EMPOWERING SMART CITY RESIDENTS THROUGH LEGIBILITY

APPENDIX -
MASTER THESIS APPENDIX
Delft, September 2020

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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 Nietzsche
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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**

<table>
<thead>
<tr>
<th>Time</th>
<th>What</th>
<th>Aim</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 min</td>
<td>Introduction &amp; Icebreaker</td>
<td>To know each other &amp; talk about the sensitizing booklet</td>
<td>Introduce ourselves, goal of the session introduce themselves. Give them instruction how to introduce themselves. Tell about consent form - Session will be recorded.</td>
</tr>
<tr>
<td>5 min</td>
<td>Sensitizing Booklet</td>
<td>How was it to fill the sensitizing booklet</td>
<td></td>
</tr>
<tr>
<td>5 min</td>
<td>Instructions</td>
<td>How to fill the platform</td>
<td>1. manoeuvring the platform 2. Making first collage 3. Ask questions 4. Desired world.</td>
</tr>
<tr>
<td>15 min</td>
<td>Collage making</td>
<td>Get them to share as many relevant stories as possible regarding their digital experiences in their cities</td>
<td>How do they currently see their cities, how do they feel about it. Focus on the technologies that you see in your city.</td>
</tr>
<tr>
<td>10 min</td>
<td>Ask them to share their first collage</td>
<td>To know desires, values, like, hate about the current world</td>
<td>Ask them questions about their collage. Explain their collage, why they picked those pictures.</td>
</tr>
<tr>
<td>10 min</td>
<td>Collage making</td>
<td>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?</td>
<td>Describe it with a collage.</td>
</tr>
<tr>
<td>10 min</td>
<td>Share second collage</td>
<td>How much do they know, want to know, what are the things they care about, things they don’t care about etc.</td>
<td>After the session everyone meets again.</td>
</tr>
<tr>
<td>5 min</td>
<td>Reflecting</td>
<td>Do you have any questions for us? How did you sign up for the session? Any input you have for us?</td>
<td></td>
</tr>
<tr>
<td>5 min</td>
<td>Feedback/ Wrap up</td>
<td>Thank everyone for their time, Ask if they will be interested to be part of a bigger session in the future</td>
<td></td>
</tr>
</tbody>
</table>

**Generative Toolkit for Collages**

![Symbols and Words](image)
**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 B, spend time at C)

**Step 2:**

Look back at your journey. Mark any positive experience with a + and any negative experience with a x

**Step 3:**

Choose one positive experience and one negative experience and describe it below.

<table>
<thead>
<tr>
<th>This was positive:</th>
<th>This was negative:</th>
</tr>
</thead>
<tbody>
<tr>
<td>because:</td>
<td>because:</td>
</tr>
<tr>
<td>and I felt:</td>
<td>and I felt:</td>
</tr>
</tbody>
</table>
6. 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:

- Convenience
- Personal safety
- Social interaction

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 38 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 this 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 realizes 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 comes by and scans his care 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 he found on his phone. It had a picture of his car with a message underneath that read parked wrongly. 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 deleted. Jan finishes parking his car and lets these thoughts cease by and now mentally prepares himself for a long weekend of painting.

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 lighting, 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 below:

What excites you about smart cities?

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.)

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Sam the car

Tess is a 25 years old author who likes to write fiction books. She lives in the city of Rotterdam with her husband Erik and daughter Zoe. Erik is 38 years old and a lecturer at the Technical University of Delft. Zoe is 8 years old and she goes to primary school nearby where they live. Zoe generally stays at her school till 4:00 pm and the responsibility of picking Zoe 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 Zoe. At the school, Zoe greets her mother with a big smile and excitement. Tess gets Zoe seated on her own bike which was parked on the school premises. As Tess and Zoe cycle their way back home side by side, Zoe 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 notice it from her starting line to see Sam the car. It had a display screen on its side windows that read “Over 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. Zoe 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 neighborhoods 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. “I’m Sam. Text me: 06456810105”. Tess decides to text this number once they get home to find out what Sam does.

After reaching home both Tess and Zoe get settled and Tess texts the number asking who Sam was and what does he do. Sam replies instantaneously introducing himself as a friendly neighbor that scans the neighborhood for wrongly parked cars along with sharing relevant information pertaining to the neighborhood, things like new restaurants openings, road closures, etc. Sam also asks if they had any further questions, by providing them options to choose from. Things like: news about their neighborhood, how does Sam work, what does he see. Tess decides to ask as it was the ideal handling – were presented as options. After going through different options Tess explains to Zoe what Sam does. Zoe is delighted with now knowing what Sam does, she can’t wait to share with dad her newfound information.
Data Analysis

What if, in a few years, we have a similar situation at sea and they decide to attach a facial recognition database, because that’s easier for recognizing people who come out to watch? So they can gradually cleanse the primary or secondary in the city, without and among the population, not knowing what is happening.

Cons: What if, in a few years, we have a similar situation at sea and they decide to attach a facial recognition database, because that’s easier for recognizing people who come out to watch? So they can gradually cleanse the primary or secondary in the city, without and among the population, not knowing what is happening.

Pros: What if, in a few years, we have a similar situation at sea and they decide to attach a facial recognition database, because that’s easier for recognizing people who come out to watch? So they can gradually cleanse the primary or secondary in the city, without and among the population, not knowing what is happening.
C. Comments Analysis
### Table of 91 codes from thematic analysis

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPENDIX C. COMMENTS ANALYSIS</td>
<td>27</td>
</tr>
<tr>
<td>Paloma Esquivel</td>
<td>2020</td>
</tr>
</tbody>
</table>

The table above lists the 91 codes from the thematic analysis. Each code represents a distinct theme or category that emerged from the data. These codes are used to organize and make sense of the comments and feedback provided by participants. The codes are organized alphabetically and cover various aspects of the subjects under investigation. The table provides a summary of the codes, making it easier to understand the main themes across the dataset.
D. Surveys
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? *
- Yes
- No
- Other...

Introduction to Digital Technologies

Digital technology is all around us, but often invisible, it is extending the reach of our daily 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:

License plate cameras, known as ScanCars, 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

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 additional comments?
Long answer text

Digital technologies and data collection

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...
Are you a Dutch citizen?

- Yes: 20%
- No: 20%
- No, but I have a permanent residence permit: 12%
- None of the above: 68%

In which city do you live?

- Amsterdam: 14%
- Den Haag: 14%
- Rotterdam: 14%
- Utrecht: 14%
- Delft: 14%
- Dordrecht: 14%
- Aachen: 14%
**APPENDIX D. SURVEYS**

### 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 spaces? 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?

<table>
<thead>
<tr>
<th>1</th>
<th>How does having these technologies in public spaces make you feel?</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Protect, safe but sometimes anxious</td>
</tr>
<tr>
<td>10</td>
<td>Generally indifferent, or curious as to what type of data they’re collecting</td>
</tr>
<tr>
<td>11</td>
<td>Not sure</td>
</tr>
<tr>
<td>12</td>
<td>I don’t mind the utility gadgets like the PTTI level sensors. I think those can make life a lot easier. But I’m worried about the surveillance technologies. There is something less than precise which requires it’s ok to break rules when it is necessary (e.g. stealing bread to feed your children). In my opinion, the laws of the state have the function of obeying the law. They should be hard enough (hard as in adequate, not as in tough) to be clear but not so hard that enforcing those laws becomes the function of these laws. The problem with technology is that it doesn’t distinguish what a law should be upheld or when it is to be broken. You can argue with a police officer when you’re spending to bring a pregnant lady to a hospital about the speeding ticket. But when you are caught on a traffic camera you are just seen as a bit.</td>
</tr>
<tr>
<td>13</td>
<td>Uncomfortable</td>
</tr>
<tr>
<td>14</td>
<td>Fine</td>
</tr>
<tr>
<td>15</td>
<td>Unclear, unsure</td>
</tr>
<tr>
<td>16</td>
<td>I have mixed feelings. Some of them, as the sensors in the trash bins, are unthreatening and nice. Others, especially the surveillance cameras, makes me a bit worried.</td>
</tr>
<tr>
<td>17</td>
<td>A little bit controlled watched</td>
</tr>
<tr>
<td>18</td>
<td>Generally indifferent, or curious as to what type of data they’re collecting</td>
</tr>
<tr>
<td>19</td>
<td>Good, I think they make life easier and efficient.</td>
</tr>
<tr>
<td>20</td>
<td>Worried about my privacy</td>
</tr>
<tr>
<td>21</td>
<td>Mainly safe. Worried only if these technologies start to interfere with people’s privacy (e.g. with surveillance cameras)</td>
</tr>
<tr>
<td>22</td>
<td>I think it is great, it’s more efficient and municipalities can do a better job</td>
</tr>
<tr>
<td>23</td>
<td>Worried about the future</td>
</tr>
<tr>
<td>24</td>
<td>Okay</td>
</tr>
<tr>
<td>25</td>
<td>Continue to see how municipalities implement technologies to make the city safer</td>
</tr>
<tr>
<td>26</td>
<td>Watched</td>
</tr>
</tbody>
</table>
What would you like to know?
25 responses

1. Not that much more than what I already know. Maybe a bit more about data storage.

2. Yes the Scenauto match vehicle number plates with geographical data?

3. 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 sentence 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 (BG cough cough)

7. The image recognition software

8. How they function and what the challenges are

9. I would like to know how these 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 with all the data that is collected about me.

14. The summary

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 do Scenauto 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 scenauto determines how much time does the car have been parked without paying.

20. To what extent is my data used

21. How does Scenauto checks if cars that are not properly parked?

22. how 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 Scenauto
25 responses

1. How much money would an advertising company have to offer a municipality for them to sell the data they collected?

2. If data is combined (e.g. faces, number plates, and geolocation) people can be followed.

3. Taking pictures of people and storing it.

4. I don’t think it’s a more effective way of a process that can already be done manually.

5. I kinda feel like I should say something about privacy but meh... 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 military men in town (for example during terrorism threats). I trust their good intentions but it makes me feel less free. (If this is needed, we must be under threat)

6. Consequences if it misreads a figure

7. Cannot say

8. I don’t have a car, so I’m not really concerned about scenauto.

9. I would prefer if people were doing the job

10. I would be concerned if the Scenauto is going to be driven unmanned. I think a human is needed to evaluate the nuance of human ethics in some circumstances.

11. Just privacy. I don’t own a car myself, but I feel the cars are an invasion of privacy.

12. Concerns requires knowledge on the subject

13. Data privacy

14. 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.

15. “puts en tin foil hat” won’t it also track the location of cars etc?

16. I don’t have a car, so I’m not really concerned about scenauto.

17. There is no way to know how much time the car has been parked without paying.

18. Does it take more than just pictures of number plates

19. Does Scenauto use vision-based algorithms?

20. where are the pictures saved? who do I make sure they get deleted

21. data being hacked

22. none

23. data protection (my privacy)

24. what information is in the images, can they see my face

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

- Yes: 30% (9 responses)
- No: 20% (6 responses)
- Not relevant: 50% (9 responses)

How should you be able to access it?

- 19 responses

1. There are many examples of data collected by the government that is publicly available. The Kadaaster API is one of them: https://i15.metaktadaaster.nl-frag-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.

2. Theoretically I feel like I should be able to do it, but I know I never will.

3. By internet

4. 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.

5. It would be cool if we can see some sort of output of the data in a way that we understand what they’re 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.

6. I think reporters or whatever should see the raw data but please don’t put this online, will take too 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. Yes.

10. Yes.

11. When asking for it.

12. Online, with a combination of my license plate and my DIGID.

13. I should be able to access it when it is about me. Any data which are not relevant (no offense against parking law) should not be allowed to be stored.

14. Maybe via DIGID

15. Yes.

16. Website

17. It should be open source

18. municipalities should offer open data to citizens
E.

Design Brief
IDE Master Graduation
Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisor about the student's IDE Master Graduation Project. This document can also include the involvement of an external organization, 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 Board of Examiners confirms if the student is allowed to start the Graduation Project.

STUDENT DATA & MASTER PROGRAMME

Complete all data parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1.

**Family name**

**Initials**

**Student number**

**Address**

**Country**

**City**

**Zip code**

**Phone**

**Email**

**Supervisory Team**

**Chair**

**Mentor 1**

**Mentor 2**

**Mentor 3**

**Short description of the supervision team**

**Description of the Project**

**Expected deliverables**

**Expected outcomes**

**Duration**

**Funding**

**Other relevant information**

**Approval**

Chair should sign the IDE Board of Examiners for approval of the IDE master, including a supervisor letter and c.v.

Mentor 1 should sign the IDE Board of Examiners for approval of the IDE master, including a supervisor letter and c.v.

Mentor 2 should sign the IDE Board of Examiners for approval of the IDE master, including a supervisor letter and c.v.

Mentor 3 should sign the IDE Board of Examiners for approval of the IDE master, including a supervisor letter and c.v.

Comments

Name

Date

Signature

IDE TU Delft & E&SA Department // Graduation project brief & study review // 2020-01-01 v3.0

Page 1 of 7
Responsible Sensing In Designing Metropolitan Solutions

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.

**Introduction**

The city of Amsterdam is a dynamic ecosystem where the interests and views of many different stakeholders (such as citizens, commercial companies, government) intersect and collide. At the same time, globalization, current political and climate change, and global warming among other factors, add a layer of complexity to the city's dynamics. With this in mind, cities face social, economic, 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. However, the increasing use of sensors, data analytics, and artificial intelligence (AI) has the potential to undermine the human and social values of cities.

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 other use cases such as detecting trash on road sides and automatically seeing buses for storefront advertisement.

The municipality of Amsterdam recognizes 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 [5] that outlines the vision of a "true, 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 smart cities 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 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.

**Past Studies**

In response to similar concerns, designers at Sidewalk Labs in Toronto developed a comprehensive system of urban signage designed to disclose what technology it is using to track people in public spaces [3]. The signs are meant to be a virtual 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 what extent visual signs can be a meaningful way to enhance the transparency of artificial intelligence systems in public spaces.

**References**

APPENDIX E. DESIGN BRIEF

PERSONAL PROJECT BRIEF - IDE MIEUER GRADUATION

PROBLEM DEFINITION

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 and incapacity of AI systems. Services in public space are often hidden and data collection practices and algorithms are not properly documented and difficult to understand. The current situation presents 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 and purpose 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 we effectively communicate the use of AI in Amsterdam, with the goal of fostering transparency and public understanding.

ASSIGNMENT

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 expanded 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 the municipality can effectively communicate the use of AI technology as well as underlying values and principles to a lay 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 use cases), complexity (ability to communicate detailed aspects of AI systems) and effectiveness (contributes to better public understanding of public AI systems).

PLANNING AND APPROACH

In line with IDE MIEUER’s design philosophy, this project is 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 studies 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 delve into the citizen dimension by conducting generative workshops with them.

Phase 2: I will conduct literature review and interviews on visual communication systems, visual languages, and design systems. By the end of this phase a synthesis paper will be produced to integrate all insights into a design brief.

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

Phase 4: A final design concept will be further developed and evaluated to see if they comply with the TADA and TADA agreements and digital city ambitions of the municipality of Amsterdam. The results of this last evaluation will be translated into recommendations.
**MOTIVATION AND PERSONAL 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 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 like Amsterdam is addressing new and complex challenges through the use of smart technologies.

I would like to further develop my research skills (e.g. facilitation, critical, synthesizing qualitative data). Moreover, I find smart technologies and data increasingly relevant for social innovation and I would like to have a better understanding on its potential use on design solutions.

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**FINAL COMMENTS**

As per your project brief needs final comments, please add any information you think is relevant.