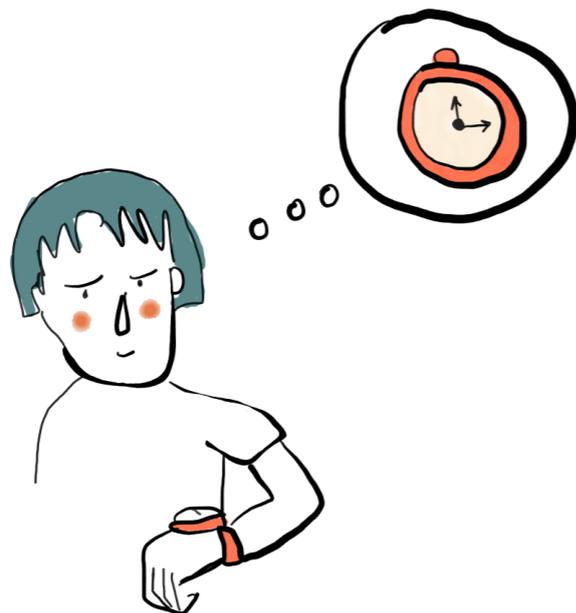


Meet the other!

The city has become more and more elitist. Housing prices are expensive and only the high-educated people who earn good salaries can live there. The connection with the people outside of the city is deteriorating ever more. This effect is enhanced by communication. By using digital tools, people reinforce their own thoughts and are losing sight of the values of others outside their own bubble. People don't value honesty anymore, everyone has their one truths and confirmed 'facts'. In this world, the public park is a place where you can still be human and meet others. The park is inviting to speak to other people outside of your own network and bubble. This park can be an example for all kinds of other public spaces.

Walking bus stop

Technology is so far advanced, that our way of transportation will change and everything will be within the flick of a touch. We won't have to wait any longer for the bus or be uncomfortable in the metro with a million people. The future is bright. There will be automated public transportation that doesn't have a set route and you can transport yourself in harmony with your mobile without the worry of time schedules. You won't be in a hurry anymore since our perception of time will also change.

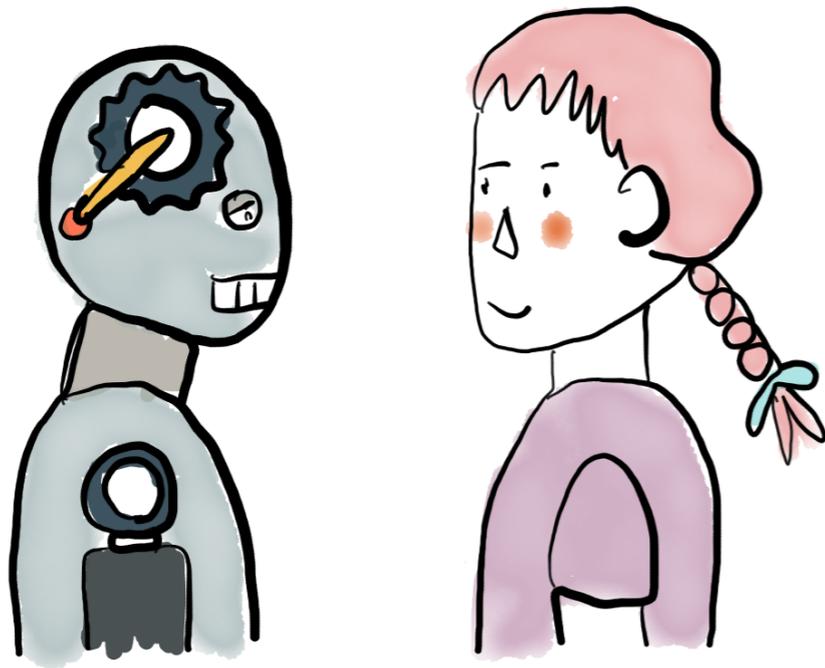
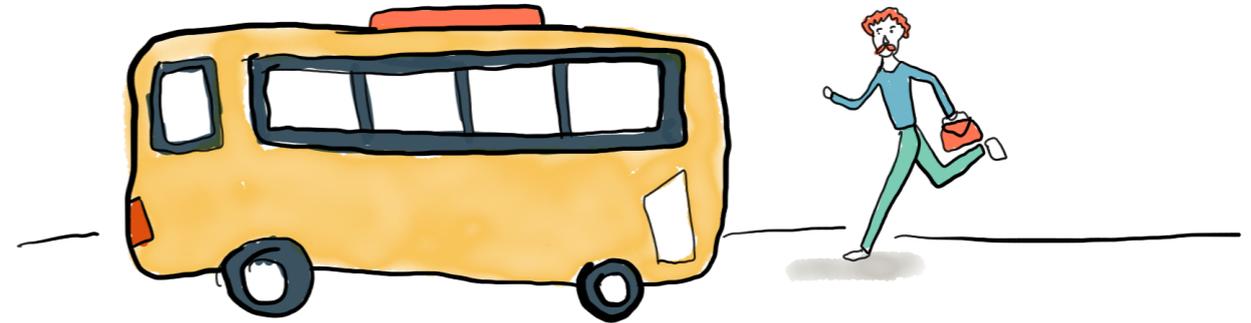


Our inclusive city

The modern city is framed towards healthy and vibrant citizens. Social inequality, accessibility and diversity are societal issues for which we need to find solutions. Social designers, together with citizens, are looking for connections between technology, the physical living environment and societal values. Technology, e-health and new forms of mobility are being applied in order to help all citizens to be self-sufficient and to be able to take part in all aspects of social life.

Death by automation

People are so used to convenient, comfy and easy ways of living, that decisions are mostly taken through their interactions with chatbots. Power-plants will be everywhere, since AIs (while will control the chatbots) will need more and more servers, more and more power. That will eventually cause the collapse of society.

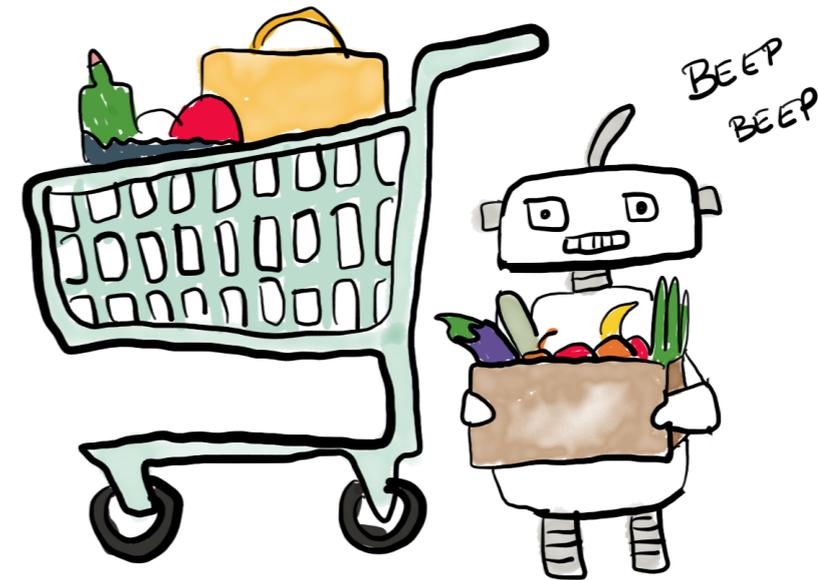
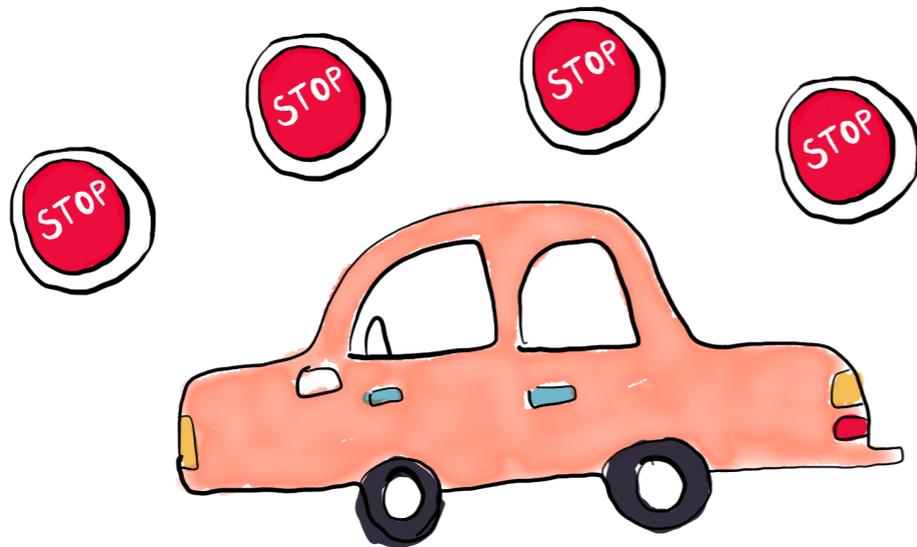


Flexible future

In the future, bus stops will be flexible, just like the walking elevator from years ago. In this case, the elevator won't stop, but you can just enter. In addition, everyone will have their own personal delivery drone. This will allow people to be more flexible.

The end of the holy cow.

The 'holy cow', the most successful concept based on transport ever, will find its end anyway. The space and humming and polluting of the car that is so loved by us all will have to disappear. Other concepts will have to be thought of. And we will succeed.



Shopping pleasure

In the future, grocery shopping will become easier due to innovative developments that are happening elsewhere as we speak. Eventually, the supermarkets will transform to a space where everything is automated. It would be great if grocery shopping could then be made more interactive by, for example, offering recipes or special stunts. This will keep or even increase the pleasure of shopping.

What is the role of imagination and storytelling in design?

"I believe that integrating people into the design process is the best way to gain useful insights when developing new products. They help me to thoroughly understand what they want, what they do not want and what I need to pay attention to. But to be honest, as good as it sounds, this is not always easy.

*It is a common problem that participants do not know how to clearly convey ideas or to be truly imaginative as they limit themselves with logical constraints. This requires me, as a designer, to facilitate a platform that participants can use to be creative and express their thoughts and wishes, allowing me to access that knowledge hidden deep in their hearts and heads. This is where I believe that **storytelling is an important tool that can help participants to be immersed into a new world and use newly defined constraints to be creative.***

Using storytelling cards results in unexpected combinations, which can be used as a reference to explore an unknown field. It comforts the participant as he understands that it is a fictional setting, meaning there is no right or wrong. The chosen words form a frame that he or she needs to fill. It helps the participant to be truly creative, and allows him or her to explain an idea not in terms of functionality, but in terms of a narrative that conveys thoughts and emotions.

Because being imaginative is not only about liberation and the freedom of coming up with literally anything – but rather providing people with a new perspective on things that gives them points of orientation. In essence, twisting their current way of knowing and thinking, so they do not rely on the rules that are set in their world to come up with ideas that truly speak to them. It does not matter if they are feasible, because it is my role as designer to translate their wishes into a design in the end."

Sefora Tunç- Creative technologist and designer- Student of Master Industrial Design and Engineering
(University of Twente)

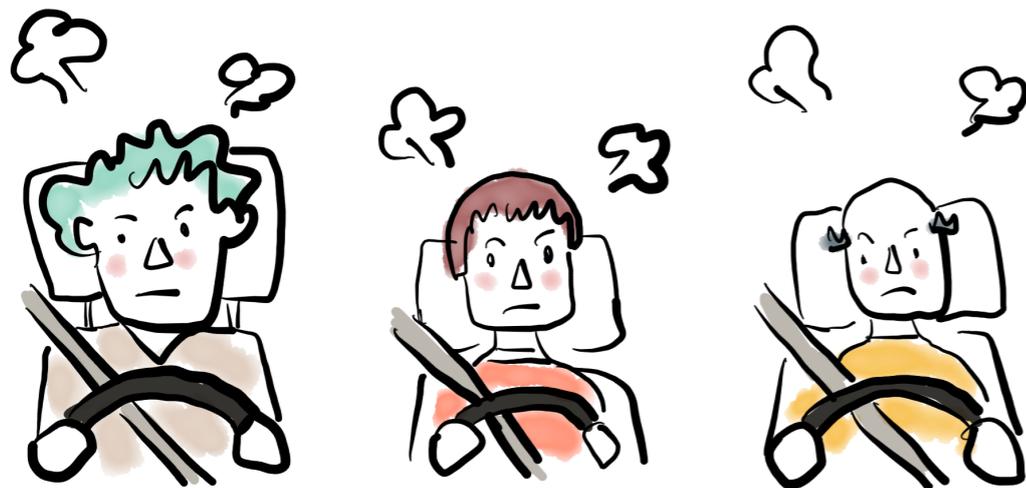
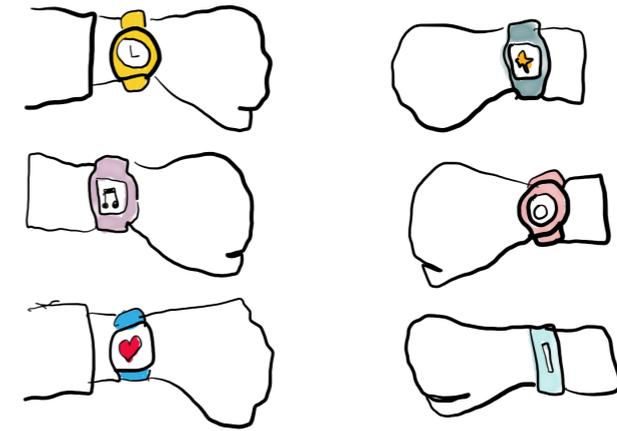
Solution development

Troubles in The Hague

Anarchy in the city... nobody is following the traffic rules. This leads to chaos, and you have to wear a harness in order to feel safe. Everybody is living in a cocoon and is lonely.

When discipline and rules return, there will be space for freedom, and to look around you and connect with others.

Right now the strongest or most loud rules, which is not freedom.



Grow together

People want to grow. Grow in knowledge, grow in wealth, and also become happy. Since we are all so insecure about ourselves, our life, our future, we are getting addicted to wearables. Things, that measure our live and give us guidelines for our behavior. But, we all know that addiction will bring us no good. Even those guys at the police station know that all people need structure, discipline and control. The good news is that wearables can make us aware of our own actions and consequences leading to self-discipline and helping us to reach the happiness we wish for.

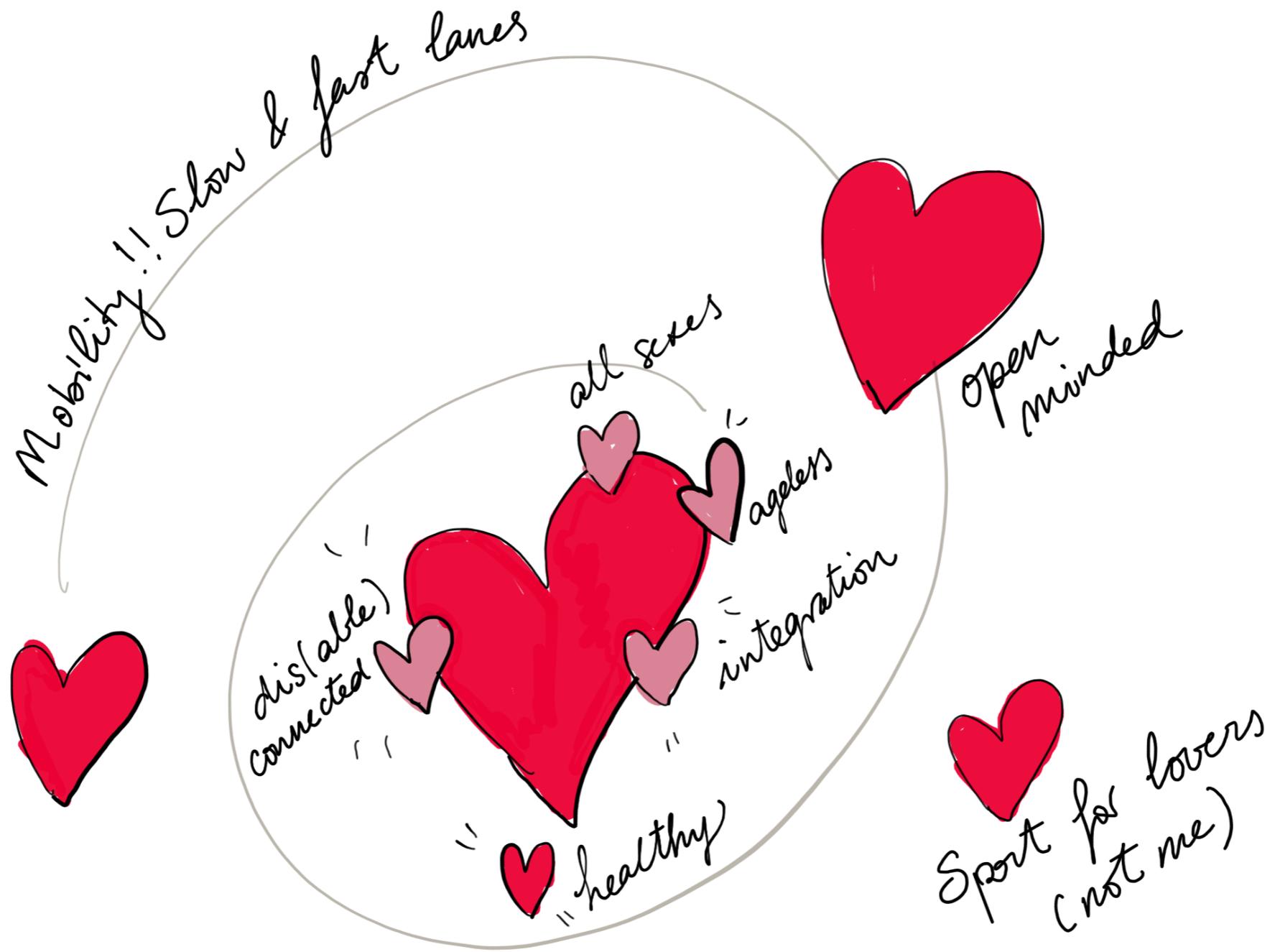
Grow together

The internet provides connection. All lines between people grow and grow. Out of desire for connection, we increasingly start browsing our computer. But help! We no longer see anybody ... now the lonely feeling is also growing. Let's go to the museum! Together! .



Reserve a seat

In the future, more and more people will visit events. To ensure that there is enough space for everyone, a digital stadium will be available before the event. This digital stadium will give an of the size of the event and this will help organizers to manage crowds and space.



Create relations between drivers of different cars

Car drivers and, if any, their passengers live in their own bubble while driving. This creates a relationship between them, inside the car's chassis and gears. Boundaries give way for selfish behavior on the road, also because there is almost no friendly interaction possible. At a petrol station, people from different cars could however actually meet and interact. Employees may facilitate interaction at different points for example by offering drinks or small food at a meeting point.



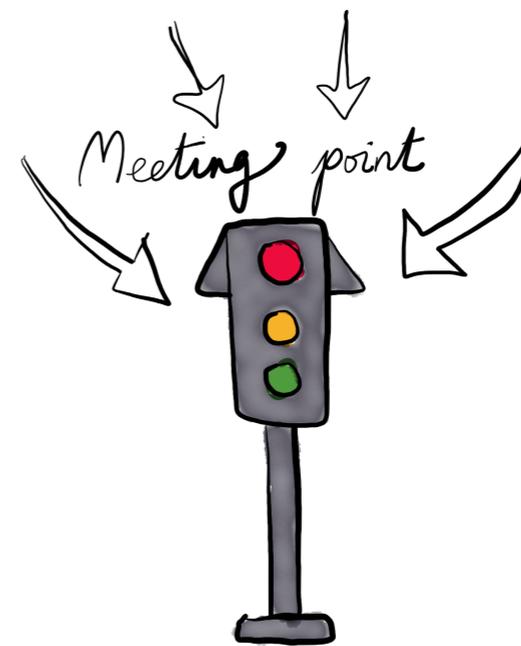
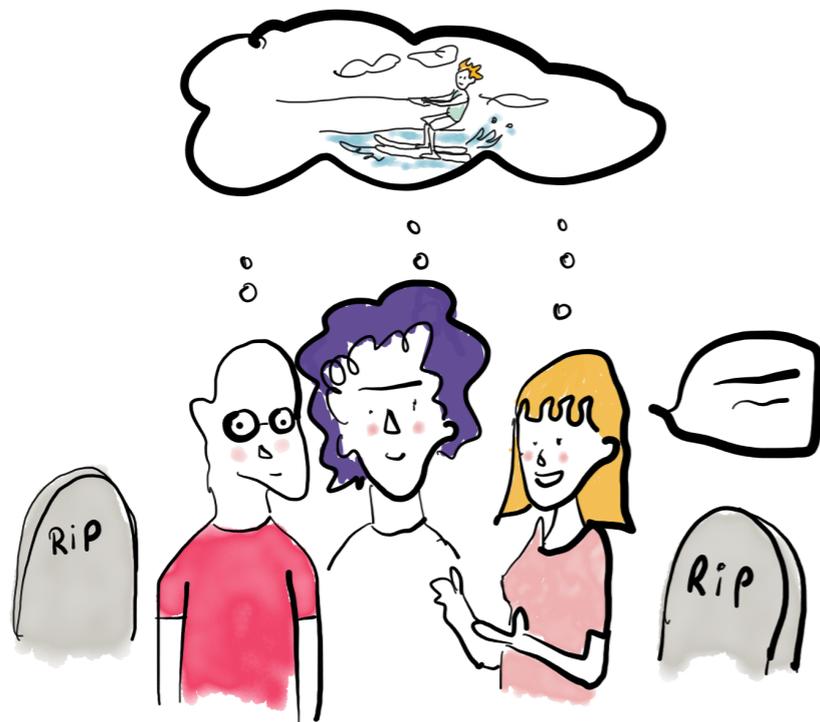
Transforming the culinary cultures

Suppliers, transporters, appliances, guests, data from the ingredients, recipes, preparations and experiences of the chefs will be collected to generate new ideas and concepts. All the data will be encoded with the culinary offer of the city thereby radically transforming cultural tradition, enabling more freedom for the chef, but also all the tourists and locals that visit its restaurants.

Reminder of humor full stories of loved ones

Graveyards are usually perceived as a sad place that reminds us of death. Being one of the most frequently visited places in one's life, visiting deceased loved one, you run into other visitors a lot. All share the same emotion of sadness.

Talking about one's death is a powerful remedy and a way to remember that person. Talking to others going through the same is a great way to deal with your feelings. Special wearables, promoting humorous stories about the deceased person with other graveyard visitors might help tackle the sad and maybe negative feelings.



From loneliness to friendships. Using a robot child

People feel lonely as if their world collapsed. When they feel life is worthless, they get a robot child or an animal robot. With an app. Through the app, they get messages and are invited to go out of the house. Two people with the same robots (both feeling lonely) get a message to go to the traffic light. There, they meet each other. The robot app will make contact with each other first, just like children do. In the meantime, real people get to know each other and friendships will grow. The app/robot will connect the right people thanks to all the digital knowledge and available algorithms.

We are more than a bus stop

We use our phone to track our bus arrival and departure time. With the help of apps, we can save time at the bus stop. You just go to the bus stop right before the bus arrives.

However, bus stops have become an empty space. Before, a bus stop could always be a place to have a conversation and interact with people. Not anymore. What about a mobile app that allows you to interact with other people or just to let you know that there is a small exhibition that you could visit 10 minutes before your bus arrived?



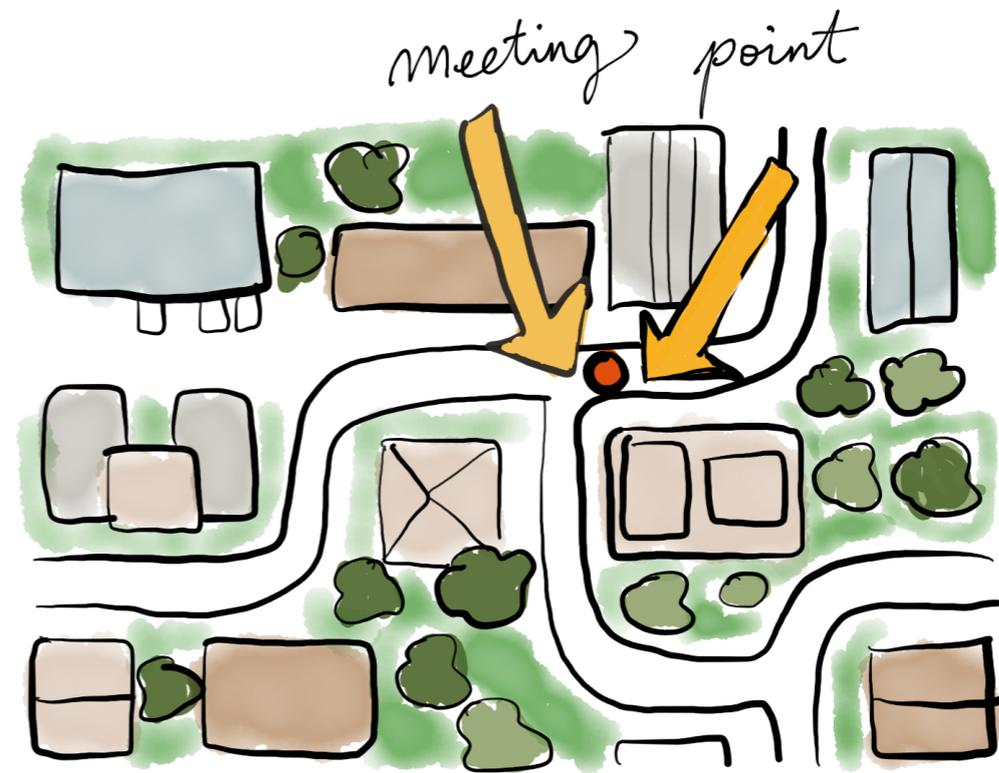
Sustainable supermarket app

We could develop an app to motivate people to buy healthy, sustainable products. The supermarket is set up in such a way that sustainable healthy products are regional products (better in the front, easy to access). The app keeps track of which products people buy, gives a recipe, and rightly provides information about their nutritional value.

Unhealthy products are sorted in a special "basket" in the app. The app provides information on what effort is needed to burn the "loose calories", effects on health etc.

Cinemwah. Getting the optimal experience out of an experience (or a life)

The need to live your life to the fullest, to get everything out of the experience is a growing phenomenon. Augmented reality touches upon this subject to add all kinds of special effects to the cinema experience. What used to be a simple projection on a white screen is now becoming an interactive experience with walk-ins of side-effects to “make the experience of a movie theater” even better. Equality of experience seems therefore dependent on the ever-advancing tailor-made, specialization of movies.

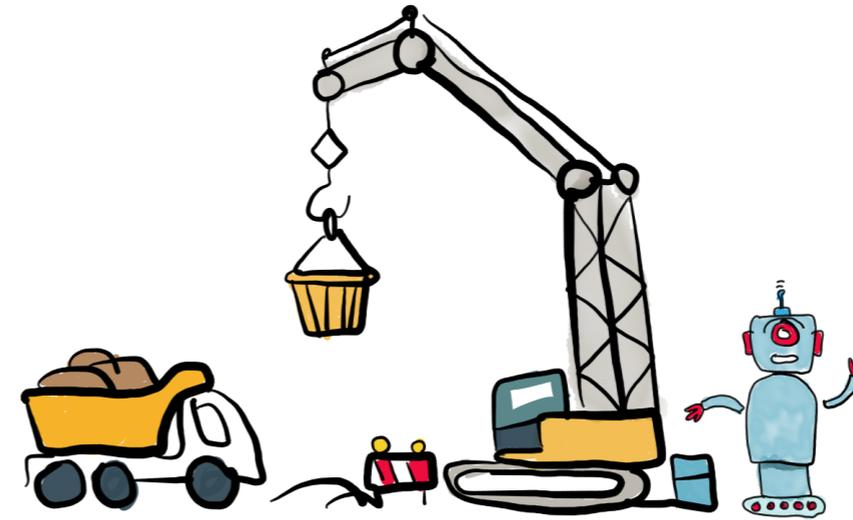
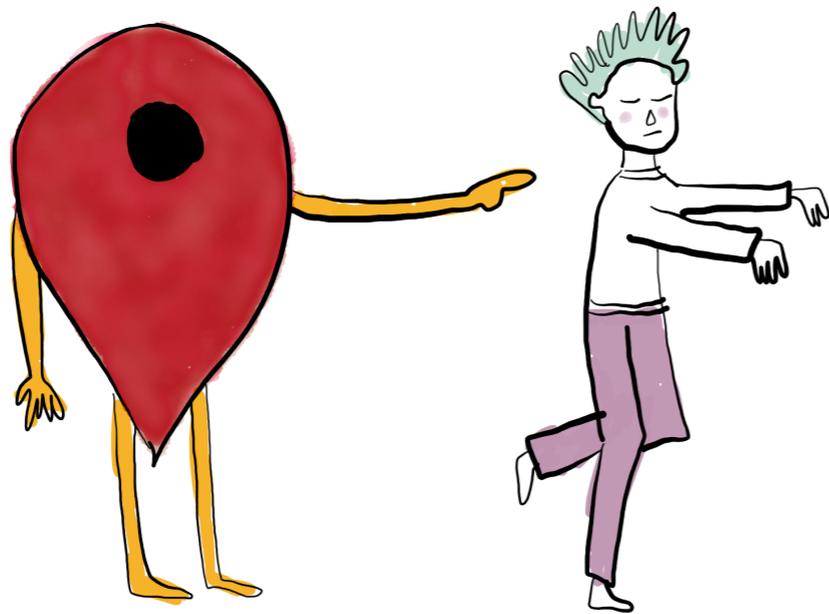


Momentary interaction app

As people are living in isolated situations in our current cities, with the help of technology, people can choose locations and means to interact with each other. Based on the loneliness level of the individuals, an app can guide the users to areas of interaction within a city, or the user can create new spaces for other users to come and join for moments of interaction, as well as discovering new parts of their city and learning from each other.

The loss of curiosity

Technology grows very fast, and people use the digital maps every second. We have stopped exploring the possibilities in the city and with our neighbors. People have stopped being curious and are controlled by maps. We are addicted to maps, to be secured. Stop being controlled by tech just for 2 days and go around the city, explore the city by walking. Stop being afraid of talking and asking strangers, the people in the city are nicer than you think.



Rebuilt shopping centre

The shopping centre collapsed. Before building a replacing mall, sustainability has to be taken into account. That's why all materials are being re-used. A special garbage-robot will be there to help sort litter from reusable material, and to clean up chewing gum from the street. The sides of the new building will be covered with moss, in order to create a carbon neutral space. The top will be covered with solar panels such that the building is self-sufficient in its energy usage.

Development!

Many regions in the developing world don't have a sewage system yet. It is very important that these regions get toilets which are connected to the sewage system. Internet will help them with this development. The sewage system can simultaneously function as a place to install the internet wires, which will help to connect people. However, this would require discipline from the people to actually use the toilets.



Solutions for everyone

By growing a university-wide database, not just for knowledge but also full of experiences, we can 'maybe' help each other achieve so much more, by effectively sharing doubts and the flexibility to access data. Through university-wide by smart apps we will learn from each other's doubts and come up with new creative solutions from different study perspectives.

Together under the sun

Our apartment buildings contain different rooms, goals and lives. When we arrive home, we quickly walk into our rooms and stay within our own lives within this room, without concerning about the neighbors. This happens because we are too busy with our own life, or because we have no common space. When there is such a common space, it is often a dark space. By creating a communal space with lots of windows, it will become more inviting. A large, light and green space that offers a peaceful and harmonious environment for people to meet. Since people will spend more time in this space, the lights in their rooms will stay turned off. The communal space will serve as a living room to bring people together and to offer them a nice space to work or study. By putting solar panels in the furniture, energy can be created and used to light up the rooms at night.



Food = good & sharing = caring

The chef prepares food, gets in his car and drives it to a location with lots of people. There, his car transforms into a small and mobile restaurant in order to enjoy food together.

Create walking routes in the city

Create an app for people to walk in the city. They can add elements to improve the walking tour and create a more lively tour for people, or more quietness, music, contact places. The app will collect ideas and make improvements every year based on people's ideas.



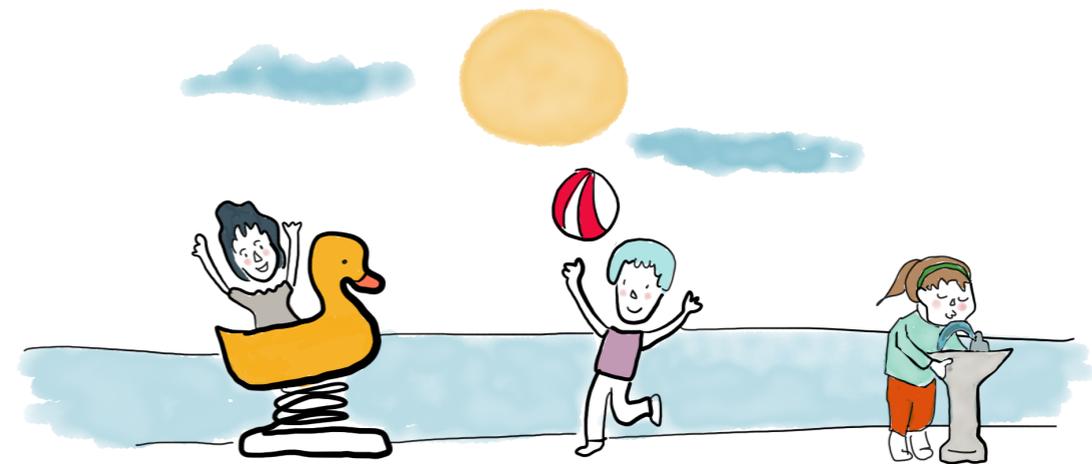
Harmony between supply and demand in the supermarket

In order to reduce food waste and create a more efficient flow of goods, supply and demand will be matched in the supermarket. Each food-wrap contains a sensor that reads the expiry date. All this expiry dates are collected by the general databank of the supermarket, which sends signals to the following 3 systems:

- Employees know what products to take out of stock
- Customers can buy cheaper products as the expiry date comes near
- Third party providers (eg. Too good to go) can use this data to collect excessive food.

Optimizing urban energy consumption

Design urban street/bike line infrastructure that optimizes energy consumption so that the street lights only turn on as someone approaches them. Based on a baseline of historic energy consumption, you can estimate how many people bike and follow trends of behavior and social habits. This strategy allows for having a creative way to measure certain habits growth or changing levels.

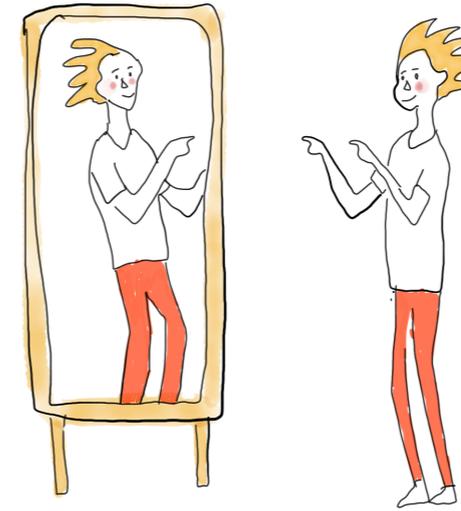
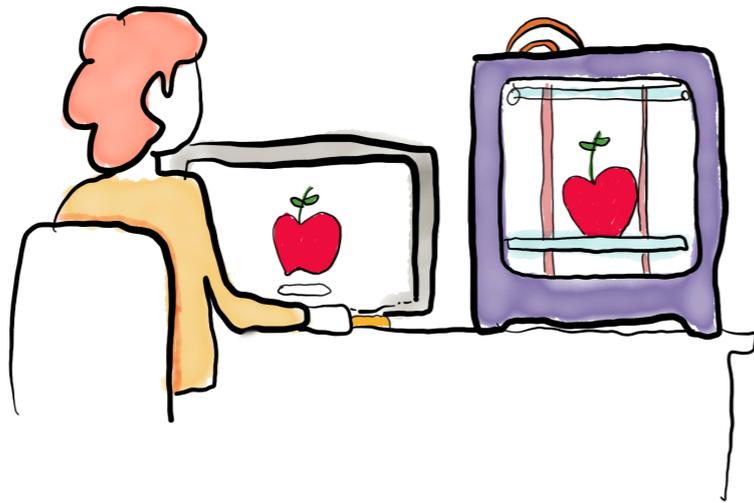


The use of purified river water

Our vision for the future is: children and people can recreate (Playing, jogging, cycling, sunbathing) in the floodplains of the rivers. With the touch screen of their telephone they can operate faucets and fountains where purified river water comes out. The electricity is processed by solar panels. This saves plastic from soft drinks bottles and we drink healthier.

3D printshop

The city is already working on a transformation. Sensors inform the supermarket about what we will buy. Fortunately we have a 3D printer at home, which means we don't have to buy anything.

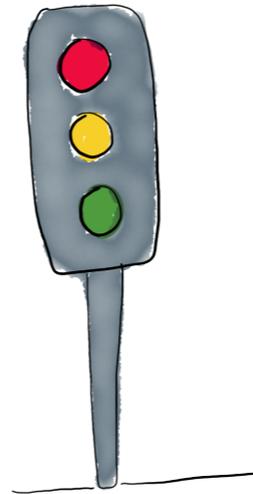


Human nature

It's good to embrace discipline. To monitor yourself on a daily basis, to know what is going on, to turn your body & intuition into a sensor. So you can be an example for 'the market' and create more understanding about human nature. Understand the market, attract clients, receive money and get your 'freedom'. Freedom is a play between the inside & outside world.

Tile through play

A game in which friendships between traffic lights confuse the city and create a great deal of traffic chaos. Children will learn in this game and negotiate how to improve the city!



Dad jokes

How about an interactive/intelligent wall in the city that helps dad to create jokes so he can impress his children?



The vertical evening experience market

This market is open at the time normal supermarkets are closed. They start at twilight. It is really accessible in a led light that seems to be from a fairytale. Vegetables grow here and you can harvest them too!

The Netherlands 2.0/It has been enough!

Climate change is telling us what we cannot do and what we should do less. Less meat, do not fly, etc. But 'no' and 'less' do not offer a future perspective to move towards. What if we had a platform, a design document, created by everyone or at least the creatives & visionaries, which contains the 'yes' and 'no's' for the future? Well here it is...

This was the point of departure for the platform that brings together smart city initiatives to form 'smart NL'. Various smart city mayors got together in November 2018 to create their vision. Besides, they also invited citizens (/representatives), consumers, companies and national institutes, and started a large Wikipedia-like platform.

Amongst others, there were the chapters Transport, Food, Energy, Health, Textile & Personal wellness. People could share their vision in words, images, enactment: what suited them best.

The chapter about Transport contained a vision for the highway A4 between Leiden and The Hague. The windmills present there were used to create a bicycle-highway, supported by less energy, such that cycling was a feasible initiative. Instead of 100% cars, busses and trucks, they aimed for 75% bikes, 20% bus and 5% carbon-taxed cars. More exercise, better health and more oxygen.

Instead of fly-vacations, there was a new initiative. However, people are still looking for a good idea. Holiday is about taking distance from daily life, exploring, new impressions.... A creative session was organized to answer the question: how to take distance from daily life?

Since this platform was visible, not only in written words but also in images of artists, experiments, theatre shows, etc., this marketing led to an attractive image not only for policy makers and engineers, but also for citizens, consumers and business. Together we moved, we evolved towards a smart NL. A Netherlands 2.0 where it's been enough.



'Imagination is the beginning of creation. You imagine what you desire, you will what you imagine, and at last, you create what you will.' – George Bernard Shaw

