

# **Data**

# **Donation:**

## **Engage Users in Ethical Data-driven Design**

Master Thesis 2020  
**Strategic Product Design**  
by Sijie Tong

## **Appendices**

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## Appendix A: Expert Interview Material

Preview File Edit View Go Tools Window Help

P1\_ExpertInterview.pdf (page 3 of 11)

P1\_ExpertInterview.pdf

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**Warming up**

**Data are generated in people's daily interaction with Smart Home**



Q1: Please take a look at the info graphic, and think about what types of data may be generated in a smart home?

Q2: Assuming that you need these data in your project, what are the possible ways to obtain/collect them?

Have you ever taken users' rights on their personal data into account?

Data donation: engaging users in ethical data-driven design

Prototype Evaluation

**System Concept**

Preview File Edit View Go Tools Window Help

P1\_ExpertInterview.pdf (page 7 of 11)

P1\_ExpertInterview.pdf

3

4

5


6

7

**Part 1: A Future Vision**

**'Personal Data Bank'**

1. It will be a set of database where users can save personal data and send data to whom they choose in a secure manner.
2. It can be built and supervised by EU, international non-profit association, etc.



**The Human-Centric Infrastructure for Personal Data**

By MyData Global, the association is governed by the Finnish Association of Act

*"MyData Global is an award-winning international nonprofit. The purpose of MyData Global is to empower individuals by improving their right to self-determination regarding their personal data."*

*"Understanding MyData Operator is a foundation for a roadmap towards a human-centric personal data infrastructure. ... Following up on the MyData vision published in 2015, MyData operators enable sharing of personal data across services where the use of data is transparent and controlled by individuals."*

Q1: How do you think about the need of 'Personal Data Bank' in the next 5 years?

1	2	3	4
No need at all	Not much needed	Probably needed	In great need

Q2: Is it feasible?

1	2	3	4
Totally unfeasible	Not very feasible	Generally feasible	Completely feasible

Data donation: engaging users in ethical data-driven design

Prototype Evaluation

**Part 2: From Data to New Product/Service**

View full Pdf file through the link:

[https://drive.google.com/drive/folders/1D\\_f9JA186v2iycr0Ko66V7-Hmo8qpGMm?usp=sharing](https://drive.google.com/drive/folders/1D_f9JA186v2iycr0Ko66V7-Hmo8qpGMm?usp=sharing)

## Appendix B: Code Manual

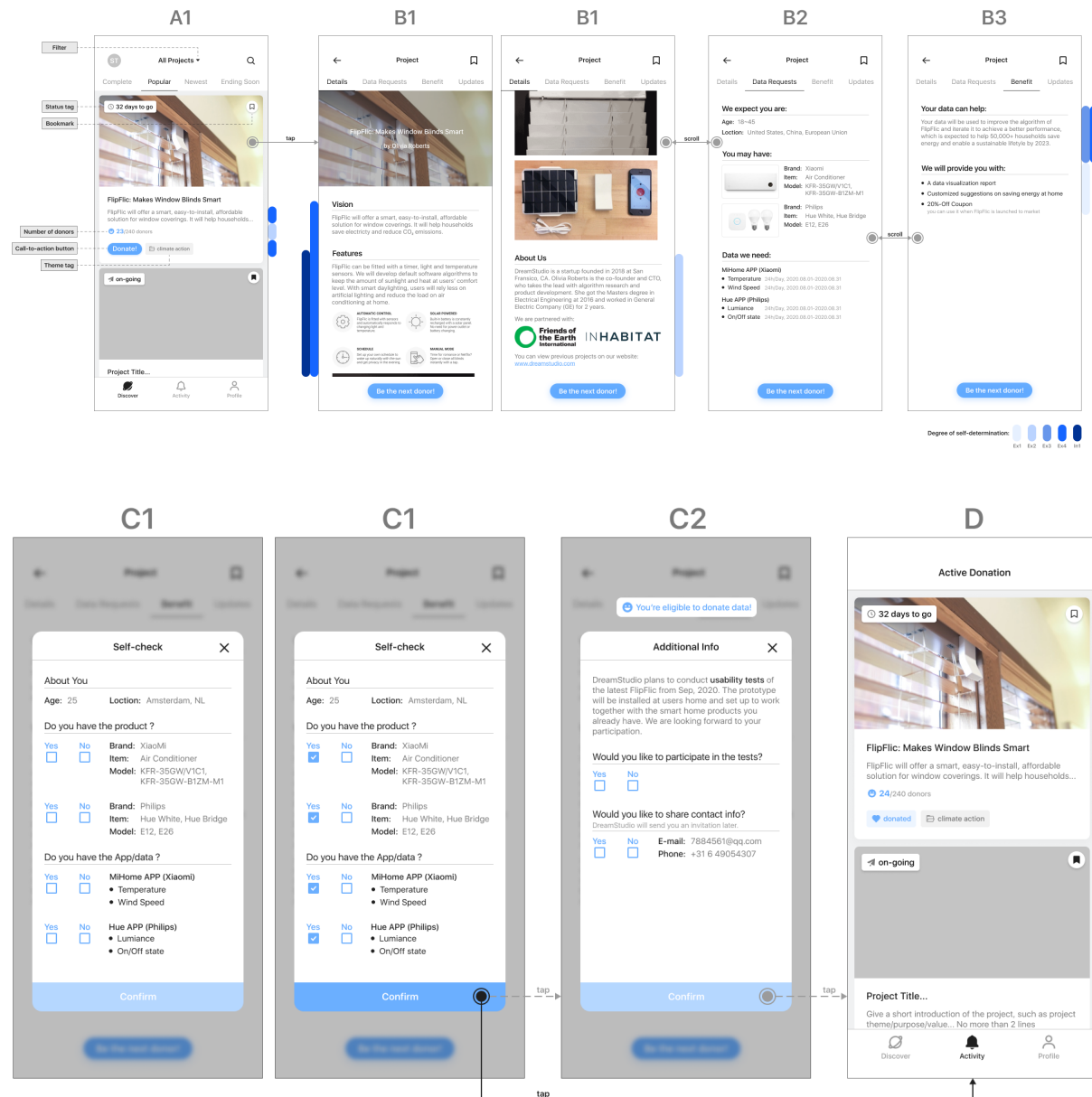
Extrinsic Motivations of donating data	Present a reliable profile of the project team	Presenting successful projects the team did or the achievements they got before would make users believe the team will use their data to get a good result as well.	Secondly, this project has not started yet, but I have projects that were completed, then I may present the results of the projects I have done before to let users know that their data will be applied to do practical
		If the data receivers has a high reputation, users would feel proud of donating data to them.	The intrinsic motivation is just like what you just said, donating blood is more like giving users a sense of honor. I feel proud that I have participated in a very meaningful project, right? And why do people have
	Do the same thing as what the majority have done	Users would feel motivated if they know many people have donated their data to projects in the same domain. They tend to be the same as others, so they donate their data as well.	In addition, users know many other people did data donation. As your project just started, currently there is no participant. But you can tell users how many people donated their data to previously launched projects within the same domain. Let's say, 500 people have participated in projects about sustainability, and users
	Give users customized rewards based on their data (abstract rewards)	Designers could offer users a simple analysis of the data they donated.	The second point is that I can offer him a simple data analysis as a return for his data donation.
		Give some suggestions of behavior changing based on the analysis of users' data.	If we follow the same logic, for example, users donate their electricity consumption data to me, then I can give them an analysis of their electricity consumption behaviors and provide some energy-saving
	Give users monetary rewards (tangible rewards)	Offering a very small amount of monetary reward for users who donate their data is a way to express politeness.	How much money you provide to users as a reward should be carefully considered. In this case, I think you can set a very small amount. That's how it might be a
		Provide users with some monetary rewards or gift cards.	Third, if I have a budget, I can provide users with
		Inform users they may be invited to join a paid research of the project after they donate their data.	If I have very little budget, I would say that we need your data donation and you may be invited to join our
	Projects have a good impact on other people Projects are very meaningful	Getting monetary rewards is an extrinsic motivation.	For extrinsic motivation, one thing is the reward that I just mentioned. It could be monetary or profitable.
		Users would be happy to know that because of their donation, the newly developed product will be used by so many others.	Or you can tell them how many people use the product, and then they know how many people are
		If the project itself is very encouraging or meaningful, many users will donate their data to it.	Another possibility could be that the project itself is very encouraging. You mentioned blood donation, right? It is a very meaningful thing in real life, and that's why many people are willing to do it. So if your
		Introduce the meaning of the project to make users feel their data can help a lot.	Second, the project has an attractive introduction. Users may feel that donating a little bit of my data will
Intrinsic Motivations of donating data	Users feel a sense of accomplishment in data donation	Users need to be appropriately motivated or feel a sense of accomplishment in donating data.	I'm not sure whether users have a motivation that keeps them donating their data all the time, because it seems that users are selflessly dedicated. Maybe they need to see how many projects are achieved due to their data donation, then they will have a sense of
	Users feel they can help themselves by data donation	The project could get good results for data subjects.	You can pay them, right? So you can give them money. You can promise them help. But usually you
		Making people feel they are helping themselves motivates them to donate their data.	If you are trying to improve a service or you are trying to improve a product or you are trying to invent a new service that might be beneficial to the target group,

View full Excel sheet through the link:

[https://drive.google.com/drive/folders/1D\\_f9JA186v2iycr0Ko66V7-Hmo8qpGMm?usp=sharing](https://drive.google.com/drive/folders/1D_f9JA186v2iycr0Ko66V7-Hmo8qpGMm?usp=sharing)



## Appendix C: UI Design



Play with the prototype through the link:

<https://www.figma.com/proto/xpCsusqsvFy1po7GdDgfvD/DataDonation?node-id=58%3A3792&scaling=scale-down>

## Appendix D: User Testing Material

Projects > Product Prototype > V3

MAZE STATUS  
All changes saved

PREVIEW START TESTING

Welcome Screen

Now, donate your smart home data to 1 project  
Mission

How do you feel about the difficulty of use?  
Opinion Scale

Full Picture: Data Donation System  
Context Screen

Future: Donate Data  
Context Screen

Future: Donate Data  
Context Screen

What would motivate you to donate data?  
Open Question

Thank You Screen

Question\*

How do you feel about the difficulty of use?

Add notes

(Could you please describe the process you just gone through based on your understanding?)

How to format text with Markdown

Image

Show an image while asking this question

Labels

very easy Middle very difficult

Number of steps

5 6 7 8 9 10 11

PREVIEW

How do you feel about the difficulty of use?

(Could you please describe the process you just gone through based on your understanding?)

1 2 3 4 5

very easy very difficult

任务

Now, donate your smart home data to 1 project

**Data Donation APP** contains lots of innovative projects that have Sustainable Development Goals (SDG). The data you generated in daily use of smart devices at home would help some projects to achieve their goals.

Now, assuming that you would be interested in the project: **FlipFlic**, please try to donate your smart home data to support its development by operating this prototype.

放弃

Project

Details Data Requests Benefit Updates

**AUTOMATIC CONTROL**  
FlipFlic is fixed with sensors and automatically responds to changing light and temperature.

**SOLAR POWERED**  
Built-in battery is constantly recharged with a solar panel. No need for power outlet or battery charging.

**SCHEDULE**  
FlipFlic can be scheduled to work up automatically with the sun and get powered in the evening.

**MANUAL MODE**  
Turn on manually or manually? Open or close all blinds instantly with a tap.

About Us

DreamStudio is a startup founded in 2018 at San Francisco, CA. Olivia Roberts is the co-founder and CTO, who takes the lead with algorithm research and product development. She got the Masters degree in

Be the next donor!

figma

Preview the user test through the link:

<https://t.maze.design/17883200?guerilla=true&notrack=true>

## Appendix E: Project Brief

DESIGN  
FOR our  
future



# 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 to 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 Tong  
initials S given name Sijje  
student number 4780140  
street & no.   
zipcode & city   
country The Netherlands  
phone   
email

Your master programme (only select the options that apply to you):

IDE master(s): ☐ IPD ☐ Dfl ☒ SPD

2<sup>nd</sup> non-IDE master:

individual programme: - - (give date of approval)

honours programme: ☐ Honours Programme Master

specialisation / annotation: ☐ Medesign

☐ Tech. in Sustainable Design

☐ Entrepreneurship

### SUPERVISORY TEAM \*\*

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

\*\* chair Jacky Bourgeois dept. / section: DE/IoT

\*\* mentor Sander Mulder dept. / section: PIM/MOD

2<sup>nd</sup> mentor

organisation:

city:  country:

comments  
(optional)

||  
||  
||

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.

**APPROVAL PROJECT BRIEF**

To be filled in by the chair of the supervisory team.

chair Jacky Bourgeoisdate 14-05-2020signature **CHECK STUDY PROGRESS**

To be filled in by the SSC E&amp;SA (Shared Service Center, Education &amp; 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 1<sup>st</sup> year master courses passed

☐ **NO** missing 1<sup>st</sup> 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 \_\_\_\_\_

date \_\_\_\_\_

signature \_\_\_\_\_

## Data donation: engaging users in ethical data-driven design

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 05 - 05 - 2020

25 - 09 - 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, ...).

With the advancement of digital technology, people leave a trail of digital information when going through their daily routines. Attention has turned to the value that these everyday digital data streams, representing real-world and real-time behaviours, could contribute to the design of products and services that bring end users with better experience. However, this data often reveals intimate behaviours about users, leading to regulations as well as solutions for data control and privacy.

To seize innovation opportunities in the booming data-driven businesses, designers become more and more data-aware and take digital data as a critical new medium for design. Data doesn't directly show what the problems are and how to solve them, but it helps to expose the problems, provide more information about them, and evaluate the effectiveness of solutions in the design process. Due to the Global Data Privacy Regulation (GDPR) is carried out, designers should adhere to strict rules set for data collection and processing, which means that they are limited to user data. It may also lead to the unreliable quality of data that influences designers' decision making.

On users' side, to feed their needs or achieve their goals by using certain products and services, they have to consent to companies collecting some of their data and making use of it. It seems that users pay for the products and services in data instead of cash. However, unlike the fixed value of a certain amount of cash, the value of data depends on how it will be mined and transformed to knowledge. After handing their data over companies, users lack control of how it is being used. As a result, there is a power imbalance between users and companies on data control.

The opportunity lies in data donation that could serve as an expression of users' autonomy to decide what they want to be done with their data, and as a value of public commitment and collective control. Data donation could also provide designers with more chances to receive user data with good quality and apply it in a responsible way. Ubiquitous and versatile, mobile phones appear as a key enabler for mechanisms that inform and engage users in donating their data for purposes they care about. It is expected that a data donation platform will be developed on mobile operating systems. This platform is aimed to establish a fair and trustworthy relationship between data subjects (users) and data receivers (designers) in digital economy.

The limitation of this graduation project is that the platform mentioned above will only be prototyped for research rather than designed as a fully functional digital product which can to be put into market, since I don't have enough coding skills. I will make prototypes iteratively to measure the viability and desirability of the data donation mechanism, while place relatively less stress on the feasibility.

space available for images / figures on next page

Personal Project Brief - IDE Master Graduation

introduction (continued): space for images

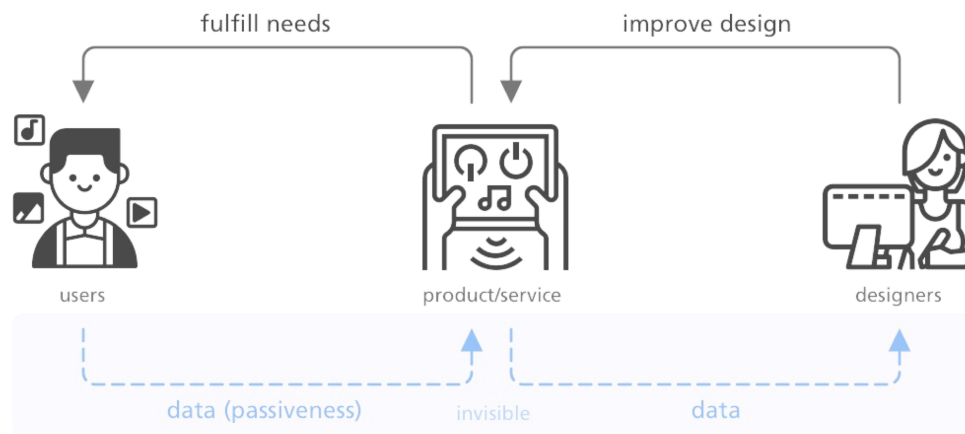


image / figure 1: Current data flows between users and designers

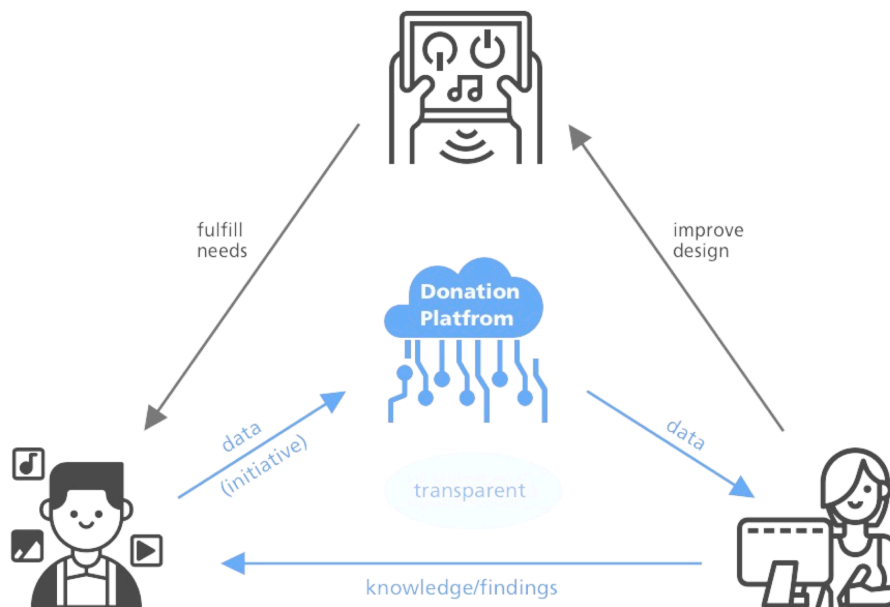


image / figure 2: Envisioned data donation platform relationships

## 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.

Donating data through mobile phone is a potential way to provide designers with more valuable user data in product and service innovation. Data donation also enhances users' autonomy on their own data. They can decide to whom their data will be hand over and be clear about the purpose of data usage.

The main problem is to explore what opportunities that data donation can bring to engage users in ethical data-driven design. Solving this problem involves providing answers to following questions:

- What are the challenges designers face in ethically collecting and using data in design?
- What are users attitude toward dealing with their data?
- What motivates users to donate their data (to designers)?
- How to inform users what is processed, what is discovered or what is done after their donations?
- What kind of relationship between users and designers are preferred in the context of data-driven design?

To ensure a more concrete outcome of this graduation project, I will focus on Internet of Things(IoT) industry and select a scenario where the type of product and the segment of user and designer will be clearly defined.

## 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.

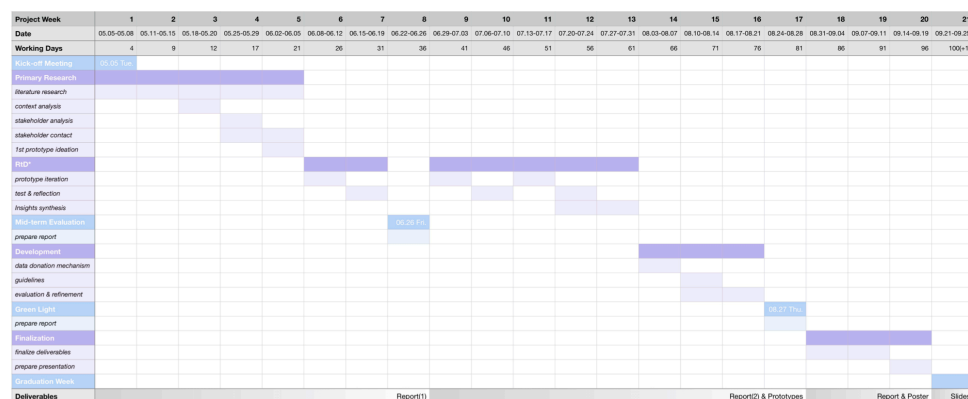
I'm going to research user's concerns of data donation and designer's concerns of ethical and effective use of data in product design. Prototypes will be iteratively made as a probe which helps to map out the mechanism of data donation.

The data donation mechanism is expected to show how values are delivered to both data subjects and data receivers. It is important to take the relationality, indirect reciprocity and multiplicity (Prainsack, 2019) of data donation into account.

Besides, I'll design some guidelines for users to have more autonomy on their data and for designers to design with data in a responsible manner.

Reference:  
Prainsack, B. (2019). Data donation: How to resist the iLeviathan. In The ethics of medical data donation (pp. 9-22). Springer, Cham.

25 - 9 - 2020      end date



This project can be roughly divided into three stages. The first stage is about understanding context and stakeholders. I'll mainly conduct literature research and define a scenario where user and designer segments will be made clear. The second stage is prototyping. I'll design prototypes as a probe to generate insights when testing them with users and designers. The insights gained in such a research through prototype (RtD) process will be synthesized and applied to develop a data donation mechanism and some guidelines in the third stage.

Due to the outbreak of COVID-19, some issues need to be taken into account:

- Interviews, brainstorming sessions and usability tests cannot be done face to face. I'll select some online tools, such as Skype/Zoom for interview, Miro for brainstorming and Userlytics/UsabilityHub for usability test, to achieve the tasks.
- It might take longer time to contact stakeholders. I'll prepare in advance and try to avoid project delay.



### 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.

Data becomes more and more important in the digital economy. During my design internship last year, I found that designers used data as the material to create products that made users' life easier or made work more efficient. At the same time, I felt worried about users' data privacy, because it seemed that companies had more power on data control than users themselves. As a designer, I'm aware of not only the value of data in design but also the responsibility of collecting and using data in an ethical way. Besides, users' right of controlling their data needs to be taken seriously.

I will bring both users' and designers' concerns into this project, which is a challenge to communicate with different stakeholders. I want to enhance my capabilities of looking into conflicts, finding out design opportunities and providing solutions beneficial for both sides.

The graduation project is the first long-term personal project in my master study. I would like to improve my skills of project management, and know how I can push forward the project when there are some obstacles. At the same time, I want to practice more on formal writing and visualization, which will help me to express my learnings and insights to others in the workplace.

### FINAL COMMENTS

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