EMPOWERING SMART CITY RESIDENTS THROUGH LEGIBILITY

APPENDIX –

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"My formula for greatness in a human being is amor fati: that one wants nothing to be other than it is, not in the future, not in the past, not in all eternity. Not merely bear what is necessary, still less conceal it — all idealism is mendaciousness in the face of what is necessary — but to love it."

–Friedrich Nietzche

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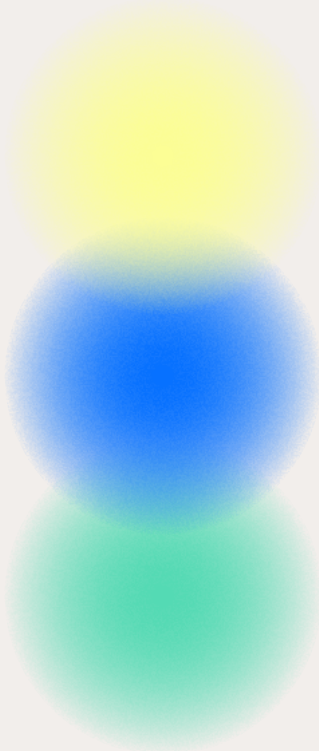
A.

Interviews

INTERVIEWS

Research Goal
Understand municipality's values, innovation process and use of scancars.

Research Questions
How do municipalities implement smart technologies in the city?
What technologies are municipalities currently using?
What ethical measures or guidelines are used for these projects?

Method
Semi-structured interview
Generative tools

Interview Guide

Introduction
- Introduction to the project, goal of the interview, structure and time of the interview
- Ask permission to voice-record the interview

Questions
- Start questions session

Generative activity
- Journey map of the decision making of innovation projects within municipalities
- Stakeholder map

Wrapping up
- Ask if they have any doubts and if they would like to hear more about the project in the future.

Questions

Interview Date:
Name:
Entity: Department:

Introduction
Tell us about your background:
Job position:
What is the role of your department:

Municipality
- Is there any department with which you interact more?
- How does new innovations spark?
- Can you give us an example of how your department is employing smart technologies?
- Who decides that a Scancar should be used?
- What does the municipality value? Max revenue collection or well being of citizens?
- Privacy departments?
- How do municipalities introduce a new project?
- How are you employing the Scancar?

Citizens
- How are citizens in general involved with municipalities?
- How are citizens involved in the decision making?
- What actions are you taking to protect citizens (ethical issues)
- How can citizens complain about Scancar or technologies like it?
- Is there a tool that enables citizens to interact with the municipality? An app?
- Can you tell us a bit about your department as to what kind of KPIs you set with companies that you work with.
- How would anyone go about suggesting a change to the existing technology?
- How does the municipality introduce a new project?

Exercise
Using post-its, please tell us how the decision making of innovation projects happens within municipalities through time. Allocate them depending on the department's influence or interest.
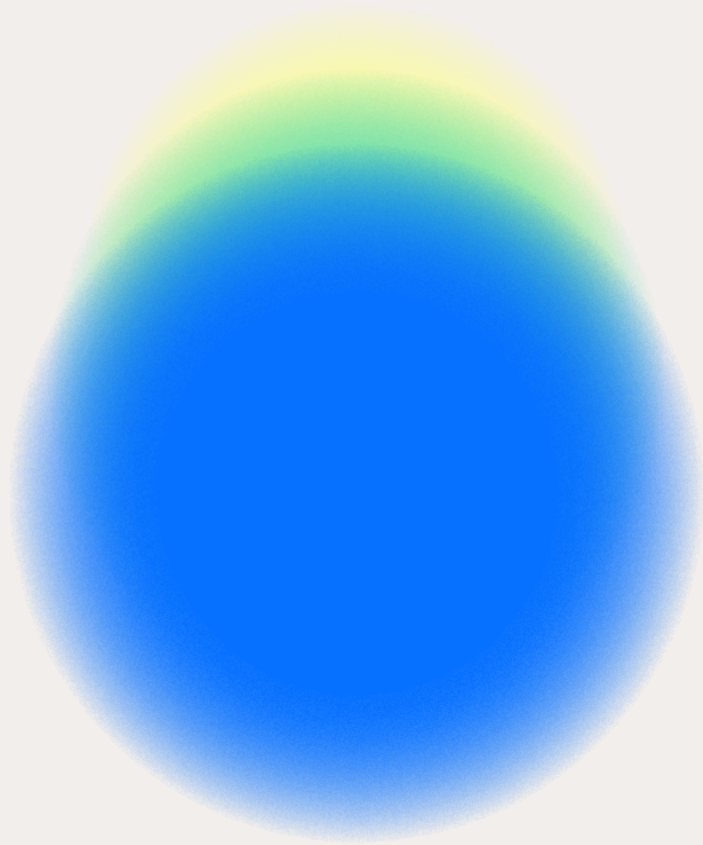
Material for Interviews

Journey Map Template

Stakeholder Map Template

B.

Generative
Sessions

GENERATIVE SESSIONS

Research Goal
Understand citizen's perspective on public space and the use of smart technologies.

Research Questions
What activities do citizens perform in cities.
What do they value in public space
How do they feel about smart technologies

Method
Sensitizing booklet
Generative tools
Interview

Session Schedule and Activities

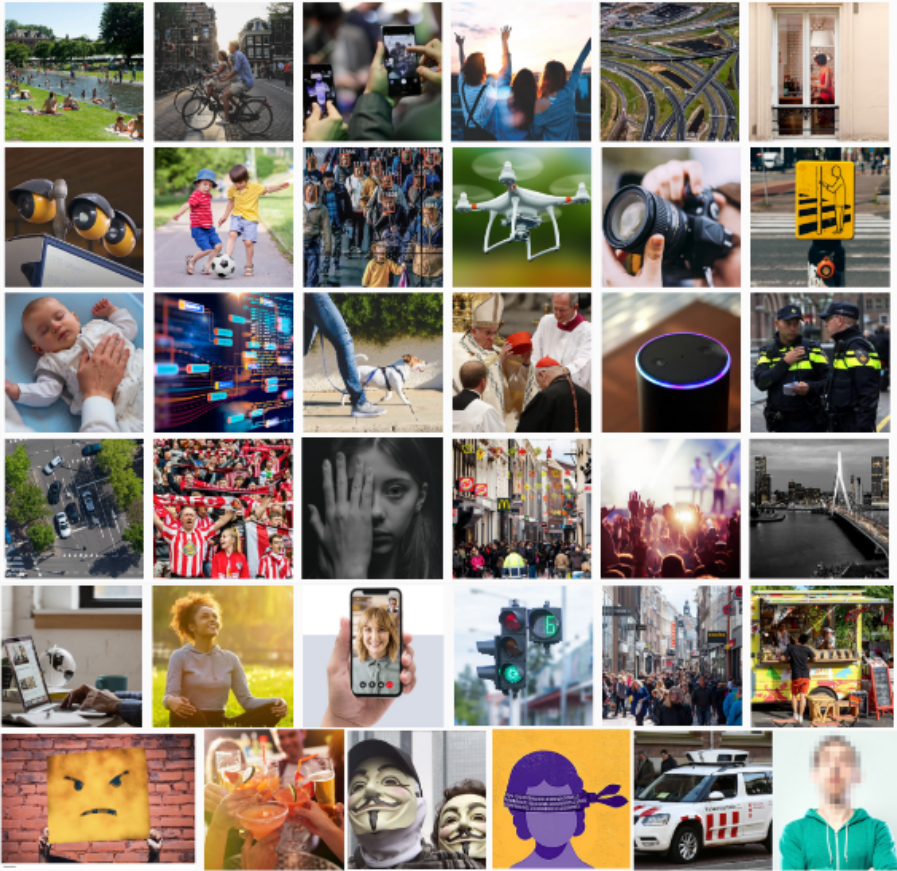| Time	What	Aim	Instructions
10 min	Introduction & Icebreaker	To know each other & talk about the sensitizing booklet	Introduce ourselves, goal of the session introduce themselves. Give them instruction how to introduce themselves Tell about consent form - Session will be recorded
5 min	Sensitizing Booklet		How was it to fill the sensitizing booklet
5 min	Instructions		How to 1. manuevaring the platfrom 2.Making first collage 3. Ask questions 4.Desired world
15 min	Collage making	Get them to share as many relevant stories as possible regarding their digial experiences in their cities	How do they currently see their cities, how do they feel about it. Focus on the technologies that you see in your city.
10 min	Ask them to share their first collage	To know desires, values, like, hate about the current world	Ask them questions about their collage. Explain their collage, why they picked those pictures
10 min	Collage making		Introduce Scan Cars, go back to the stories, a future where the use of scan cars is expanded for many different uses. How would you feel about this future scenario? How do you picture your city in that situation? describe it with a collage.
10 min	Share second collage	How much do they know, want to know, what are the things they care about, things they don't care about etc.	After the session everyone meets again
5 min	Reflecting		Do you have any questions for us? How did you sign up for the session? Any input you have for us?
5 min	Feedback/ Wrap up		Thank everyone for their time, Ask if they will be interested to be part of a bigger session in the future

Generative Toolkit for Collages

Sensitizing Booklet

THANK YOU FOR HELPING US!

This booklet is intended to put you in the mood for next week's session. There are a total of 5 assignments spread over 4 pages.

We recommend that you fill in the assignments over at least 2 days. For example, on day one you can complete assignments 1-3 and on day two assignments 4-5.

There are no wrong answers, so fill it in from your own perspective.
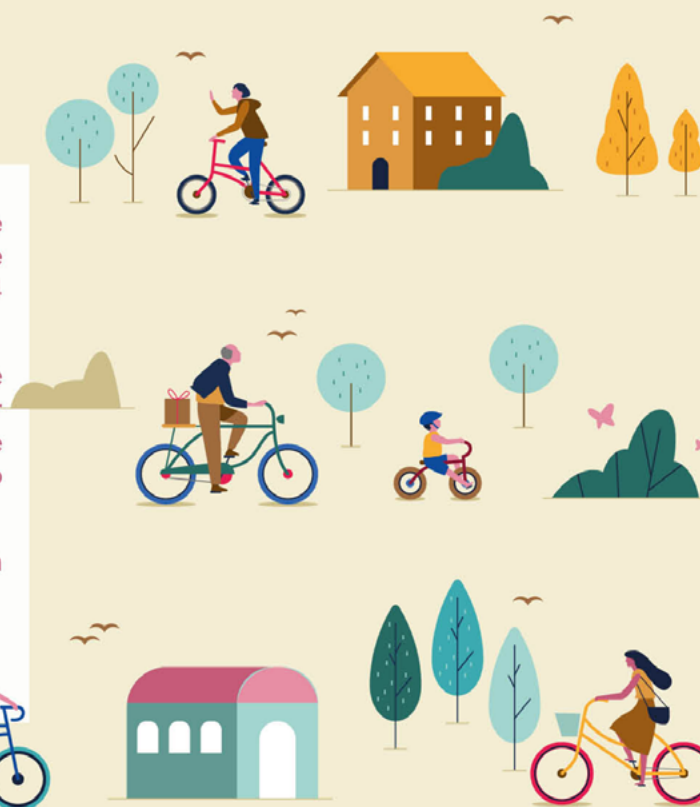
1. **We would like to get to know you better!**

Name ....

I live at (city/neighborhood) ....

Please describe your neighborhood. What do you like most about it? What can you find in there? How does it look like?

....
....
....
....
....

2. **Favorite activities outdoors**
Please circle all the activities that you do recurrently in your neighborhood. Have any other? Please write it down here: ....
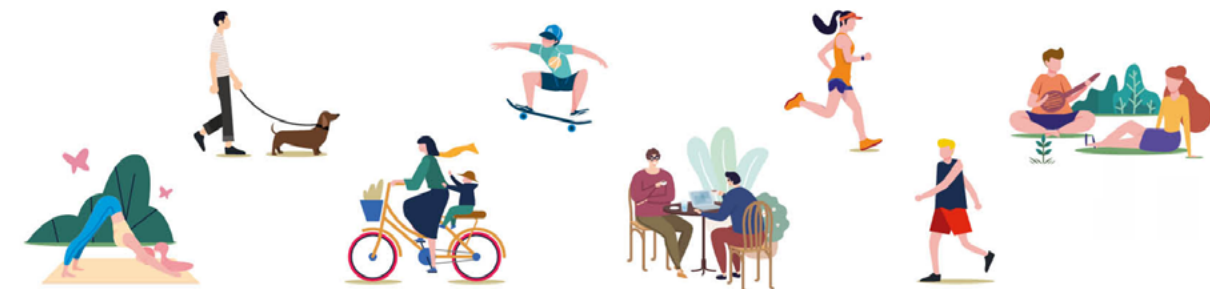
3. **My daily journey**

Step 1: We want to know how you experience the city, before coronavirus of course ☺ Please write or draw in the timeline what your daily journey used to look like from the moment you leave the house, till the moment you come back. (Cycle/walk from A, stop at Y, spend time at Z)

How it might look like:

cycle to work at Nieuw Markt   take a walk at X street   stop at the AH in my neighbor-hood

Park my bike in X street ✕   stop at my favorite coffee place ○   cycle home from Dam ✕

leave home

come home

Step 2: Look back at your journey. Mark any positive experience with a ○ and any negative experience with a ✕

Step 3: Choose one positive experience and one negative experice and describe it below.

This was positive:	This was negative: ....
because:	because: ....
and I felt:	and I felt: ....

4. Me and public space

What do you find important about public space? What do you like about it? Indicate what you find very important close to "me" and further away what you find less important. Please name at least 3 things per layer.
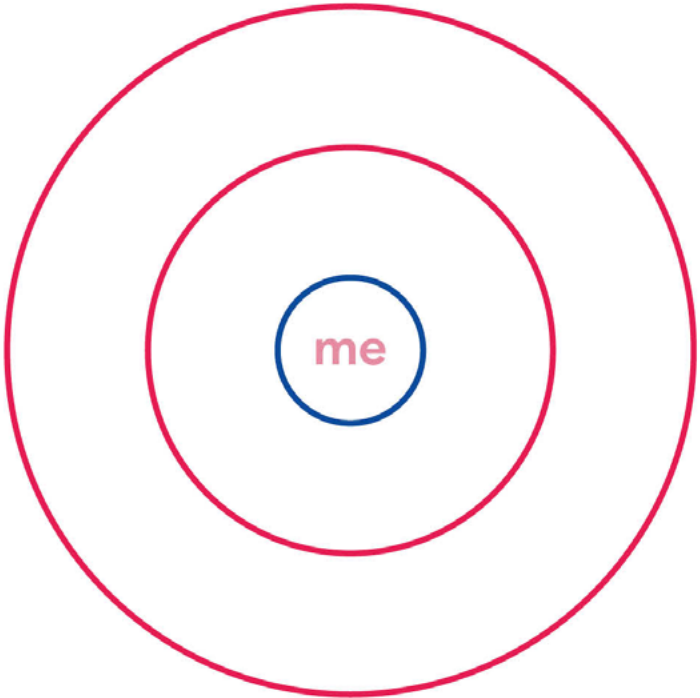
Think for example of attributes, green areas, services, shops, urban furniture.

example:

noise
trees
me

me

5. Cities becoming smart

It looks like the future of cities is becoming smart, after all, it helps make public spaces more comfortable, responsive, and efficient. Digital technology is all around us, consider your daily commute: you could encounter security cameras, traffic cameras, smart lighthing, bike lane counters, Wi-Fi access points, among others.
What do you think of cities moving in this direction? Can you relate to this? Please answer the questions belows:

CARGO DRONE　CCTV
SMART INFRASTRUCTURE　SMART BUS STOP　WI-FI STATION

What excites you about smart cities?

What worries you about smart cities?

6. Mini Stories

Please read the following two stories and answer a few questions at the end of each story.

Painting Day

Jan is a 28 years old newly married man living in the centre of Amsterdam. He works in a company as a management consultant and has a busy life. Emma, his wife works at a florist shop nearby where they live. Jan and Emma have been planning to paint their home for quite some time now and they finally decided to paint it together the coming weekend.

The following Saturday morning, Jan drives by to the nearest art supplies shop that he knows will have all the things he might need for painting. At the shop, there are a few paintings that catch his eyes, he looks at a few of them and decides to buy two paintings that might go well on the painted walls.

On the way back, he realises that he will have to stop the car just outside his home near the pavement before he can park at the parking garage to make the unloading easy. The house that Jan lives is on the main street and is generally buzzing with people passing by so he knows he will have to be quick about unloading everything from his car so as not to cause any inconvenience to anyone. When Jan reaches his home, he gets out of his car and remembers that he must turn on the unloading option on his parking ticket app so that if any authority passes by and scans his cars number plate they will know that the car is temporarily parked in that location and that the owner will be right back at his car. When turning on the unloading option, three choices are presented to him 5 min, 10 min and 15 min. He chooses the

5 min option as he will not require a lot of time to unload everything. He grabs everything, puts them in front of his house entrance and walks back to his car.

While driving his car to the parking garage he reminisces about last year when he was unloading something just like today and received a fine for it by a passing Scan Car. That's how he got to know about the app which was suggested in the mail that had the fine and the picture of his parked car. He had mixed feelings about the app. Just last week, he was in a meeting at his client's place when he got a notification on his phone. It had a picture of his car with a message underneath that read parked wrong, upon opening the notification it had the link to how he could pay his fine. He wasn't convinced that his car was parked wrong so after his meeting, he went and took a picture of his parked car and uploaded it on the contest decision section of the app and after some time to his surprise, his fine was detracted. Jan finishes parking his car and lets these thoughts pass by and now mentally prepares himself for a long weekend of painting.

"Unloading my car: Back in 5 minutes!"

Unloading my car: Back in 5 minutes!

Please briefly explain how the Scan Car system described in this story works:

What aspects of the Scan Car system do you like and what aspects you don't like?

How would you prefer the Scan Car to be? (think of improvements, interactions, etc)

Sam the car

Tess is a 35 years old author who likes to write fiction books. She lives in the city of Rotterdam with her husband Erik and daughter Zoë. Erik is 38 years old and a lecturer at the Technical University of Delft. Zoë is 8 years old and she goes to a primary school nearby where they live. Zoë generally stays at her school till 4:00 pm and the responsibility of picking Zoë up from school is taken up by Tess as Erik's job requires him to stay at his office a little while longer.

Today is Monday and just like any other day, Tess goes on her bike to pick up Zoë. At the school, Zoë greets her mother with a big smile and excitement. Tess gets Zoë seated on her own bike which was parked on the school premises. As Tess and Zoë cycle their way back home side by side, Zoë starts talking about what she has done at school today. At one point during her conversation, her face brightens up and shouts out 'look, mommy, Sam!'. Tess looks left from her biking lane to see Sam the car. It had a display screen on its side windows that read "Oud East to be closed for maintenance tomorrow, please take Exit 2 from the highway" and in addition to the display screen, the car was equipped with cameras on top.

Tess made a mental note to inform Erik about it as he generally takes that road when coming back from work. Zoë then asks 'mommy, what does Sam do?'. Tess thinks - she knows that Sam comes often to this neighbourhood and shares different forms of information on its display screen about this neighbourhood and nearby neighbourhoods but she did not know how he worked and what were those cameras for.

Sam the car now drives past them with its rear now visible for them to read 'Hi I'm Sam! Text me @655510058'. Tess decides to text this number once they get home to find out what Sam does.

After reaching home both Tess and Zoë get settled and Tess texts the number asking who Sam was and what does he do. Sam replies instantly introducing himself as a friendly neighbour that scans the neighbourhood for wrongly parked cars along with sharing relevant information pertaining to the neighbourhood, things like new restaurants openings, road closure, etc. Sam inquires if they had any further questions, by providing them options to choose from. Things like - news about their neighbourhood, how does Sam work, what does he see, how is the data handled - were presented as options. After going through different options Tess explains to Zoë what Sam does. Zoë delighted with now knowing what Sam does, she can't wait to share with dad her newfound information.

Please briefly explain how the Scan Car system described in this story works:

What aspects of the Scan Car system do you like and what aspects you don't like?

How would you prefer the Scan Car to be? (think of improvements, interactions, etc)

Data Analysis

Left table:

Category	Quote	Source
we lost freedom gradually	What if in a few years' time we have a similar situation as now and they decide to attach a facial recognition database 'because that is useful for recognizing people who come out too much'. So they can gradually compromise the privacy of everyone in the city, without you having to say anything about it.	tweakers Article 2 - 10/10
positive	Using data, using technologies to make our cities more resilient and more inclusive and sustainable.	participant one
positive	Smartphones radically transformed our cities	participant one
concerns	Uber, airbnb, amazon disrupting and transforming our cities faster than anticipated	participant one
municipality	smartcity as a branding technique	participant one
positive	companies selling expensive and complicated solutions that aren't even necessary for cities	participant one
concerns	official giving citizen's data to big corporations	participant one
trust	the dutch way: bottom-up grassroots approach making solutions local, affordable..we all take ownership together	participant one
municipality	include people: the dutch public will tell you how these technologies are helping them or helping their lives	participant one
concerns	city official having back door discussion with corporates about data they are collecting	participant one
trust	we are now listening to citizens and getting them more onboard with the design and testing and placement	participant one
concerns	CCTV cameras are coming online and there's very little regulation on terms or rules, algorithms framing object detection? deep learning... all these techs now are flooding the markets and spilling over to our public spaces.. how do we in a responsible way use these techs to get those insights that give us the data information to inform facts.	participant one
concerns	are these things providing a service or it's just another surveillance technique?	participant one
positive	automation=efficiency: you can't hire all this people to go around with a clipboard anymore, you need to have smarter ways of collect this information and data, and streamlining those penalties or violations so there's no much overhead in the administration	participant two
positive	how can these technologies help us and not hinder us	participant two
municipality	how does data becomes facts and evidence to make inform decisions versus emotional decisions. now we have lots of sources to validate those type of opinions.	participant two
municipality	if we are not measuring then we are not managing. the urban problems that we're tackling now are profoundly more complicated than they were a hundred years ago. so we can't solve everything politically and spatially anymore	participant two
positive	digital solutions which threatens the livelihood of space, the collective spaces, how do we prevent the same mistakes that happened with internet on our streets and sidewalks	participant two
concerns	changing your own behaviour based on the data that the state has access to.	participant two
positive	how can we use envasive technologies as design tools, to get more participation engagement, technology can allow us to do that.	participant two
municipality	balance between service and surveillance.	participant two
concerns	you don't give consent to the techs placed in public space	participant two
trust	What kind of city do we want to become? idea of control, a system where you're engaging with the public to decide on what kind of future you want	participant two
concerns	balance between protect: what values and principles do we want to protect as cities so that we have a fair and inclusive city	participant two
municipality	city of amsterdam: automate many services (ai, way finding, registration forms) but biases on those bots algorithms, how could they negatevely affect certain groups of people.	participant two
positive	privacy by design	participant three
concerns	less human eyes and more camera eyes;	participant three
municipality	monitoring in the case of scancar when you couple it with other technologies like GPS, validating decissions from the car owner, if you are old you get disscount .. they can help validate these dynamics infrastructures like parking, by making it more expensive at certain time, viceversa more equally, not waste more time and reduce CO2 emissions	participant three
concerns	it gets a little bit stinky when you got data collection, it's capturing everything, who owns that storage. you can't reverse engineer where we've been with this robot cars.	participant three
concerns	i don't think there's enough awareness. people don't think about the data privacy, digital rights aspects. there's a massive disconect between people's understanding of how they work, what's being collected, vs. just issuing tickets	participant three
trust	if citizens knew how much data is being collected about them, they might movilized themselves to say "hey, this is a can car free street"	participant three
positive	be completely transparent, city of Amsterdam is saying: this is the agreement we have with Tom, these are the cameras that he's using, this is why we are using this camera, this is where they are.	participant three
positive	Amsterdam is an outside city which i really appreciate, more time spend outdoors	participant four
positive	how i interact with the city is through biking	participant four
municipality	i can't really participate in public life or community cause i can't understand	participant four
municipality	I would like to be more interactive about shaping my community but I'm not able to as much as i wish	participant four
positive	there's a different relationship here with rules or laws, which can be positive in some sense, but there's also a lot of grey area it worries me the rules can be banned but if you know people. i worry a lot who has access to what.	participant four
municipality	who has access to different faces or what data is collected, or what rule is for who.	participant four
positive	rules are more relaxed in the netherlands compared to canada	participant four
concerns	transparency, who is owning and storing the data, and how are they using.	participant four
concerns	i understand the use of big data to have. the increase surveillance, it usually affects certain groups more than others	participant four
positive	my biggest concern is the lack of transparency of how they systems have been made or the lack of inclusion of residents to be not only informed but also have some sort of input in this decisions	participant four
concerns	Smart cities connecting up data, linking all information, creating a healthy environment for people to work and live in	participant four
trust	Internet of things, makes things easier and efficient	participant four
concerns	products are being produce faster than the regulations. People are linking everything to the internet without thinking about the consequences	participant five
positive	making everything smart can be very beneficial to society (all connected, streamlining all data)	participant five
concerns	if you have a scan car with cameras driving around and saying 'this is wrong, and that' effectively you have a 'big brother is watching' attitude	participant five
concerns	if your smart city measures are not backed up by a human or operational interaction (police) it could be problematic. old fashioned is good to support everyone, you need a balance.	participant five
positive	human are social beings, you need that social aspect to keep people sane	participant five
municipality	having proper legislation, don't just implement things without thinking about it, and before people sign up to	participant five

Right table:

Category	Quote	Source
positive	right to be forgotten: legislation, the more data there is the more people are gonna be nervous.	participant five
concerns	making things too smart might have an adverse reaction: in a few years people moving to the country side to avoid smart techs.	participant five
municipality	neighborhood benefit.. if it doesn't it will be rejected by the neighborhood	participant five
municipality	the transparency, why is the city using,	participant five
concerns	combined with an operational response as well.. if you're only sending fines through the post, people are gonna see your car as smt negative. visible police	participant five
positive	i don't think there's enough community policing. reduce man power and increase tech cause it's cheaper	participant six
positive	Outsource control, enforcement and all processes surrounding it to the private sector. What can go wrong?	participant six
trust	i would like cities to be more organize, where people can easily interact, this should be the core value of the city in the future while having smart techs, they should contribute to make cities more liveable	participant six
positive	safety and security, improve mobility .. techs helps improve these things. How do we use big data	participant six
concerns	it shouldn't feel like tech is only used for enforcement but to the better good. and focus on transparency, say what you are doing.	participant six
positive	the number of scan cars are incresing and taking new roles like covid19.	participant six
municipality	technology advances, prominent.. as a citizen i'm worried about how this services work, the collection of data, what do they know about me, privacy issues, enforcement	participant six
trust	I see a difficulty in having these techs that is made for 1 purpose and then being used for other purposes, and therefore we don't know what it does exactly anymore	participant six
concerns	distopia: if u apply to an insurance policy and you say you live a healthy life, what if they use technology to "spy" you to corroborate this and then tell you you are not doing what you said you do.	participant six
municipality	who controls it? who is defining what's acceptable by the community? is it the gov, then are they impartial? or is it a 'privacy watch dog', who looks over how all this tech is being used and assess is this acceptable or no	participant six
trust	open protocol.. connecting different systems makes it more easier. Añadirle otras funciones porque es open source?	participant seven
trust	right now the scan car function is very clear, everybody knows the rules	participant seven
positive	it's replacing man power	participant seven
concerns	little bit of transparency, Iguess, in where it's coming from.	participant seven
municipality	Oh, it's the municipality, then I couldthink like, Oh, they could scan, well, themunicipality probably doesn't care about where I goshopping or that kind of stuff.	participant seven
municipality	butis it like police related or is it municipality only?	participant seven

C.

Comments Analysis

Table of 91 codes from thematic analysis

Code	Comment	Source
balance - middle ground	There are probably better applications of technology that don't include putting a population's whereabouts and status in the hands of the government, any government.	NYT Article
balance - middle ground	To put a fully trained police officer in front of a camera to report minor offenses seems to me to be overkill and the police officer in question will not be happy either	tweakers Article 1 - 12/05
balance - middle ground	But I do think there should be a middle ground and room for broadening your thinking if something like covid happens to you. Something you and I have never experienced and don't know what to do about it.	tweakers Article 1 - 12/05
boas perception	There are often just enforcers / BOAs, who have a lot of powers and do not care much about the enforcement in public space with the Police	tweakers Article 1 - 12/05
boas perception	What many people don't know is that the majority of BOAs are not government employees, but work for the business.	tweakers Article 1 - 12/05
boas perception	the other (boas) sees the community as minerals that can be extracted for economic gain, outside the democratic process. That is, I think, potentially very dangerous.	tweakers Article 1 - 12/05
boas perception	Because there is quite a difference in training and (usually) knowledge between agent and BOA. I have experienced several times that BOAs do not even know the traffic rules, but do enforce them in terms of parking.	tweakers Article 1 - 12/05
consent	These are moving vehicles in which people have little influence on whether they appear on the screen	tweakers Article 2 - 10/05
consent	So if they have cameras traveling around, they have to inform people about it. The question is how will they do that. In fact, they have to do that within an area and place signs with camera surveillance wherever you enter that area.	tweakers Article 2 - 10/11
consent	Tell governments and companies we do not consent to these surveillance measures, and take our chances with living life as it was meant to be lived.	Medium
control	Digital data in China is giving the government more information about all its citizens and better control of all	NYT Article
control	What I fear is that in 50 years' time we will be so under control that it is impossible to do anything illegal or socially unacceptable. But humans are not robots. Many of the things we now take for granted stem from something that was unacceptable or even illegal in the past.	tweakers Article 1 - 12/05
control	There has been so damn much cutback with the police, there is going to be (a) camera car (s) in my opinion really not a safer feeling ... rather a feeling that you are being looked at.	tweakers Article 2 - 10/04
control	centralized government control of a population using mandatory non-transparent technology	NYT Article
Dangers of surveillance	How very, very dangerous for human rights. As in America, we see the Chinese government exploiting the epidemic for its own crass political and, in their case, authoritarian purposes.	NYT Article
Dangers of surveillance	I am appalled that some commenters think this is an appropriate use of technology. Together with face recognition, China will soon be able to track the movements and behavior of every citizen 24/7, taking totalitarianism to a new level	NYT Article
Dangers of surveillance	lack of thorough risk assessment ("what could possibly go wrong?")	NYT Article
Dangers of surveillance	The danger is that it normalizes government surveillance in everyone's private life; that endangers liberty.	NYT Article
Dangers of surveillance	How do they ensure that inspectors in the screen space (who are therefore not agents!) Do not accidentally see acquaintances, so that a privacy violation can take place.	tweakers Article 1 - 12/05
excuses	that is no reason for a disproportionate violation of privacy. There should be no other options. There are, so this is illegal. "Yes but more expensive" is no reason to allow this.	tweakers Article 1 - 12/05
excuses	I also find the reasoning strange. "You already had no privacy, so some extra cameras don't matter anymore."	tweakers Article 2 - 10/04
excuses	Everything can always be different (you can replace any camera for 7 people who stand guard 24/7, but it is probably not reasonable and such an argument will also be made by the municipality of Rotterdam).	tweakers Article 1 - 12/05
government violates laws	hey again violate the laws and regulations. And that it is now quite common in the Netherlands that the government does not comply with the rules and laws as laid down in a (semi-) democratic manner.	tweakers Article 1 - 12/05
government violates laws	There are plenty of examples where our government violates the (privacy) rules. Something about asking who has parked where and when, passing camera images via u-turn to the police while this is prohibited.	tweakers Article 1 - 12/05
government violates laws	The problem remains that governments are pushing the limits of the law, or going beyond it. For a while, the tax authorities also checked all registration details for paid parking until the high council forbade it.	tweakers Article 2 - 10/04
government violates laws	Governments have proven to violate their own laws, so yes you can be very critical if they want to stretch them further now, no matter how noble the goal.	tweakers Article 2 - 10/04
Government will not go back	As the author notes, measures implemented by government are rarely removed when they're no longer needed	Medium
Government will not go back	The virus will come and go, but your government will keep this stranglehold on your personal liberties for as long as it possibly can.	Medium
Government will not go back	Think with everything that is now being rolled out and that our privacy is further dampened and that government control is also expanding, will never disappear from society again.	tweakers Article 1 - 12/05
happening fast	Really horrifying at what pace privacy is being thrown overboard.	tweakers Article 2 - 10/04
happening fast	Technology is advancing, privacy is declining. Law of progress or decline. It just depends on which way you look at it .	tweakers Article 2 - 10/08
how it works	Those cars scan license plates and check whether there is a valid parking action (or permit) for the car in question at that position at that time. (also referred to in the source article)	tweakers Article 2 - 10/04
how it works	The scan cars take photos and can recognize number plates, and then a message goes to a server of the Municipality of Rotterdam to check whether parking has been paid for the car in question.	tweakers Article 2 - 10/04
how it works	Yes, recognizing license plates is done by the computer in the car. However, photos are also taken and if there is a suspicion that a violation has been committed (not paid for parking), the server can also retrieve the photos from the car.	tweakers Article 2 - 10/04
how it works	In Rotterdam, a fine is not made "immediately and automatically". If there is a suspicion that parking has not been paid for, then a person must first check it. Then an inspector goes on a scooter, on the spot, can check remotely.	tweakers Article 2 - 10/04
it's cheaper, it's efficient	Why would you put a policeman there while for less you can also put a BOA with the same powers? for the task.	tweakers Article 1 - 12/05
it's cheaper, it's efficient	This problem comes from the (local) governments that use these types of resources for budget reasons (boas).	tweakers Article 1 - 12/05
it's cheaper, it's efficient	A few cars that cross a certain area faster and can look in three directions at the same time and afterwards images can be analyzed	tweakers Article 1 - 12/05
it's cheaper, it's efficient	much more effective than when a BOA / agent strolls down the street. For that you have to open a whole can of BOAs, which are more expensive than the cars.	
it's cheaper, it's efficient	As a single agent, you need to watch traffic and be vigilant while you do that. Now they can put a cheaper civil servant in such a car and just drive laps while someone else can watch the footage in full concentration and probably rewind something	tweakers Article 1 - 12/05
lack of standarization	There are clear guidelines for mounting cameras, but not for enforcement.	
lack of standarization	Indeed, it appears that Rotterdam does not use P1 (https://www.p1.nl/digitaal-loket). Rotterdam's approach therefore sounds a lot safer than that of other municipalities. It is strange that we have not (yet) looked at a national system that all municipalities can use.	tweakers Article 2 - 10/04
lack of standarization	And if a private company is going to keep an eye on people, what about the retention period of those images? Because I assume that when they take those images, they immediately use them instead of easy storage for later viewing.	tweakers Article 1 - 12/05
learn from the past	Rotterdam in particular, with its bombing past, should know better.	tweakers Article 2 - 10/04
learn from the past	As current events clearly show, "human rights" are a fabrication of humanity. We invented that idea to protect ourselves from others who wish to control us for their own purposes.	Medium
limitations of scan cars	Even with all of that data what are they going to do with it? They will still need people on the ground to enforce whatever actions they want to take.	NYT Article
limitations of scan cars	nightlife violence and revolving door crime are not reduced with cameras. For example, cameras do work against the illegal provision of household waste.	tweakers Article 2 - 10/04

Code	Comment	Source
not available info of how it works/value	Is there any facial recognition software that compares people to see if they are from the same family? And if so, or if not, what is done with that data?	tweakers Article 1 - 12/05
not available info of how it works/value	And the people who view the images are in my opinion employed by the police	tweakers Article 1 - 12/05
not available info of how it works/value	These cars look suspiciously like the parking camera cars	tweakers Article 1 - 12/05
not available info of how it works/value	I think you still have some slack. If you still pay for parking within x min after such a scan, you will not receive a fine.	tweakers Article 1 - 12/05
not available info of how it works/value	I'm guessing that several people can watch the images plus facial recognition.	tweakers Article 1 - 12/05
not available info of how it works/value	The cars, drivers and scanning system are all outsourced to P1, which is a private organization. Objections to fines etc. must also all be handled via P1, the only thing the municipality actually does is authorize P1 to enforce on their behalf.	tweakers Article 2 - 10/04
not available info of how it works/value	I am therefore curious how the data flow is set up exactly. In the case of parking enforcement; who owns the images and is responsible for the processing? Who does the link between license plate and owner?	tweakers Article 2 - 10/04
not available info of how it works/value	So recognizing license plates in the photos happens in the car's software locally? That is interesting to know, it means that in principle only license plate information (incl. Metadata) is the data flow. Too bad that such information is not publicly available anywhere. (or I just can't find it)	tweakers Article 2 - 10/04
not available info of how it works/value	Maybe I don't get it. But whoever is in the car can just 'see' when someone needs to be turned on? What does the camera add?	tweakers Article 2 - 10/07
Privacy is protected sentiment	Data and personal freedom are now, more than ever, closely associated and are core tenets of western democracy.	Medium
Privacy is protected sentiment	Well, privacy ... if the images are not stored, and no personal data is linked to it, then this is just as intrusive as just enforcers walking around and looking around	tweakers Article 1 - 12/05
Privacy is protected sentiment	You want to go back to an outdated inefficiently expensive system just because you don't trust the processing of your license plate, but it is well secured via the AVG, so you shouldn't worry about that.	tweakers Article 2 - 10/04
Privacy is protected sentiment	If they want to track you illegally if necessary, why would they bother to let it pass through the parking poles illegally? Then they might as well use the data from those scan cars illegally?	tweakers Article 2 - 10/04
Regulations	lack of appropriate regulation by government ("no one knows how much data we're collecting" and "it's totally anonymized" and "we'll never sell it" and "of course we can never be hacked")	NYT Article
Regulations	Question, to what extent is this correct: According to the Dutch Data Protection Authority, municipalities may only use cameras if 'less extensive means' do not help to maintain public order.	tweakers Article 1 - 12/05
Regulations	I find it special that the Personal Data Authority is apparently going to determine whether the use of cameras makes sense. This is not where the expertise of this group lies.	tweakers Article 1 - 12/05
Regulations	I wonder if and then who tested all the cameras in the Netherlands in public places against the current conditions of the AP	tweakers Article 1 - 12/05
Regulations	There are all kinds of strict privacy rules, not just all employees are allowed to see the photos, this is done in an area with extra security. Faces, etc. in the photos are also automatically blurred so that people are not recognizable	tweakers Article 1 - 12/05
Societal benefits	Chinese government was able to control the outbreak with extreme measure.	NYT Article
Societal benefits	She feels she is safer in China at this moment, than in any other country.	NYT Article
Societal benefits	some good science of controlling an epidemic - might just come out of this new deployment of a technology.	NYT Article
Societal benefits	As a resident of the South, I like these cars otherwise. There is too little supervision on the street. This is an easy way to fix that quickly.	tweakers Article 2 - 10/04
Societal benefits	these cars seem like a good thing, if it makes it easier to track down people who don't like the rules and think they don't apply to them. They do increase the risk to normal people by spreading corona and stuff.	tweakers Article 2 - 10/12
Society vs Individual dilemma	she agrees with the work the Chinese government is doing to prevent the epidemic to get out of hand	NYT Article
Society vs Individual dilemma	Sometimes, common sense is needed during a public health crisis or to protect the greater good and this app makes sense to me.	NYT Article
Society vs Individual dilemma	So is it acceptable to see elders die of this virus but politically wrong to reveal too much privacy	NYT Article
Society vs Individual dilemma	Personal freedom and epidemic handling are all complicated, intricate issues	NYT Article
Society vs Individual dilemma	I love my personal freedom and privacy as much as everybody else. But it absolutely stops when it starts hurting other people.	NYT Article
Society vs Individual dilemma	personal data is required to track people but it is clumsy to measure an individual's personal rights against a tragedy to so many others	Medium
They already have a lot of info	Private companies are sharing personal information with police and government	NYT Article
They already have a lot of info	Same with the sense of control. Facebook, Google, credit bureaus, half the apps on your phone all knows more about you than can recall and the government have warehouses of server with everyone's internet/text/call/internet comment records	NYT Article
They already have a lot of info	It's no secret that tech giants continually sell consumer data over to government agencies.	Medium
They already have a lot of info	Governments and corporations know no bounds, they happily mass collect all of this data, store it, and with the help of data science, machine learning, and AI, are getting to know us better than we know ourselves	Medium
They already have a lot of info	Rotterdam is full of cameras. You have to go to the station for fun and how many of those beautiful NS-colored cameras are there.	tweakers Article 1 - 12/05
trust government over privates	who is responsible for the data flow? The municipality? Or do the enforcers only have an account where they can log in to a website to view the images? Because then everything would be handled further by a private company, which can be worrying.	tweakers Article 2 - 10/04
trust government over privates	the Municipality of Rotterdam does have its own software system for checking and enforcing that has not been outsourced to an external party. The people who also do the actual enforcement (fines) are employees of the municipality.	tweakers Article 2 - 10/04
trust government over privates	Outsource control, enforcement and all processes surrounding it to the private sector. What can go wrong?	tweakers Article 2 - 10/08
utopic/excuses	not to mention appropriate balance-of-power and oversight within government itself ("this tool will increase closed cases by 200%!!")	NYT Article
utopic/excuses	Allow governments and data collection companies to do whatever they like in order to "protect" the public, even though it is absolutely impossible to achieve complete protection	Medium
utopic/excuses	The parking enforcement system is based on entering your registration number. This is not an obligation. You must demonstrate that you have paid, you can do this with proof of payment that you have received.	tweakers Article 2 - 10/04
we lost freedom gradually	When smartphones and apps started luring us people into giving out information about us for the sake of keeping us safe, facilitating things for us and rewarding us by doing so, I knew that we were giving up our freedom bit by bit.	Medium
we lost freedom gradually	World governments have been doing all these things for quite some time.	Medium
we lost freedom gradually	And so every day more precedent is set and we are gradually stepped into a totalitarian surveillance state	tweakers Article 1 - 12/05
we lost freedom gradually	Don't get me wrong, I am very serious about the corona crisis, but this is just the beginning of the end for the "free" west (in how far it is still free).	tweakers Article 2 - 10/04
we lost freedom gradually	These kinds of things get used to slowly, and if this is still driving around in a year, you are already used to it and you no longer hear about it, while it actually has quite an impact on your privacy.	tweakers Article 2 - 10/09

Clustering process

Category	Theme / Question	Comment
balance - middle ground	there should be compromises from both sides. Governments should always look for better practices and citizens should make concessions when it comes to societal interests, but both parties should be fully informed and briefed	There are probably better applications of technology that don't include putting a population's whereabouts and status in the hands of the government, any government.
balance - middle ground		To put a fully trained police officer in front of a camera to report minor offenses seems to me to be overkill and the police officer in question will not be happy either
balance - middle ground		I do think there should be a middle ground and room for broadening your thinking if something like covid happens to you. Something you and I have never experienced and don't know what to do about it.
BOAs rejection	Residents don't trust BOAs as they trust police, due to their training and cause they're private companies employees. Does this influence the perception of the scan car?	There are often just enforcers / BOAs, who have a lot of powers and do not care much about the enforcement in public space with the Police
BOAs rejection		What many people don't know is that the majority of BOAs are not government employees, but work for the business.
BOAs rejection		the other (boas) sees the community as minerals that can be extracted for economic gain, outside the democratic process. That is, I think, potentially very dangerous.
BOAs rejection		Because there is quite a difference in training and (usually) knowledge between agent and BOA. I have experienced several times that BOAs do not even know the traffic rules, but do enforce them in terms of parking.
consent		These are moving vehicles in which people have little influence on whether they appear on the screen
consent		So if they have cameras traveling around, they have to inform people about it. The question is how will they do that. In fact, they have to do that within an area and place signs with camera surveillance wherever you enter that area.
consent		Tell governments and companies we do not consent to these surveillance measures, and take our chances with living life as it was meant to be lived.
control	will these technologies control people in the future? people think government could use them to have control over them and know their whereabouts at all times	Digital data in China is giving the government more information about all its citizens and better control of all
control		What I fear is that in 50 years' time we will be so under control that it is impossible to do anything illegal or socially unacceptable. But humans are not robots. Many of the things we now take for granted stem from something that was unacceptable or even illegal in the past.
control		There has been so damn much cutback with the police, there is going to be (a) camera car(s) in my opinion really not a safer feeling ... rather a feeling that you are being looked at.
control		centralized government control of a population using mandatory non-transparent technology
Dangers of technology	if employed incorrectly technology can be very dangerous, it also depends in the hands of who it falls. A non-democratic country has more possibilities of missusing the techs to control the people. People could lose their freedom as we know it	How very, very dangerous for human rights. As in America, we see the Chinese government exploiting the epidemic for its own crass political and, in their case, authoritarian purposes.
Dangers of technology		I am appalled that some commenters think this is an appropriate use of technology. Together with face recognition, China will soon be able to track the movements and behavior of every citizen 24/7, taking totalitarianism to a new level
Dangers of technology		lack of thorough risk assessment ("what could possibly go wrong?")
Dangers of technology		The danger is that it normalizes government surveillance in everyone's private life; that endangers liberty.
Dangers of technology		How do they ensure that inspectors in the screen space (who are therefore not agents!) Do not accidentally see acquaintances, so that a privacy violation can take place.
Excuses	is there any valid reason to make use of technologies to know everything about the citizens? governments always find an excuse to justify what they do, whether it's a bad reason or not	that is no reason for a disproportionate violation of privacy. There should be no other options. There are, so this is illegal. "Yes but more expensive" is no reason to allow this.
Excuses		not to mention appropriate balance-of-power and oversight within government itself ("this tool will increase closed cases by 200%!!")
Excuses		Allow governments and data collection companies to do whatever they like in order to "protect" the public, even though it is absolutely impossible to achieve complete protection
Excuses		The parking enforcement system is based on entering your registration number. This is not an obligation. You must demonstrate that you have paid, you can do this with proof of payment that you have received.
Excuses		I also find the reasoning strange "You already had no privacy, so some extra cameras don't matter anymore."
Excuses		Everything can always be different (you can replace any camera for 7 people who stand guard 24/7, but it is probably not reasonable and such an argument will also be made by the municipality of Rotterdam).
Government violates laws	laws are no impediment for governments to enforce new measures that they find convinient, thus we should we trust them?	again violate the laws and regulations. And that it is now quite common in the Netherlands that the government does not comply with the rules and laws as laid down in a (semi-) democratic manner.
Government violates laws		There are plenty of examples where our government violates the (privacy) rules. Something about asking who has parked where and when, passing camera images via u-turn to the police while this is prohibited.
Government violates laws		The problem remains that governments are pushing the limits of the law, or going beyond it. For a while, the tax authorities also checked all registration details of paid parking until the high council forbade it.
Government violates laws		Governments have proven to violate their own laws, so yes you can be very critical if they want to stretch them further now, no matter how noble the goal.
Government will not go back	it's really hard to reverse measures taken by the government. they keep making excuses and at some point they become	As the author notes, measures implemented by government are rarely removed when they're no longer needed
Government will not go back		The virus will come and go, but your government will keep this stranglehold on your personal liberties for as long as it possibly can.

permanent

Category	Grouping	Comment
Government will not go back		Think with everything that is now being rolled out and that our privacy is further dampened and that government control is also expanding, will never disappear from society again.
happening fast		Really horrifying at what pace privacy is being thrown overboard.
happening fast		Technology is advancing, privacy is declining. Law of progress or decline. It just depends on which way you look at it .
how it works		Those cars scan license plates and check whether there is a valid parking action (or permit) for the car in question at that position at that time. (also referred to in the source article)
how it works		The scan cars take photos and can recognize number plates, and then a message goes to a server of the Municipality of Rotterdam to check whether parking has been paid for the car in question.
how it works	some people have a clear idea of how it works (people who had a direct contact with the project)	Yes, recognizing license plates is done by the computer in the car. However, photos are also taken and if there is a suspicion that a violation has been committed (not paid for parking), the server can also retrieve the photos from the car.
how it works		In Rotterdam, a fine is not made "immediately and automatically". If there is a suspicion that parking has not been paid for, then a person must first check it. Then an inspector goes on a scooter, or the check is done remotely.
it's cheaper, it's efficient		Why would you put a policeman there while for less you can also put a BOA with the same powers? for the task.
it's cheaper, it's efficient		This problem comes from the (local) governments that use these types of resources for budget reasons (boas).
it's cheaper, it's efficient	even though it's more efficient is that enough reason to do it this way? should gov make the leap to become a smart city cause it's cheaper? Maybe citizens are not seeing the benefits of why the gov is deciding to do things this way	A few cars that cross a certain area faster and can look in three directions at the same time and afterwards images can be analyzed.
it's cheaper, it's efficient		much more effective than when a BOA / agent strolls down the street. For that you have to open a whole can of BOAs, which are more expensive than the cars.
it's cheaper, it's efficient		As a single agent, you need to watch traffic and be vigilant while you do that. Now they can put a cheaper civil servant in such a car and just drive laps while someone else can watch the footage in full concentration and probably rewind something
lack of standarization		There are clear guidelines for mounting cameras, but not for enforcement.
lack of standarization	why is every municipality in the nl doing things their own way? wouldn't it be easier to standarize it?	Indeed, it appears that Rotterdam does not use P1 (https://www.p1.nl/digitaal-loket). Rotterdam's approach therefore sounds a lot safer than that of other municipalities. It is strange that we have not (yet) looked at a national system that all municipalities can use.
lack of standarization		And if a private company is going to keep an eye on people, what about the retention period of those images? Because I assume that when they take those images, they immediately use them instead of easy storage for later viewing.
learn from the past	is tech actually enabling progress or are we going backwards by loosing human rights such as freedom?	Rotterdam in particular, with its bombing past, should know better.
learn from the past		As current events clearly show, 'human rights' are a fabrication of humanity. We invented that idea to protect ourselves from others who wish to control us for their own purposes.
limitations of scan cars	people don't respect scan cars. you still need a person to enforce whatever measure it's needed. scan cars can be effective for certain issues but not everything can be solve with them	Even with all of that data what are they going to do with it? They will still need people on the ground to enforce whatever actions they want to take.
limitations of scan cars		nightlife violence and revolving door crime are not reduced with cameras. For example, cameras do work against the illegal provision of household waste.
not available info of how it works/value		Is there any facial recognition software that compares people to see if they are from the same family? And if so, or if not, what is done with that data?
not available info of how it works/value		And the people who view the images are in my opinion employed by the police
not available info of how it works/value		These cars look suspiciously like the parking camera cars
not available info of how it works/value		I think you still have some slack. If you still pay for parking within x min after such a scan, you will not receive a fine.
not available info of how it works/value		I'm guessing that several people can watch the images plus facial recognition.
not available info of how it works/value	there are so many doubts around the functionality of the car, how the data is processed, how owns the data, how much time to you have to pay. a lot of basic questions but also high level. people seems curious to know how they work	The cars, drivers and scanning system are all outsourced to P1, which is a private organization. Objections to fines etc. must also all be handled via P1, the only thing the municipality actually does is authorize P1 to enforce on their behalf.
not available info of how it works/value		I am therefore curious how the data flow is set up exactly. In the case of parking enforcement; who owns the images and is responsible for the processing? Who does the link between license plate and owner?
not available info of how it works/value		So recognizing license plates in the photos happens in the car's software locally? That is interesting to know, it means that in principle only license plate information (incl. Metadata) is the data flow. Too bad that such information is not publicly available anywhere. (or I just can't find it)
not available info of how it works/value		Maybe I don't get it. But whoever is in the car can just 'see' when someone needs to be turned on? What does the camera add?
Privacy is protected' sentiment		Data and personal freedom are now, more than ever, closely associated and are core tenets of western democracy.
Privacy is protected' sentiment	some people believe that their privacy is protected and they shouldn't doubt the gov. we are in the 20th century and democracy protect us	Well, privacy .... if the images are not stored, and no personal data is linked to it, then it is just as intrusive as just enforcers walking around and looking around
Privacy is protected' sentiment		You want to go back to an outdated inefficiently expensive system just because you don't trust the processing of your license plate, but it is well secured via the AVG, so you shouldn't worry about that
Privacy is protected' sentiment		If they want to track you illegally if necessary, why would they bother to let it pass through the parking poles illegally? Then they might as well use the data from those scan cars illegally?

Category	Grouping	Comment
Are they following regulations		lack of appropriate regulation by government ("no one knows how much data we're collecting" and "it's totally anonymized" and "we'll never sell it" and "of course we can never be hacked")
Are they following regulations		Question, to what extent is this correct: According to the Dutch Data Protection Authority, municipalities may only use cameras if 'less extensive means' do not help to maintain public order.
Are they following regulations	it's not clear whether they followed the proper regulations when they installed the systems. which organism is responsible of regulating techs?	I find it special that the Personal Data Authority is apparently going to determine whether the use of cameras makes sense. This is not where the expertise of this group lies.
Are they following regulations		I wonder if and then who tested all the cameras in the Netherlands in public places against the current conditions of the AP
Are they following regulations		There are all kinds of strict privacy rules, not just all employees are allowed to see the photos, this is done in an area with extra security. Faces, etc. in the photos are also automatically blurred so that people are not recognizable
Societal benefits		Chinese government was able to control the outbreak with extreme measure.
Societal benefits		She feels she is safer in China at this moment, than in any other country.
Societal benefits		some good science of controlling an epidemic - might just come out of this new deployment of a technology.
Societal benefits		As a resident of the South, I like these cars otherwise. There is too little supervision on the street. This is an easy way to fix that quickly.
Societal benefits		these cars seem like a good thing, if it makes it easier to track down people who don't like the rules and think they don't apply to them. They do increase the risk to normal people by spreading corona and stuff.
Society vs Individual dilemma		she agrees with the work the Chinese government is doing to prevent the epidemic to get out of hand
Society vs Individual dilemma		Sometimes, common sense is needed during a public health crisis or to protect the greater good and this app makes sense to me.
Society vs Individual dilemma	the end justifies the means? should i resign to my rights when others are suffering?	So is it acceptable to see elders die of this virus but politically wrong to reveal too much privacy
Society vs Individual dilemma		Personal freedom and epidemic handling are all complicated, intricate issues
Society vs Individual dilemma		I love my personal freedom and privacy as much as everybody else. But it absolutely stops when it starts hurting other people.
Society vs Individual dilemma		personal data is required to track people but it is clumsy to measure an individual's personal rights against a tragedy to so many others
they are everywhere and know it all		Private companies are sharing personal information with police and government
they are everywhere and know it all		Same with the sense of control. Facebook, Google, credit bureaus, half the apps on your phone all knows more about you than can recall and the government have warehouses of server with everyone's internet/text/call/internet comment records
they are everywhere and know it all	technologies are everywhere in our cities.. train stations, street, malls.. and private companies have been collecting our info for quite some time. they even have more info about us than ourselves	It's no secret that tech giants continually sell consumer data over to government agencies.
they are everywhere and know it all		Governments and corporations know no bounds, they happily mass collect all of this data, store it, and with the help of data science, machine learning, and AI, are getting to know us better than we know ourselves
they are everywhere and know it all		Rotterdam is full of cameras. You have to go to the station for fun and how many of those beautiful NS-colored cameras are there.
trust government over privates		who is responsible for the data flow? The municipality? Or do the enforcers only have an account where they can log in to a website to view the images? Because then everything would be handled further by a private company, which can be worrying.
trust government over privates	government are somehow more trusted than private company. People have the perception that companies can make use of our data for their own benefit, while government protect us and do things for the benefit of everyone	the Municipality of Rotterdam does have its own software system for checking and enforcing that has not been outsourced to an external party. The people who also do the actual enforcement (fines) are employees of the municipality
trust government over privates		Outsource control, enforcement and all processes surrounding it to the private sector. What can go wrong?
We lost freedom gradually		When smartphones and apps started luring us into giving out information about us for the sake of keeping us safe, facilitating things for us and rewarding us by doing so, I knew that we were giving up our freedom bit by bit.
We lost freedom gradually		World governments have been doing all these things for quite some time.
We lost freedom gradually		And so every day more precedent is set and we are gradually stepped into a totalitarian surveillance state
We lost freedom gradually	it's not new and techs have been here for some time already, problem is that we get use to it and stop noticing it. but does it really makes us lose freedom? or it's just a matter of being inform and being transparent?	Don't get me wrong, I am very serious about the corona crisis, but this is just the beginning of the end for the "free" west (in how far it is still free).
We lost freedom gradually		These kinds of things get used to slowly, and if this is still driving around in a year, you are already used to it and you no longer hear about it, while it actually has quite an impact on your privacy.
We lost freedom gradually		What if in a few years' time we have a similar situation as now and they decide to attach a facial recognition database 'because that is useful for recognizing people who come out too much'. So they can gradually compromise the privacy of everyone in the city, without you having to say anything about it.

D.

Surveys

Questions   Responses 25

Section 1 of 3

Scanauto and other technologies in Public Space

Thank you for taking the time to fill in this anonymous questionnaire which is part of a design graduation project at TU Delft.

In this questionnaire, 8 short questions will be asked related to the use of digital technologies, such as the Scanauto, in cities around The Netherlands and how you perceive them. Answering these questions will take about 10 minutes to complete.

Are you a dutch citizen? *

○ Yes

○ No, but I have a permanent residence permit

○ None of the above

In which city do you live? *

Short answer text

Have you seen the Scanauto (in the picture above) in your city? *

A Scanauto, or Scan Car in english, has a camera-equipped unit on the top of the car which quickly scans all visible license plates of parked cars while driving through the city. All license plates that are captured are then verified to check whether the corresponding parking fee was paid. If not, a parking ticket is issued to the owner of the car.

○ Yes

○ No

○ Other...

Section 2 of 3

Introduction to Digital Technologies

Digital technology is all around us, but often invisible, it is extending the reach of our digital lives and collecting data about ourselves. The idea of these technologies is to provide new services, or improve the efficiency and quality of existing services within a city.

Examples of digital technologies already in use in public spaces:

*Example material was created by Sidewalk Labs in collaboration with Projects by IF and Puncture Design. I made slight modification to the material. License: https://github.com/sidewalklabs/dtpr/blob/master/contributors.md

License plate cameras, known as Scan Cars collect pictures to detect illegally parked vehicles and enforce fines.

Bluetooth beacons transmit a unique ID which helps determine the device's location.

Traffic video cameras monitor traffic volume, vehicle speed or enforce rules, on streets.

Surveillance cameras capture video footage and are monitored for security purposes.

Fill level sensors detect how full a garbage can is so staff know it needs to be emptied.

Infrared sensors detect changes to heat patterns to count the number of people using a space.

Please write down a question you have in regard to a particular digital technology or any, from the examples above.

In case of a particular technology, please mention it in your answer.

A question I have is: *

Long answer text

A question I have is:

Long answer text

How does having these technologies in public spaces make you feel? *

Long answer text

After section 2   Continue to next section

Section 3 of 3

Digital technologies and data collection

Description (optional)

Do you know how these technologies work? *

	1	2	3	4	
Not at all	○	○	○	○	Yes, pretty much

Would you like to be able to understand how these technologies work and the purposes they serve? *

○ Yes

○ No

○ Indifferent

○ Other...

What would you like to know? *

Long answer text

Name one concern you have in regard to a Scanauto *

If you don't have any, please explain why.

Long answer text

Should you be able to access data that's being collected around you? *

○ Yes

○ No

○ Indifferent

How should you be able to access it?

Long answer text

Any aditional comments?

Long answer text

25 responses

Accepting responses ⬤

Summary Question Individual

Are you a dutch citizen?
25 responses

- Yes
- No, but I have a permanent residence permit
- None of the above

68%
20%
12%

In which city do you live?
25 responses

Almere 1 (4%)	Amersfoort 1 (4%)	Amsterdam 2 (8%)	Amsterdam 1 (4%)	Arnhem 1 (4%)	Delft 8 (32%)	Delft 1 (4%)	Den Haag 3 (12%)	Leiden 1 (4%)	Rotterdam 3 (12%)	Utrecht 2 (8%)	delft 1 (4%)

Have you seen the Scanauto (in the picture above) in your city?
25 responses

- Yes
- No
- I'm not sure

40%
56%

Introduction to Digital Technologies

Please write down a question you have in regard to a particular digital technology or any, from the examples above.

A question I have is:
25 responses

1	A question I have is:
2	Are (anonymized) datasets from technologies like these publically available for research purposes? Would be nice to leave the infinite possibilities for applications of a fill level sensor for example to the general public and extend their use beyond maintenance.
3	What happens to individual personal data
4	How can the companies keep technologies privacy friendly?
5	Who has access to the data generated by these technologies. Is it only the government or companies as well?
6	Idk.. Bluetooth: to what extent is this data anonymous? What do they do with it? With the heatmap thing, you feel more protected i guess because it's clearer what's being measured. As a person: "you kinda get how it works so it's less scary"
7	How is the data stored, and does it still contain possible privacy sensitive information?
8	How is the data protected (in theory and in practice)?
9	No questions
10	How is the data from these technologies - particularly images/film footage including my face - being stored and used?
11	how much can they know about me?
12	Some of these technologies, (surveillance cameras, traffic video camera, licence plate camera) are used for surveillance. How effective are they? For example, does the licence plate camera detect 100% of the illegaly parked cars?
13	Is bluetooth beacon always on when I use bluetooth?
14	I have no questions
15	How many of ask those are used? How much of public space is under surveillance?
16	How does the surveillance camera information is used to increase safety?
17	I dont really have a question.
18	How is the data from these technologies - particularly images/film footage including my face - being stored and used?
19	How these technologies are regulated? They could be used for inappropriate activities.
20	None
21	Is it possible to make a digital technology for parking (and locating) bikes during the night, in places where light is weak (or no light at all)?
22	are municipalities in the netherlands using facial recognition in public spaces?
23	How are scan cars processing license plates
24	what other uses could scan car have?
25	how many of these technologies can I find around Amsterdam.
26	is it legal to use all of these technologies

A question I have is:

3 responses

Is there a government body that checks whether or not there is any reasoning behind collecting data in public space? Is there anything preventing companies or individuals from just collecting data because they can, without it serving any real purpose?

Surveillance cameras. We all know the 1984- big brother kinda nightmare stories of China's face-detection empire, but we also have cameras. What do they see? Less, sure. But how close are we to face-detection and where is it headed?

How these technologies affect the unemployment.

How does having these technologies in public spaces make you feel?

25 responses

1	How does having these technologies in public spaces make you feel?
9	Protect, safe but sometimes anxious
10	Generally indifferent, or curious as to what type of data they're collecting.
11	Not sure
12	I don't mind the utility gadgeds like the Fill level sensors. I think those can make life a lot easier. But I'm worried about the surveilance technologies. There is something like force majeure which means it's ok to break rules when it is necessary (stealing bread to feed your children.) In my opinion, the laws of the state have the function to streamline society. They should be hard enough (hard as in absolute, not as in tough) to be clear but not so hard that upholding those laws becomes the function of these laws. The problem with technology is that it doesn't distinguishe when a law should be uphold or when it is ok to be broken. You can argue with a police officer when you are speeding to bring a pregnant lady to a hospital about the speeding ticked. But when you are caught on a traffic camera you are just send a bill.
13	Uncomfortable
14	Fine
15	Uneasy, unfree
16	I have mixed feelings. Some of them, as the sensors in the trash bins, are unharmful and nice. Others, specially the surveillance cameras, makes me a bit worried.
17	A little bit controlled/ watched.
18	Generally indifferent, or curious as to what type of data they're collecting.
19	Good, I think they make life easier and efficient.
20	Worried about my privacy
21	Mainly safe. Worried only if these technologies start to interfere with people's privacy (e.g. with surveillance cameras)
22	I think it is great, it's more efficient and municipalities can do a better job
23	Worried about the future
24	okay
25	curious to see how municipalities implement technologies to make the city safer
26	watched

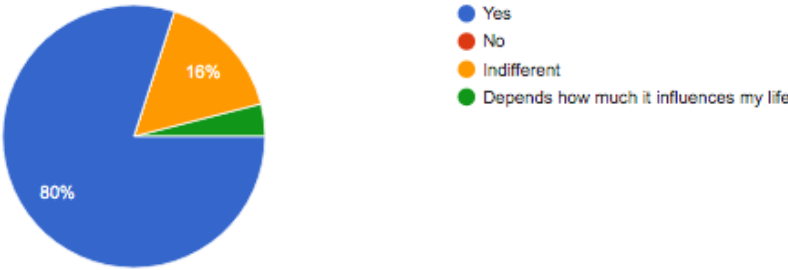## Digital technologies and data collection

Do you know how these technologies work?

25 responses
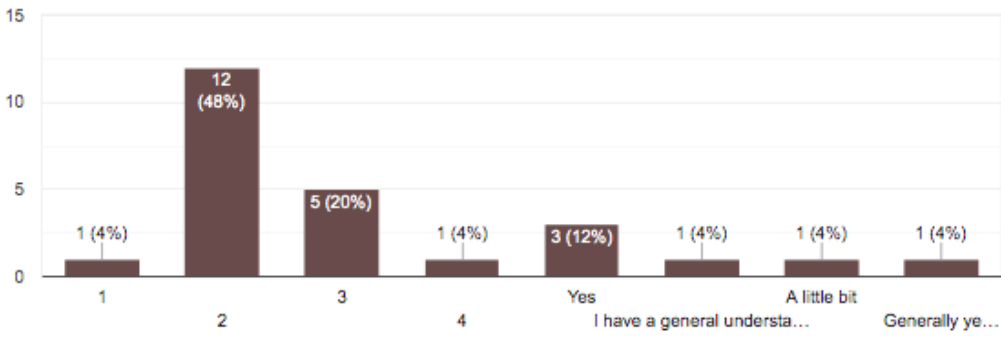
Would you like to be able to understand how these technologies work and the purposes they serve?

25 responses

- Yes
- No
- Indifferent
- Depends how much it influences my life

What would you like to know?

25 responses

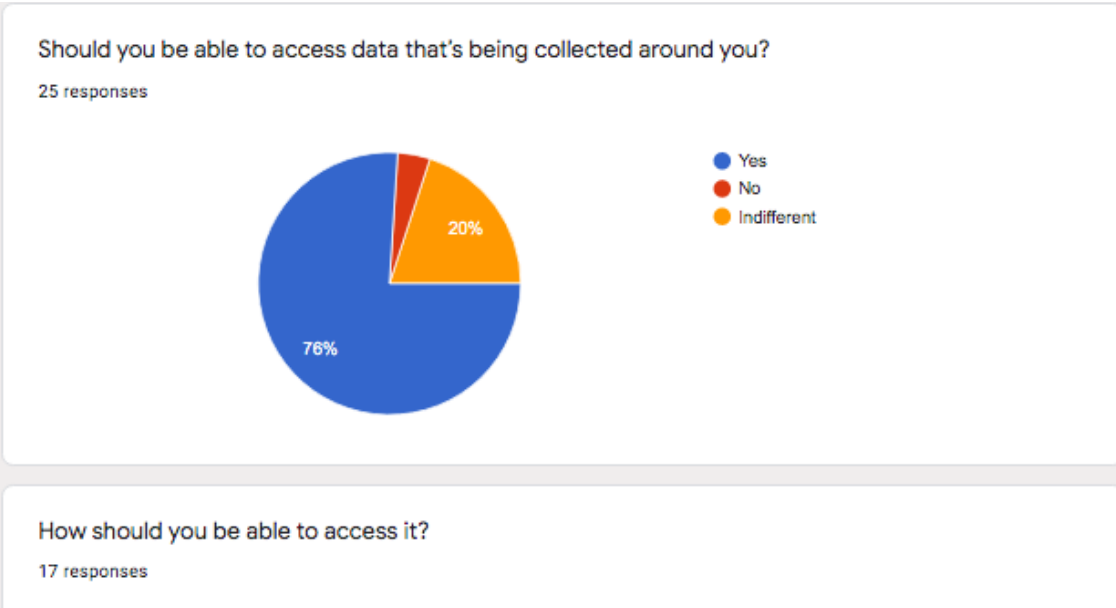| #	What would you like to know?
1	What would you like to know?
2	Not that much more than what I already know. Maybe a bit more about data storage.
3	Does the Scanauto match vehicle number plates with geographical data? Are photo's taken of people's faces as well?
4	What data do they store and which data they don't store
5	Who gets to see the data?
6	Just a sentences or two (more) would be enough for me to make me understand their intentions and functions. Generally, I kinda trust our government (although they suck at IT projects). I know many don't feel the same though (5G cough cough)
7	The image recognition software
8	How they function and what the challenges are
9	I would like to know how this technologies work in order to protect us and what is the usage data collected.
10	What data is being collected, and how long this data is processed/stored
11	why do they need to use them
12	How does it influence my life.
13	What exactly happens whit all the data that is collected about me.
14	The summery
15	How they obey the Data protection laws
16	More details on how personal privacy is ensured with the increase of public monitoring
17	How would de Scanauto know if you have a parking ticket if you have a paper ticket?
18	What data is being collected, and how long this data is processed/stored
19	How does the scanauto determines how much time does the car have been parked without paying.
20	To what extent is my data used
21	How does Scanauto checks if cars that are not properly parked?
22	how do they analyse the data
23	what security protocols the municipality implements
24	Just make sure my privacy is protected
25	which technologies the municipality already uses
26	if municipalities are sharing data with private companies

Name one concern you have in regard to a Scanauto

25 responses

#	Name one concern you have in regard to a Scanauto
1	Name one concern you have in regard to a Scanauto
2	How much money would an advertising company have to offer a municipality for them to sell the data they collect?
3	If data is combined (e.g. faces, number plates, and geolocation) people can be followed.
4	taking pictures of people and storing it
5	I don't, it is a more effective way of a process that can already be done manually.
6	I kinda feel like I should say something about privacy but mweh.. honestly i don't feel that concern so much. It's more how it looks: camera's patrolling the streets is a bit like when there are militairy men in town (for example during terrorism threats): I trust their good intentions but it makes me feel less relax. ('if this is needed, we must be under threat)
7	none
8	Consequences if it misreads a figure
9	Cannot say
10	I don't have a car, so I'm not really concerned about scanautos
11	i would prefer if people were doing the job
12	I would be concern if the Scanauto is going to be driven unmanned. I think a human is needed to evaluate the nuance of human ethics in some circumstances.
13	Just privacy. I don't own a car myself, but I feel the cars are an invasion of privacy.
14	Concerns requires knowledge on the subject
15	Data privacy
16	No concerns. It is ok to check the regular parking of the cars. If it wasn't the car, it would be a guard doing it.
17	*puts on tin foil hat* won't it also track the location of cars etc?
18	I don't have a car, so I'm not really concerned about scanautos
19	There is no way to know how much time the car has been parked without paying.
20	Does it take more than just pictures of number plates
21	Does Scanauto use vision-based algorithms?
22	where are the pictures saved? who do i make sure they get deleted
23	data being hacked
24	none
25	data protection (my privacy)
26	what information is in the images, can they see my face

Should you be able to access data that's being collected around you?

25 responses

- Yes
- No
- Indifferent

76%
20%

How should you be able to access it?

17 responses

1	How should you be able to access it?
2	There are many examples of data collected by the government that is publically available. The Kadaster API is one of them: https://zakelijk.kadaster.nl/-/bag-api. I think it would make sense to make other data available in a similar way, maybe with the addition of visualisations for people who have no interest in using an API.
3	Theoretically I feel like I should be able to do it, but I know I never will.
4	By internet
5	Mostly data is collected where there is a problem to be solved with the data. Visualise the data on a special insight website / app, show where data is collected and how it is used. E.g. in case of the scanner, show how many cars are
6	It would be cool if we can see some sort of output of the data in a way that we understand what theyre working on. Would be cool if we could 'play with the data' in a way. It makes it less mysterious what they are doing and in a way safer. Also highlight the 'good' they will try to do with it. I think reporters or whatever should see the raw data but please don't put this online, will take to much storage haha.
7	Not online, maybe offline in a governmental building
8	It really depends on the data. There is also a big difference in being able to access your own data and being able to access others' data. For certain groups at risk, data can be extremely sensitive.
9	
10	Yes.
11	Yes.
12	When asking for it.
13	Online, with a combination of my license-plate and my DigID.
14	
15	I should be able to access it when it is about me. Any date which are not relevan (no offense against parking law) should not be allowed to be stored
16	Maybe via digiD
17	
18	Yes.
19	Website
20	It should be open source
21	
22	
23	municipalities should offer open data to citizens

E.

Design Brief

_____

DESIGN FOR our future

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IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

ⓘ **USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT**
Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME
Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !   ⚠

family name	Esquivel	Your master programme (only select the options that apply to you):
initials	P.A.	given name	Paloma	IDE master(s): ( ) IPD (★) Dfl ( ) SPD
student number	4788915		2nd non-IDE master:
street & no.		individual programme: ___ - ___ (give date of approval)
zipcode & city		honours programme: (Honours Programme Master)
country		specialisation / annotation: (Medisign)
phone		(Tech. in Sustainable Design)
email		(Entrepeneurship)

SUPERVISORY TEAM **
Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair	Prof. dr. Gerd Kortuem	dept. / section: DE
** mentor	Derek Lomas	dept. / section: ID
2nd mentor		
	organisation:	
	city:	country:

ⓘ Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

ⓘ Second mentor only applies in case the assignment is hosted by an external organisation.

ⓘ Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

comments (optional)

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Procedural Checks - IDE Master Graduation

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APPROVAL PROJECT BRIEF
To be filled in by the chair of the supervisory team.

chair   Prof. dr. Gerd Kortuem   date ___ - ___ - ___   signature _____

CHECK STUDY PROGRESS
To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: _____ EC
Of which, taking the conditional requirements
into account, can be part of the exam programme _____ EC

List of electives obtained before the third
semester without approval of the BoE

(**YES**) all 1st year master courses passed
(**NO**) missing 1st year master courses are:

name _____   date ___ - ___ - ___   signature _____

FORMAL APPROVAL GRADUATION PROJECT
To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **.
Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: (APPROVED) (NOT APPROVED)

Procedure: (APPROVED) (NOT APPROVED)

comments

name   Prof Gerd Kortuem   date 9 - 3 - 2020   signature _~~~~_

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Initials & Name   P.A.   Esquivel   Student number   4788915
Title of Project   Responsible Sensing in Designing Metropolitan Solutions

Personal Project Brief - IDE Master Graduation

TU Delft

Responsible Sensing in Designing Metropolitan Solutions

project title

Please state the title of your graduation project {above} and the start date and end date {below}. Keep the title compact and simple.
Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 09 - 03 - 2020   03 - 08 - 2020 end date

INTRODUCTION *
Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

The city of Amsterdam is a dynamic ecosystem where the interests and views of many different stakeholders (such as citizens, commercial companies, goverment) intersect and collide. At the same time, globalization, current political and social climate, global warming among other factors, add a layer of complexity to a city's dynamic. With this in mind, cities face social, economical and environmental challenges that must be addressed to ensure the quality of life of their inhabitants. New technologies represent an area of opportunity for cities to explore solutions and applications that address these challenges [1]. However, the increasing use of sensors, data analytics and artificial intelligence (AI) has the potential to undermine human and social values values [2].

One prominent case of the use of "intelligent" digital technologies is the Scan Car, a camera-equipped car for identifying illegally parked vehicles and automatically issuing parking fines. Similar uses of cameras and image recognition are now being investigated for a range of new use cases such as detecting trash on roadsides and automatically taxing businesses for storefront advertisement.

The municipality of Amsterdam recognises the ethical issues of Artificial Intelligence and has a strong interest in ensuring that digital technologies are used in an ethical and responsible way. Specifically, the municipality has developed a Digital Agenda [3] that outlines the vision of a "free, inclusive digital city". This agenda lays out concrete priorities related to digital rights, privacy, data use, and citizen inclusion, partially inspired by the TADA manifesto [4].

Stakeholders
The use of AI in scan cars will affect citizens (and businesses) in many direct and indirect ways. Increasingly, citizens and businesses will be subject to automated decision making systems that are complex to understand and whose decisions are difficult to appeal.
The Municipality of Amsterdam is responsible for deciding for what and where this technology will be used and how it will be monitored and governed. Most critically, the municipality has the mandate to ensure that all digital projects conform to the principles laid out in the Digital Agenda.

Prior Work
In response to similar concerns, designers at Sidewalks Lab in Toronto developed a comprehensive system of urban signage designed to disclose what technology it is using to track people in public spaces [5]. The signs are meant to be a visual representation of the privacy policies the company is developing to go along with its data collection technology. However, the utility and value of such a public signage system for citizens, companies and local government has not yet been established. It is unclear to what extent visual signs can be a meaningful way to enhance the transparency of artificial intelligence systems in public space.

References:
1. Rodríguez-Bolívar, M. P. (2015). Transforming city governments for successful smart cities. Springer.
2. Martínez-Ballesté, A., Pérez-Martínez, P. A., & Solanas, A. (2013). The pursuit of citizens' privacy: a privacy-aware smart city is possible. IEEE Communications Magazine, 51(6), 136-141.References:
3. Gemeente Amsterdam. (2019, March). Agenda Digital City.
4. Gemeente Amsterdam. (2019, June). tada. Retrieved from https://tada.city
5. How can we bring transparency to urban tech? (2019, April). Retrieved from https://medium.com/sidewalk-talk/

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TU Delft

introduction (continued): space for images
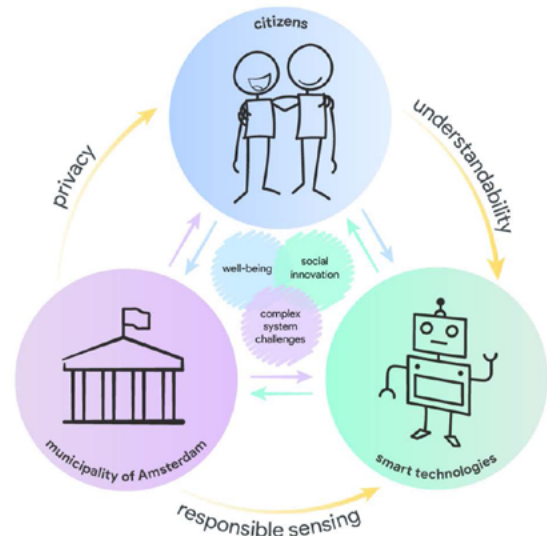

image / figure 1:   Ideal interrelation among all stakeholders
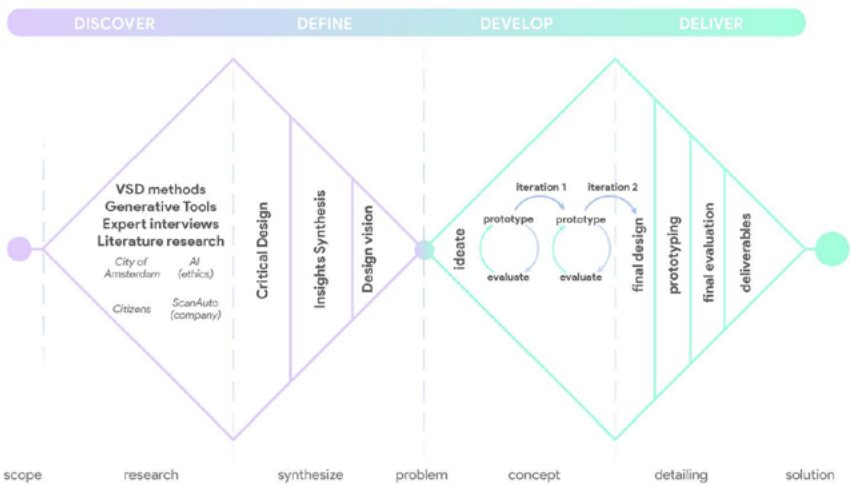
image / figure 2:   Design Process: 4 phases

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PROBLEM DEFINITION **
Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

While the use of AI technologies in Amsterdam has many potential benefits, there is a growing concern about the ethical risks and the commercial interests behind the use of such technology. A key concern is the invisibility or opacity of AI system. Sensors in public space are often hidden and data collection practices and algorithms are not properly documented and difficult to understand. The current situation prevents a meaningful public debate of AI and prevents citizens and citizen groups from scrutinising AI projects in Amsterdam.

A means to effectively communicate the presence and purpose of smart AI systems in Amsterdam.

In particular, it is unclear:
How complex AI systems can be documented in a way to make them understandable by laypeople
How the presence, purpose and functionality of AI systems in public space can be meaningfully indicated in and around Amsterdam
How the municipality can effectively communicate the use of AI technology in Amsterdam
How the municipality can effectively communicate the values and principles it uses in developing public AI systems

The key driving question for this project thus is: how can a strategic communication approach be used to meaningfully inform the public about the use of AI in Amsterdam, with the goal of fostering transparency and public understanding.

ASSIGNMENT **
State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

The aim of this project is to develop a visual communication strategy and system to meaningfully inform the public about the use of AI in Amsterdam, with the goal of fostering transparency and public understanding. This aim will be explored in the context of the Scan car and similar AI systems in Amsterdam.

To get to the desired outcome, the following research questions need to be addressed:
-What are the ethical risks and challenges of AI systems such as the scan cars, for example with respect to privacy, transparency, fairness, accountability?
-What values and principles does the municipality use to inform the design of AI systems in Amsterdam?
-What are the attitudes of citizens with respect to the use of intelligent technologies in public space?
-How complex AI systems can be documented in a way to make them understandable by laypeople
-How can the presence, purpose and functionality of AI systems in public space be meaningfully indicated in and around Amsterdam?
-How can the municipality effectively communicate the use of AI technology (as well as underlying values and principles) to a public audience.

The key outcome of this graduation project is a theoretically-grounded visual communication system to inform the public about the use of AI in Amsterdam. This system will be informed by and validated within the context of Amsterdam's Scan cars.
Key success criteria for the communication system are legibility (easy to comprehend by laypeople), scalability (can be used for a range of different case studies), complexity (ability to communicate detailed aspects of AI systems) and effectiveness (contributes to better public understanding of public AI systems).

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PLANNING AND APPROACH **
Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 9 - 3 - 2020   3 - 8 - 2020   end date
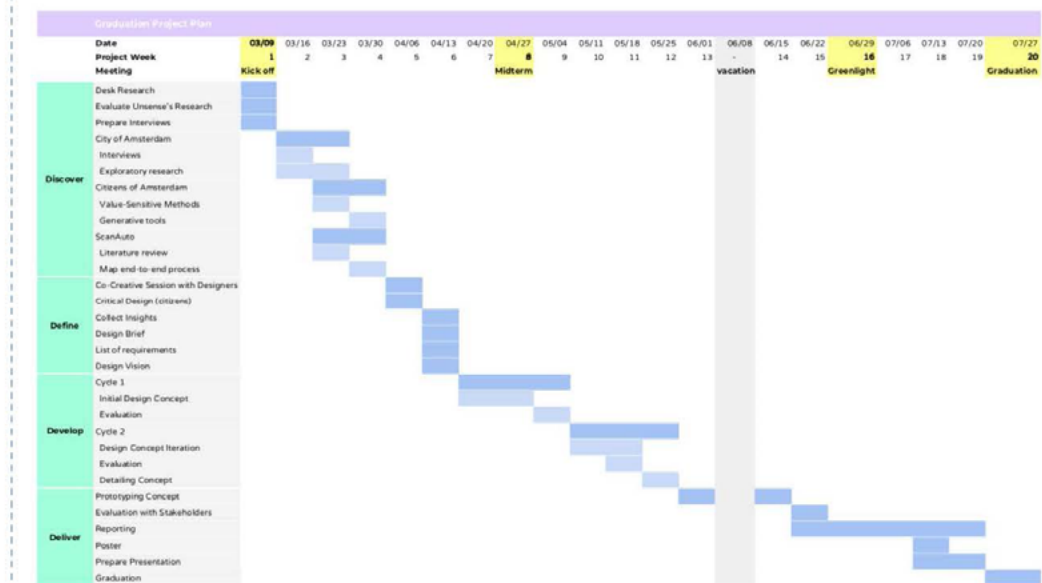
The process of this project will be divided into 4 phases: discover, define, develop and deliver See Figure 2).

Phase 1: I will conduct theoretical and empirical research on AI technologies in Amsterdam, Scan car case study with respect to technology and stakeholders, ethical risks of AI and current methods to ensure ethical standards, finally mapping values and principles of the municipality with respect to smart technologies. Furthermore, I aim to deep dive into the citizens dimension by conducting generative workshops with them.

Phase 2: I will conduct literature review and interview experts on visual communication systems, visual languages, and design systems. By the end of this phase a synthesizing process will take place to translate all insights into a design brief.

Phase 3: an idetion process will take place to explore the solution space. This phase will follow an iteration process (3 cycles) where a validation will precede the following cycle.

Phase 4: a final design concept will be further developed and evaluated to see if they comply with the TADA agreements and digital city ambitions of the municipality of Amsterdam. The results of this last evaluation will be translated into recommendations.

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MOTIVATION AND PERSONAL AMBITIONS
Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your
MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed.
Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives
of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a
specific tool and/or methodology, ... Stick to no more than five ambitions.

I have a big interest in City-Making and how public spaces can be designed to improve the well-being of its citizens,
therefore the opportunity to participate in an ongoing project led by the City of Amsterdam represents a great
opportunity for me to get experience in designing urban solutions, public innovation and an understanding of how
the public sector operates, which is something missing from my design education. Furthermore, this project will allow
me to observe how, an innovative city as Amsterdam, is addressing new and complex challenges through the use of
smart technologies.

I would like to further develop my research skills (eg. facilitation, co-creation, synthesizing qualitative data). Moreover, I
find smart technologies and usage of data increasingly relevant for social innovation thus I would like to have a better
understanding on its potential uses on design solutions.

FINAL COMMENTS
In case your project brief needs final comments, please add any information you think is relevant.

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