Consent practices and disclosure interactions in the context of digital platforms

A design proposal to improve current practices by leveraging value similarities and resolving value tensions

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Strategic Product Design
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Preface

Dear reader,

I am excited to present you my graduation project. Not only am I closing the final chapter of the master programmes, but I am also saying goodbye to the wonderful years I spent at the faculty as an Industrial Design Engineering student. I can look back at a time that has made a great impact on me as a designer and personally. I am especially grateful for everything that I have learned, all the people I have met and the friendships that started over the years.

Before I introduce you to the contents of this report, I would like to express my gratitude to several people.

First, I would like to thank my supervisors. Thank you Elisa, Lianne and Heather, for your guidance and support throughout my graduation journey. In particular, for all the interesting and inspiring discussions that we had. Your motivational, positive and constructive feedback was invaluable and made this journey a joy to go through.

Second, I would like to thank Open Future Foundation for allowing me to use your design case for my graduation project. Thank you Francesco, for introducing me to the world of policies, your guidance and highly relevant input. It was a joy to work with you and I am looking forward to our session at Mozfest 2022.

Third, I would like to thank everybody who participated in the interviews, creative sessions and validation sessions. In addition, I want to thank everyone who has given me advice along the way. Without your willingness and enthusiasm to take part in my graduation journey and all your valuable contributions, the result that lies before you would not have been the same. I am grateful for all the new people I met and for everything that I learned from you.

Fourth, I would like to thank my friends from the IDE and outside the faculty for an incredible time at TU Delft. I cherish all the conversations, coffee breaks, fun moments and ID Kafee visits that we had together.

Fifth, I would like to thank my family for your unconditional support and love through all these years. Together we went from testing wooden prototypes for a one-handed apple peeling product and children's toys, to evaluating elevator services and information provision at the general practitioner's office. I learned a lot from going to school and university all these years, but it is not comparable to everything that I have learned about life from you.

Finally, I would like to thank my partner and best friend. Thank you Andrea, for standing by me every day of this journey. Thank you for celebrating the beautiful moments and for guiding me through difficult ones. Your cheers and support made all the difference in this journey, which I will forever take with me.

My time as a student at TU Delft has come to an end. Therefore, it is with joy and pride that I present my graduation report.

All the best,

Aniek

Executive Summary

Digital platforms harvest end-users' data for providing personalised recommended content. However, this data is also used to predict individual end-users' behaviours and hook them to the content, eventually influencing their worldviews. This raises ethical debates related to the development of serious societal issues, such as fake-news diffusion, increasing polarisation and threats to democracies. On the individual level, end-users are affected by data leaks and privacy intrusiveness. People are therefore increasingly concerned about sharing their data without knowing what they reveal, for what purpose and to whom, and are consequentially unable to exercise their digital right to privacy and consent, as also concluded by the European Commission (2015).

This thesis investigates how consent practices and disclosure interactions can be redesigned to instate future data practices and digital platform relations which both digital platform organisations and end-users desire. This thesis adopts a sociotechnical perspective on digital platforms, as in de Reuver et al. (2018) and Tilson et al. (2012). The hypothesis is that future visions on 1) digital platform relations, 2) data practices, and 3) consent practices and disclosure interactions, from digital platform organisations and end-users should be explored, defined and compared to identify commonalities that provide a foundation for solution exploration, and to identify fundamental tensions that need to be resolved to create the conditions in which new practices can be effective and meaningful.

Future visions are defined through semi-structured interviews and Context Mapping conducted with eight field experts and eight (sensitised) end-users, led by the Path of Expression line of inquiry and analysed accordingly to the Grounded Theory Method. For every future vision topic, one theoretical framework is made to extract values and sources of friction. While the first are the drivers of the future visions, the latter contain conflicting interests to resolve before they can occur. By comparing the values extracted from the future visions on consent practices and disclosure interactions from the experts and end-users, it is concluded that some values match and others clash, which are defined as value similarities and value tensions respectively.

Methods to leverage value similarities in consent practice redesign are investigated through creative sessions with (former) design students employing How To – Questions, Brainwriting and Creative Confrontation. As all values can be leveraged in different ways, strategies for creating new consent practices are defined by using a Morphological Chart. A similar creative session employing Personal Analogy, Role-Play and Scenarios is used to investigate how to resolve value tensions in a consent redesign. All common tactics used to reach agreements on the value tensions are analysed and applied to the redesign for resolving the value tensions. Eventually the design objective of the thesis is reached by creating new (aspects of) consent practices and disclosure interactions based on the design propositions, for a total of 21 design directions including 88 different ideas from several ideation activities.

The digital platform organisation Flickr served as a real-life case for applying the research insights and design directions. A new consent journey proposal which balances privacy considerations from end-users and interests of the AI community is created for obtaining users' photos to create image data sets. The proposal is validated with representatives from Flickr, Flickr's end-users and the AI community, and evaluated as desirable, sufficiently feasible and viable, with part of it effectively contributing to solving the design case. Additionally, the proposal enables the exercise of end-users' digital right to privacy and consent. It's effect on individual-level relations also contributes to solving data practice-related societal issues.

This thesis concludes that consent practices and disclosure interactions can successfully be redesigned by leveraging the set of identified value similarities and resolving the set of identified value tensions (figures A & B). It is also found that ensuring a match between desired practices and reducing opportunities for dissension allows redesigning consent practices to be effective and meaningful. The early assumption that the identified sources of friction are solved limits however this thesis' effective implementations, possibly requiring future research and investigations in these regards.

LEGEND:

- Value driving the end-users' future vision on consent & disclosure
- Value driving the experts' future vision on consent & disclosure
- Shared value driving experts & end-users future visions on consent & disclosure

LEGEND:

- **Throughout** the disclosure interaction
- **During** the disclosure interaction
- **After** the disclosure interaction

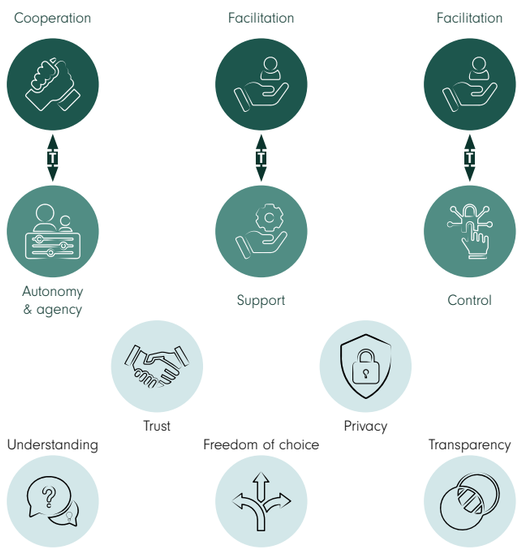

Figure A: Overview of the set of identified value similarities & tensions

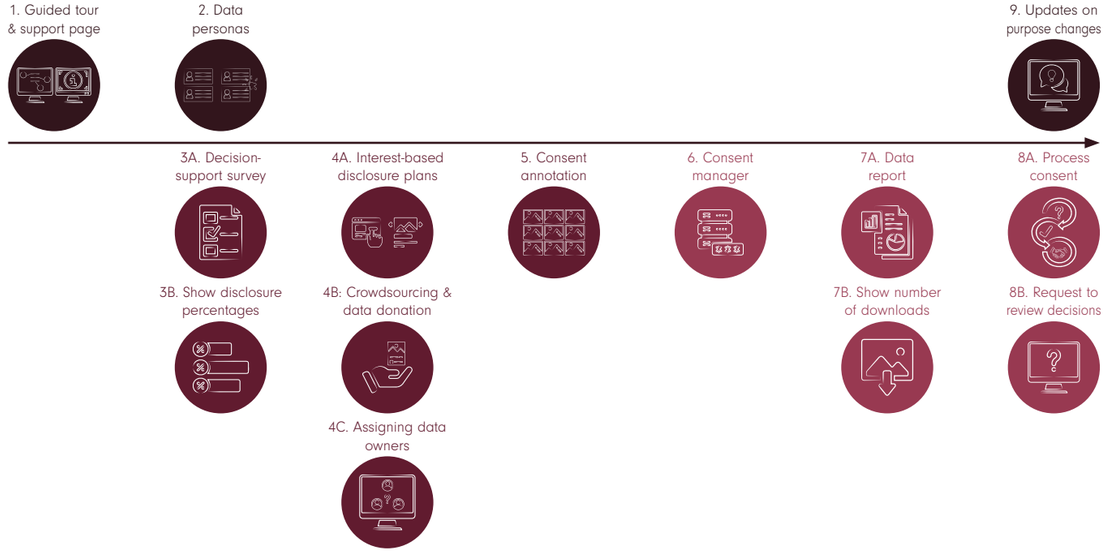

Figure B: Proposal with new consent practices and disclosure interactions

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Reading Guide

This reading guide is created to assist the reader of this thesis in understanding the structure and content of this report. It presents visual cues, definitions of key words, explanations of abbreviations and topic-based marked chapters. Their purpose is to support the quick reader and the reader with specific interests in finding the desired content fast and easily.

VISUAL CUES

> Main research chapters
This report contains six chapters that belong to the research phase of this thesis.

Main design chapters <
This report contains five chapters that belong to the design phases of this thesis.

> Research results
Research results are presented on coloured light and dark green and blue backgrounds.

Design phase results <
Design results are presented on coloured light and darker pink backgrounds.

?

> Research (sub-) question

Design (sub-) question <

?

"Text of the quote" – RX1

> Research quote
From empirical design research.

Design quote <
From design sessions & evaluation.

"Text of the quote" – P1

ABBREVIATIONS

AI/ML	Artificial Intelligence / Machine Learning
GDPR	General Data Protection Regulation
ePD	ePrivacy Directive
T&Cs	Terms & Conditions
ToS	Terms of Service
PP	Privacy Policies
LI	Legitimate Interest
UX/UI	User Experience / User Interface

SPECIFIC TOPICS

CHAPTER 1: 1.1
CHAPTER 2: 2.2
CHAPTER 3: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6
CHAPTER 4: 4.1
CHAPTER 5: 5.1, 5.2

CHAPTER 07: 7.7

> Future visioning: digital platforms & data practices
Selected relevant chapters and sections.

Designing with value similarities & value tensions <
Selected relevant chapters and sections.

CHAPTER 1: 1.1
CHAPTER 03: 3.1, 3.2, 3.3, 3.4, 3.5
CHAPTER 04: 4.1
CHAPTER 05: 5.1, 5.2

CHAPTER 07: 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7
CHAPTER 08: 8.2, 8.4

CHAPTER 1: 1.1
CHAPTER 3: SUMMARY & TAKE-AWAYS
CHAPTER 05: 5.1, 5.2

CHAPTER 06: 6.1, 6.2
CHAPTER 07: 7.3, 7.6, 7.7, 7.8
CHAPTER 08: 8.1, 8.2, 8.3, 8.4
CHAPTER 09: 9.1, 9.2

> Design case: Open licensing in the age of AI
Selected relevant chapters and sections.

01

Project Introduction

This chapter introduces the initial assignment of this graduation project. In addition, it elaborates on the project approach.

First, it describes the context and problem definition, elaborates on the relevance of a solution to the problem and identifies a starting point of this thesis. Subsequently, it defines the scope and focus of the graduation project. In addition, it provides an overview of all stakeholders involved. Finally, it formulates initial questions and project goals that serve as starting points for a literature review.

Second, the project approach is described and visualised. It addresses the main structure, the design perspectives and approaches. Furthermore, it elaborates on the methods used throughout the research and design phases.

To conclude, the chapter contains a visual overview of this thesis' project activities, project structure and report structure.

1.1 Initial Assigment

Context & problem definition
Scope & focus
Initial questions & project goals

1.2 Project Approach

Approach & methodology
Project activities, project structure & report structure

1.1 Initial Assignment

This section describes the initial assignment of this thesis. It elaborates on the context and problem definition. In addition, it defines the scope and focus, and identifies the stakeholders of this graduation project. Subsequently, it formulates different initial questions to start the theoretical investigation with. To conclude, it lists personal ambitions for this graduation project.

CONTEXT & PROBLEM DEFINITION

Nowadays, digital platforms are everywhere. They host the music we listen to, provide the news we read, screen the movies and series we watch, display the messages we send to and receive from friends and family, advertise the clothes and products we buy, allow us to socialise and work despite a physical distance, and so much more (de Ree, 2019). They are highly integrated in people's daily activities, which makes it difficult to imagine a life offline.

Digital platforms harvest end-users' data for providing personalised recommended content, such as news feeds, streaming recommendations and suggested products. However, this data is also used to predict individual end-users' behaviours in detail and hook them to the content, eventually (unconsciously) influencing their worldviews.

This raises ethical debates related to the development of serious societal issues caused by data practices, such as fake-news diffusion (e.g. throughout the COVID-19 pandemic), increasing polarisation (e.g. political division) and threats to democracies (e.g. Cambridge Analytica scandal). On the individual level, end-users are affected by data leaks and privacy intrusiveness (Trevisan et al., 2019). People are therefore increasingly concerned about sharing their data without knowing what they reveal, for what purpose and to whom, and are consequentially unable to exercise their digital right to privacy and consent, as also concluded by the European Commission (2015).

The EU Charter of Fundamental Rights stipulates the right to protection of personal data for all citizens of the member states of the European Union (European Commission, n.d.-a). The basic approach to protection consists primarily of rights to notice, access and consent regarding the collection, use and disclosure of personal data (Solove, 2012). In order words, organisations may process end-users' data if they receive consent or have a legitimate interest (Koch, 2019). Consequentially, they offer services in exchange for end-users' data which is justified by terms and conditions that are agreed to in order to use the service (Edenberg & Jones, 2019).

As a result, end-users' inability to exercise their digital rights is problematic for organisations in a number of ways. First, consent provided by end-users becomes legally invalid (in the European Union) which may affect the data supply as fuel to the digital platform organisations' business models. Furthermore, these data practices negatively affect the relation between end-users and organisations while trust should be a key aspect of the relation instead. Relations that feature personal trust will survive greater stress and display greater adaptability (Williamson, 1985; Zuboff, 2015).

End-users' inability to exercise their digital rights is also highly problematic on the individual and societal level. For instance, blind acceptance of data disclosure contributes to sustaining the development of societal and individual issues, similar to the ones as previously discussed. Despite an increasing presence of issues caused by data practices on an individual level, end-users still expect privacy by default as they think that no data is collected unless they decide (Utz et al., 2019). Even if end-users are aware, there is not much they can do about it. For instance, excluding themselves from digital participation by not using the services of the Big Five (i.e. Amazon, Apple, Facebook, Google & Microsoft) is demonstrated to be nearly impossible (Hill, 2019).

As a consequence, end-users have become the main data source for digital platforms and take part in heavily mediated platform user relations founded on invisible communication (Alaimo, Kallinikos & Valderrama, 2020;, Hill, 2019). There is a misconception regarding people's perception of digital platforms being at their service, while the reality is that their everyday life, also referred to as "Harvesting of Everydayness" (Kallinikos & Constantiou, 2015) has become the resource that is now mined, used and channelled.

As we are becoming a data intensive society with a rapid increase in the number of products and services we use that are designed as apparatuses to extract data (Statista, 2021), solving the imbalance in the relation between end-users and digital platforms (organisations) becomes highly relevant and is therefore the starting point of this thesis.

How to change and contextualise what we think of as digital platforms? How to accomplish a switch in our mental models from "using" digital platforms to curating a relation and feeding it with more or less intention, dependently on our mindset in different moments?

SCOPE & FOCUS

The scope of this thesis includes contemporary digital platforms, their data practices and their effects on individuals and society. In addition, the scope involves many stakeholders such as regulatory international and national authorities, and third parties including advertisers and Software-as-a-Service providers. However, the main focus of this thesis is on digital platform organisations and end-users of digital platforms.

The issue to be tackled is primarily the data itself, as it is the fuel that keeps the engine (i.e. business models) running. As a consequence, the disclosure of this data becomes relevant. Therefore, the focus of the research study is twofold: first on digital platforms and second on the disclosure of data.

An overview of the involved stakeholders in this graduation project is presented in figure 1. The supervisory team and myself are closely involved. The project owner is research network DCODE. The network and PhD programme focus on the role of design in society's digital transformation. This thesis has a close link with PhD research in the fields of democratic data governance and trusted interactions. In addition, the research is conducted with direct involvement of experts from research and industry, as well as end-users. Throughout the ideation phase, (former) design students are directly involved in creative sessions. The organisation Open Future is involved as they are the owner of the real-life design case that is used in this thesis. The design case itself involves digital platform organisation Flickr and art and research publication Exposing.ai. Flickr and Exposing.ai are therefore indirectly involved in this thesis. To conclude, the project is executed within the Faculty of Industrial Design Engineering at Delft University of Technology.

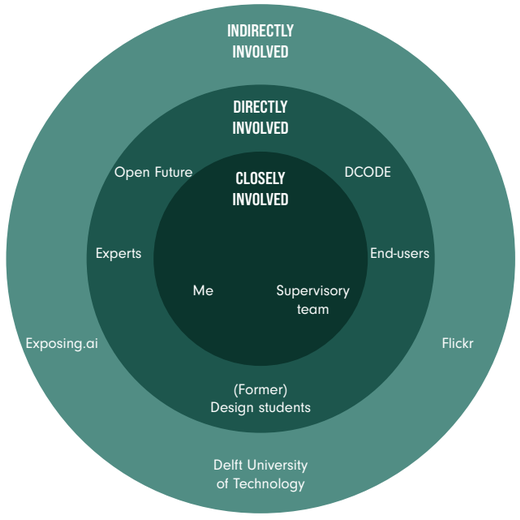


Figure 1: Graduation project stakeholders

INITIAL QUESTIONS & PROJECT GOALS

By conducting research in digital platforms, the relations that people have with these platforms, data practices and data disclosure, I aim to create a framework and design concept that illustrate how a more transparent relation on the individual level can contribute to solving societal problems caused by the data practices driving digital platforms.

To further determine and specify the focus of this thesis and to identify opportunity areas for design, the following initial questions are defined which will guide the literature reviews:

1. How are digital platforms defined?
2. How have digital platforms developed over time?
3. How do digital platforms affect individuals and society?
4. How to solve or improve negative effects caused by digital platforms?
5. How are data disclosure practices and interactions currently executed?
6. How are they regulated?
7. What problems do they have and/or cause?
8. How can they be improved?

Personal Ambitions

Personal ambitions for this project have been identified in addition to the overall goal of meeting all attainment levels for both Strategic Product Design and Design for Interaction:

1. **Improve the skills visual thinking and visualising processes and results.** For the thesis report, I aim to find a good balance between visualisation and writing because I see myself as a person with an analytic mindset who is comfortable with reading and writing.
2. **Improve the ability to deal with time constraints.** I tend to spend a lot of time in the diverging phases. With a triple diamond approach, I aim to move on to converging phases earlier in the process.
3. **Execute frequent validation and iteration** as a means to shift continuously between analytical thinking and creative exploration.
4. **Facilitate other people's participation throughout the project.** Involvement of people has always been beneficial to the design process and outcomes, but especially during a pandemic it is important to prevent isolation. Therefore, I aim to involve 1) experts from academics and industry because of their knowledge and experience, 2) end-users as they are experts of their own experience, 3) family and friends to get inspiration and validation from a non-design perspective, and 4) designers/peers for advice and collaboration.

1.2 Project Approach

This section describes the perspectives taken in this thesis: Strategic Design, Human-centred Design, and Value Sensitive Design. In addition, it discusses the general process structure which is visually displayed and connected to the main project activities and the report structure. To conclude, the section elaborates on methods used during the research and design phases.

APPROACH & METHODOLOGY

Triple Diamond Structure

Different approaches and methods are employed in this thesis to direct the process and support research and ideation activities. The project follows a Triple Diamond structure (figure 3), inspired by the Double Diamond model (Design Council, 2019). The methodology represents a design process based on exploration (i.e. divergent thinking) and definition (i.e. convergent thinking). The Double Diamond contains four phases: discover, define, develop and deliver. This thesis' Triple Diamond structure follows the same phases, but repeats the phases of the second diamond with a different focus. Despite its linear visualisation, the process is iteratively executed as indicated by, for instance, pilots of research and design materials, and iterations on deliverables.

Design Perspectives & Approaches

This thesis distinguishes itself by combining a Strategic Design with a Human-Centred Design perspective due to the double degree graduation.

Strategic Design (SD)
Strategic Design is defined as the use of principles, tools and methods to influence strategic decision-making within complex systemic challenges by redefining problems, identifying opportunity areas and influencing decision-making (Calabretta et al., 2016). SD is reflected by the creation of a future vision, the identification of design directions as solution opportunities and their evaluation on desirability, viability and feasibility.

Human-Centred Design (HCD)
Human-Centred Design is based on the use of design research techniques to obtain understanding of human needs, desires and experiences. Furthermore, it focuses on the questions, insights and activities from the people for whom the design is intended (Giacomin, 2015). HCD is reflected in this thesis by involvement of end-users throughout the research and design process, and continuous consideration of their experience by understanding them, their tasks, interactions and context.

Value Sensitive Design (VSD)
Digital platforms are large, complex and dynamic. Small-scale methods do not lead to a holistic understanding (de Reuver et al., 2018). Therefore, a third influence on this thesis is from the perspective of Value Sensitive Design. VSD is an approach that originates from the field of information technology and human-computer interaction (Friedman et al., 2002). It focuses on the design of sociotechnical systems from a foundation of human values from the stakeholders involved. These values are identified through conceptual, empirical and technological investigation, and taken into account throughout the design process (Friedman et al., 2002) (see Appendix A). VSD is reflected in this thesis by the investigation of digital platform relations and data practices from a sociotechnical perspective and the values extracted from empirical design research which are subsequently applied as the foundation of a redesign proposal.

Research Methodology

Specific methods employed in the research phase include the Grounded Theory Method (GTM) (Glaser & Strauss, 1967), used to structure the analysis process of the results of semi-structured interviews with experts. Furthermore, GTM is used to analyse the results of generative end-user research. Due to digital platforms' long term horizon (de Reuver et al., 2018), Contextmapping is used to structure the end-user research as it is a method that investigates contexts of product relations in which tacit knowledge is gained and used as a basis for a desired future vision of the interaction in question (Sleeswijk Visser et al., 2005). In addition, interview guides from both expert and end-user research have been structured following the path of expression. The path follows a process of reasoning that analyses the current and past situation first to subsequently define a meaningful future outlook (Sanders & Stappers, 2012). To conclude, the future vision is created based on value drivers in a manner inspired by Roadmapping (Simonse, 2018).

Design Methodology

Specific methods used in the design phase include Creative Facilitation (Tassoul, 2009), used to structure the three conducted creative sessions with designers and graduate students. The sessions consist of many methods such as Flower Association, How To – Questions, Brainwriting, Creative Confrontation, Morphological Synthesis, Roleplay and 40 Inventive Principles of TRIZ, among several others (Heijne & van der Meer, 2019; van Boeijen et al., 2020). Similar methods are also used in the individual brainstorm. Furthermore, one of the sessions is influenced by the perspective of Speculative Design (Dunne & Raby, 2013). It employs Personal Analogy in a sensitising exercise and a Roleplay/Scenario exercise based on value-attributed roles (Heijne & van der Meer, 2019; van Boeijen et al., 2020). The proposal for the employed design case is evaluated in a manner inspired by Storytelling (van Boeijen et al., 2020). Reverging and clustering techniques have been used throughout both the research and design phases of the project.

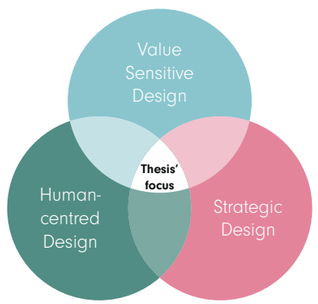


Figure 2: Design perspectives in this thesis

Figure 3: Overview of the project activities, project structure & report structure

02

Theoretical Foundation

This chapter contains a summary of the theoretical foundation of this thesis. It consists of two parts: 1) digital platforms and data practices, and 2) consent practices and disclosure interactions.

The first section introduces definitions, classifications and characteristics of digital platforms. It also evaluates the role of data and data disclosure. The following section summarises the literature review on consent practices and disclosure interactions. First, it defines consent and describes how it is applied in different fields. Then it describes how contemporary consent practices are regulated by EU law and what type of interactions are common practice. Subsequently, it identifies issues with current practices, ranging from regulatory non-compliance to differences in legislation and to consent malpractices. It also presents recommended future practices by researchers, specifically about form and conceptual improvements. It concludes by briefly discussing the relevance of consent practice redesign from an organisational perspective.

2.1 Digital Platforms & Data Practices

Definition of platforms and digital platforms
Classification of digital platforms
The role of data within digital platforms
Critical perspectives on data-driven digital platforms
Data disclosure
Opportunity area

2.2 Consent Practices & Disclosure Interactions

Definition of consent
Contemporary practices & interactions
Issues with contemporary practices & interactions
Recommended future practices & interactions
Consent practice redesign in context
Discussion

2.1 Digital Platforms & Data Practices

This section is a literature review on digital platforms and data practices. It contains the definition of platforms and digital platforms. It introduces different ways to classify digital platforms and discusses characteristics. Furthermore, it elaborates on the role of data and lists critical perspectives on contemporary practices. Finally, it discusses data disclosure and identifies an opportunity area for design.

DEFINITION OF PLATFORMS AND DIGITAL PLATFORMS

In literature, the different ways in which platforms are framed across management, economics, telecommunications and Information Systems (IS) originates a widespreadd conceptual ambiguity (de Reuver et al., 2018). Gawer (2014) identifies the presence of two main theoretical perspectives: economical and technical, interpreting platforms as (multi-sided) markets and technological architectures respectively. Gawer (2014) also bridges these two perspectives by conceptualising technological platforms as evolving organisations which: 1) federate and coordinate constitutive agents to innovate and compete, 2) create value by generating and harnessing economies of scope in supply and/or demand, and 3) entail modular technological architecture containing a core and periphery.

Gawer's (2014) definition of technological platforms is similar to what can be currently recognised as digital platforms. Digital platforms differ from non-digital platforms - conceptualised in earlier economic and engineering literature - in various ways as argued by Yoo et al. (2014) and de Reuver et al. (2018).

Similarly to the definition of platforms, digital platforms are conceptualised from multiple perspectives. For instance, digital platforms may be interpreted as technical entities, economical entities and sociotechnical entities. However, all definitions given from a technical perspective share some commonalities namely, the presence of an entity defined as an extensible codebase (Tiwana et al., 2010), a building block (Gawer, 2009; Spagnoletti et al., 2015) and a set of components (Ceccagnoli et al., 2012), which can be complemented in functionality through modules and interfaces (Tiwana et al., 2010), complementary products, technologies or services (Gawer, 2009; Spagnoletti et al., 2015), third party modules (de Reuver et al., 2018) or applications (Ceccagnoli et al., 2012).

Constantinides et al. (2018) defines digital platforms from the economical perspective as "a set of digital resources, including services and content, that enable value-creating interactions between external producers and consumers", based on Parker et al. (2016) who emphasizes the business' objective of value-creation in a multi-stakeholder environment as part of the definition of digital platforms. To conclude, de Reuver et al. (2018) addresses a third perspective, sociotechnical, in their review of digital platform conceptualisation based on the definition from Tilson et al. (2012): "A sociotechnical assemblage encompassing the technical elements of software and hardware, and associated organisational processes and standards".

This thesis adopts a sociotechnical perspective on digital platforms, as in de Reuver et al. (2018) and Tilson et al. (2012). Furthermore, the terms platform and digital platforms are used in this thesis interchangeably. It is worth reminding that, outside of this report, these terms generally assume different meanings.

CLASSIFICATION OF DIGITAL PLATFORMS

De Reuver et al. (2018) introduces one way to classify different types of digital platforms' research. They make a distinction between vertical and horizontal scoping. Vertical scoping concerns the choice of the appropriate level of technical architecture for studying digital platforms (e.g. operating systems, browsers, iOS and Android apps). Horizontal scoping refers to the variety of application domains covered by the digital platform to be taken into consideration in the study (e.g. integration of devices and data sources, specific application domains such as healthcare, finances, and media). However, vertical and horizontal scoping issues lead to a large complexity and lack of comparability across studies.

A different approach is taken by Gawer (2014) who distinguishes platforms between three different categories: internal, supply-chain and industry. All differ in organizational form, interface openness, innovative capabilities and coordination mechanisms ranging from a closed, internal and managerial entity to an open, external ecosystem. However, this approach does not conceptualise technology in relation to the platform as critically noted by (de Reuver et al., 2018).

A third type of classification is by applying the concept of multi-sided platforms. In essence, multi-sided platforms (MSPs) coordinate demands of distinct stakeholders who need each other in some way (Evans, 2003). According to (Hagiu & Wright, 2015), MSPs enable direct interactions between two or more stakeholders who must be both affiliated with the platform. Consequentially, MSPs allow different stakeholders to create value for one another (Constantinides et al., 2018). In the context of digital platforms, it allows for mediation of different groups of users, including buyers and sellers (de Reuver et al., 2018). In addition, other actors include third parties such as advertisers, software developers and cloud providers (Constantinides et al., 2018). Due to these characteristics, this thesis adopts the multi-sided platform model to classify digital platforms.

CONTEMPORARY DIGITAL PLATFORM CHARACTERISTICS

Digital platforms in the context of sociality originated as online user-connectivity facilitators of community-building and networking (Boyd & Ellison, 2007; Kaplan & Haenlein, 2010). At that time, social and commercial platforms were differentiated by their operational foundations. The first focused on sociality and user-engagement, while the latter to transactional data (Kallinikos & Constantiou, 2015). In recent years, digital platforms have evolved into large and differentiated business ecosystems operating as data producers whom extract monetary value from targeted advertising optimized based on online user behaviour (Alaimo & Kallinikos, 2017). Nowadays, service development relying on data other than user-involvement is changing social digital platforms' position and status as a business in the digital economy as well as changing the role of end-users as data generators (Alaimo et al., 2020). As an example, a case study on TripAdvisor shows how the digital platform follows this evolution from providing a search engine for travellers to becoming a social media platform and evolving into a complex data-service ecosystem that produces a variety of data formats and user models to expand and differentiate their data service offering (Alaimo et al., 2020).

Consequentially, an important characteristic of contemporary digital platforms is their multi-stakeholder environment, which is accompanied by their intertwined nature with other inherently dynamic digital artefacts (Constantinides, 2018; de Reuver et al., 2018). In addition, they are increasingly operating as multi-sided markets, thereby facilitating, among others, social networks and the sharing economy.

The value of contemporary digital platforms is often determined by their ability to create network effects. Originally, network effects (i.e. network externalities) cause the end-user value of a product or service to increase when compatible products or services are adopted (Farrell & Saloner, 1985). In the context of digital platforms, their value can depend on the number of end-users in the same user group or on the number of end-users in a different user group. These concepts are referred to as direct and indirect network externalities respectively (de Reuver et al., 2018). They are also defined as same-sided network effects and cross-sided negative effects (Parker et al., 2016).

THE ROLE OF DATA WITHIN DIGITAL PLATFORMS

Digital platforms are powered by huge amounts of data, which has been increasing and is expected to further increase over the next years (see figure 4) (Statista, 2021). However, this way of talking about data suggests that it is collected and exists "out there" in a discrete form, while this is actually not the case.

Data is produced as it requires an apparatus of production in the form of, for instance, digital platforms. In other words, data needs to be appropriated and therefore cannot have natural value or be viewed as a "raw resource" (Couldry & Mejias, 2019). If it were a waste product that someone else can use to generate value, that seems like a good thing. However, people's everyday lives must be configured and represented for capture which have therefore become the product that is now mined, used and channelled by designed apparatuses to generate monetary value. Framing data as being "collected" diverts away from the core mechanics of data practices behind digital platforms that are centred around optimisation and prediction.

> "Platforms in and of themselves are of little value for end-users without the services running on top. Platform appeal depends as much on technical performance as on the envisioned network effects and intangible aspects like trust in platform providers" (de Reuver et al., 2018)

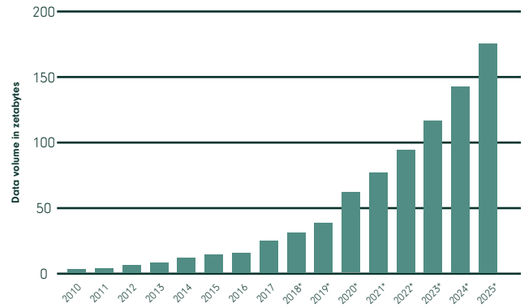


Figure 4: Increase in data volume per year.
Adapted from "Volume of data/information created, captured, copied, and consumed worldwide from 2010 to 2025" by Statista, 2021.

CRITICAL PERSPECTIVES ON DATA- AND AI-DRIVEN DIGITAL PLATFORMS

The development of data processing as a main driver of digital platforms has received critique and praise from a wide variety of researchers and industry experts. Their opinions are formulated in frames and perspectives explaining the current and envisioned practices. The different frames can be seen as the foundations that shape the relation established between end-users and digital platform organisations.

Couldry & Mejias (2019) introduce the frame of data colonialism. They describe that exploitation of human beings through data, as a result of continuous tracking, conversion and appropriation of people's everyday lives into data streams, is currently normalised. The frame is intended to show the urgency of resistance towards big data developments leading society into a new stage of capitalism in which appropriation of everyday life into data streams is central.

According to Alaimo & Kallinikos (2017), the appropriation of data makes humanity the subjects of capital in new, distinctive ways. Personal data, i.e. the data of actual or potential relevance to persons whether collected from them or from other persons or things, is an outcome and not a precondition or prior target of a newly computed society (i.e. artificially and quantitatively derived interaction, engagement and community building).

Another frame is that of data capitalism, which is defined as "a system in which the commoditisation of our data enables an asymmetric redistribution of power that is weighted toward the actors who have access and the capability to make sense of information" (West, 2019). Organisations create value out of the digital traces produced within the online environment and causes academics and policy-makers to "question the conflict between our needs for privacy and desires for community" (West, 2019).

The process prior to data capitalism is described by Srnicek (2016) as he introduces the concept of platform capitalism to be the transformation of firms into platforms that provide the hardware and software foundation for others to operate on. This signals a shift in how capitalist firms operate and how they interact with the rest of the economy, which is in several dimensions similar to the concept of surveillance capitalism as introduced by Zuboff (2015; 2019). Surveillance capitalism is a "new form of information capitalism that aims to predict and modify human behaviour as a means to produce revenue and market control" (Zuboff, 2015).

An envisioned approach to data and data practices is described by, among others, Marleen Stikker who advocates for data commons, which are controlled platforms on which all participants have ownership of their data. This data is anonymised for other platform end-users and can only be used for a predetermined set of analyses (Stikker, 2019; Trigt, 2021).

DATA DISCLOSURE

As end-users become the main sources of data through user-generated content and user interaction with and across digital platforms, it allows digital platform organisations to become independent sources of data production (Alaimo et al., 2020; Alaimo & Kallinikos, 2017). This development affects society, organisations and end-users in different ways.

For instance, the blur between social and commercial digital platforms may result in changes in the relationship between end-users and digital platform organisations as it is expected to remain heavily mediated by the functional identify of the platform, types of participation and user interaction. This is caused by the interconnectedness between data types, platform functionalities and stakeholders (Alaimo et al., 2020). Additionally, end-users are just one stakeholder among many others which leads to increased interdependency and complexity of digital platform operations and stakeholders.

As a result, end-users are unable to control their personal data, nor are they able to decide for themselves how to weigh the costs and benefits of their data disclosure, which is called privacy self-management (Solove, 2012). In other words, in the territorial scope of the European Union, end-users are unable to practice their digital rights, which is also concluded by the European Commission (2015). This relates to the common denominators from the critical frames discussed, namely the discussion concerning imbalances of power, ownership and ethics. Informed consent, privacy policies, cookies and legitimate interest aimed to tackle issues from this debate therefore seem to lack effectiveness in providing the opportunity for privacy self-management to end-users of digital platforms.

OPPORTUNITY AREA

Developments in the organisational domain lead to new unanswered research questions regarding the longevity of digital platforms as architectural patterns as well as creating design knowledge. Consequentially, a need for research investigating digital platforms by employing design science approaches is identified (de Reuver et al., 2018). Therefore, an opportunity is identified for this thesis by contributing to filling this knowledge gap.

The current design perspective on digital platforms would be the user experience-frame. However, this frame excludes important aspects as it assumes a relation with the digital platform, and implicitly the algorithms, as if they are "at our service" without end-users needing to do anything, which is a misconception. Consequentially, people lack knowledge on how to curate their relation with digital platforms and do not realize how digital platforms are actually handling them. This seems closely related to what Hauser et al. (2021) identify as "a widening rift between what computational things actually are and do, and the ways in which they are presented as things for use".

Awareness of the data practices that run digital platforms may enable end-users to perform privacy self-management. However, privacy controls are necessary in order to realise them (Schaub et al., 2015). Additionally, Solove (2012) argues that scholars should identify new concepts of consent. This is supported by Utz et al. (2019) as they argue that it is important to not just require consent practices, but also provide clear requirements on how obtaining consent must be improved. A design-led investigation into these privacy controls, consent practices and requirements can potentially support resolution of regulatory issues regarding consent practices and disclosure interactions, as is also identified by Constantinides et al. (2018). Therefore, this opportunity area for design is pursued throughout the rest of this thesis. The second part of the literature review focuses in more detail on consent practices and disclosure interactions in the context of digital platforms.

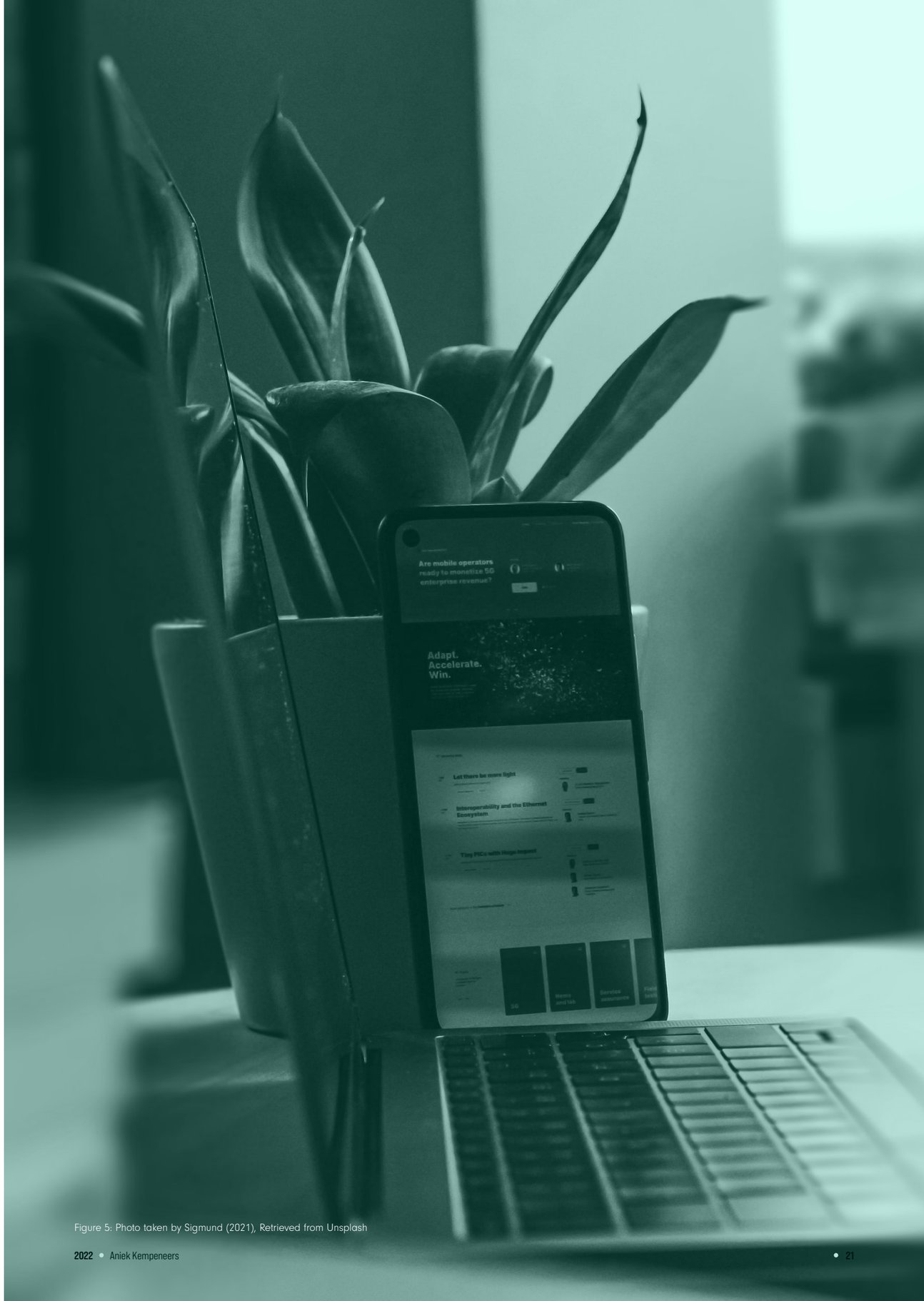


Figure 5: Photo taken by Sigmund (2021), Retrieved from Unsplash

2.2 Consent Practices & Disclosure Interactions

This section starts with defining consent and its application in different fields. Then it describes how contemporary consent practices are legislated by EU law and what type of interactions are common practice. Subsequently, it identifies issues with current practices. Thereafter, it presents recommended future practices and briefly discusses the relevance of consent practice redesign.

DEFINITION OF CONSENT

Consent is defined by the Cambridge Dictionary as: "to agree to do something, or to allow someone to do something" (Cambridge Dictionary, n.d.). The concept of consent is present in many fields including the law, politics, healthcare, academic research, social relations and the online environment.

Already in the 16th century, the concept of consent is discussed in the political theory of John Locke (Dunn, 1967). The theory describes, among other, how consent of the governed is a necessary condition for political legitimacy and how the governed agree to obey the government through tacit consent, simply by their presence in a specific territory (Dunn, 1967; Tuckness, 2020). Throughout the past decades, several types of consent have been introduced and advocated for, especially in the medical research field, for instance: presumed consent, informed consent, broad consent and open consent (Karlsen et al., 2011). Consent types are often defined by their mapping on different scales: active vs. passive, expressed/explicit vs. implicit/implied, broad vs. specific, and collective vs. individual (for example, figure 6). A selection of different types of consent as discussed in the medical research field are presented in table 1.

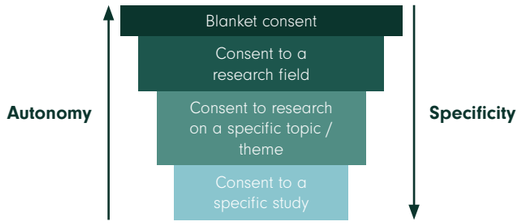


Figure 6: Consent types mapping on a continuum from autonomy to specificity. Adapted from "Should donors be allowed to give broad consent to future biobank research?," by M. G. Hansson, J. Dillner, C. R. Bartram, J. A. Carlson, & G. Helgesson, 2006, *The Lancet Oncology, 7*, p. 226-269.

Type	Description	Additional notes	Source(s)
Opt-in	Actively given, explicit consent.	It promotes autonomy, respects expectations and preserves trust.	(Bak et al., 2018)
Opt-out / Presumed consent	"A legislative framework in which citizens must place their name on a national opt-out register, otherwise their consent will be presumed". Often used for matters such as organ donation.	High participation rates, more practical and less costly. Values utility and focuses on science and society.	(Bak et al., 2018; Fabre, 2014; Karlsen et al., 2011)
No consent / Streamlined consent	No consent is provided: exception/waiver. With streamlined consent, people are briefly and intuitively informed during a normal conversation, but not asked for written consent.	It provides maximum participation, is therefore very practical and the least costly.	(Bak et al., 2018; Faden et al., 2014; Goldstein et al., 2018)
Prospective consent	Consent is provided in advance.	It promotes autonomy, respects expectations and preserves trust.	(Bak et al., 2018)
Deferred consent	Retrospective consent which is provided after the matter.	It provides temporarily incapacitated people to participate and is more valid in stressful situations.	(Bak et al., 2018)
Study-specific consent	Consent for one specific purpose.	It promotes autonomy.	(Bak et al., 2018; Hansson et al., 2006)
Tiered consent / Dynamic consent	A person chooses form a list of purposes what consent is given for.	It promotes autonomy.	(Bak et al., 2018)
Broad consent	Broad consent is consent defined on a scale ranging from strictly specified, such as a specific study, to blanket consent which has no restrictions regarding the research' purpose. It is generally provided to multiple purposes, all contributing to one overall topic.	It values confidentiality as technically manageable forms of risk, utility and public trust. It focuses on science and society.	(Bak et al., 2018; Hansson et al., 2006; Karlsen et al., 2011)
Blanket consent / Future consent	Blanket consent is consent provided to something without limitations. Future consent differs from broad consent by consenting to yet unspecified purposes.		(Bak et al., 2018; Hansson et al., 2006)
Open consent	People consent to unrestricted re-disclosure of their personal data which originates from a confidential relationship. Furthermore, people consent to unrestricted disclosure of information that emerges from any future research/processing of their data (i.e. information that cannot be predicted). Therefore, no promises regarding anonymity, privacy or confidentiality can be made.	It is based on the value veracity, which is argued to precede autonomy. Also values confidentiality as technically manageable forms of risk and utility. It focuses on science and society.	(Karlsen et al., 2011; Lunshof et al., 2008)
Informed consent	"Agreement or permission to do something from someone who has been given full information about the possible effects or results". The concept can be interpreted from a legal and moral perspective and is frequently used in patient-physician relations.	It values autonomy, right to confidentiality and individual trust. It focuses on the individual.	(Cambridge Dictionary, n.d.; Faden & Beauchamp, 1986; Karlsen et al., 2011)

Table 1: Consent types discussed in the medical field

In the late nineties/early 2000's, Friedman has proposed a conceptual model for informed consent on web-based applications (Friedman et al., 2000; Friedman, Kahn, et al., 2002). The original model consists of five components: disclosure, comprehension, voluntariness, competence and agreement. A revision of their model includes the component of minimal distraction (Friedman et al., 2013). The model was created from a Value Sensitive Design approach and was implemented in the Mozilla browser to test its application (Friedman, Howe, et al., 2002). The relation and definitions of the model's dimensions are displayed in figure 7.

Many similarities can be found with the definition of consent as established by the General Data Protection Regulation (GDPR) legislated by the EU, almost fifteen years later. Consent from an end-user in the digital sphere is defined by the GDPR as:

> "Consent of the data subject means any freely given, specific, informed and unambiguous indication of the data subject's wishes by which he or she, by a statement or by a clear affirmative action, signifies agreement to the processing of personal data relating to him or her." (GDPR, 2016)

The definition states several conditions for consent as it must be freely given, specific, informed and unambiguous. These conditions are elaborated on in Article 7 and Recitals 32, 42 and 43 (GDPR, 2016). Furthermore, the GDPR states that consent is ruled invalid if any of these conditions are not met. Within the context of digital platforms, the conditions have the following meaning:

Freely given means that consent may be withdrawn or refused by the end-user without consequence. It is evaluated not to be freely given if the performance of a contract depends on the provided consent despite this consent not being necessary for the provision of the service. The end-user has the right to withdraw their consent at any time and must be informed of this right by the digital platform organisation. Furthermore, withdrawing consent must be equally easy as providing consent (GDPR, 2016) (Information Commissioner's Office, 2021).

Specific and informed mean that the consent request must include the identity of all involved parties who will rely on the consent, the purpose of data processing, the processing activities and the notification of the right to withdraw (GDPR, 2016) (Information Commissioner's Office, 2021).

Unambiguous means presence of proof of provided consent and clarity of what consent is provided for. A digital platform organisation must be able to demonstrate, for instance through records, that an end-user has provided consent to personal data processing. If consent is requested in written form, it must be distinguishable from any other terms and conditions presented in the declaration. In addition, it must be easily accessible and must use clear and plain language. For instance, through oral or written statements such as check boxes. Silence, pre-ticked boxes such as cookie walls or inactivity do not constitute consent (GDPR, 2016) (Information Commissioner's Office, 2021).

In comparison to Locke's Consent Theory, consent in the online environment has nowadays become a condition for organisational legitimacy. However, simple presence in digital territory does not conform as consent in the online environment, as explained by the GDPR's definition of, and conditions for consent.

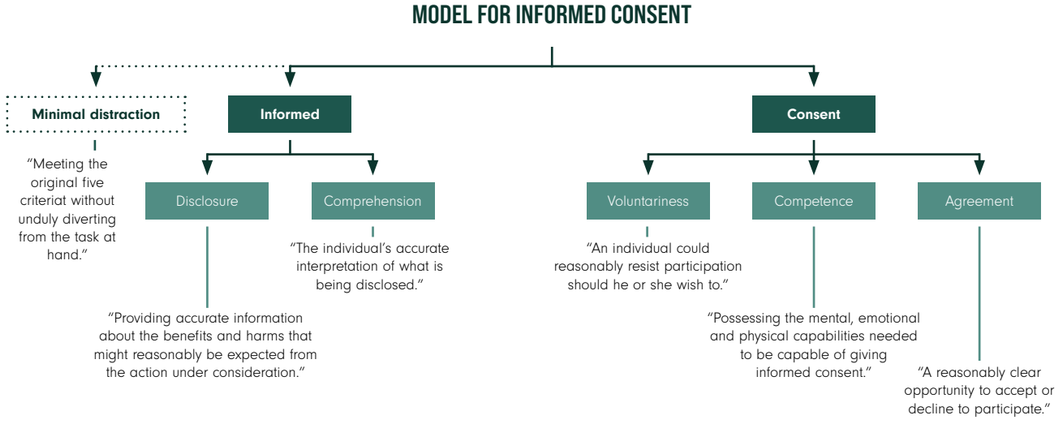


Figure 7: Model for informed consent. All cited from Friedman et al. (2013).

CONTEMPORARY CONSENT PRACTICES & DISCLOSURE INTERACTIONS

Legislation

Consent practices of digital platform organisations are determined by the General Data Protection Regulation (GDPR) and the ePrivacy Directive which are both legislated by the European Union (GDPR, 2016; ePrivacy Directive, 2009). Regulations are directly applicable to all EU member states and directives may be legislated differently in domestic data protection laws, causing differences in interpretation (see figure 8, Trevisan et al., 2019). Therefore, guidelines are set and practices are investigated by national institutions such as courts and supervisory authorities (DLA Piper, 2021). In the Netherlands, this is performed by the Dutch Data Protection Authority (i.e. *Autoriteit Persoonsgegevens*). The ePrivacy Directive is implemented in the Dutch Telecommunications Act and the local implementation of the GDPR is constituted in the Implementation Act (i.e. *Uitvoeringswet AVG*).

The **GDPR** is introduced in 2016 and created to regulate processing of individuals' personal data. In addition, it states consent requirements which are used for, among other things, cookies. Another aim of the regulation is for organisations to benefit from greater consumer trust (Publications Office, 2020). The **ePrivacy Directive** supplements the GDPR and is introduced in 2002 (and amended in 2009). It is created to regulate privacy, security and confidentiality of all electronic communication, including tracking and monitoring (European Data Protection Supervisor, n.d.). Regarding consent, it requires digital platform organisations to request "prior informed consent for storage or for access to information stored on a user's terminal equipment" (ePrivacy Directive, 2009). Therefore, organisations must request consent for data sent through cookies and other tracking mechanisms (i.e. opt-in). In addition, the ePrivacy Directive states which types of cookies have to obtain consent from the end-user. The **ePrivacy Regulation** is an updated legal framework which is meant to replace the directive when it is adopted. New proposals within the regulation refer to new players within electronic communications like WhatsApp, stronger general rules, metadata, simpler rules on cookies, protection against spam and more effective enforcement of confidentiality rules (European Commission, 2021b). Compared to the ePrivacy Directive, it elaborates on consent by requiring data to be processed only if explicit, informed consent is provided to information for the agreed-upon purpose (Edenberg & Jones, 2019). It elaborates on consent practices by proposing consent management via browser settings and clarifies the regulation of the use of legitimate interest (Deloitte Risk Advisory, 2020).

Types of Agreements

Terms & Conditions (T&Cs), Terms of Service (ToS) & Terms of Use (ToU)

Terms & Conditions, Terms of Service and Terms of Use are all different names for a legally binding agreement, but there is no legal difference between them (Iubenda, n.d.). In dictionaries, they are defined as "the contract for acceptable use of digital media as defined by the developer" (Dictionary.com, n.d.) and "the legal terms that set forth the nature scope, and limits of a service (such as one offered through a website or an app) and the rules that the service's users must agree to follow" (Merriam-Webster, n.d.). This agreement is mainly aimed at protecting the organisation and her interests as they may set their rules and limits. However, organisations are not legally obligated to provide the agreement.

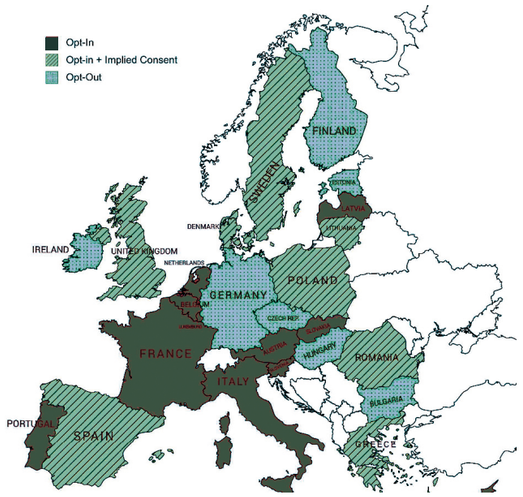


Figure 8: ePrivacy Directive transposition into EU member states legislation. Adapted from "4 Years of EU Cookie Law: Results and Lessons Learned," by M. Trevisan, S. Traverso, E. Bassi, & M. Mellia, 2019, *Proceedings on Privacy Enhancing Technologies, 2*, p. 126-145.

Disclaimers

In addition to T&Cs, disclaimers are often provided. The Legal Information Institute from Cornell Law School (2021) states: "Disclaim, in legal sense, means to give up a legal claim, obligation or right to something. Disclaim also means to deny responsibility for something." In the context of digital platforms, disclaimers are used to protect legal liability of the organisation by saying what they are not responsible for.

Privacy Policies (PP)

Privacy policies are generally seen as a way to improve end-users' trust and reduce privacy concern. They explain how personal data is used and inform end-users about security tools and protection systems of the digital platforms (Wu et al., 2012). Furthermore, they are a legally required agreement to provide. In more detail, Schaub et al. (2015) defines them as: "A privacy policy describes a system's data practices including all relevant parameters, namely what data is being collected about users (and why), how this information is being used (and why), whether it is shared with third parties and for what purposes, how long information is retained, as well as available choice and access mechanisms. This full privacy policy serves as the definitive (and legally binding) privacy notice." This definition is very similar to earlier work by Karjoth & Schunter (2002), however they add specification of who will be informed in what cases and put emphasis on the presence of an access control system that enforces the policy stated by the enterprise.

Cookies

Cookies are small files or trackers that a digital platform organisation places on an end-users' device (e.g. laptop, mobile phone or tablet). Cookies allow for the collection and storage of information on online activity and device specifications (Autoriteit Persoonsgegevens, n.d.). Cookies are required to serve crucial functions on digital platforms, but also have the potential to identify end-users without their consent due to the large amounts of data they store (Koch, 2019). Therefore, compliance with the GDPR is mandatory.

Cookies are generally classified based on three different factors: purpose, provenance and duration (Koch, 2019). Four categories of cookies distinguished by purpose are identified in the GDPR, two by duration and two by provenance (Deloitte Risk Advisory, 2020; europa.eu, 2021; Koch, 2019):

- **Strictly necessary cookies** are essential to use the digital platform's service and features. For instance, holding an item in a shopping cart while browsing a web shop.
- **Functional/Preference cookies** allow a digital platform to remember past online activity that is used to identify an end-user. Examples are user names and language preferences.
- **Performance cookies** collect online activity on how the digital platform is used. The information may not be used to identify the end-user. The data is aggregated and therefore may solely be used to improve digital platform functionality. Collected data through this type of cookies are, for example, page visits and mouse clicks.
- **Tracking and advertising cookies** collect online activity for the purpose of providing a personalised experience through advertising and recommendations. Examples include highly detailed preferences and location data.
- **Session cookies** are temporary and expire once the online activity ends. Holding items in a shopping cart are therefore also identified as session cookies.
- **Persistent cookies** are the opposite of session cookies and remain saved until they are deleted from the device manually or automatically due to their assigned expiration date.
- **First-party cookies** are directly placed on the device by the digital platform organisation.
- **Third-party cookies** are placed by stakeholders of the digital platform such as advertisers or analytics systems.

These distinctions are relevant because not all types of cookies require end-user consent (europa.eu, 2021) (Directive 2009/136/EC). Consent is not required for strictly necessary cookies and functional cookies such as user input cookies and authentication cookies. Consent is mandatory for performance, tracking and advertising cookies such as social plug-in tracking cookies for analytical and market purposes. Furthermore, consent is mandatory for all third-party cookies (europa.eu, 2021).

Legitimate Interest (LI)

Legitimate interest is a lawful foundation for processing personal data (GDPR, 2016). LI is appropriate for expected data practices and/or have a minimal privacy impact (Information Commissioner's Office, 2021a). The first or third-party interest can be individual and/or societal. A condition for LI is that rights and freedoms of end-users are not seriously impacted (European Commission, n.d.-b). Another condition is that processing must be necessary because the result cannot be achieved in another, less intrusive, way (Information Commissioner's Office, 2021a). An example of LI grounds provided by the European Commission (n.d.-b) is "...when the processing takes place within a client relationship, when it processes personal data for direct marketing purposes, to prevent fraud or to ensure the network and information security of your IT systems".

Types of Interfaces and Interactions

The consent practice and disclosure interaction occur between two main stakeholders: the end-user and the digital platform organisation. End-users' attitude and behaviour may directly or indirectly be influenced by family members, friends, teachers or news outlets. Organisations are directly or indirectly influenced by Software-as-a-Service (SaaS) providers, national authorities, the European Commission and/or third party consent management organisations. Other third parties include ad-networks, ad-brokers, social media plug-ins, microblogs and non-visible services such as web analytics (Leenes & Kosta, 2015).

In the case of consent requests regarding cookies, the interaction between these parties is often mediated by cookie walls, banners or pop-ups (figure 9). Important to note is that each party on the organisation side only has access to their own cookies. Deloitte Risk Advisory (2020) concludes in their study that cookie consent requests are most frequently presented in the form of banners (75%). The European Commission even provides a 'Cookie Consent Kit' that gives instructions on how to create and include cookie banners (European Commission, 2021a).

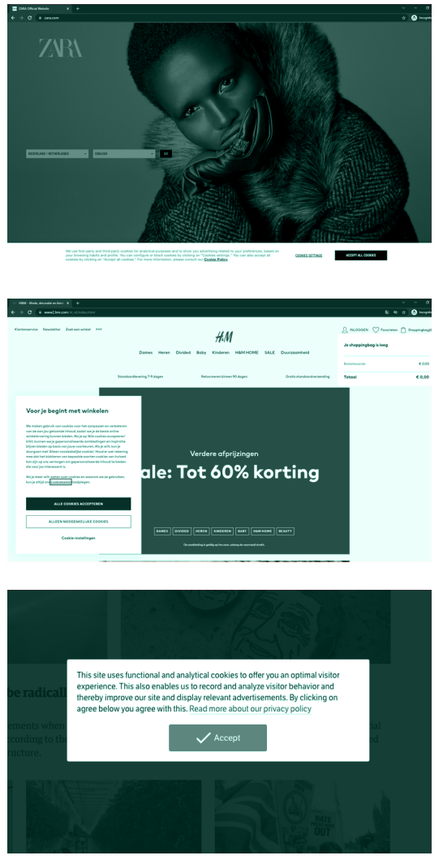


Figure 9: Examples of a consent banner, pop-up and wall (from top to bottom)

In addition to cookie banners that come in many different shapes, sizes and positions, often the option to manage cookie settings or adjust preferences is provided. It allows end-users to customise their consent preferences on different levels. In figure 10 can, for instance, be seen that end-users of this news platform may specify consent to different stakeholders. Another option is to determine consent preferences based on purposes such as personalisation, marketing and scoial media. The last option is to provide preferences for processing activities which include linking multiple devices, location data and receiving automatically sent device characteristics for identification purposes.

Nowadays, incorporating consent in digital platforms is sporadically experimented with as can be seen in an example from the Washington Post where information about consent is linked directly to the paid subscription plans they provide on their digital platform (see figure 11). For their free subscription, an end-user is, for instance, consenting to "the use of cookies and tracking by us and third parties to provide you with personalised ads".

Other interfaces and interactions that are common in use are long T&C contracts with checkmarks at the bottom which are mandatory to select in order to use the service. In addition, consent walls are also applied in a T&C context. For instance, when account policies are updated and the end-user has to agree to revised privacy notices, T&Cs and sometimes special terms. Another example is from Instagram and Facebook as they have applied consenting to multiple platforms at once. As a consequence, end-users give consent to two different digital platforms at the same time (see page 35 for illustrations of these practices).

All the presented examples are relevant to compare as the design of consent banners matters which is investigated by several studies (Utz et al., 2019; Van Bavel & Rodríguez-Priego, 2016). Utz et al. (2019) investigated different properties of consent notices, including: position of the banner, whether choices are visible or hidden, blocking of the service, use of nudging, link to privacy policy, and whether the text mentions collection, processor and/or purpose aspects (Utz et al., 2019). Different banner positions show different interaction rates on mobile and desktop (see figure 12) (N = 14135). Van Bavel & Rodrígues-Priego (2016) applied four behavioural insights, including defaults, the information deficit model, protection motivation theory and social norms, to the design of cookie banners and used the proposed banner by the European Commission (EC) as a control condition. They conclude that a default condition on the cookie banner leads to very high acceptance rates, but did not make a difference in whether end-users would click on a link to more information compared to the EC banner. A combined coping and threat appraisal condition on the cookie banner caused people to click on the link for more information even less.

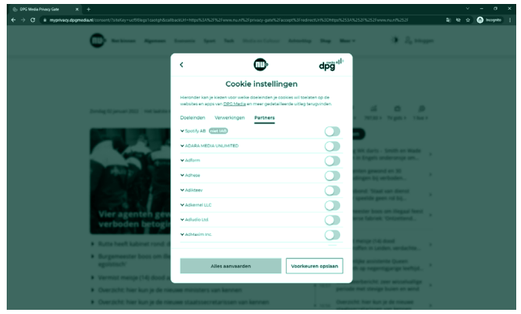


Figure 10: Example of cookie settings that allow for consenting per stakeholder

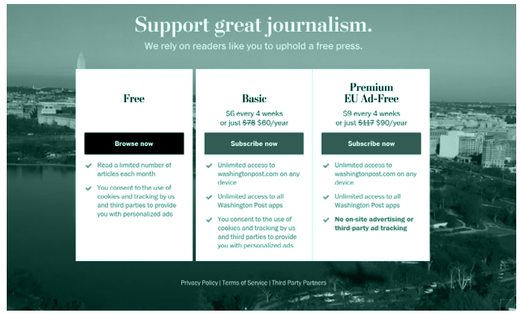


Figure 11: Example of consent as part of paid subscriptions

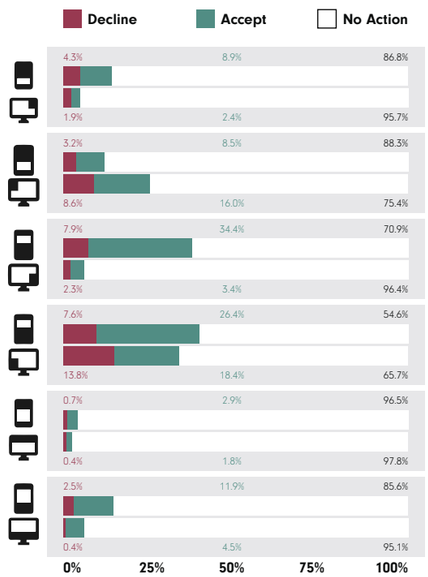


Figure 12: Interaction rates based on notice position.
Adapted from "(Un)informed Consent: Studying GDPR Consent Notices in the Field," by C. Utz, M. Degeling, S. Fahl, F. Schaub, & T. Holz, 2019, *Proceedings of the 2019 ACM SIGSAC Conference on Computer and Communications Security*, p. 973-990.

ISSUES WITH CONTEMPORARY CONSENT PRACTICES & DISCLOSURE INTERACTIONS

Notifying end-users about a digital platform organisation's data practices is supposed to enable them to make informed decisions regarding their personal privacy. However, consent practices are often unusable and un-useful, and therefore ignored (Schaub et al., 2015). End-users generally do not read consent requests and think little about their consent decisions (Graßl et al., 2021), as is, for instance, illustrated by Obar & Oeldorf-Hirsch (2020). They investigated to what extend end-users read privacy policies and terms of service (N = 543). Their results show that 74% did not read the presented privacy policy. Of all people who did not skip the privacy policy, their reading time was 73 seconds, while the estimated time to read the presented policy is 29-32 minutes. The terms of service were presented to all participants and their average reading time was 51 seconds while the estimated time to read was 15-17 minutes.

Almost all participants agreed to the privacy policy and the terms of service (i.e. 97% and 93%). People who did not, read the privacy policy 30 seconds longer and the terms of service 90 seconds longer (Obar & Oeldorf-Hirsch, 2020).

But what are the reasons why contemporary consent practices are unusable and un-useful? And why do end-users not read consent requests nor think about their disclosure decisions? The following sections will answer these questions elaborately. First, regulatory non-compliance and the effect of differences in national legislation on consent practices are discussed. Subsequently, consent malpractices including unwitting, coerced and incapacitated consent are described. To conclude, identified overarching issues are elaborated on. A summary of all issues is presented in figure 13.

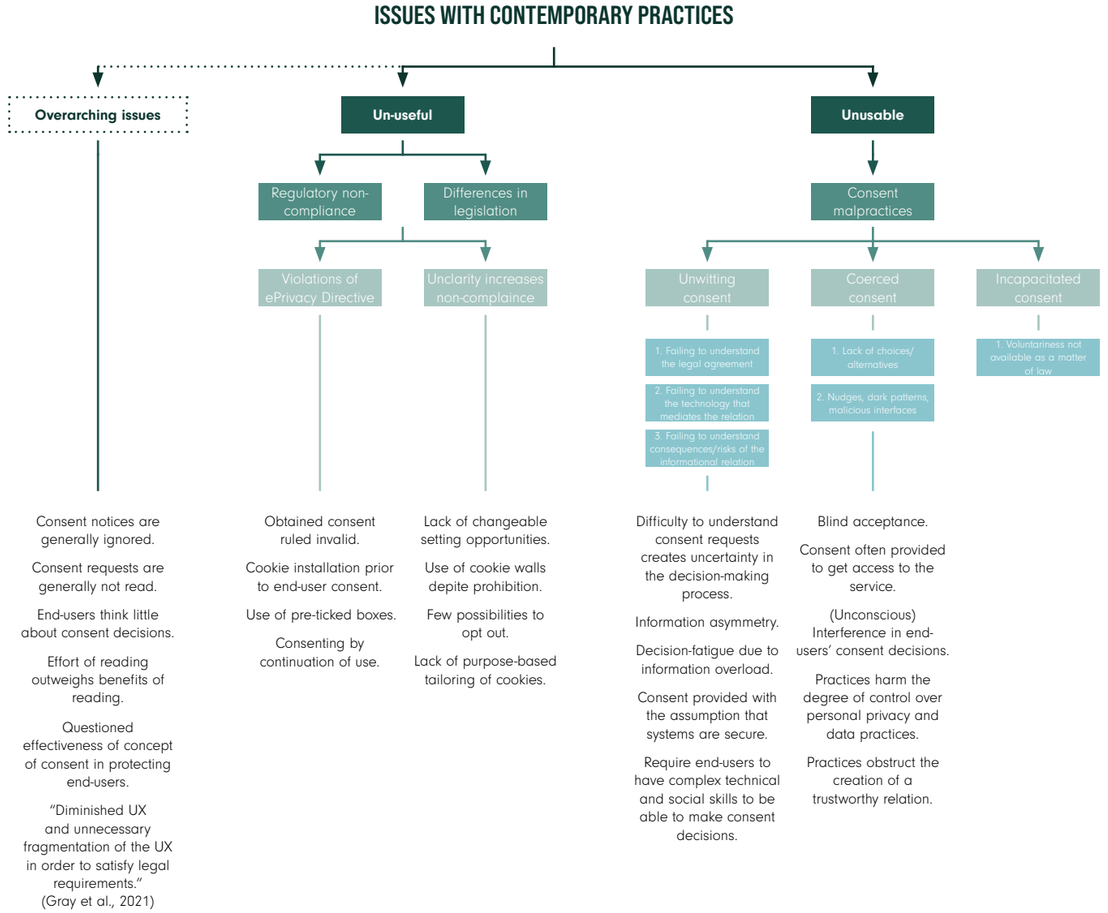


Figure 13: Summary of identified issues with contemporary consent practices & disclosure interactions from literature

Regulatory Non-Compliance

A large scale (EU-wide) measurement campaign performed by Trevisan et al. (2019) has evaluated the implementation status of the ePrivacy Directive between 2015 and 2018. The overall violation of the ePrivacy Directive has remained constant throughout this period. In case of third-party cookies, 74% on average install them before end-user consent. The majority of these cookies are for personalised advertising purposes (79%). Unfortunately, of all digital platforms evaluated (approximately 35.000), 49% does not respect the legislation and profiling cookies are installed by third party trackers prior to consent provided by end-users. One of the popular advertising trackers present in more than ten thousands of cases in this dataset is managed by Google and causes violations of digital platforms in more than 20% of the cases. Similar studies have been performed in separate countries such as the Netherlands (Leenes & Kosta, 2015) and the United Kingdom (Carpineto et al., 2016) which concluded similar results, but from smaller datasets (100 and 200 digital platforms respectively). The Dutch Data Protection Authority (i.e. *Autoriteit Persoonsgegevens*), has also found that almost half of the investigated digital platforms that use tracking cookies, do not comply to the regulations. The most common violations are the use of pre-ticked boxes and consenting by continuation of use (Autoriteit Persoonsgegevens, 2019). Another study in the UK that focused specifically on consent management platforms, i.e. external parties that provide regulatory compliance, has similar conclusions. Dark patterns and implied consent are found to be ubiquitous and only 11.8% of investigated platforms meet minimal legal EU requirements (Nouwens et al., 2020).

Differences in Legislation

Not only is consent already often not obtained validly, the number of consent practices that become non-compliant may even increase due to differences in national legislation that cause further unclarity. As explained on page 24, different rules are set by independent national institutions that affect consent practices (Deloitte Risk Advisory, 2020; Edenberg & Jones, 2019). Between different countries, consent requests differ significantly. For instance, in the United Kingdom none of the researched digital platforms allow end-users to change cookie settings through cookie banners. In the Netherlands, cookie walls are used despite their prohibition. Furthermore, in Italy most of the reviewed digital platforms do not allow opt-out. In comparison, Belgium is performing slightly better as their researched digital platforms have the highest number of opt-in and changeable setting opportunities (30.7% compared to the average of 16%). However, only 55% of the researched digital platforms (EU-wide) have consent tools that offer users the possibility to pro-actively tailer cookie consent settings. 45% of websites do not provide tailoring based on purpose: strictly necessary, functional, performance, and tracking and advertising (Deloitte Risk Advisory, 2020).

As a result, the current concept of consent is questioned to be effective in protecting end-users' control over their data (Edenberg & Jones, 2019). The EU body Regulatory Fitness and Performance (REFIT), who are in charge of verifying effectiveness of directives, evaluate the current rules to be counter-productive as "the constant stream of cookie pop-up-boxes that users are faced with completely eclipses the general goal of privacy protection as the result is that users blindly accept cookies" (REFIT Platform Opinion, 2016 as in Trevisan et al., 2019).

Consent Malpractices

In addition to regulatory non-compliance and the effect of differences in national legislation on consent practices, the execution of consent practices by organisations is also found to be the cause of why end-users currently do not engage and interact with privacy notices. Richards & Hartzog (2019) argue against the privacy paradox by explaining how certain consent practices may cause end-users to agree to data practices that undermine their privacy while simultaneously genuinely caring about their own privacy. They have identified unwitting consent, coerced consent and incapacitated consent, which are all explained in this section. Elaboration on further identified issues with contemporary consent practices and disclosure interactions will follow this taxonomy.

1 Unwitting Consent

According to Richards & Hartzog (2019), unwitting consent is about the lack of knowledge during the disclosure interaction and can take three different forms. First, end-users may fail to understand the legal agreement due to its length, language, structure, technicality, lack of clarity and/or syntax. Second, end-users may not understand the technology that mediates their relation with the digital platform organisation. As a consequence, consent is provided with the assumption that their systems are secure. The last form of unwitting consent is about how end-users might not understand the consequences or risks of the informational relation with the digital platform organisation.

1.1 Failing to understand the legal agreement

Several studies have shown that end-users fail to understand legal agreements and consent requests, and investigate reasons why this occurs (European Commission, 2016; Graßl et al., 2021; Reidenberg et al., 2015; Schaub et al., 2015).

A study by the European Commission concludes that T&Cs are hardly accessible to consumers due to their length and technical jargon. As a consequence, 26.6% of the respondents encountered problems with purchases on digital platforms (e.g. delivery, return and guarantee conditions) because they did not know the T&Cs well enough. A study by Schaub et al. (2015) has identified several reasons why privacy notices are currently not effective. One of them is complexity, due to their length and legal jargon, multi-purpose aspect and vagueness. Their multi-purpose aspect refers to the need to inform end-users about data practices, demonstrate compliance with regulations and limit liability of the organisation. In addition, they remain vague to stay as open as possible to not limit (not yet specified) future uses of data. As a result, privacy notices are difficult to understand for end-users (see also Reidenberg et al., 2015). These findings match the outcomes of Graßl et al. (2021) who have concluded that ambiguous language potentially affects understandability of consent requests which thereby creates uncertainty in the decision-making process.

1.2 Failing to understand the technology that mediates the relation

An example of when end-users may fail to understand the technology that mediates their relations with digital platforms is illustrated by the practice of third party tracking through advertising technology. This technology makes use of highly complex ad networks and ad servers which are used to manage, run, and report on advertising campaigns. They conduct auctions in milliseconds and involve many organisations to process data to serve personalised ads. On one hand, consent for this practice is highly complex and should be simplified and streamline compliance.

On the other hand, if digital platform organisations are too specific in their information provision, end-users may suffer from decision-fatigue, thereby reducing their ability to process information regarding data practices in relation to their consent (Richards & Hartzog, 2019). The speculation on fatigue is also addressed in Van Bavel & Rodríguez-Priego's work (2016) as they state: "Increasing the length may decrease its effectiveness, given people's limited attention span and the large amount of information they must process online." Both speculations are supported by Schaub et al. (2015) as fatigue as a result of complexity and frequent presentation of consent requests is identified as one of the reasons why privacy notices are currently not effective.

Another reason why it is a problem that end-users provide consent with the assumption that systems are secure is that a lack of security regarding session cookies has been identified (Deloitte Risk Advisory, 2020). There is an urgent need to secure them as privacy and digital platform security are inseparable components with regard to cookies. Only 26% of all investigated session cookies are secured which leaves 74% of data unprotected. In addition, only 4% of all researched digital platforms use fully secure cookie headers (Deloitte Risk Advisory, 2020).

1.3 Failing to understand the consequences/risks of the informational relation

End-users may fail to understand risks because of the presence of information asymmetry. Graßl et al. (2021) has identified presence of information asymmetry between an end-user and digital platform organisation regarding the purpose of data collection and future application (Graßl et al., 2021).

In summary, consent practices require complex technical and social skills from end-users. They need to be able to consider individual, contextual and collective short and long-term consequences of their disclosure decisions. Furthermore, they need detailed knowledge to comprehend visual and textual elements present in the disclosure interaction (Human & Cech, 2021). As a consequence, end-users are "unlikely to understand the complexities of layered applications and their correlated, opaque, data flows" (Richards & Hartzog, 2019).

2 Coerced Consent

Coerced consent is about involuntariness during the disclosure interaction. Sometimes there is no other choice than to accept (i.e. "blind acceptance") which may cause costly consequences (European Commission, 2016). Coerced consent occurs for instance when a choice becomes an unpleasant trade-off and causes unpleasant consequences, or when a choice is not really a choice anymore (Graßl et al., 2021; Richards & Hartzog, 2019).

2.1 Lack of choices/alternatives

For example, choosing not to use the services of the Big Five is illustrated to be nearly impossible nowadays (Hill, 2019). There are highly limited options in the digital sphere due to the necessity of mass use by end-users for digital platforms to become relevant. Even when services are similar and there is a choice, their terms and conditions are equally similar thus no choice in consent is provided (Richards & Hartzog, 2019). The issue of lack of choices is also identified by Schaub et al. (2015) as often end-users are informed about data practices, but choices to opt-out are not provided (i.e. a take-it-or-leave-it choice). In these instances, end-users almost always provide consent if it means getting access to the service they want to use.

2.2 Nudges, dark patterns, malicious interfaces

Another example of coerced consent is the use of dark patterns and malicious practices in the disclosure interaction's interface (Richards & Hartzog, 2019). Dark patterns are defined as: "a type of user interface that appears to have been carefully crafted to trick users into doing things where these user interfaces are carefully crafted with a solid understanding of human psychology, and they do not have the user's interests in mind" (Brignull, 2011; Greenberg et al., 2014). As a consequence, different types of bias would be present in consent requests such as status-quo bias (e.g. preference for default) and salience-bias (e.g. focus on prominent features) that influence people's privacy decisions (Graßl et al., 2021).

Despite the GDPR, contemporary consent practices contain these manipulative techniques that favour organisational profits over end-user values. Dark patterns may therefore lead to undesirable interference in end-users' decision-making process and degree of control over their personal privacy and data practices (Forbrukerrådet, 2018; Graßl et al., 2021; Nouwens et al., 2020; Schubert, 2015). In addition, these practices obstruct the creation of a trustworthy relation between end-user and digital platform organisation. To convey the value of transparency, there is a need for the improvement of consent requests to allow end-users to give valid consent (Deloitte Risk Advisory, 2020).

A study by Utz et al. (2019) concludes that dark patterns are used by 57.4% of the investigated platforms and 95.8% provide no choice for consent or confirmation only (N = 36395). These findings are highly relevant as nudging has significant effect on acceptance rates (see figure 15 on page 30).

The application of nudging differs per industry as is illustrated in figure 14. Therefore undesirable interference occurs more frequently in specific industries (Deloitte Risk Advisory, 2020).

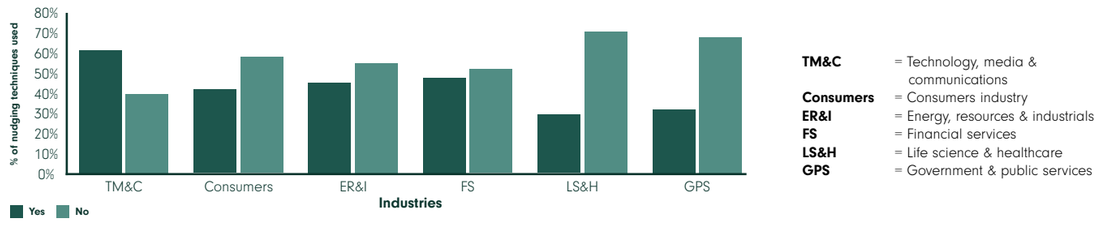


Figure 14: Nudging practices per industry.
Adapted from "Cookie Benchmark Study", by Deloitte Risk Advisory, 2020.

Graßl et al. (2021) investigated three common types of design nudges applied to consent notices: default, aesthetic manipulation and obstruction. As hypothesised, most participants provided consent to the privacy-unfriendly option regardless of the dark patterns. In addition, they introduce the concept of 'bright patterns' which leverages nudges towards the privacy-friendly option. They found that obstruction and default successfully persuade end-users to choose the privacy-friendly option. From their findings, they conclude that current consent requests do not enable meaningful decisions by end-users because persuasive techniques, either for dark or bright purposes, seem to be effective. They speculate that end-users may be conditioned to accept conditions due to the many requests that occur in everyday life.

3 Incapacitated Consent

Incapacitated consent is about voluntariness not being available as a matter of law. For example, children or people who are not capable of legally providing consent (Richards & Hartzog, 2019).

Overarching Issues

An overall problem the EC has identified, is that the costs of reading the T&Cs are high due to their length and technical jargon, and the benefit of reading is low due to (often) mandatory acceptance (European Commission, 2016). For illustration, an older study on the cost of reading privacy policies in the United States estimated that individuals need approximately 244 hours per year to read privacy policies of the digital platforms they use (McDonald & Cranor, 2008). Another reason for high costs is that organisations' policies may change at any time which means that all effort spend by end-users on reading the terms may be useless (Schaub et al., 2015).

Another study has taken a multidisciplinary approach to evaluating consent notices from an interaction criticism perspective which does not fall into one specific category (e.g. unwitting, coerced, and incapacitated) (Gray et al., 2021). They have identified several tensions that occur in "complex, contingent, and conflicting ways in the act of designing consent banners" (see table 2). They conclude that these tensions highlight "a diminished user experience and unnecessary fragmentation of the user experience in order to satisfy legal requirements".

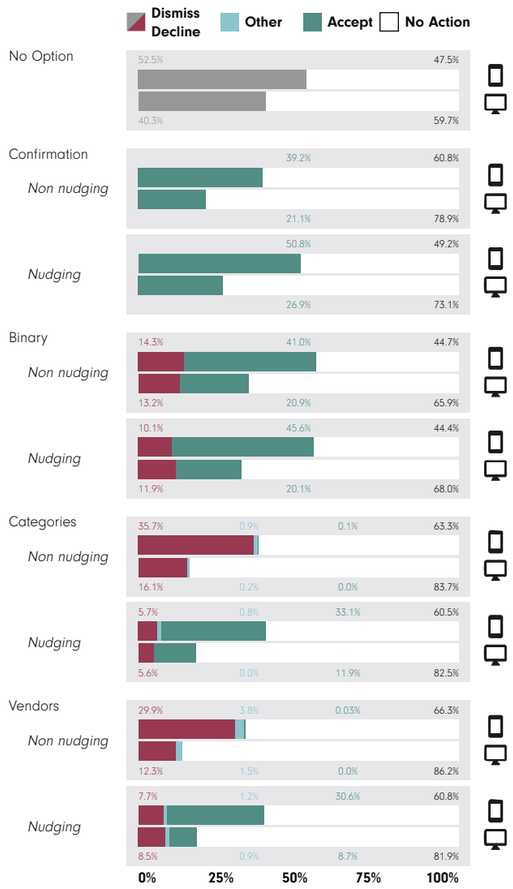


Figure 15: Participants' consent choices in different conditions.
Adapted from "(Un)informed Consent: Studying GDPR Consent Notices in the Field," by C. Utz, M. Degeling, S. Fahl, F. Schaub, & T. Holz, 2019, *Proceedings of the 2019 ACM SIGSAC Conference on Computer and Communications Security*, p. 973-990.

Consent wall - tensions between:	Tracking wall - tensions between:	Reduced service - tensions among separation of access to content based on:
1. Interactive separation of user activities.	1. Interactive separation of user activities.	1. Consent choice of the user.
2. Strategies meant to limit user interaction prior to completing the consenting process.	2. Requirement to allow the user to freely give consent.	2. Economic realities of producing and providing access to content.
3. Requirements that mandate that consenting precedes use.	3. Lack of an ability to reject consent.	3. Requirements for consent to be freely given with outcomes that are transparent to the user.
4. The various impacts of both a 'burden of care' on the part of the designer and the 'freely given' nature of the consent process itself.	4. Inability to use the web resource without making a forced choice.	4. Increasing social expectations that web content be accessible without cost or obligation.

Table 2: Summary of tensions that occur in the act of designing consent banners. Informed by "Dark Patterns and the Legal Requirements of Consent Banners: An Interaction Criticism Perspective, by C.M. Gray, C. Santos, N. Bielova, M. Toth, & D. Clifford, *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, p. 1-18.

RECOMMENDED FUTURE CONSENT PRACTICES

In literature, specific recommendations are proposed to improve contemporary consent practices and disclosure interactions. For this thesis, a distinction is made between improvements regarding form and substance of consent notices and proposed conceptual changes to how digital platform consent should be executed.

Form & Substance Improvements

Regarding the placement of consent notices, Utz et al. (2019) recommend based on their study findings to place the request in the lower left corner on desktop and on the lower part of the screen on mobile as it increases the chances of end-users interacting with them significantly. In addition, Nouwens et al. (2020) conclude that information and control after the first page of a consent notice are effectively ignored. Therefore, they propose to provide granular controls on the first interface of a consent notice to further stimulate interaction rates and control over personal privacy and data practices. Their research shows that this intervention decreased consent acceptance rates by 8% to 20%.

Regarding the content and form of T&Cs, a study from the European Commission (2016) proposes several improvements. They argue that T&Cs should become simpler and more user-friendly. This can be achieved by shortening and simplifying the text and providing a time indication to show how long it takes to read, which makes people more likely to read (parts) and understand them. 26.5% of end-users read parts of T&Cs when the text is shorter and language simpler (compared to 10.5% before the intervention). 19.8% of end-users read parts of the T&Cs if a time indication is provided (compared to 9.4% before the intervention). Furthermore, default exposure to T&Cs seems to increase readership as 77.9% of respondents indicated that they read parts of the T&Cs with this condition. In addition, the study concludes that added quality cues to T&Cs influence end-users' attitudes and behaviours regarding trust in the organisation and the T&Cs themselves. An example of a quality cue is: "These terms and conditions are fair". The type of quality cue matters as only endorsement by national or European Union consumer organisations and customers have a positive effect on end-users' attitudes and behaviours. Another proposition by the European Commission (2016) is to stimulate end-users to gain awareness of their digital rights from other sources, like the Frequently Asked Questions section, as it reduces the need for their presence in the T&Cs. As a consequence, T&Cs would only have to contain service-relevant information.

Regarding the design of T&Cs, Kinch & Mytka (n.d.) have developed the Better Disclosure Toolkit including the Better Disclosure Canvas which aims to improve the way T&Cs are designed. The canvas contains nine steps and can be used as a guideline and supportive tool in the design process:

1. Lead with values.
2. Break components down and utilise layering techniques.
3. Diversify the form factor.
4. Offer contextual guidance.
5. Give visibility of tangible progress.
6. Clarify the consequences (both negative and positive).
7. Delay the core action.
8. Give people a receipt of the agreement they entered into (enable review at any time).
9. Define action items and ownership.

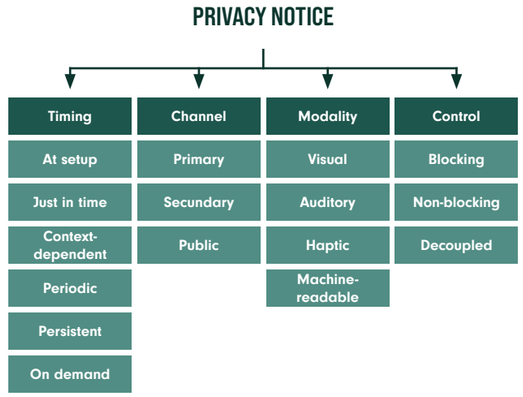


Figure 16: The privacy notice design space.
Adapted from "A Design Space for Effective Privacy Notices," by F. Schaub, R. Balebako, A.L. Durity, & L.F. Cranor, 2015, *Eleventh Symposium On Usable Privacy and Security (SOUPS)*, p. 365-393.

Regarding the design of consent notices, Schaub et al. (2015) propose overall guidance on design aspects of consent practices that can impact their effectiveness instead of proposing stand-alone improvements. This guidance is provided by mapping the design space for privacy notice design. The framework is meant to indicate the dimensions in which consent practices can be innovated. It includes four dimensions: timing, channel, modality and control (figure 16).

Timing refers to when notices are presented. The design space illustrates different options: at setup during first time use, at the time when a specific data practice is active (i.e. just in time), when it is relevant to show additional notices for context (i.e. context-dependent), at a specific number of times in a specified frequency (i.e. periodic), during an ongoing data practice (i.e. persistent) or when end-users actively seek information for themselves (i.e. on demand).

Channel refers to how notices are delivered and includes primary, secondary and public options. Primary means that the notice is provided on the same platform. Secondary refers to notice provision on other channels. Both primary and secondary channels are directed towards a specific group of end-users. If the identity of the end-user is broad or unspecified, public channels may be used (e.g. signs to indicate camera surveillance).

Modality refers to what interaction modes are used: visual, auditory, haptic or machine-readable means. Visual includes text, images, icons or a combination which are frequently used in contemporary consent requests. Auditory means include spoken word or sounds. Haptic feedback can be provided through vibrations. Neither are commonly used in the context of digital platforms. A machine-readable format would be to encode data practices and communicate them to other systems and devices.

Control refers to how choices are provided which can be via blocking, non-blocking or decoupled. Blocking means that end-users should make a choice on what to provide consent for based on the information in the notice. Non-blocking does not require end-user engagement and are for instance settings repeated for multiple interactions. Decoupled means that the choices may be separate from the privacy notice. This is for instance the case with privacy settings pages or reviews when necessary.

Complementary to the identified design space (Schaub et al., 2015), Gray et al. (2021) argues for bi-directional design with which they refer to "the opportunities to evaluate and interrogate designed experiences using the language of law and policy (legal > design), while also using a user experience or user interface as a means of addressing gaps or opportunities for more precision in existing legal or policy frameworks (design > legal)".

Conceptual Improvements

Before the introduction of the GDPR, Beauchamp (2010) argued for consent practices which require full autonomous authorisation. Post-introduction of the GDPR, this view is still partially shared by Richards & Hartzog (2019) who conclude that the core problem with consent for data practices is not the form or substance of the consent itself and instead argue for consent practices that meaningfully enhance autonomy and self-determination of end-users. They propose three circumstances that effective consent practices require:

1. Consent requests must be infrequent to prevent decision-fatigue.
2. Risks of consent must be vivid and easy to envision.
3. End-users need an incentive to understand the decisions' significance and motivate them to take each request seriously.

As acknowledged by Richards & Hartzog (2019), decision-fatigue must be prevented. However, autonomous authorisation may be too demanding for end-users and potentially cause decision-fatigue which is also argued by Miller & Wertheimer (2010) prior to the introduction of the GDPR. In addition, they identify that consent seems to serve another value besides autonomy, namely well-being or the agent's interest. They conclude that these values may sometimes conflict and therefore propose to focus on the context in which the consent practice takes place. Consent should take place in conditions that ensure fair treatment of end-users, i.e. the Fair Transaction model of consent transactions. In essence, the model states that an entity seeking consent is morally permitted to proceed on the basis of a consent transaction if they have treated the entity that consent is requested from fairly and responds in a reasonable manner to their own expression of consent (Miller & Wertheimer, 2010).

Edenberg & Jones (2019) acknowledge the differences between consent theories pre- and post-introduction of the GDPR, and conclude that clarifying the moral core of consent in the digital environment can provide a way forward to cooperative online jurisdiction. They propose five key features, based on their synthesis of similarities between views of different consent theorists:

1. Background condition: Clear delineation of the background conditions for permissible and impermissible uses of end-users' data.
2. Scope condition: Mutual understanding of a clearly defined scope of action.
3. Knowledge condition: Relevant information provided to the end-user including what consent is given to and how that information will be processed and used.
4. Voluntariness condition: Freedom to choose among a set of viable options.
5. Fairness condition: End-users should be treated fairly and should not be required to sacrifice other important rights.

Human & Cech (2021) argue for a human-centric approach that encompasses perspectives from multiple theorists as well, i.e. Beauchamp's and Miller & Wertheimer's views. According to Human & Cech (2021), end-users should be empowered in their right to consent through interdisciplinary and multidimensional socio-technical means and approaches. Consent practices are proposed as socio-cognitive actions that include cognitive, collective and contextual dimensions that should be taken into account in the design and implementation phases.

The cognitive dimension refers to the complexity of current consent practices which require technical and social abilities from end-users to carefully deliberate with limited time, expertise, knowledge and resources.

The collective dimension is about the social impact that social data extracted from personal data (e.g. group photos) and individual privacy decisions may have. In addition, it is about the need for support from peers and experts throughout the consent practice and with personal data management due to the absence of expertise and/or ability from end-users and the social consequences of privacy.

The contextual dimension emphasizes that consent is always provided in relation to specific contextual dimensions which illustrates the need for control of end-users' needs and values, among others, within consent practices. Human & Cech (2021) conclude that in current consent practices from Google, Amazon, Facebook, Apple and Microsoft (i.e. the Big Five), the collective and contextual aspects are almost completely ignored in their design and identify these dimensions as areas of opportunity.

CONSENT PRACTICE REDESIGN IN CONTEXT

To conclude this chapter, the influence and relevance of improving consent practices on the organisation are briefly discussed.

Regulatory incentives
Deloitte Risk Advisory (2020) reports that (inter)national supervisory authorities and courts are increasingly pursuing legal disputes against digital platform organisations who do not comply to consent requirements. As a consequence, consent practices are crucial to enhance privacy due to these regulatory shifts. This development is also identified by Edenberg & Jones (2019) who state that "consent has become central to international privacy disputes and transnational innovation".

Increased positive attitude
Another reason why it would be relevant for organisations to improve consent practices is higher customer satisfaction. The European Commission (2016) found that end-users have a more positive attitude towards improved T&Cs due to the presence of less frustration, they do not miss relevant information, it makes reading time-worthy, and they are more satisfied with the content that is in T&Cs.

Increased agency & ownership
In addition, if performed meaningfully, consent practices have the potential to enable end-users' agency regarding ownership and management of their own personal data (Human & Cech, 2021).

Trust & fairness
A consequence of end-users being better informed is enhanced trust in fairness of the T&Cs, even irrespective of their content (European Commission, 2016). Furthermore, the organisation in its entirety can also benefit from greater end-user trust (Publications Office, 2020). This should be relevant to digital platform organisations because 63% of the respondents of the Special Eurobarometer 431 on Data protection (2015) say that they do not trust online organisations. Richards & Hartzog (2019) emphasise the importance of trust in our digital environment as they call it "the key ingredient toward a better future".

Competitive advantage
To conclude, Deloitte Risk Advisory (2020) also found that as a result of effective and trustworthy consent practices, organisations may gain competitive advantages and unique selling points by employing user-centric methods for consent management in combination with implementation of sophisticated supportive tools.

DISCUSSION

This literature review draws three conclusions. **The first conclusion is that prior research on consent practices, on their issues, as well as on proposed improvements, has often focused separately on regulatory, organisation and end-user aspects.**

From a regulatory perspective, the focus is often on whether digital platform organisations comply to the rules (Autoriteit Persoonsgegevens, 2019; Carpineto et al., 2016; Leenes & Kosta, 2015; Nouwens et al., 2020; Trevisan et al., 2019) and whether the differences between nationally adopted rules affect consent practices in certain ways (Deloitte Risk Advisory, 2020; Edenberg & Jones, 2019).

From an organisational perspective, the execution and performance of different consent practices is often evaluated and criticised. The malpractices are elaborately analysed, and improvements on form and conceptual level are suggested (Edenberg & Jones, 2019; Graßl et al., 2021; Human & Cech, 2021; Nouwens et al., 2020; Richards & Hartzog, 2019; Schaub et al., 2015; Utz et al., 2019). In addition, the unsustainable characteristic of these practices is called out as it may cause legal disputes and fines, as well as reduced trust in the relation between end-users and digital platform organisations and missed opportunities of competitive advantage (Deloitte Risk Advisory, 2020; Edenberg & Jones, 2019; Publications Office, 2020; Richards & Hartzog, 2019).

From an end-user perspective, an isolated focus is not surprising as "consent is often seen as the primary mechanism for protecting users' control over their personal information" (Edenberg & Jones, 2019; Solove,2012). The focus is for instance on investigating the reasons why end-users do not read privacy notices and why they blindly accept them (Obar & Oeldorf-Hirsch, 2020). Furthermore, research is performed on how end-users are affected negatively by contemporary consent practices and what their consequences might be (Human & Cech, 2021; Richards & Hartzog, 2019; Schaub et al., 2015; Van Bavel & Rodríguez-Priego, 2016).

In the case that organisations and end-users are both addressed, the focus remains on how end-users are affected as opposed to on the relation between both parties (see for instance Graßl et al., 2021 on information asymmetry).

The first conclusion is supported by Gray et al. (2021) as they state that previous research has focused on consent practice redesign from isolated perspectives such as interaction design, legal/regulatory compliance perspectives and ethics/moral-focused perspectives. As a consequence, they identified a research gap in addressing connections among multidisciplinary approaches, including opportunities and tensions that exceed disciplinary boundaries.

They have addressed this research gap in their own research by reviewing consent notices from an interaction criticism perspective, performed by researchers from multiple disciplines. However, they have not constructed new knowledge on desired practices from a non-isolated perspective. They have also not addressed potential tensions that may occur between the different views on desired practices that arise from a multi-perspective approach. **Therefore, this thesis identifies an opportunity for empirical design research on desired consent practices from multiple perspectives, and elaborates on it.** Its contribution is relevant to this field as Jones (2019) has identified that digital consent has thus far remained under-theorised and lacks scholarly history.

The second conclusion drawn from this review is that consent plays a role in a larger context, including data practices and relations between digital platform organisations and end-users. This finding is supported by Edenberg & Jones (2019) as they state "consent is not an exchange but a transformation of the relationship based on the autonomous willingness of one party to allow the act of the other party", thereby implying the relevance of addressing a wider scope. In addition, Gray et al. (2021) conclude that redesigning consent practices demands a holistic approach and analysis. Furthermore, they identify a role for design in investigating how to "reflect the needs of users into technology design to respond to the regulatory challenges in a more contextually aware manner" (Gray et al., 2021).

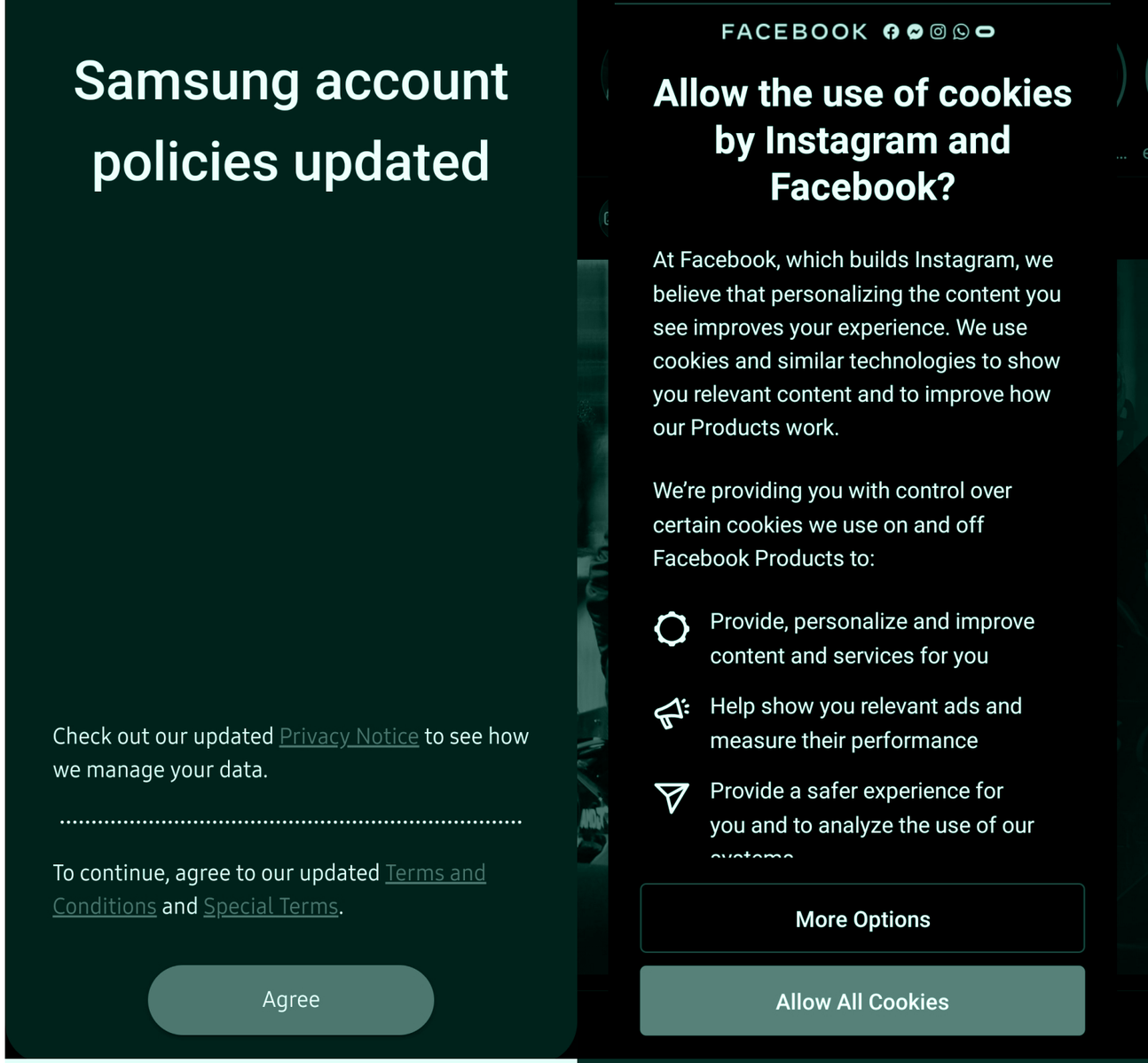
To be able to propose relevant and effective recommendations on the redesign of consent practices in the context of digital platforms, it is important to first define and understand the desired vision on, and tensions that may occur in, the wider scope, thus encompassing data practices and digital platform relations. **Therefore, this thesis identifies an opportunity for empirical design research from a holistic and contextually aware approach.**

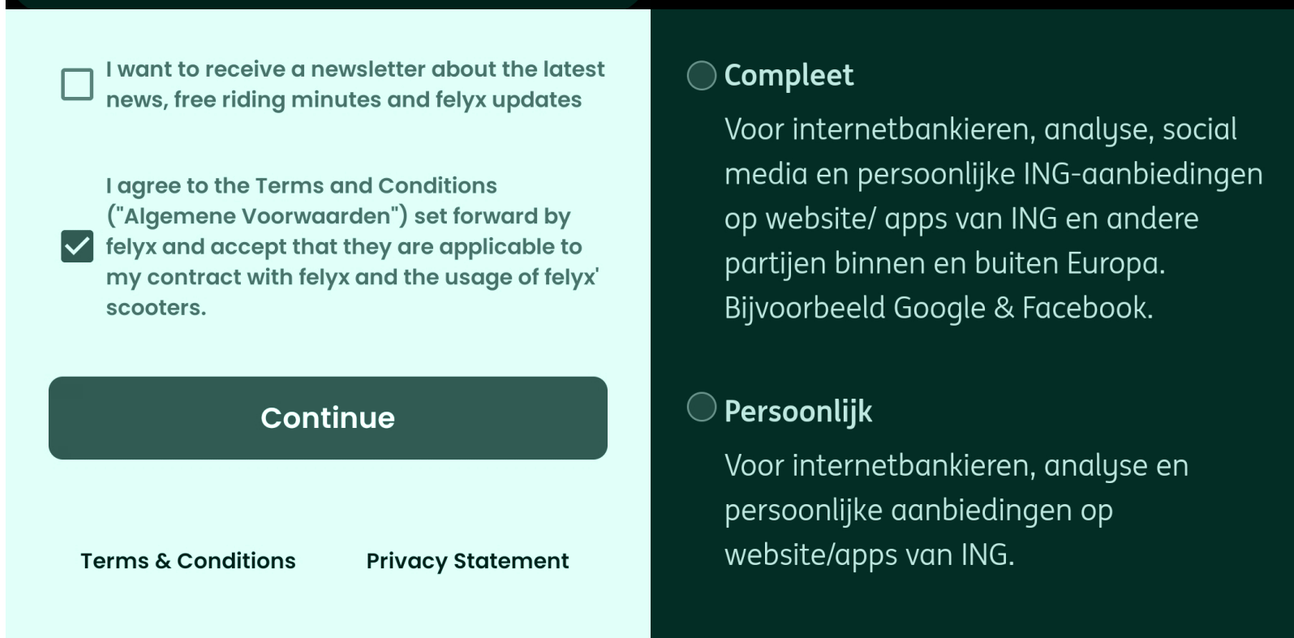
The third conclusion is about determining the focus of the redesign of consent practices. The UX/UI design of consent notices seems to be relevant as elements such as position, length, structure, technicality, clarity, syntax, dark and bright patterns influence interaction rates, decision-making processes and acceptance rates (Forbrukerrådet, 2018; Graßl et al., 2021; Nouwens et al., 2020; Schubert, 2015; Utz et al., 2019; Van Bavel & Rodríguez-Priego, 2016). However, suggested improvements including placement in the bottom left corner, shortening and simplifying the text, providing time indications and placing controls on the first page are concluded to have only minor impact (European Commission, 2016; Nouwens et al., 2020; Utz et al., 2019). In addition, these improvements all impact individuals and their ability to make informed decisions regarding their personal privacy. They do not address issues caused by consent practices that are present on a societal level. Furthermore, Van Bavel & Rodríguez-Priego (2016) argue that "there is no evidence that redesigning cookie banners in innovative ways will lead to a more cautious online behaviour".

This implies the need for a conceptual approach rather than from the UX/UI of consent practices. It is supported by other scholars such as Richards & Hartzog (2019), Edenberg & Jones (2019) and Human & Cech (2021) as their research shows that issues with contemporary consent practices are conceptual, and not with its form and substance. **Therefore, this thesis argues that a different approach from UX/UI practices, and specifically a conceptual approach, must be taken for further individual and societal impact. Thus, the focus of the redesign process is on conceptual improvements rather than on UX/UI.**

The three conclusions, together with the identified contribution opportunities, result in the following research question:

> How can consent practices and disclosure interactions be redesigned to instate future data practices and digital platform relations which both digital platform organisations and end-users desire?





03

Empirical Design Research

This chapter describes the empirical design research that is performed to explore, define and compare digital platform organisations' and digital platform end-users' future visions on three topics: a) digital platform relations, b) data practices and c) consent practices and disclosure interactions. It elaborates on the employed methodology, including data collection and analysis methods.

As a result, theoretical frameworks are created that schematically represent the defined current situations of, and future visions on, the three research topics. In addition, sources of friction and values are extracted from these frameworks. Sources of friction contain conflicting interests that form an obstacle to pursue a desired future vision. The values are the drivers of the future visions. The chapter concludes with a comparison of the extracted values which results in a set of value similarities and value tensions between the defined future visions on consent practices and disclosure interactions from the perspectives of digital platform organisations and end-users.

3.1 Expert & End-user Research

This section describes the types of empirical design research that are conducted with the respective research questions. Furthermore, it explains their methods by defining the research designs and sampling strategies. Subsequently, the data collection and analysis processes are described. To conclude, the section finishes with an overview and brief explanation of the results this research has produced.

INTRODUCTION

As concluded from the literature review, topics that will be further investigated are digital platform relations, data practices, and consent practices and disclosure interactions. This will be done from two perspectives: the end-user and the organisation. The purpose of the empirical research is to compare an end-user perspective with an organisation's perspective on these three themes. The reasoning for this is twofold. First, to find common ground which may provide a foundation for solution exploration. Second, to identify fundamental tensions between both perspectives that need to be resolved to create the conditions in which a solution can be effective.

The digital platform relation and data practices form the context in which consent practices and disclosure interactions take place (figure 17). Therefore, the future visions on digital platform relations and data practices first have to be defined. Future visions express a desired future and are driven by different types of values, also called value drivers (Simonse, 2018). When future visions from different perspectives are compared, the value drivers may be similar or form a tension. With this in mind, the following research questions have been formulated:

1) What value similarities and tensions drive end-users' and experts' future visions on digital platform relations?

2) What value similarities and tensions drive end-users' and experts' future visions on data practices?

Subsequently, the future vision on consent practices and disclosure interactions has to be defined to inform how they may be redesigned. Therefore, the following research question has been formulated:

3) What value similarities and tensions drive end-users' and experts' future visions on consent practices and disclosure interactions?

It is relevant to identify value similarities and tensions because they can be used as a foundation to redesign consent practices and disclosure interactions desired by both end-users and digital platform organisations.

The contribution of this research to the field of design is the new knowledge that may contribute to current developments on how to redesign consent practices and disclosure interactions. For instance, to the work of Nathan Kinch on Data Trust by Design (Kinch, 2018). Furthermore, the outcomes of this research may contribute to the field of digital platforms as it provides future visions on digital platform relations that are grounded in data. To conclude, the research outcomes may contribute to the field of AI driven practices and involved ethics. This study focuses on value similarities and tensions regarding digital platform relations, data practices and consent which can nowadays all be referred to as ethically sensitive practices.

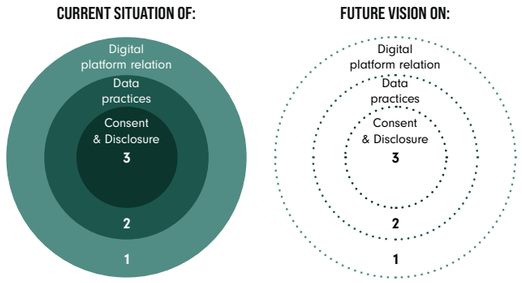


Figure 17: Overview of the expert & end-user research topics

METHOD

Research Design

A qualitative research approach is chosen for this study because the research purpose and questions emphasise the need for creating a better understanding of relations, data practices and consent practices in the context of digital platforms from both an organisational and end-user perspective. The Grounded Theory Method (GTM) (Glaser & Strauss, 1967) is chosen as the data analysis method to build frameworks of knowledge on these three themes, based on the data itself. Furthermore, GTM is combined with design research methods and techniques such as Contextmapping (Sleeswijk Visser et al., 2005) and Sensitising (Sanders & Stappers, 2012).

To investigate the **organisational perspective** on the research themes (figure 17), expert inquiry is chosen because experts have domain-specific knowledge and experience that may contribute to future foresight. Furthermore, expert knowledge is relevant when organisational conflicts are being examined (Döringer, 2021) which is part of the purpose of this research.

To investigate the **end-user perspective** on the research themes (figure 17), Contextmapping is chosen because it is a design research technique that investigates contexts of user-product relations in which tacit knowledge is gained about the context and interaction in question (Sleeswijk Visser et al., 2005). The context is defined by digital platform relations and data practices and the interaction in question is the consent practice and disclosure interaction.

Expert Research

This study is aimed towards gaining an in-depth understanding of the current and future data practices and end-user relations of digital platform organisations. This requires rich data beyond statistics and figures. Therefore, semi-structured qualitative interviews with experts are conducted, providing words as data for analysis. Semi-structured interviews allow for flexibility in the line of inquiry which is relevant in this study because new perspectives, ideas and thoughts on the topics can be elaborated on. The interview is explorative in nature and follows the path of expression (figure 21) line of inquiry (Sanders & Stappers, 2012). Defining issues that may occur in the future can only be mapped meaningfully if relevant contemporary experiences and events from the past are first analysed. Following this principle assures overall focus, cohesion of, and a clear connection between, the different research themes (figure 17). In addition to these three themes, other related topics addressed are context factors such as trends and developments, organisational incentives and transformation strategies.

End-user Research

This study is aimed towards gaining an in-depth understanding of the research themes as well. However, in this inquiry the themes are investigated from an end-user perspective.

Similar to the expert research, semi-structured interviews are conducted which are explorative in nature and follow the path of expression line of inquiry (Sanders & Stappers, 2012). In addition, all participants are sensitised prior to the interview to prepare them by motivating them to reflect on the topic through different generative exercises. The approach, procedure, analysis and results of the sensitising are elaborated on in section 4.2.

Sampling: End-user Research

For this study, a mix of two sampling strategies based on group characteristics and comparison is used. Since the goal is to study what a specific group of digital platform end-users have in common, homogenous sampling is used first as this method focuses on cases that are very similar (Patton, 2015). Furthermore, criterion-based case selection is employed to ensure a study of cases that meet key criteria (Patton, 2015). Therefore, a variety of participants is recruited (see table 3). The total number of participants is eight (N = 8).

All participants are Dutch because of several reasons. The Dutch are digitally active. The share of people who are online on a daily basis has increased from 81% in 2015 to 88% in 2019 (CBS, 2020b). In addition, they are top ranking in digital proficiency in the EU. 50% of people between 16 - 74 years old have above basic overall digital skills in 2019, compared to an estimated EU average of 33% (CBS, 2020a). An assumption here is that digital platform use is influenced by the digital skills of an individual. Low skill may mean less (extensive) use. The Netherlands has the highest number of websites that provide adjustable cookie settings, compared to other EU countries (Deloitte Risk Advisory, 2020). Therefore, the opportunity for privacy preservation is provided. Because of this, it is not surprising that the Netherlands is leading in the EU with limiting online access to personal data. 92% of Dutch internet users took measures to protect their personal data online in 2020 (CBS, 2021). The assumption is that the willingness to protect, translates in privacy preserving behaviour which allows for research into the relation with digital platforms. Additional statistics that support this claim are provided in Appendix D.

	Gender	Age	Education	Duration	Codes
U1	Female	16/17	VMBO	1 hour	68
U2	Female	18/19	Havo	1 hour & 12 min.	148
U3	Female	20/21	University	59 min.	144
U4	Female	22/23	University	1 hour & 14 min.	147
U5	Male	16/17	Havo	1 hour & 12 min.	119
U6	Male	18/19	VWO	58 min.	139
U7	Male	20/21	HBO	1 hour & 1 min.	161
U8	Male	22/23	University	1 hour & 12 min.	177

Table 3: End-user research participants' characteristics

In addition, an equal division in female and male participants is made and both practical and higher education are represented. The additional statistics that show how and to what extent Dutch internet users take measures to protect their data (Appendix D), differ in gender and education. Therefore, a variety is chosen to increase representability. Another important aspect here is that none of the participants are affiliated with ICT because the same statistics show that these people have much higher percentages compared to others (Eurostat, 2021). Therefore, this group is assumed not to be representative for the majority of end-users of digital platforms and excluded from the sample.

To conclude, all participants are between 16 and 24 years old. This age group has the highest percentage of people (78%) that have above basic overall digital skills (CBS, 2020a). The assumption is that they are more likely to have the ability to self-manage privacy and consent compared to other age groups because of their digital skills. This assumption is supported by the statistic that this age group limits and restricts their content and profiles (74%), and geographical location (84%), more compared to other age groups (Appendix D) (Eurostat, 2021). However, they read privacy policies less (42%), limit their trackability slightly less (30%) and change settings to prevent or limit cookies slightly less (47%) compared to averages across the other age groups (Appendix D) (Eurostat, 2021). This raises the question what their motivations are for limiting and restricting online data disclosure despite performing less manual actions to make it happen.

All end-users are contacted through WhatsApp. The recruitment process and further communication continued via WhatsApp as well. No contribution is provided to incentivise participation. However, after the study had ended, a small present is given to thank them for their participation.

Sampling: Expert Research

For this study, a purposeful sampling strategy based on group characteristics is pursued as the aim is to gain in-depth understanding of the phenomena, hence the sample needs to be informative. Key informants sampling strategy (Patton, 2015) is employed since this method focuses on people with great knowledge or influence who can shed light on the nature of problems and recommend solutions. Therefore, a variety of scholars and industry experts are recruited for this study. The total number of participants is eight (N = 8); four representatives from both research and practice. All experts work in the fields of digital platform dynamics and AI/data ethics. They have complementary experience and represent different points of view, resulting in a balanced sample, selected to enhance research quality. Specifications of the participants are summarised in table FIX.

All experts are initially contacted through LinkedIn and/or e-mail. The recruitment process and all contact after acceptance of participation, continued via e-mail. None of the participants have been in personal contact with the researcher prior to the study. To conclude, no contribution to incentivise participation is provided.

	Field	Expertise	Duration	Codes
RX1	Research	Technology ethics, human rights in AI, computer scientist	57 min.	115
RX2	Research	Ethical imagination, ethics in design & AI, engineer	39 min.	60
RX3	Research	Ethical data management & consent, data steward	1 hour & 7 min.	139
RX4	Research	Digital platform architecture, openness & business models	31 min.	83
PX1	Practice	Head of product at a digital platform within e-commerce	1 hour & 5 min.	133
PX2	Practice	Cognitive solutions & AI ethics, senior consultant	56 min.	146
PX3	Practice	Ditial platform AI research director, data scientist	54 min.	68
PX4	Practice	Information & cyber security, security operations specialist	51 min.	103

Table 4: Expert research participants' characteristics

DATA COLLECTION

Procedure: Expert Research

Prior to the interview, 2-3 days in advance, an overview of the interview themes and sub-themes is provided to give participants the opportunity to prepare and not be surprised by the content of the interview. In addition, the purpose is to re-check whether the experts evaluated themselves to be suitable as an expert for this research. Subsequently, a consent form is provided (see Appendix D), signed and received by the interviewer prior to the interview.

The interviews are conducted through Zoom and Microsoft Teams and recorded to be transcribed using Microsoft Word's automatic transcription tool. Notes are not taken during the interview due to only one researcher being present. No photo nor video material is published to preserve the privacy of the participants. The intended duration of an interview is approximately one hour. However, two experts were restricted in time, therefore shorter interviews were conducted but all themes were discussed.

An interview guide is created for the expert interviews. Prior to the start of the research, the guide is peer-reviewed and iterated on. The final version of the interview guide is available in Appendix D.

All interviews are conducted within the period of one week. The interview guide has not been modified throughout this time. The general outline of the interview guide is as follows. First, introductory questions are asked about the experts' work and trends/developments in their field. Subsequently, perspectives, opinions and thoughts on contemporary data practices and digital platform relations are identified. The second theme addresses the investigation of what a future vision on data practices and digital platform relations could be. To conclude, the steps and key factors necessary to reach the identified future vision are identified. In this guide, consent practices and data disclosure interactions are addressed as part of the digital platform relation.

Procedure: End-user Research

Similar to the expert research, participants received a consent form approximately one week before their interview session. In addition, participants received a sensitising package. The sensitising process is explained in section 4.2. The filled in sensitising booklets are used as a basis for the interview session.

The interview sessions are also conducted through Zoom and recorded to be transcribed with Microsoft's automatic transcription tool. In addition, boards are created in the online white board programme Miro. They are used with two exercises to guide the session and stimulate more in-depth answers from the participants. The created boards are available in Appendix D. The intended duration of the interview was again one hour. Likewise, an interview guide is created for the end-user research which has not been modified throughout the execution. The final version is available in Appendix D. In addition to the research themes (figure 17), two exercises about recognising yourself in digital platform interactions and identifying values of using certain digital platforms are included.

DATA ANALYSIS

Expert & End-user Research

As previously argued, the Grounded Theory Method (GTM) (Glaser & Strauss, 1967) is chosen as the data analysis approach to construct theoretical frameworks from elements specific to: 1) consent practices and disclosure interactions, 2) data practices conducted by digital platform organisations, and 3) digital platform relations. These frameworks are created as a result of the following data analysis process.

First, all interview transcripts are automatically transcribed by the transcription tool in Microsoft Word. Subsequently, they are re-transcribed by hand to prevent mistakes and to preserve descriptive validity.

Second, all coding stages of GTM are executed; open, axial and selective coding respectively. Two transcripts are initially labelled in the open coding stage. Subsequently, codes from the two finished transcripts are assigned to the other six transcripts and new codes are assigned if necessary. Throughout the coding process, Constant Comparison (Dye, Schatz, Rosenberg & Coleman, 2000) is performed. As a result, multiple initial codes are clustered and merged. In the axial coding stage, grounded codes with a threshold value of 4 or higher (expert research), or 5 or higher (end-user research) are categorised. In the selective coding phase, the relations between the categories are identified and used to integrate all categories into the theoretical frameworks.

To increase credibility and validity of both studies, thick description is added to all grounded codes identified in the axial coding phase. In addition, the coding process has been reviewed by the supervisory team and various interpretations of single codes and categories have been peer-debriefed. To conclude, memos are written containing notes about the coding process, the categorisation process, quotes and ideas for the ideation phase. The coding process and memo writing are performed in Atlas.TI. The theoretical frameworks are initially created in Atlas.TI but later in Miro as this programme provided better visual support.

From the frameworks, two elements are extracted: sources of friction and future values. In this thesis, sources of friction are defined as concepts that contain conflicting interests and contrast. Therefore, they are obstacles that need to be dealt with to pursue a desired future vision. They are identified from the categories that represent the current situations of consent, data practices and digital platform relations. In addition, values that represent the future visions on these same topics, are extracted from the grounded codes that are part of these visions. The extraction process of the future values is done through clustering with one iteration.

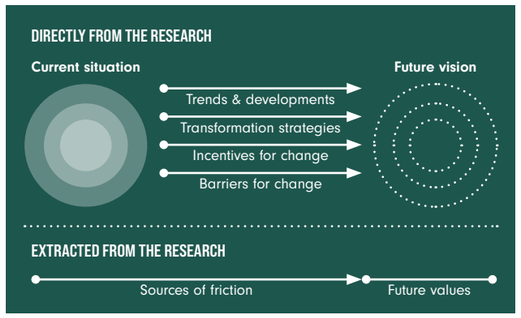


Figure 18: Overview of direct and extracted elements of the research

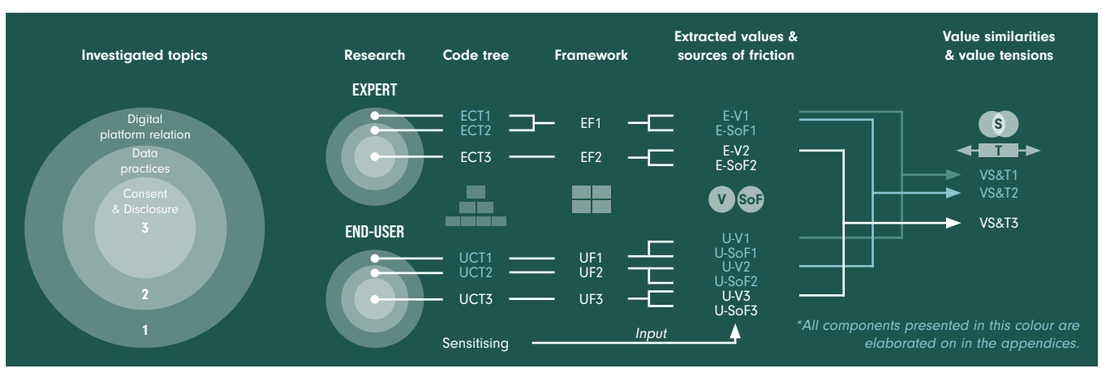


Figure 19: Overview of the research outcomes

Data Analysis Outcomes

Figure 19 shows how the investigated themes are addressed in both expert and end-user research and what results are concluded. **Important to note is that only theme 3, consent practices and disclosure interactions, is elaborately discussed in the main report.** All other results are available in Appendix D.

First, a code tree is created from each theme, resulting in six code trees in total. The code trees about the current situation and future vision on consent from the expert and end-user perspectives are presented in section 3.3 (i.e. ECT3 & UCT3).

Second, the expert and end-user research result in six theoretical frameworks. One model describes the result of end-user sensitising which is displayed in section 3.2. Two models clarify the central theme: current and future consent practices & disclosure interactions (i.e. EF2 & UF3). Three models describe the contextual themes: current digital platform data practices and digital platform relations (i.e. EF1, UF1 & UF2. Section 3.4 shows and elaborates on frameworks EF2 and UF3 through category explanations, relevant code definitions and interview quotes. After each framework, sources of friction are described.

Third, extracted values from end-users' and organisations' future visions on consent practices and disclosure interactions are compared and classified as value similarity or value tension. They are elaborated on in section 3.5.

To conclude, the theoretical frameworks regarding data practices and digital platform relations are shown and briefly discussed in section 3.6 as they form the foundation of the future vision as will be presented in the next chapter.

3.2 Sensitising Design Research

This section describes how the participants of the end-user research are sensitised for their interview sessions. It explains the approach and procedure of the sensitising period and briefly illustrates the analysis process which has lead to different types of results. Subsequently, the end result is presented in a framework. The elaboration on created materials and additional results is available in Appendix D.

APPROACH & PROCEDURE

Sensitising is the period prior to an interview session in which the participants immerse themselves into the topic by collecting personal experiences and increasing their understanding, often guided by assignments or a workbook. The purpose of sensitising is to prepare the participants well and stimulate an open mind. The use of generative exercises is meant to get to tacit knowledge that is usually not reached with traditional research methods (Sanders & Stappers, 2012).

All sensitising packages including a booklet, an explanation letter and stickers are provided to the participants one week prior to their sessions. Finished booklets were returned either in person or by taking photos of all pages and sending them back. The finished booklets are discussed in interview questions and session exercises. The sensitising booklet follows the path of expression (figure 21) (Sanders & Stappers, 2012). It is created based on a brainstorm about interview themes and exercise types. The match with the interview guide and interview exercises has been evaluated multiple times. In addition, all exercises are piloted with two people and iterated on based on their feedback. Every exercise contains introductory questions, an explanation of the exercise's purpose, steps to undertake, a template to fill in answers, and an example answer to guide the participant in filling out the booklet.

The sensitising booklet starts with an introduction exercise in which participants introduce themselves and explain what they like about being online and offline. Day 1 is a layered day in the life exercise in which the participants write down what their usual activities are and which digital platforms they use. The second step is to connect their daily activities with the digital platforms they use. In the last step, the participants use the supplied stickers to indicate their feelings throughout the day. During day 2, the participants create a map of all digital platforms they use on a value circle. They make a distinction between frequent and infrequent use, and their importance. The exercise from day 3 elaborates on why certain digital platforms are evaluated to be important. It is about discovering the values behind a chosen digital platform. In addition, the participants are asked to think about why they would and would not recommend their chosen important digital platform to friends and family. During day 4, the participants choose another digital platform as a starting point, and reflect on their experience with this platform by writing down positive and negative encounters. In addition, they reflect on the actions they take to create a positive experience and prevent a negative experience on the digital platform. To conclude day 4, the participants answer questions about the meaning of privacy, consent and their worry about disclosing personal information. The last day is about envisioning their ideal relation with digital platforms and ideal data practices by digital platform organisations. Participants may use supplied images and word stickers to create their visions. To conclude, participants identify what steps they may undertake and support they need to move towards their created ideal future vision. All exercises are presented in Appendix D.

ANALYSIS & RESULTS

The results of the sensitising exercises are analysed following the Grounded Theory Method (GTM) approach (Glaser & Strauss, 1967). First, the answers are initially coded after which similar codes are merged. The grounded codes with a threshold value of 2 or higher are categorised. Subsequently, the relations between the categories are defined from which a framework is created. The exercises from day 2 and 3a are excluded. They are summarised in visual representations available in Appendix D. From the framework, values are extracted. These values contribute to the extracted values from the frameworks of the interviews.

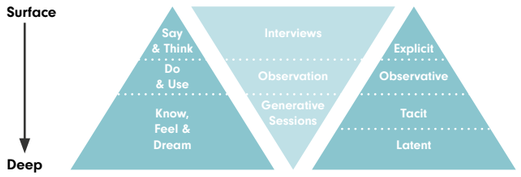


Figure 20: Research approaches and corresponding levels of knowledge

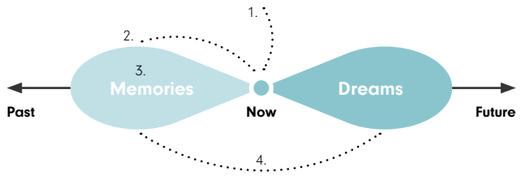


Figure 21: Path of expression

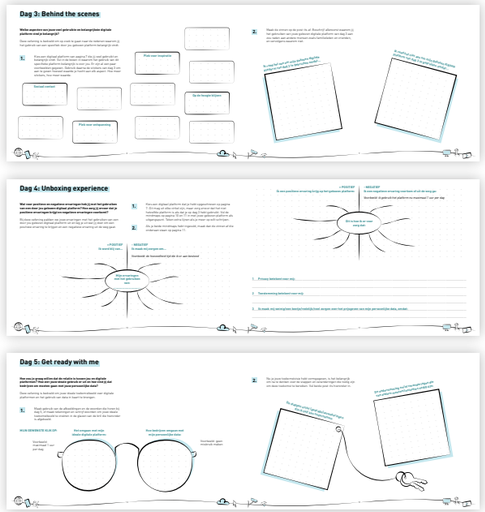
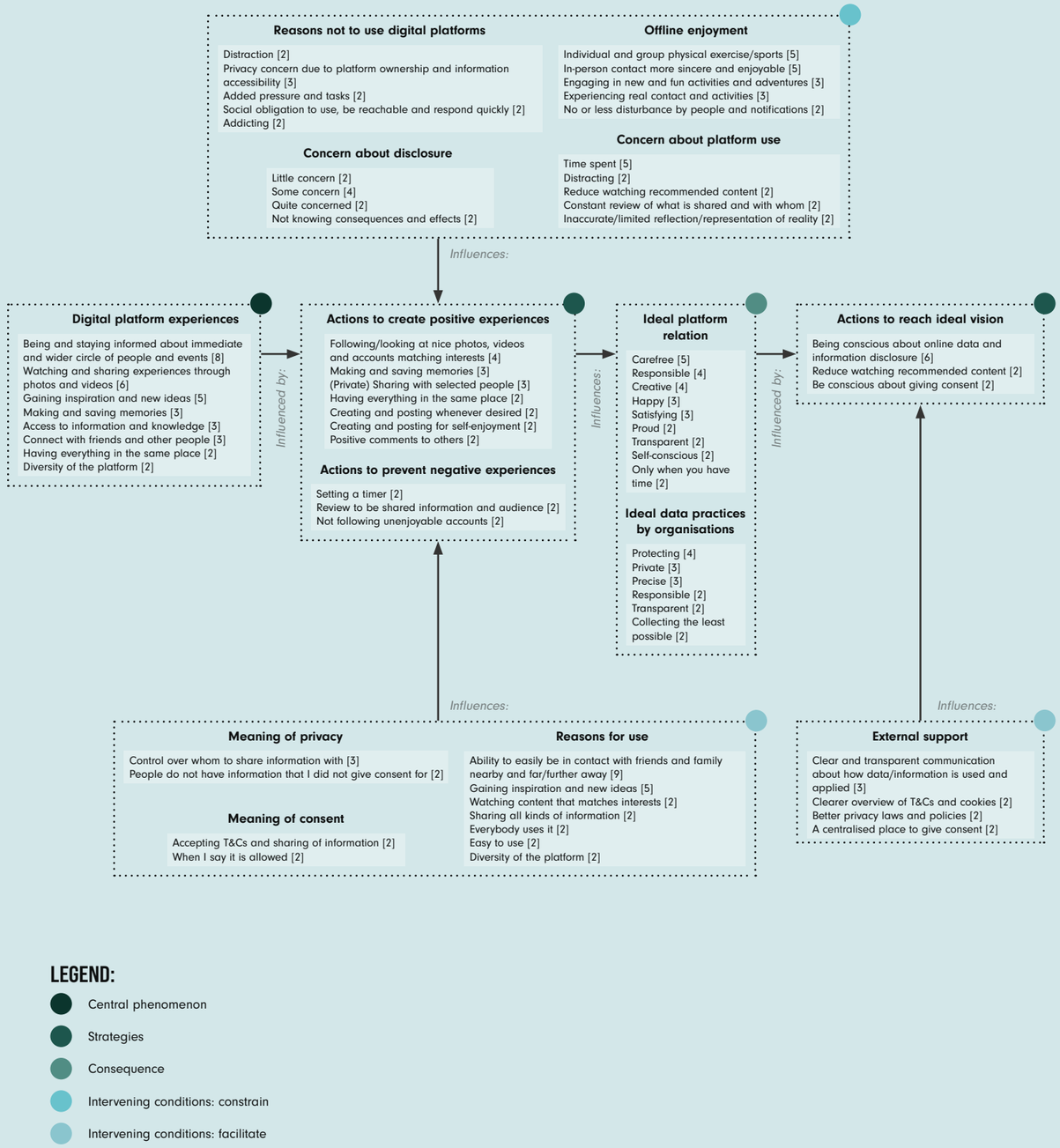


Figure 22: Sensitising exercises from the created booklet

SENSITISING FRAMEWORK

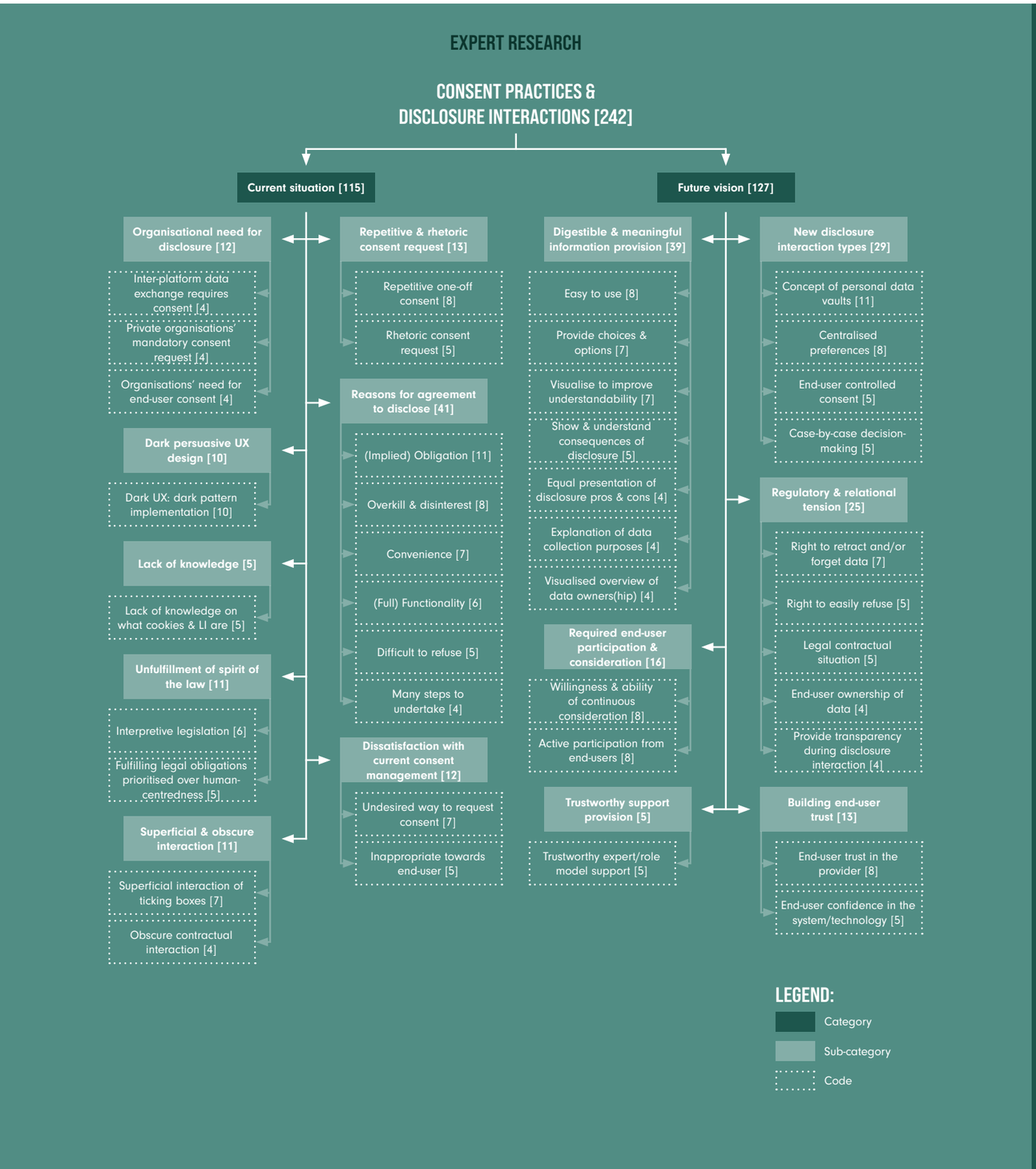


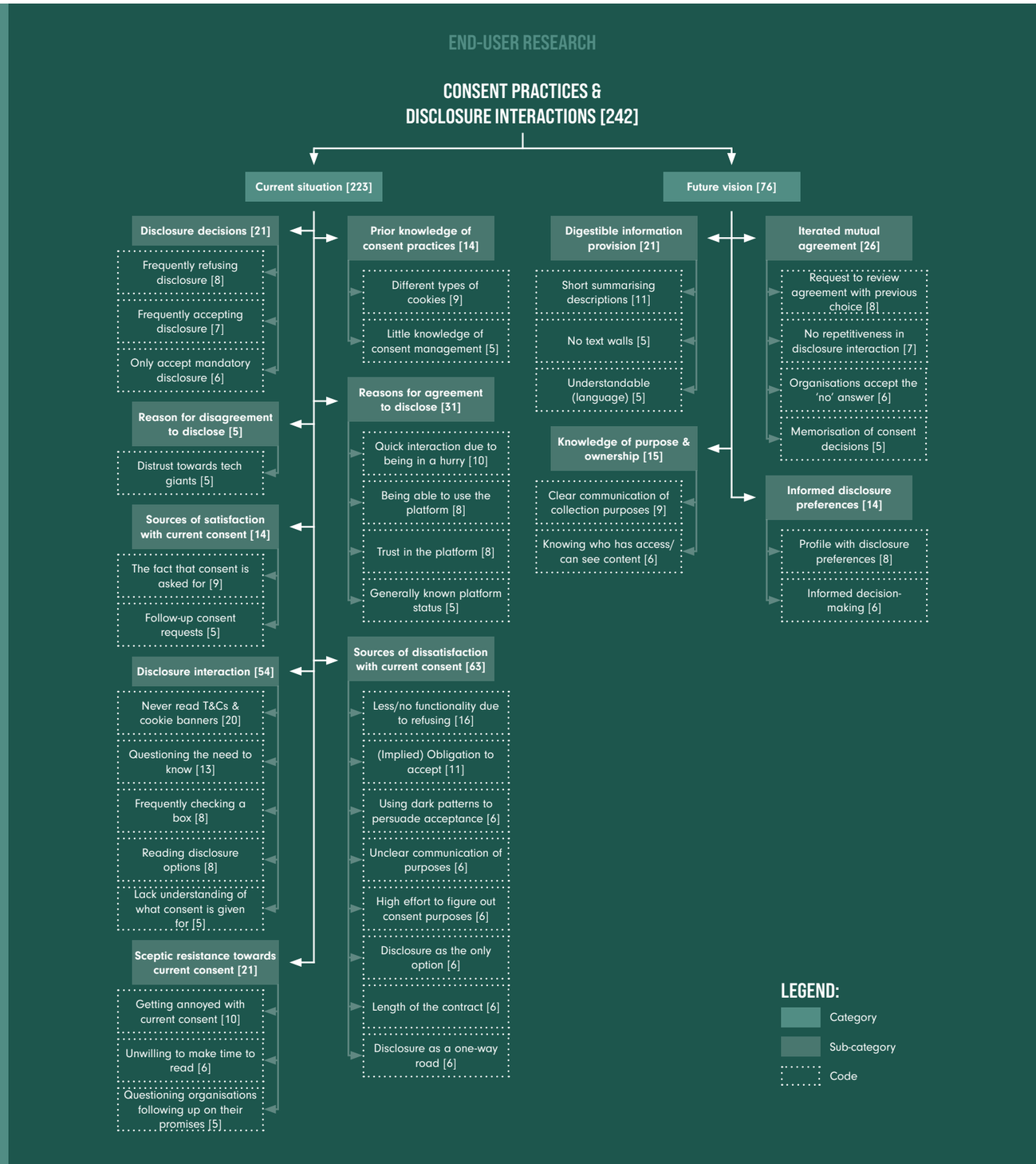
LEGEND:

- Central phenomenon
- Strategies
- Consequence
- Intervening conditions: constrain
- Intervening conditions: facilitate

3.3 Code Trees: Consent Practices & Disclosure Interactions

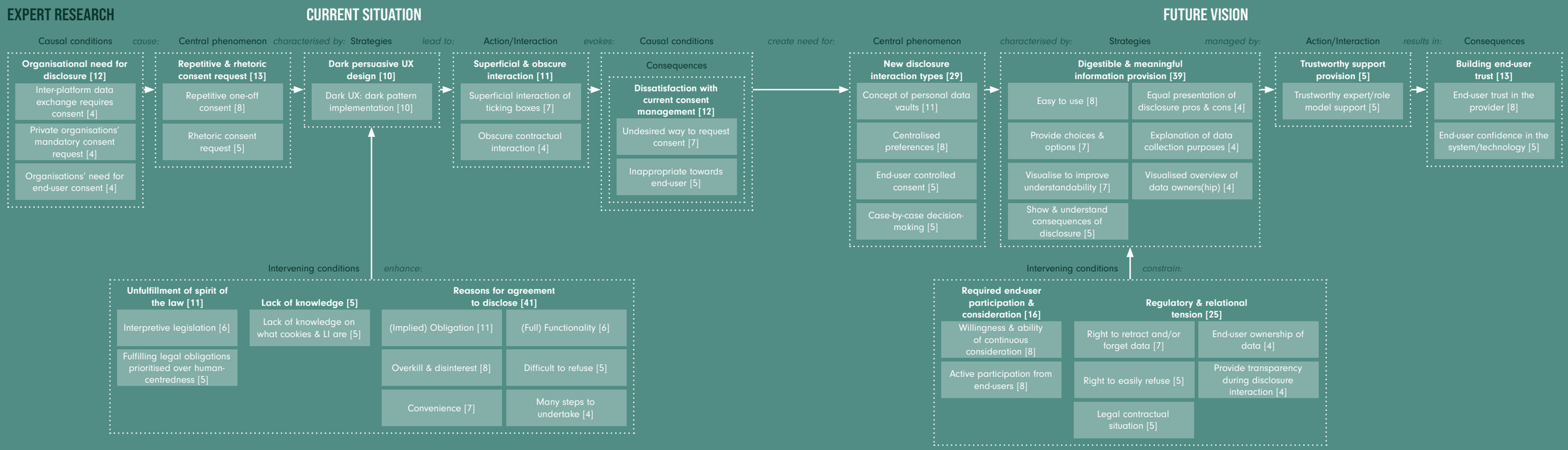
As a first result of the analysis process of the expert and end-user research, code trees are created. They include the grounded codes within their assigned categories and themes. The figures below show the code trees about consent practices and disclosure interactions from both the expert and end-user research. The number of quotations is displayed between brackets.

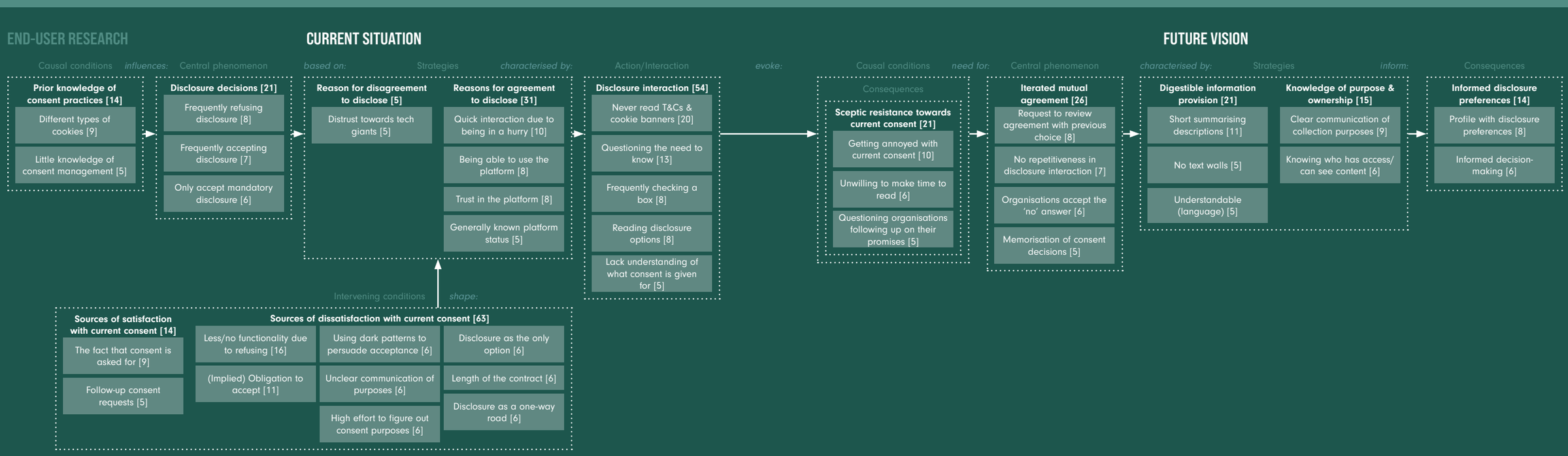




3.4 Frameworks: Consent Practices & Disclosure Interactions

From the code trees displayed in section 3.3, two frameworks are created that show the identified relations between the categories. They represent an understanding of the current situation and future vision on consent practices and disclosure interactions from both the expert (top) and end-user (bottom) perspective. Both frameworks are elaborated on in subsequent sections.





RESULTS THEORETICAL FRAMEWORK (EXPERT RESEARCH)

Contemporary consent practices & disclosure interactions

Organisational need for disclosure
Requesting consent from end-users by digital platform organisations is mandatory. Digital platform organisations are in need of end-users' acceptance to disclose personal information, to provide their services to end-users and to be able to employ inter-platform data exchange and data practices.

"I think there is some progress made in terms of when we browse around and we download the apps for our phones, we see more and more: we need your permission to do this and this, do you consent or not?" – RX1

"We share data between ourselves, only if the user gives consent for this." – PX1

Repetitive & rhetoric consent request
Due to this need for disclosure, consent requests tend to become rhetoric and repetitive. Repetition is identified due to reoccurring requests on the same digital platforms and also between different ones. A seemingly contrasting one-off aspect is identified due to the "once agreed to disclose, data remains disclosed" trait.

"It is something that does not make customers happy, because you get it for every website and platform you visit. When you encounter it ten times per day, you will not read it attentively anymore." – PX1

When consent is requested, people tend to refuse. Organisations are legally obliged to ask, but they have a need for end-users' acceptance of data disclosure for platform innovation and personalisation, among other purposes. As a result, the question becomes rhetoric.

"Sometimes it still seems that you do not exactly have a choice and you just get notified. If you want to use it you have to accept it, if not, well too bad for you." – RX1

"In many cases when you ask, you know that people will say no. But if you do not ask, they will just go with it." – PX3

Dark persuasive UX design
As a result of repetitive and rhetoric consent requests, the interaction changes into coercion for acceptance, supported by dark persuasive UX design. Dark UX is characterised by dark pattern implementation in disclosure interactions such as nudges in the organisations' interest.

"To change the copy, the experience, you see that you can influence it. For example, you can put the 'I accept' button on the right side or on mobile on the bottom so that it is close to the thumb. People usually operate these kinds of buttons with their thumb, so then you want the 'I accept' button to be there and the other button further away because people have to make more effort." – PX1

Reasons for agreement to disclose
Dark persuasive UX design is enhanced by other obstacles and reasons that persuade agreement to disclose. For instance, overkill and disinterest, convenience, difficult to refuse, implied obligation, full functionality, and many steps to undertake.

"The resource is within your grasp and you will just tick the box to say, yes I give my consent to whatever my data will be used for. At the moment it is just a very superficial interaction." – RX2

"You still often have to click yes to all of them in order to get the various functionalities you want on the site." – RX3

Unfulfillment of spirit of the law
In addition, the effect of dark persuasive UX design is enhanced by unfulfillment of the spirit of the law by organisations. Regulations are legally met, but not applied with a human-centred perspective. Moreover, legislation is found to be interpretable.

"There is always going to be this thing of how people will find gaps in the way things are legislated and a lot of things are left to interpretation of courts when specific cases arise." – RX1

"So that to me is the big difference between being legal and actually considering a person. You can give them the big book of opens, you are legally covered and you can defend your case in court. But you cannot expect anyone to do certain actions if they have another task that they want to complete." – PX3

Lack of knowledge
The effect of Dark UX is also enhanced by a general lack of knowledge on what cookies and legitimate interest are.

"I have the feeling that people do not know exactly what that second slider is, the legitimate interest. And that one is on and the rest is off, then you think that must be good. But it might be worse." – PX2

Superficial & obscure interaction
All previous factors lead to the current interaction being described as superficial in terms of ticking boxes and obscure due to its contractual nature.

"A lot of businesses that I have seen, they have essentially interpreted a tick box on cookies. I am not sure how efficacious or meaningful that is really." – RX3

"It looks like a contract that is very obscure, it becomes difficult to refuse. There is often no button to refuse all, now you have to switch off cookies for every aspect, multiple check marks to continue. It has been made very difficult to refuse." – PX4

Dissatisfaction with current consent management
The experience of this interaction evokes dissatisfaction with current consent management practices and disclosure interactions. They are identified to be undesired and inappropriate towards end-users.

"I think it is clear that people are burdened with it or it is unusable, so that is actually not a good way to ask for consent." – RX4

Future vision on consent practices & disclosure interactions

New disclosure interaction types
Dissatisfaction with the current situation evokes a desire for a different future situation. It is characterised by new types of interactions including case-by-case decision-making and end-user controlled consent. The essence of these concepts is the choice to be involved and set limitations yourself.

"That is precisely that the user can agree or not on every operation, instead of losing all your data at once and having to think about it beforehand, what would happen to it?" – RX4

"I think that it is most important that in the end, the user has control. So if the user does not want it anymore, that you are able to say I provide access to this data, I block it or I switch it off or something like that." – PX1

In addition, centralized preferences in for instance a profile, browser or operating system, and the concept of Personal Data Vaults (PDV) are defined as new concepts. PDV also encompasses related concepts such as data donation and crowdsourcing data.

"If instead of for every single website saying what your preferences are, you have a centralized thing on your operating systems or in a particular browser that you use, you say: here are my preferences and this is going to apply to all websites unless for a specific website I want to change this." – RX1

Digestible & meaningful information provision
Regardless of the new disclosure interaction type, all new concepts should be characterised by digestible and meaningful information provision. Choice and option provision, easy in use and visualisation for understandability and of ownership, all contribute to digestibility.

Meaningful is represented by equal presentation of disclosure pros and cons, showing and understanding consequences of disclosure, and explanation of data collection purposes.

"I think that could be made clearer in terms of structuring the information that you get when you give consent. So you know examples of how your data might be used." – RX2

Required end-user participation & consideration and regulatory & relational tension
Two types of intervening conditions constrain digestible and meaningful information provision: required end-user participation and consideration, and regulatory and relational tension between organisation and end-user. The first constraint comes from the active participation of end-users, which in turn is a result of their willingness and ability of continuous consideration.

"But even then the question is whether everyone wants to make their own decision and is able to make it every time." – RX4

"I also have the idea that when you give responsibility to the end-user, there are already so many choices that we have to make. You have to read in order to do it right." – PX2

The second, regulatory and relational tension, comes from the current legal contractual situation, which includes the right to retract and/or forget data and the desired right to easily refuse.

"It is a kind of right for a user that very few people make use of. Which most companies also try to hide a bit, because it is a pain to get all data from everyone from all systems. Very often a manual process." – PX1

"You can see that it is a way of obfuscation. They want to make it as difficult as possible to refuse, that you actually want the right to easily refuse." – PX4

Other factors contributing to this tension are end-user ownership of data and transparency provision during the disclosure interaction.

Trustworthy support provision
To revert to digestible information provision, this may be achieved by instating trustworthy support provision to the end-user. Sources of support may be experts and other role models.

"You could delegate it to someone. An algorithm that makes those trade-offs on your behalf. And you could perhaps train them as a user, thinking out loud, perhaps with choice models? And connect AI to it." – RX4

"So you may want to make your own choices for some decisions and not others. You can then entrust this to an expert such as the data protection officer of a company, for example, and follow them." – PX2

Building end-user trust
New disclosure interaction types based on digestible and meaningful information provision, supported by trustworthy guidance of the end-user results in building end-user trust. It is a twofold concept as it encompasses trust in the provider as well as confidence in the system/technology.

"I think people will assume that control is there and what they are promised is in fact the way things are, and that entails a level of trust. That everything is secure, that privacy when promised is kept, that details that are being collected are only being collected for the purposes. All these things, they entail a level of confidence in the way that a system works." – RX3

RESULTS THEORETICAL FRAMEWORK (END-USER RESEARCH)

Contemporary consent practices & disclosure interactions

Disclosure decisions
End-users do not show specific preferences for either accepting, refusing or accepting only mandatory disclosure of personal data. This last option is, for instance, chosen by end-users when they distrust digital platforms or know that organisations sell profiling data to third parties.

"For example, if you are on a site about which you say I do not fully trust it, then you take a look at the cookie settings. Like, okay, only necessary." – U5

Prior knowledge of consent practices
The decision to disclose is influenced by prior knowledge of consent management practices. End-users are aware of the existence of different types of cookies, such as functional and analytical, but generally have little knowledge on this topic. For instance, a misunderstanding about required acceptance of cookies to be able to use the platform regardless of platform type is identified among several participants.

"Well, to be honest I don't know much. Yes, I don't know much about it, but I do know that they just collect a lot of data." – U2

"That you have many varieties. Analytical, I think it's always on. No, wrong. Functional, they are always on. Analytical is when they start to analyse you, you can often turn this one off. And you have many more kinds, but I don't know all of that exactly." – U3

Reaons for (dis)agreement to disclose
In addition, the disclosure decision is found to be based on reasons for agreement to disclose and argumentation to disagree with disclosure. End-users tend to agree because of trust in, and a well-known status of, a digital platform. However, distrust towards digital platforms from well-known large technology firms leads to disagreement. Participants identified the experience of this feeling strongly towards Facebook.

"If there's a shady site, I'm not going to enter my real data there. I would only enter my real data on platforms that I really trust." – U6

"And if it doesn't say anything, I think they'll handle my data well." – U8

End-users also agree to disclose to be able to use the platform or when they are in a hurry.

"Well I just find that irritating. Then, for example, you quickly look up something and then that strange thing comes up again, you just have to read it in its entirety." – U1

"For example, with large platforms such as Spotify and Netflix, I'm not really involved in that. You create your account, because I just want to listen to music or I just want to watch my series." – U7

Sources of (dis)satisfaction with current consent practices
The argumentation to agree or disagree is shaped by two intervening conditions: sources of satisfaction and dissatisfaction with contemporary consent practices. End-users perceive an obligation to accept, potentially due to less or no functionality when disclosure is refused, the implementation of dark patterns, or digital platforms where agreement to disclose is the only option.

"Yes, I think it's important to ask. Only I think you often can't use the service if you don't give permission. So then it kind of becomes an obligation." – U2

"They always try to make it so that the most obvious button is 'continue'. Or you click on specialised cookies and when you are not paying attention, the most striking button is 'accept everything'. – U5

In addition, the length of the contract affects unclear communication of disclosure purposes which causes high effort for end-users to discover these purposes.

"It takes so much extra time when you go through the entire document for fun on all the platforms at first-time use. Of course nobody does that." – U4

To conclude, disclosure is perceived as a one-way road. Once data/information is disclosed, no changes can be made. All these aspects contribute to end-user dissatisfaction towards current consent management practices.

"You agree sometimes, but there is no going back. They already have your data anyway." – U7

Identified sources of satisfaction are the fact that consent is asked for and the practice of follow-up consent requests. Communication about tracking behaviour is appreciated and follow-up requests allow end-users to change settings if necessary for certain functionality and/or accessibility.

"A lot of platforms are asking for permission right now. I think since the introduction of the new law. I think that's really good." – U6

Disclosure interaction
The argumentation to agree or disagree is also characterised by the definition of the disclosure interaction itself as experienced from the end-user perspective. Behaviour identified during the disclosure interaction includes the frequency of checking a box while often not reading T&Cs and cookie banners. Sometimes disclosure options are read, nevertheless a lack of understanding in what consent is given for, occurs. If disclosure purposes are understood, end-users indicate to question an organizations' need to know certain information required to disclose. This especially concerns the need for home addresses outside the scope of delivery services.

"For example, giving your address for a loyalty card in a store or something like that, I get that. But what should Spotify do with my address and zip code?" – U7

"Perhaps more attention should be paid to that. I don't think anyone really thinks about what they're actually saying yes to right now." – U8

Skeptic resistance towards current consent practices
The current knowledge, attitude, interaction and experience leads to the consequence of sceptic resistance towards current consent management practices. End-users are annoyed with the interaction, unwilling to make time to read and are questioning whether organizations are following up on their promises regarding whether or not organizations really do what they say. For instance, with deletion of data.

"Hopefully they erase it because that's what they say. But I'm also not sure if they do. Maybe they just erase it from my computer and not their computer." – U3

Future vision on consent practices & disclosure interactions

Iterated mutual agreement
The negative aspects of the current situation create a need for an improved future situation. In the framework, sceptic resistance towards current consent acts as the bridge between the current situation and future vision. The desired future vision on consent practices and disclosure interactions is defined as an iterated mutual agreement. This concept is substantiated by no repetitiveness in the interaction, memorisation of consent decisions, organisations' acceptance of end-users refusing to disclose and review requests concerning previous disclosure decisions.

"Keep it simple and that you can always just choose yes and no." – U1

"I would like a button with 'remember my choice', that would be nice." – U3

"Just give me a questionnaire about what information I do and don't want to share that you have to fill out every year or something. You can hand it in with the government." – U8

Digestible information provision & Knowledge of purpose and ownership
The iterated mutual agreement is characterised by digestible information provision and knowledge of purpose and ownership. Short summarizing descriptions, no text walls and understandable language all contribute to digestibility of the information. Clear communication of collection purposes and accessibility to information are part of building up knowledge on purposes and ownership.

"I would like, to what extent it is possible, that you can see for yourself where your information has ended up." - U4

"Yes, just clear and short. So it is not necessary that you could click on more information. With every pop-up simply indicate clearly and briefly 'these are the things we do with it' and I think this can be shown concisely and schematically." – U6

Informed disclosure preferences
Both identified strategies inform a potential future interaction defined as informed disclosure preferences. It is characterised by a disclosure preferences profile and informed decision-making. In context of a preferences profile, receiving warnings when organizations do not comply is also mentioned.

"If you know exactly what happens to your data and information, you can make much better choices about what you do and don't want. But of course it's not so black and white. You can't say 'I'm not giving my data so they won't know'." - U4

"It would be ideal if you know what is in your profile and that you can say 'you can and you can't know this'. – U5

SOURCES OF FRICTION (EXPERT RESEARCH)

As previously explained, sources of friction are concepts that contain conflicting interests and contrast. They are obstacles between the current situation and future vision that need to be dealt with to be able to pursue a design proposal in the context of the desired future vision. The sources of friction presented in this section are extracted from the current situation frameworks on consent practices and disclosure interactions. From the expert research, three sources of frictions are identified and elaborated on in this section.

Figure 23: Explanation of sources of friction

1. Rhetoric Consent Request

Consent requests as rhetoric questions, is identified as a source of friction. It is influenced by three sub-aspects:

- **The influence of end-user control/ownership on disclosure**
  This relates to the fear of the organisation that disclosure is refused if end-users are provided more control and ownership.
- **Right to retract/forget**
  Retracting data is a manual process and can be distributed into 30-40 different (third-party) servers according to interviewee RX5. As a consequence, the organisation "hides" this right from the public. In addition, data can get "lost" due to (out-of-context) manipulation and analytics of the data. Retracting all personal data upon request is therefore likely impossible.
- **Right to easily refuse**
  This relates to the fear of the organisation that disclosure is refused frequently if it has been made easier for the end-user to refuse.

2. Dark UX

Nudging applied to disclosure interactions purposefully cause obfuscation to stimulate consent agreement. However, this contrasts with the prominent business objective to provide a good customer experience (CX). As a result, overall digital platform CX is compromised to coerce acceptance. A sub-aspect of this source of friction is the implied obligation/illusion of choice. Use of nudging towards opt-in may seem like blocking walls. The current dynamic may feel like a notification rather than a decision, and is characterized by questionable voluntariness. All these aspects have the potential to negatively affect overall CX on short- and long-term.

3. Imbalance of effort and contribution

For organisations, data collection is automated. Therefore, the effort for organizations to collect data through their digital platforms is very low. For end-users, permission for data provision is not automated and requires therefore much more effort. As a consequence, an imbalance of effort and contribution develops between the currently required active role of the end-user and passive role of the organization in consent practices.

Figure 24: Sources of friction concluded from expert research

SOURCES OF FRICTION (END-USER RESEARCH)

Sources of friction have also been identified from the end-user research in the same way as the expert research. They are elaborated on in this section.

4. Uselessness of Reading

End-users tend not to read terms and conditions or cookie banners because they know in advance they will probably have to accept anyway to use the service. Even if they do read the disclosure options, the effort to discover consent purposes is very high and increased by the length of the contract. As a result, they lack understanding of what consent is given for. However, they are unwilling to put effort into gaining understanding by reading the conditions in the way they are provided now.

5. Questioning despite Trust and Status

Despite organisations' efforts to build and maintain end-user trust, and being perceived as generally well-known, end-users question whether or not organisations follow up on the promises they make and their need to know personal information. As a result, distrust remains part of the relation during the consent interaction, thereby causing dissatisfaction.

6. Damage to Digital Platform Status

The generally well-known status of digital platform organisations is barely affected by the use of dark patterns to persuade acceptance. Slowly, end-users gain awareness of these practices causing organisations to be unable to maintain their status regardless of their dark pattern implementation. If these practices lead to anger and dissatisfaction, it creates a barrier to a desired consent situation.

7. Building Trust from Unawareness & Obscure Communication

Trust in the platform is relevant for organisations because it incentivizes end-users to agree to disclose their data. However, trust is difficult to build when end-users are not aware of organisations' data practices, it requires high effort to figure them out and are informed through unclear and obscure communication.

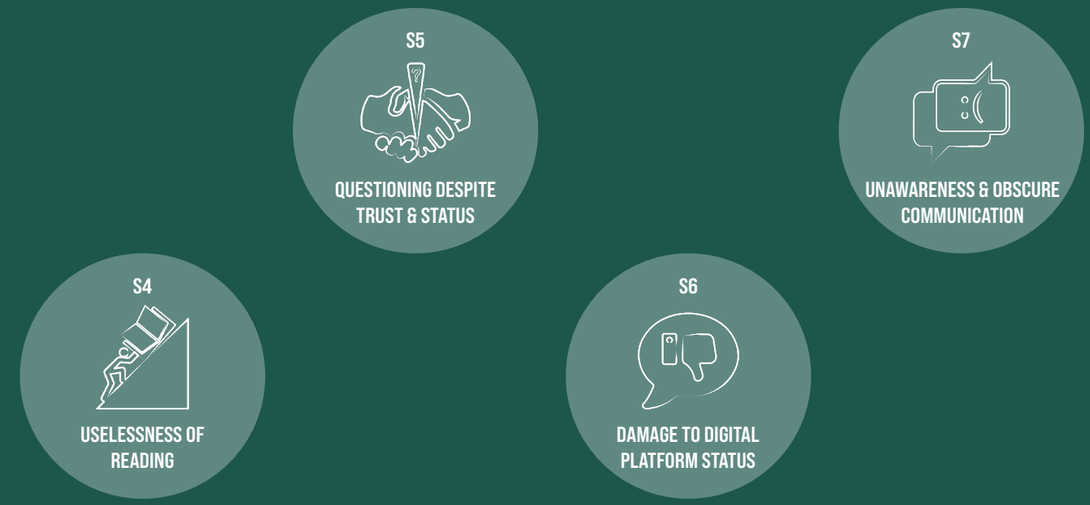


Figure 25: Sources of friction concluded from end-user research

3.5 Value Similarities & Value Tensions

From the frameworks shown in section 3.4, values are extracted from the expert and end-user future visions on consent practices and disclosure interactions. These future values are compared and are either similar, contrasting or stand alone. First, all extracted values are separately explained in the order of similarities, tensions and stand alone. Second, the classification as similarity or tension is explained.

EXPERT RESEARCH

EXTRACTED VALUES

Definition: "To have confidence in something or to believe in someone".[1]
In context: Trust is expressed through trustworthy expert and role model support in disclosure considerations, end-user trust in the provider, and end-user confidence in the system/technology.
Perspective: Trust is a desired value by the organisation and an assumed value for the end-user.

Definition: "The right to keep one's personal matters and relationships secret".[1]
In context: Privacy is expressed through the concept of personal data vaults, the right to retract and forget data, and the right to easily refuse.
Perspective: Privacy is a desired value for the end-user as assumed by the organisation.

Definition: "The state of being explainable".[2]
In context: Explainability is expressed through showing and understanding consequences of disclosure, visualisation to improve understandability, and explanation of data collection purposes.
Perspective: Explainability is a desired value by the organisation.

Definition: "An individual's opportunity and autonomy to perform an action, unconstrained by external parties".[3]
In context: Freedom of choice is expressed through the willingness and ability of continuous consideration, the right to easily refuse, and provision of choices and options.
Perspective: Freedom of choice is a desired value by the organisation and an assumed value for the end-user.

Definition: "The quality of being honest".[1]
In context: Honesty is expressed through providing transparency during the disclosure interaction, visualisation of an overview of data owners(hip), and equal presentation of disclosure pros and cons.
Perspective: Honesty is a desired value by the organisation.

Definition: "The quality of being done in an open way without secrets".[1]
In context: Transparency is expressed through showing and understanding consequences of disclosure, explanation of data collection purposes, and visualisation of data owners(hip).
Perspective: Transparency is a desired value by the organisation and an assumed value for the end-user.

1 (Cambridge University Press, n.d.)
2 ("Explainability", 2020)
3 ("Freedom of choice", 2021)

END-USER RESEARCH

EXTRACTED VALUES

Definition: "To have confidence in something or to believe in someone".[1]
In context: Trust is expressed through informed decision-making, clear communication of collection purposes, and knowing who has access and can see content.
Perspective: Trust is a desired value by the end-user.

Definition: "The right to keep one's personal matters and relationships secret".[1]
In context: Privacy is expressed through organisations' acceptance of the 'no' answer, and knowing who has access and can see content.
Perspective: Privacy is a desired value for the end-user, to be executed by the organisation.

Definition: "The activity of obtaining knowledge", and "having knowledge about a subject or situation".[1]
In context: Learning and understanding is expressed through understandable language, informed decision-making, knowing who has access and can see content, and clear communication of collection purposes.
Perspective: Learning and understanding is a desired value by the end-user.

Definition: "An individual's opportunity and autonomy to perform an action, unconstrained by external parties".[1]
In context: Freedom of choice is expressed through organisations accepting the 'no' answer, and having a profile with disclosure preferences.
Perspective: Freedom of choice is a desired value by the end-user, to be facilitated by the organisation.

Definition: "The quality of being done in an open way without secrets".[1]
In context: Transparency is expressed through knowing who has access and can see content, clear communication of collection purposes, and understandable language.
Perspective: Transparency is a desired value by the end-user, to be executed by the organisation.

EXPERT RESEARCH

EXTRACTED VALUES

Definition: "To be in charge of something and have the power to make decisions relating to them".[1]
In context: Control is expressed through the concept of personal data vaults, end-user controlled consent, and centralized preferences.
Perspective: Control is a desired value for the end-user as assumed by the organisation.

Definition: "To help someone emotionally or in a practical way".[1]
In context: Support is expressed through easy to use, visualisation to improve understandability, equal presentation of disclosure pros and cons, and trustworthy expert and role model support for disclosure considerations.
Perspective: Support is a desired value by the organisation.

Definition: "The ability to make your own decisions without being controlled by anyone else".[1]
In context: Autonomy is expressed through making case-by-case decisions, the concept of personal data vaults and end-user controlled consent.
Perspective: Autonomy is a desired value for the end-user as assumed by the organisation.

Definition: "The ability to take action or to choose what action to take".[1]
In context: Agency is expressed through the concept of personal data vaults, end-user controlled consent, willingness and ability of continuous consideration, active participation from end-users, and easy to use.
Perspective: Agency is a desired value for the end-user as assumed by the organisation.

Definition: "The quality of being legal".[1]
In context: Legitimacy is expressed through the right to retract and forget data, the right to easily refuse, and the legal contractual situation.
Perspective: Legitimacy is a desired value by the organisation.

Definition: "The right or state of being an owner".[1]
In context: Ownership is expressed through case-by-case decision-making, the concept of personal data vaults, willingness and ability of continuous consideration, the right to retract and forget data, and end-user ownership of data.
Perspective: Ownership is a desired value for the end-user as assumed by the organisation.

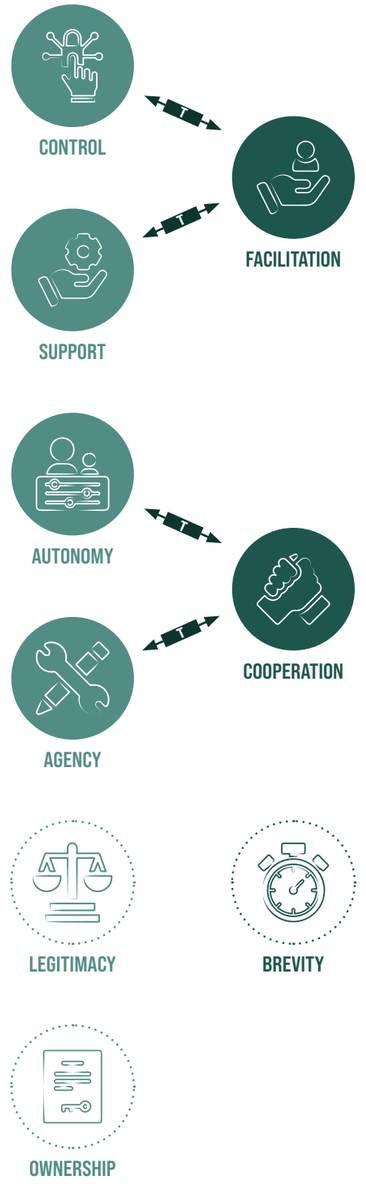
END-USER RESEARCH

EXTRACTED VALUES

Definition: "The act of helping other people to deal with a process or reach an agreement or solution without getting directly involved".[1]
In context: Facilitation is expressed through memorization of consent decisions, requests to review agreement with previous disclosure decisions, and no repetitiveness in the disclosure interaction.
Perspective: Facilitation is a desired value for the end-user, to be executed by the organisation.

Definition: "The act of working together with someone or doing what they ask you".[1]
In context: Cooperation is expressed through requests to review agreement with previous disclosure decisions, and having a profile with disclosure preferences.
Perspective: Cooperation is a desired value by the end-user.

Definition: "Using only a few words or lasting only a short time".[1]
In context: Brevity is expressed through short summarizing descriptions, no text walls, and no repetitiveness in the disclosure interaction.
Perspective: Brevity is a desired value by the end-user, to be executed by the organisation.



VALUE SIMILARITIES

Based on a comparison of the extracted values from the end-users' and organisations' future visions on consent practices, five value similarities have been found (see figure 26).

1. Trust

Trust is identified as a value similarity because providing trustworthy support in disclosure decisions fits with the action of informed decision-making. Furthermore, communication and knowledge provision contributes to building trust in the provider and system.

2. Privacy

Privacy is identified as a value similarity because the right to easily refuse matches with organisations' acceptance of end-users' refusal to disclose. Furthermore, the concept of personal data vaults allows for having insight in data owners and accessibility by digital platform organisations.

3. Understanding, Learning & Explainability

These concepts are identified as a value similarity because the desire to learn and understand through for instance understandable language and knowledge of collection purposes and accessibility is met by the will to show consequences of disclosure, visualisation to improve understandability and additional explanation by the organisation.

4. Freedom of Choice

Freedom of choice is identified as a value similarity because of the shared vision on providing a real choice between disclosure and refusal, and having the ability to set preferences regarding these options.

5. Transparency & Honesty

Transparency and honesty are identified as a value similarity because of the desire to have openness through explanation and communication regarding collection purposes, accessibility and consequences.

VALUE TENSIONS

In addition to the value similarities, three value tensions have been identified. See figure 27 for the overview of values in their value tensions.

1. Control vs. Facilitation

End-users desire facilitation of the consent process performed by the digital platform organisation through memorization of their consent preferences and requests to review their agreement with previous disclosure decisions. However, organisations desire end-users to take control of the consent process through for instance, personal data vaults and end-user controlled consent. Both parties want the other to take responsibility for, or facilitate the consent process.

2. Support vs. Facilitation

In addition, end-users' desire for facilitation contradicts with support since tools are provided to help, but the end-users still have to go through the process themselves instead of being guided through.

3. Autonomy & Agency vs. Cooperation

To conclude, end-users desire cooperation through for instance the reminders from the organisation to review their agreement with previous consent choices and creation of a profile with disclosure preferences that organisations may use to determine what is given consent for. However, organisations desire end-users to have agency and be autonomous in their consent decisions.

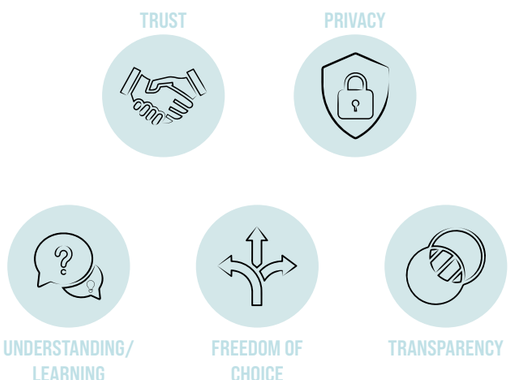


Figure 26: Overview of the value similarities

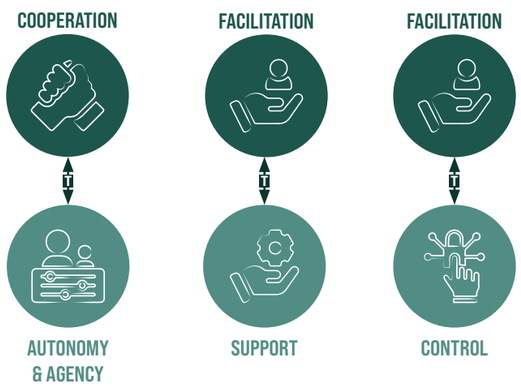


Figure 27: Overview of the value tensions

3.6 Frameworks: Data Practices & Digital Platform Relations

This section provides summaries of the three frameworks that are not elaborately discussed in the report. It discusses and shows the framework on data practices and digital platform relations from the expert research (EF1), the framework on data practices from the end-user research (UF2), and the framework on digital platform relations from the end-user research (UF1) respectively.

FRAMEWORK EF1

On pages 58-60, the framework on data practices and digital platform relations that results from the expert research is shown. An elaborate description all codes and categories supported by quotes is available in Appendix D. A short summary of the framework is written here.

The core of contemporary data practices is the use of data as organisational asset. Data is perceived as a commodity and is often identified as "the new oil". It represents business value and is increasingly used for strategic decision-making. Since it is an asset, there is a need to collect and generate it. For instance through purchase and inherent sharing. Data practices have a self-reinforcing effect, but can also be self-undermining. They are identified as rather intrusive towards end-users due to practices like profiling, intrusive tracking and digital surveillance. There practices are not (fully) legislatively prevented as contradictions in regulation remain. Another issue is the creation of a substituted representation of reality due to granularity and manipulation of data as well as quantification of nuanced social qualities.

The undesired current situation of data practices, creates a need for a desired future vision. The identified vision contains five components. First, the introduction of new regulatory standards for operational processes, AI/ML application, transparency and interorganisational data exchange. Second, new system development design approaches such as the implementation of a multidisciplinary systemic design processes, ethical- and value-based system design, and design for sociotechnical systems. Third, the execution of value-considerate data practice strategies. For example, a critical assessment of quantification suitability. Fourth, the development of concepts such as open data projects and collaboratives. Last, the enforcement of privacy preserving data processing by, for instance, using sensitive-data independent algorithms and privacy preserving technologies.

The results show that there are many reasons why end-users use digital platforms. Their presence is stimulated by customer-value focused propositions by organisations. Value of use is currently provided in return for their data, thereby making these services appear to be free. Despite these propositions, organisations experience difficulty in stimulating end-user participation. This may be affected by the lack of end-user digital platform literacy as end-users currently have little awareness and knowledge of data collection, processing and application. On a societal scale, this causes issues as digital platform's societal impact is found to be frequently neglected. Furthermore, this neglect creates conditions in which there is a risk of abuse of organisational power. As a consequence of the current situation, a desired future vision on digital platform relations illustrates a future in which end-users have digital awareness and capabilities which are highly necessary due to potential dominance of digital interactions. Likewise, clarity and transparency of regulatory oversight is needed to protect end-users by default in a supportive technology dominant world. The goal would be to create a situation of negotiated digitalism in which end-users and organisations cooperatively navigate in the digital sphere.

FRAMEWORK UF2

On page 61, the framework on data practices that results from the end-user research is displayed. An elaborate description is again available in Appendix D and summarised here.

End-users' vision on contemporary data practices starts with their prior knowledge they gained from different sources of information. Despite indicating presence of little knowledge, they are aware of the basics. Their knowledge shapes the attitude towards and acceptance of the data practices they encounter. The participants have identified both reasons for concern and for no concern as a response to current data practices. Their degree of concern is influenced by the advantages and disadvantages they gain individually and as a society. Benefits are for instance relevant personalised recommendations and meeting societal needs and wants with these technologies. However, the participants also identified risks such as abuse of power, data leaks, intrusive tracking and misuse of their personal data.

As a reaction to these negative aspects of current data practices, a desired vision is illustrated. Ideal aspects are personal data protection, information privacy and restricted purpose-based data practices. A future vision to avoid includes hacking, data leaks, non-consensuel out-of-context use of data, and extensive interorganisational data sharing.

FRAMEWORK UF1

On page 62, the framework on digital platform relations that results from the end-user research is displayed. An elaborate description is also available in Appendix D and summarised here.

The current relation with digital platforms is described by end-users' perceptions on approved and disapproved types of use. For instance, being in contact with friends or online education versus encountering exposing photos or frequently comparing yourself to others. The types of use are constructed based on factors that contribute and reduce perceived control, ownership, transparency and honesty of digital platforms. These factors are characterised by the degree of influence on your own UX and the performed privacy preserving behaviour.

Central to the identified future vision is personal serenity in digital platform use. This is achieved by several strategies including: being in charge of balance and focus, avoiding dissatisfaction and misuse, organisations' transparency through being open, and personal relevance of content and presentation. All strategies can be constrained by the end-user's consciousness and awareness of their own digital behaviour. If their awareness is low, they may have difficulty executing and/or experiencing the identified strategies. The strategies are translated into actions of own behaviour change and necessary support from others to achieve reassurance regarding privacy preservation and the feeling of being carefree while using the digital platform.

Framework: Data Practices & Digital Platform Relations

On the next three pages, the framework on data practices and digital platform relations that results from the expert research is displayed. On the first page, the current situation is shown. On the second page, the identified trends and developments, transformation strategies, barriers, incentives and interaction are shown. On the last page, the future visions on the data practices and relation are elaborated on.

EXPERT RESEARCH

CURRENT SITUATION

Central phenomenon: Current relation

Lack of digital platform literacy [36]
- Unknowledgeable about what happens with data [9]
- Superficial digital awareness [9]
- Unconscious adoption of/ interaction with AI [7]
- Worry about data protection [6]
- Unknowledgeable about 3rd party disclosure [5]

End-user reasons for digital platform use [28]
- Discover/Connect with (new) people, ideas & organisations [7]
- Continuation of use due to value of use [6]
- Digital presence as a lifestyle choice [6]
- Easy continuous accessibility to tech [5]
- Optimisation of life [4]

Privacy & ethical sensitivity by design [35]
- Impact on public values [8]
- Autonomy over self-representation [8]
- Fairness [5]
- Tension: Openness vs. Privacy [5]
- Tension: Ethically right vs. Performance right [5]
- Non-discrimination [4]

Abuse of organisational power [38]
- Digital service monopolies [9]
- Exploitation of position of power [8]
- Mass use provides organisational power [7]
- Taking advantage of the public [5]
- Tension: Right to collect vs. Protect [5]
- Tension: Impact discrepancy of leaks on organisations vs. end-users [4]

Customer-value focused propositions by organisations [34]
- Convenience value proposition [8]
- Free service appearance [6]
- Value of use in return for data [6]
- Social logins [6]
- Customer retention techniques [4]
- Personalisation provides business value [4]

Societal implications in platform development [22]
- Neglect of societal impact of AI [9]
- Unrealistic promises of technology capability [5]
- Difference in human & AI understanding [4]
- Computerised interaction lacks human aspect [4]

Obstructions of change [20]
- High tolerance for incorrect organisational behaviour [8]
- Difficult to explain impact & scope of practices [4]
- Absence of personal problem encounters [4]
- Tension: Societal undesirable vs. Individual desirable effects [4]

Regulatory assistance [9]
- GDPR effective in codifying basic rights [5]
- Regulations by tech organisations [4]

Interdisciplinary conflict [11]
- Interdisciplinary conflict [6]
- Different world views between organisations [5]

Regulatory limitations [19]
- Insufficient & irregular enforcement of GDPR [8]
- Lack of GDPR execution mechanisms [6]
- Contradicting regulations [5]

Difficult end-user participation [19]
- Difficult not to participate [9]
- Difficult to have data ownership [5]
- Complicated continuous decision-making [5]

Central phenomenon: Current data practices

Legislative contradictions [11]
- Tension: Regulation vs. Cumbersome processes [6]
- Strict regulations prohibit bias checks [5]

Self-undermining effect/ practices of organisations [22]
- Monetising characteristics of people [7]
- Technological & data solutionism [6]
- Lacking recognition of systemic complexity & limitations [5]
- AI's circular self-defeating potential [4]

Self-reinforcing effect/practices of organisations [19]
- Mass collection of data [7]
- Data network effects [6]
- Focus on (radical) innovation [6]

Data collection through purchase & inherent sharing [19]
- Third party data selling/ purchasing [7]
- Inherent data provision to tech giants [6]
- Interorganisational data sharing [6]

Substituted representation of reality [26]
- Quantification of nuanced social qualities [7]
- Granularity: monitoring at detailed scales [7]
- Manipulation of data [7]
- General statistics prioritised over individuality [5]

Data as organisational asset [26]
- Data as business value asset [8]
- Data application for personalisation [7]
- Data application for strategic decision-making [7]
- Data as a commodity [4]

Intrusive data practices towards end-users [36]
- Digital surveillance [7]
- Profiling [6]
- Invisibility of data crawling [6]
- Decision-making based on algorithmic recommendations [6]
- Indelibleness of data & digital records [6]
- Intrusive tracking of/& influencing lives [5]

FROM CURRENT SITUATION TO FUTURE VISION

Context: Trends & developments

Enablers for the desired future vision [71]
- Increasing attention on new (EU) regulations [9]
- Progression & seriousness of the platform industry [6]
- Growing recognition of ethical issues [5]
- Critiques on data & AI practices [7]
- Increasing importance of (data) security [6]
- Recent consideration of privacy impact [5]
- Increasing awareness of societal impact [7]
- AI explainability [6]
- Increasing interest in ethical data & AI practices [4]
- Creation & presence of AI & ethics departments [7]
- EU investment in privacy preservation [5]
- Increasing use of AI in platform applications [4]

Barriers for the desired future vision [22]
- Growth of remote possibilities [7]
- Software as a Service (SaaS) [6]
- Increasing occurence of cyber attacks [5]
- Mainstreaming of digital platforms [4]

Strategies: Transformation strategies

Educational transformation strategies [27]
- Education for end-users [9]
- Systemic intervention into education for professionals [9]
- Promotion of digital awareness [5]
- Education stimulated by governments [4]

Regulatory & legislative transformation strategies [30]
- New EU regulations [15]
- Stimulation of sufficient security [8]
- Collective legislation on international scale [7]

Ethical business transformation strategies [24]
- Development of new ethical business models [8]
- Exposing & clarifying ethical issues [6]
- Questioning the need to collect [6]
- Privacy as value proposition [4]

Multidisciplinary development transformation strategies [17]
- Bridge sociotechnical gaps [9]
- Resolve interdisciplinary tensions [4]
- Constructive dialogue on societal future vision of data practices [4]

Action/Interaction

Digital awareness stimulations [18]
- Triggers to broaden perspective [5]
- Communicate automated decision-making [5]
- Critical evaluation of privacy preservation by organisations [4]
- Scandals as drivers for change [4]

Intervening conditions: Barriers & incentives — *constrain & facilitate:*

Critical organisational barriers for change [37]
- Focus on raising profits [12]
- Organisational proactivity towards change [10]
- Shift in organisational culture/mindset [6]
- Lack of incentives [5]
- Economic sustainability & viability [4]

Critical societal barriers for change [37]
- Political will [7]
- Willingness of society [4]

Economic/financial incentives [15]
- Impact on innovation capabilities [7]
- Economic/financial impact [4]
- Brand damage prevention [4]

Moral incentives [19]
- Intrinsic motivation [11]
- Legitimacy [4]
- Societal/social responsibility [4]

Regulatory incentives [19]
- GDPR/Regulatory compliance [12]
- Fear of regulatory repercussions or fines [7]

EXPERT RESEARCH

FUTURE SITUATION

Consequence: Future relation

Inconclusive privacy attitude & behaviour [28]
- Privacy neglecting attitude & behaviour [9]
- Changing interpretation of privacy [8]
- Privacy preserving attitude & behaviour [6]
- Discrepancy between privacy concern & online behaviour [5]

End-user digital awareness & capabilities [31]
- End-user control [13]
- Digital platform literacy [8]
- Insight in own limited perspective/echo chamber [5]
- End-users' ability to manage relation [5]

Negotiated digitalism [23]
- Multidisciplinary puzzle building [15]
- Shared goals/purposes beyond money [8]

Understanding & prioritisation of societal values [8]
- Humanity prioritised over legality [4]
- Understanding societal & individual values & interactions [4]

Dominance of supportive digital systems [17]
- Control of & within browsers [7]
- Supportive role of technology [5]
- Dominance of digital interactions [5]

Clarity & transparency of regulatory oversight [20]
- Active legislative/GDPR execution oversight [11]
- Default protection of end-users by organisations [5]
- Enforcement of legislative penalty mechanisms [4]

Consequence: Future data practices

Introduction of new regulatory standards [23]
- Regulatory standards for operational processes [6]
- Regulatory standards for AI/algorithm use [5]
- Data on organisations' balances [4]
- Regulatory standards for transparency [4]
- Regulatory standards for interorganisational data exchange [4]

Value-considerate data practice strategies [32]
- Consideration of societal/ethical consequences [9]
- Critical assessment of quantification suitability [8]
- Recognise when to implement human interaction [6]
- Data collection for specific intent [5]
- Gaining insight in bias occurence [4]

System development design approaches [19]
- Multidisciplinary systemic design process [8]
- Ethical/value-based system design [7]
- Design for sociotechnical systems [4]

Data collection through exchange & trade [19]
- Open data projects & collaboratives [8]
- Data markets & spaces [7]
- (Two way) Financial transaction with money or data [4]

Privacy preserving data processing [8]
- Sensitive data-independent algorithms [4]
- Privacy preserving technologies [4]

Framework: Data Practices

On this page, the framework on data practices that results from the end-user research is displayed. It first shows the causal conditions which concern prior knowledge and sources of information. Subsequently, it elaborates on the attitude towards data practices, followed by reasons for (no) concern. It concludes with the desired and undesired future vision on data practices.

END-USER RESEARCH

CURRENT SITUATION

FUTURE VISION

Causal conditions *influences:* Central phenomenon *based on:* Strategies *characterised by:* Action/Interaction

Prior knowledge of data practices [70]
- Little knowledge of organisations' data practices [15]
- Advertising business (model) [11]
- Organisation itself collects data [9]
- Disclosure with other parties [7]
- Recommended content [6]
- Search results/history [6]
- Location [6]
- Information about personal interests [5]
- Collecting data/information on behaviour [5]

Sources of information [14]
- Informed by news items [7]
- Informed by other people [7]

Attitude towards data practices [30]
- Scary/uneasy/creepy feeling [14]
- Disbelief towards impact of tracking [6]
- Impressed by technological capabilities [5]
- Profile creation is bizarre [5]

Degree of acceptance [35]
- Accepting of data practices [15]
- Personal limit at recommendation purposes [7]
- Unhappy about detailed knowledge organisations have [7]
- Active search makes recommendations unnecessary [6]

Reasons for concern [10]
- Selling data/profiles to third parties [5]
- Non-consensual use of pictures [5]

Reasons for no concern [34]
- Unwilling to have continuous concern [8]
- Not thinking about potential consenquences [7]
- Perceived irrelevance of data from non-famous people [7]
- Not having many secrets [6]
- No experienced problems no understanding of worry [6]

Vision on desired practices [20]
- Personal data/information privacy [7]
- Restricted purpose-based practices [7]
- Personal data protection & security [6]

Vision on to avoid/undesired practices [33]
- Hacking & data leaks [12]
- Non-consensual out-of-context data use [9]
- Data getting into the wrong hands [7]
- Extensive inter-organisational data sharing [5]

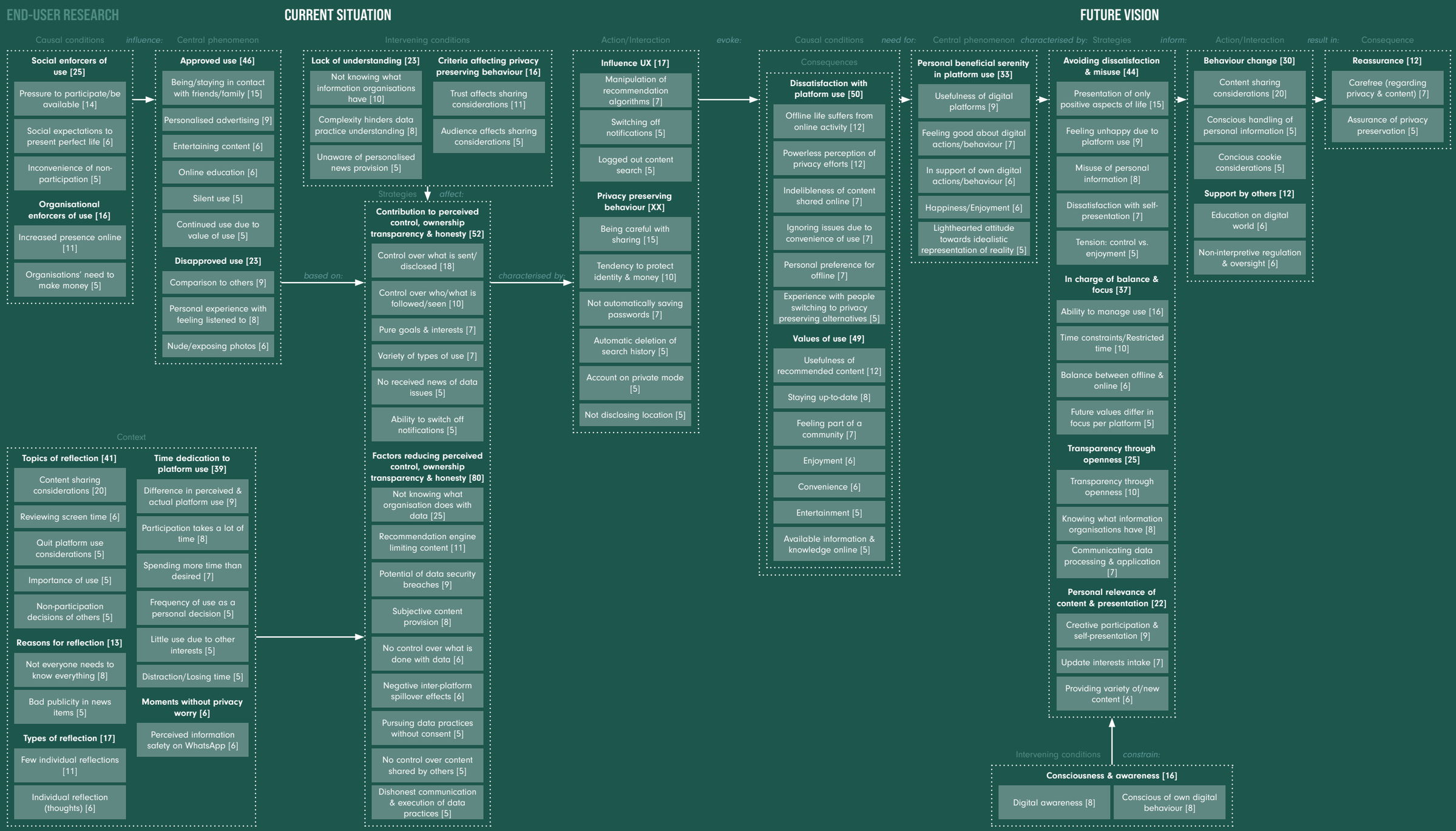
Intervening conditions *shape:*

Benefits of data practices [13]
- Relevant personalised recommendations [8]
- Meeting societal needs & wants [5]

Disadvantages of data practices [67]
- Misuse of data or insights [11]
- Intrusive detailed level of tracking [9]
- Abuse of power/control risk [8]
- Inability to keep information private [7]
- Data leaks [7]
- Unwanted people showing up at the house [7]
- Echo chamber effect [6]
- Irrelevant advertising [6]
- Distrust towards digital platforms [6]

Framework: Digital Platform Relations

On the next two pages, the framework on digital platform relations that results from the end-user research is displayed. On the first page, the current situation is shown. On the next page, the future vision is elaborated on. It includes, for instance, the desire for personal beneficial serenity with platform use by being in charge of balance and focus.



Summary & Key Take-Aways

EMPIRICAL DESIGN RESEARCH

The starting point of the empirical design research is the following research question:

How can consent practices and disclosure interactions be redesigned to instate future data practices and digital platform relations which both digital platform organisations and end-users desire?

By conducting interviews with eight experts as representatives from digital platform organisations and eight end-users of digital platforms, future visions on digital platform relations, data practices and consent practices are defined from two perspectives. The reasoning for this approach is twofold. First, to find common ground between the future visions which could provide a foundation for solution exploration on how to redesign consent practices. Second, to identify fundamental tensions between both perspectives that need to be resolved to create conditions in which a solution can be effective.

FUTURE VISIONS

The future visions are schematically presented in theoretical frameworks which contain themes, categories and codes. The categories represent the elements that end-users and experts envision to be present in a future situation. The identified categories from the future visions on consent practices and disclosure interactions are:

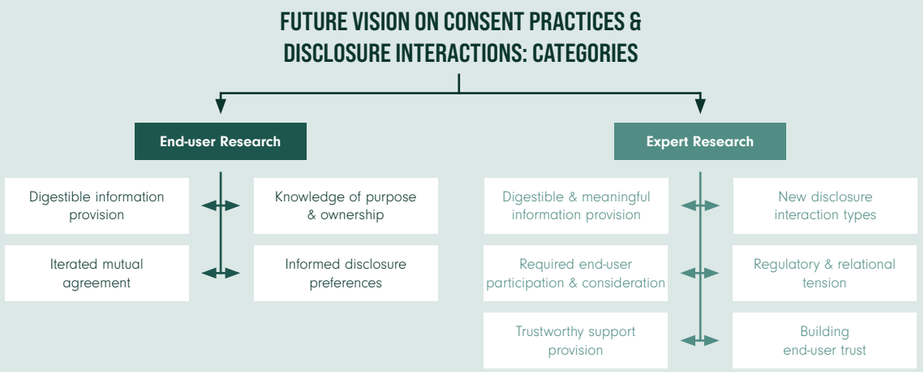


Figure 28: Overview of the categories from the future visions on consent practices & disclosure interactions

SOURCES OF FRICTION

Defining a future context can only be mapped meaningfully if relevant contemporary experiences and events from the past are first analysed (Sanders & Stappers, 2012). Therefore, theoretical frameworks that represent the current situation of the three research topics are created prior to the definition of the future visions. From the analysis of the current situations and future visions, sources of friction are identified. They are concepts that contain contrast and conflicting interests that form obstacles between a current and future situation that need to be resolved to be able to reach a desired future vision. The sources of friction that are identified from the expert and end-user research are:

Figure 29: Overview of the sources of friction

VALUE SIMILARITIES & VALUE TENSIONS

To conclude, future visions express a desired future and are driven by different types of values, also called value drivers (Simonse, 2018). Therefore as next step in the analysis process, values are extracted from the defined future visions on consent practices and disclosure interactions. When comparing the extracted values from the end-users' and experts' future visions, some values match and others do not. As a result, value similarities (left) and value tensions (right) are concluded.

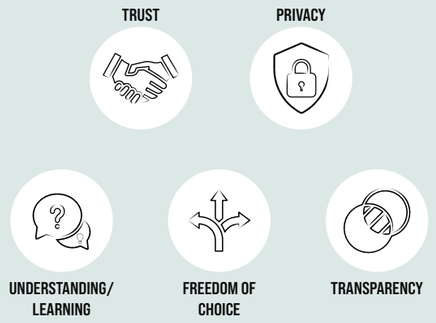


Figure 30: Overview of the value similarities

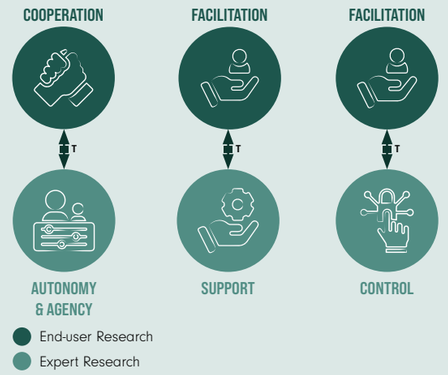


Figure 31: Overview of the value tensions

04

Imagining the Future Vision

This chapter shows the imagined future visions on 1) digital platform relations, 2) data practices and 3) consent practices and disclosure interactions.

It contains the categories that describe the future visions from the frameworks presented in sections 3.4 and 3.6. It synthesises all information into one complete overview. In addition, it lists the values that are extracted from the future visions on digital platform relations and data practices defined by experts and end-users. These values are extracted by clustering the codes, similar to the process employed to define value similarities and tensions in section 3.5.

4.1 Future Vision

Defined by expers
Defined by end-users

4.1 Future Vision

On these pages, the future visions on 1) digital platform relations, 2) data practices and 3) consent practices and disclosure interactions as defined by experts and end-users are shown. Each element represents a category from the theoretical frameworks. This section also lists the values that are extracted from the future visions on digital platform relations and data practices.

DEFINED BY EXPERTS

Inconclusive privacy attitude & behaviour

Privacy preserving data processing

End-user digital awareness & capabilities

Negotiated digitalism

Introduction of new regulatory standards

Building end-user trust

Digestible information provision

Iterated mutual agreement

Value-considerate data practice strategies

Required end-user participation & consideration

Trustworthy support provision

3. CONSENT & DISCLOSURE

System development design approaches

New disclosure interaction types

Digestible & meaningful information provision

Knowledge of purpose & ownership

Understanding & prioritisation of societal values

Clarity & transparency of regulatory oversight

Data collection through exchange & trade

Regulatory & relational tension

Informed disclosure preferences

Dominance of supportive digital systems

Extracted Values from the Future Vision on Data Practices

- Comparability
- Accountability
- Responsibility
- Clarity
- Rationality
- Accessibility
- Enhancement
- Ownership
- Transparency
- Privacy

Extracted Values from the Future Vision on Digital Platform Relations

- Privacy
- Openness
- Adaptability
- Consciousness
- Control
- Empathy
- Legitimacy
- Support
- Accountability
- Security
- Sustainability
- Cooperation

DEFINED BY END-USERS

Personal beneficial serenity in platform use

Avoiding dissatisfaction & misuse

Vision on desired practices including: personal data privacy, restricted purpose-based practices & personal data protection and security

In charge of balance & focus

Transparency through openness

2. DATA PRACTICES

1. DIGITAL PLATFORM RELATIONS

Personal relevance of content & presentation

Vision for practices to avoid including: hacking and data leaks, non-consensual out-of-context use & extensive interorganisational data sharing

Consciousness & awareness

Behaviour change

Support by others

Reassurance

Extracted Values from the Future Vision on Data Practices

- Privacy
- Integrity
- Significance/Purpose
- Security
- Stewardship
- Legitimacy

Extracted Values from the Future Vision on Digital Platform Relations

- Serenity
- Awareness
- Consciousness
- Legitimacy
- Transparency
- Renewal
- Creativity
- Confidence
- Self-reliance
- Moderation
- Recreation

Figure 32: Future visions as defined by experts & end-users

05

Design Proposal

This chapter describes how the transition from the research to the design phase is made. First, it presents and explains how aspects of the research question are answered by the performed empirical design research with end-users and experts. Second, it proposes how consent practices and disclosure interactions should be redesigned in the design proposal. Third, based on the design proposal, design questions are formulated and the expected design process and outcomes discussed. In addition, the process of synthesising insights is visualised.

The last section presents the formulated design requirements and design wishes derived from the empirical design research and literature review respectively. The requirements are based on conceptual improvements and are the criteria which must be met by the design. The wishes are based on form and substance improvements and are the criteria that the design desirably would meet.

5.1 Synthesis of Insights & Design Brief

This section describes how the insights from the literature research and empirical design research are synthesised into a design proposal. It elaborates on how the research (sub-)questions are answered and concludes with a proposition on how consent practices and disclosure interactions should be redesigned. Furthermore, design questions are formulated which are the starting points of the design phase.

DESIGN PROPOSAL

As a result from the literature review on consent practices and disclosure interactions, the research question is specified and formulated as:

How can consent practices and disclosure interactions be redesigned to instate future data practices and digital platform relations which both digital platform organisations and end-users desire?

This question is answered by the results of the performed empirical research with end-users and experts who represent the organisational perspective.

The first components, 'future data practices and platform relations', are envisioned from both end-user and organisational perspectives and synthesised into the visual representation presented in chapter 5. The aspect 'desired by both digital platform organisations and end-users' is determined by answering these research sub-questions:

1) What value similarities and tensions drive future visions on digital platform relations of end-users and experts?

2) What value similarities and tensions drive future visions on data practices of end-users and experts?

The results are provided by the value extraction and comparison from three theoretical frameworks as presented in section 4.6. The value similarities indicate where the desired future visions on data practices and digital platform relations match. The value tensions show where the desired future visions clash.

The second component, 'how can consent practices and disclosure interactions be redesigned', is determined by answering the third research sub-question:

3) What value similarities and tensions drive future visions on consent practices and disclosure interactions of end-users and experts?

The results are also provided by the value extraction and comparison from two theoretical frameworks as presented in section 4.4. The value similarities indicate where the desired future visions on consent practices and disclosure interactions match. The value tensions show where the desired future visions clash (see section 4.5).

Based on these results, **the proposition of this thesis on how to redesign consent practices and disclosure interactions is:**

Consent practices and disclosure interactions should be redesigned by leveraging the identified value similarities and resolving the identified value tensions.

Leveraging value similarities ensures a match between desired practices. Furthermore, resolving value tensions reduces opportunities for dissension. This thesis argues that the above propositions allow to redesign consent practices and disclosure interactions more meaningfully and effectively.

DESIGN QUESTIONS

From the design proposal, two design questions can be formulated:

1) How can the set of identified future value similarities be leveraged in a consent practice redesign?
For example: How can trust be leveraged in a redesign of consent practices?

2) How can the set of identified future value tensions be resolved in a consent practice redesign?

The expected outcome of the first design question is an ideation card that contains different options per value similarity on how to leverage them. For example, trust may be leveraged in a redesign by taking time for building a relationship prior to the disclosure interaction. The expected outcome of the second design question is a set of tactics used to resolve specific value tensions, potentially including tactics that can be used to resolve multiple value tensions. For example, a digital platform organisation could investigate the necessary conditions for end-users in order to have them make consent decisions autonomously.

The next step in the design process is to use the ideation card with options on how to leverage value similarities as a foundation for ideas on new (aspects of) consent practices. The expected outcome is a set of ideas that can provide insight into how to compose a final redesign specific to a digital platform.

To propose a final redesign, this thesis incorporates a real-life design case which allows to provide more specific and effective recommendations. Every digital consent case is different and may therefore require tailored solutions by adapting the created ideas to specific situations. Subsequently, the idea and/or combination of ideas should and will be tested and evaluated with end-users and case representatives.

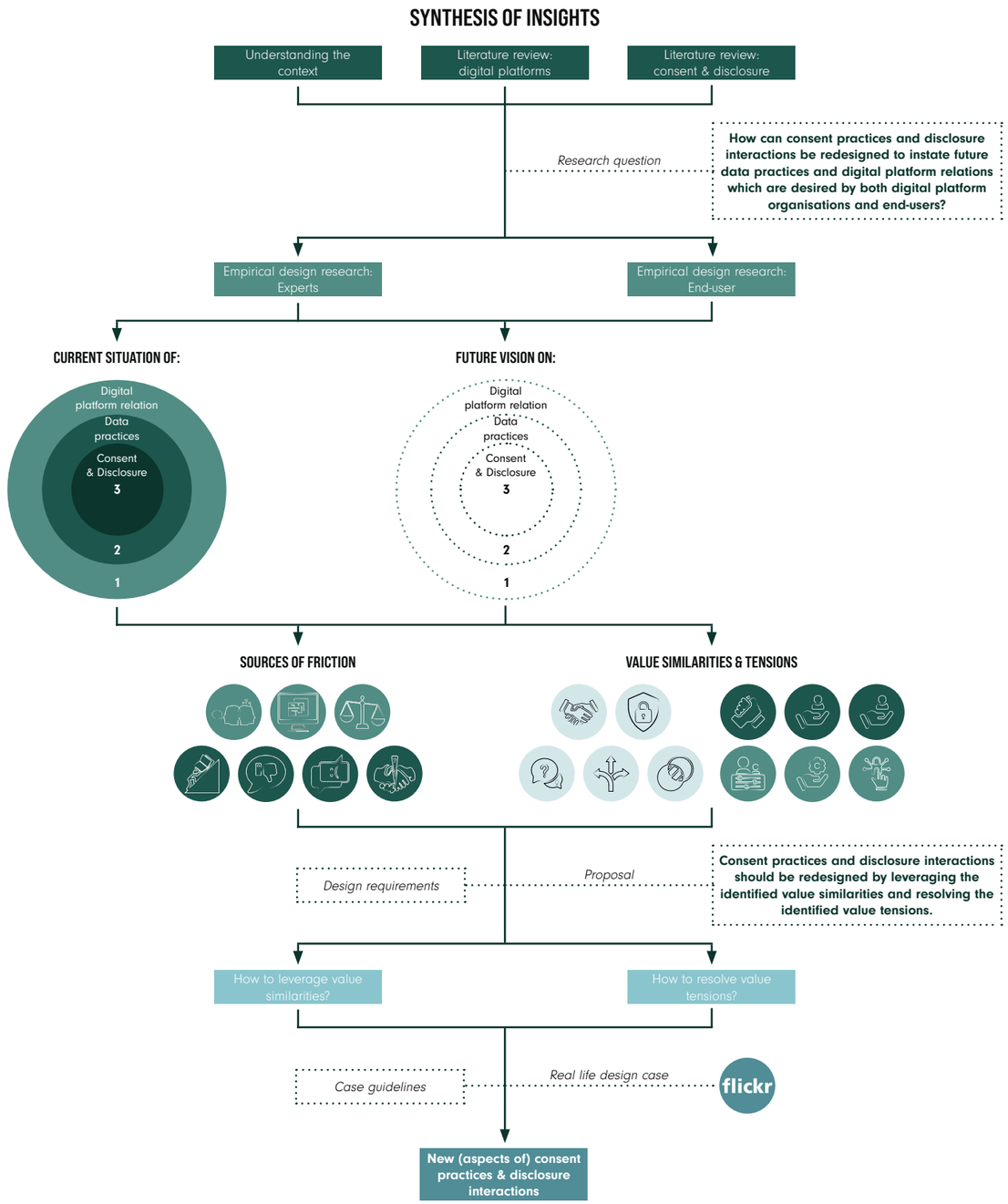


Figure 33: Visual presentation of the approach to synthesising insights

5.2 Design Requirements

This section describes what the design requirements and wishes are and how they are formulated. The design requirements are the criteria that the design must meet. The design wishes are the criteria that the design desirably would meet. They are both defined by using the Values Hierarchy method, and applying the results and insights from the empirical design research and literature review.

DESIGN REQUIREMENTS

The design requirements and wishes are based on the insights from the literature review and empirical design research. In addition to the design requirements, other guidelines are drafted from the design case which are elaborated on in chapter 7.

The design requirements are defined by using the Values Hierarchy method which is part of Value Sensitive Design (van den Hoven, 2015). This method describes how to translate values into norms and subsequently into design requirements.

The Value Hierarchy on the core value of consent is presented in figure 34. As specified by the design proposal, the value similarities should be leveraged. Therefore, they are the defined sub-values of consent.

For each value similarity, the norms are determined by the codes and categories from the theoretical frameworks on consent practices and disclosure interactions presented in chapter 4. Subsequently, design requirements are extracted and defined from the norms. From the literature review is concluded that the main point of investigation shall be on conceptual improvements of consent practices and disclosure interactions rather than their form and substance. Therefore, a distinction is made between design requirements and design wishes (similar to the requirements and wishes method described by van Boeijen et al. (2020)). As a consequence, the design requirements focus on conceptual improvements and the design wishes on form and substance enhancements.

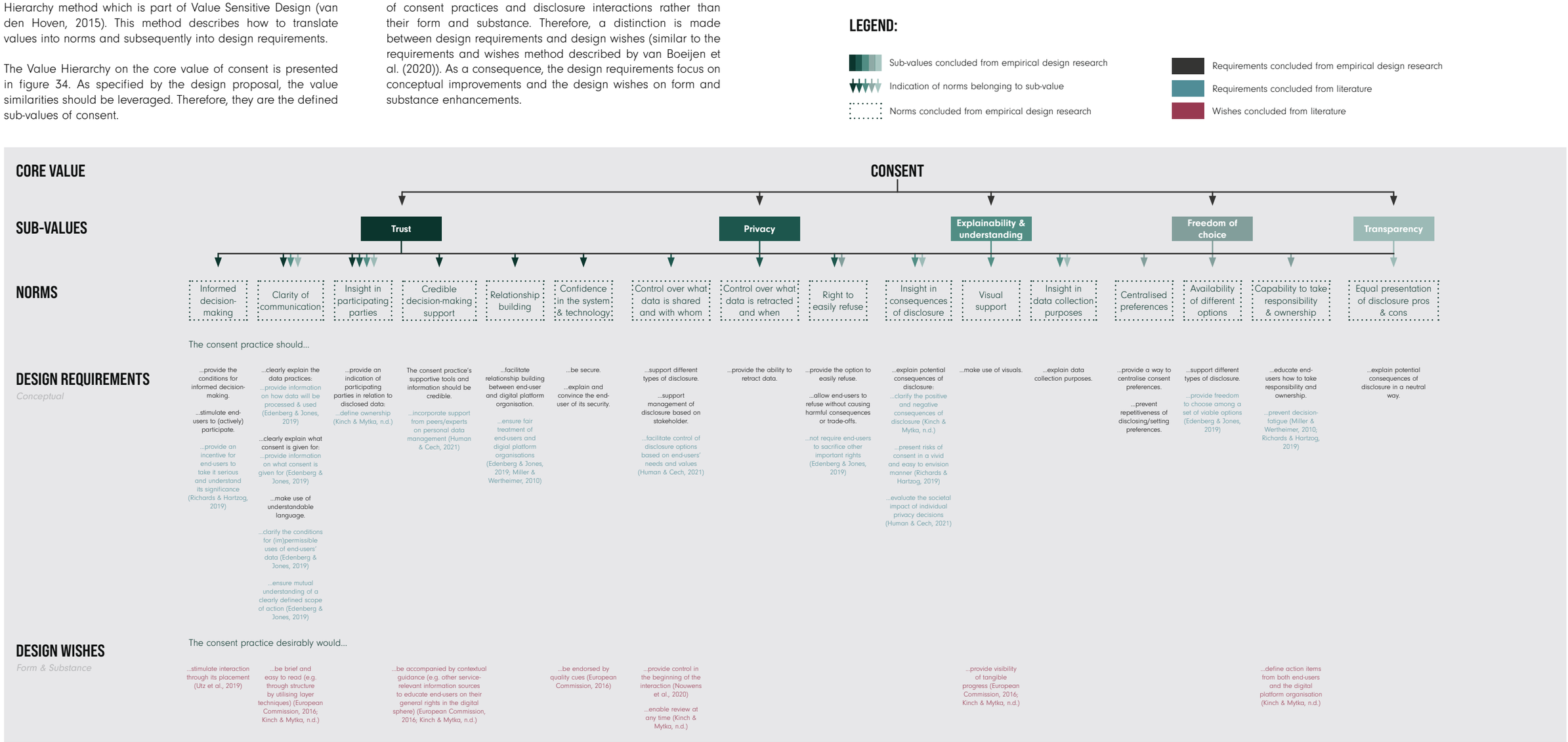


Figure 34: Value hierarchy of consent based on empirical design research and literature review

06

Design Case

This chapter describes the design case that is used in this thesis to apply the results from the empirical design research into a tangible context.

First, it elaborates on the problem definition of the design case. It provides the context in which the problem occurs, it describes the problem itself and the cause of the problem and it outlines what stakeholders are directly and indirectly involved. Second, it discusses the fit between the design case and this thesis. It explains how the findings of this thesis' research phase contribute to the design case. It gives arguments for the fit between the case and the thesis, but also identifies and discusses potential limitations. Third, the current consent practice of digital platform Flickr is briefly reviewed. The cookie pop-up, and policies and guidelines are presented and discussed.

The last section presents case guidelines. They are design requirements extracted from the case's problem definition. They help with defining the final design concept recommended for this case.

6.1 Open Licensing in the Age of AI

Problem definition
Connection to empirical design research
Flickr's consent practice & disclosure interaction

6.2 Case Guidelines

Case guidelines

6.1 Design Case: Open Licensing in the Age of AI

This section describes the real-life design case that is used to develop a new consent practice and disclosure interaction for. It starts with the problem definition and contains its context, problem, cause of the problem, stakeholders, interests in the solution and the identified solution space. It also discusses the fit between the design case and the empirical design research and briefly reviews the Flickr platform.

PROBLEM DEFINITION

Context

There is a growing concern within research and industry regarding the ethics of AI and ML technologies in relation to biometric data. This concern has become increasingly relevant since facial recognition applications have extended beyond academic research into the fields of intelligence, military and law enforcement (Vogelezang & Tarkowski, 2021). In particular, the question is whether Creative Commons (CC) licensed content such as images, music, and text, should be captured to create large data sets to train AI. It so happens that, while on one side the accessibility to this content (granted by CC-licenses) is crucial for AI and ML training purposes, on the other side it exposes the content to the ethical concerns that these same applications entail, possibly preventing creators from openly sharing their content (Vézina & Hinchliff Pearson, 2021).

Problem

The use of CC-licenses for digital platforms containing images with faces and other biometric information allows for using such data to develop, train and test facial recognition algorithms. As a consequence, digital platform users' images are used for a variety of debatable and ethically sensitive purposes, which frequently occurs without their consent or awareness (Vogelezang & Tarkowski, 2021).

An example of usage of these image datasets for controversial and unethical applications concerns the scientific community in 2018. In that instance, researchers have trained algorithms to identify Uyghurs, a predominantly Muslim ethnic minority in China, which led to mass detection and heavy surveillance of these people (Van Noorden, 2020; Wang et al., 2019). Commercial organisations have not acted differently either, with IBM creating a large dataset from publicly available collections such as images from Flickr, without informing the photographers or photographed people, nor requesting their permission (Vézina & Hinchliff Pearson, 2021). Other organisations have downloaded images from Flickr to create large datasets as well, as exposed by Adam Harvey and Jules LaPlace (2021).

They found a pattern of use by tracking down and analysing hundreds of image data sets (Harvey & LaPlace, 2021). Photos uploaded to Flickr between 2004 and 2020 containing faces or other biometric information are likely to have been used to create large image data sets. For instance, the dataset MegaFace has been created with Flickr images. It was used for debatable commercial and military surveillance purposes by, among others, military researchers and Chinese firms (e.g. SenseTime and Megvii) (Harvey & LaPlace, 2021; Vogelezang & Tarkowski, 2021). As previously mentioned, the creation of these image data sets as a result of permissive licensing is also problematic because data is frequently collected without the consent of end-users, or their awareness of facial recognition practices including their controversial purposes. At the time of writing, an extensive survey is distributed among affected Flickr users to investigate the extent of this unawareness and lack of consent.

In conclusion, these practices are problematic due to their controversial applications and because of the lack of end-user consent and awareness.

Cause of the Problem

There is a growing need of facial recognition algorithms, which must be trained and tested with large image datasets. Permissive licenses allow these images to be downloaded from digital platforms containing many end-users' images. However, existing legislation does not seem to provide sufficient guidance nor clarity on this process. The non-profit organisation Creative Commons states: "there is no consensus on whether the use of copyright works as input to train an AI system is an exercise of an exclusive right" (Vézina & Hinchliff Pearson, 2021). Among other reasons, legal uncertainty is caused by ethical concerns around AI, the lack of transparency of algorithms and patterns of privatisation and enclosure of AI outputs (Vézina & Hinchliff Pearson, 2021). Therefore, there is a need for greater legal clarity on machine training with openly licensed material.

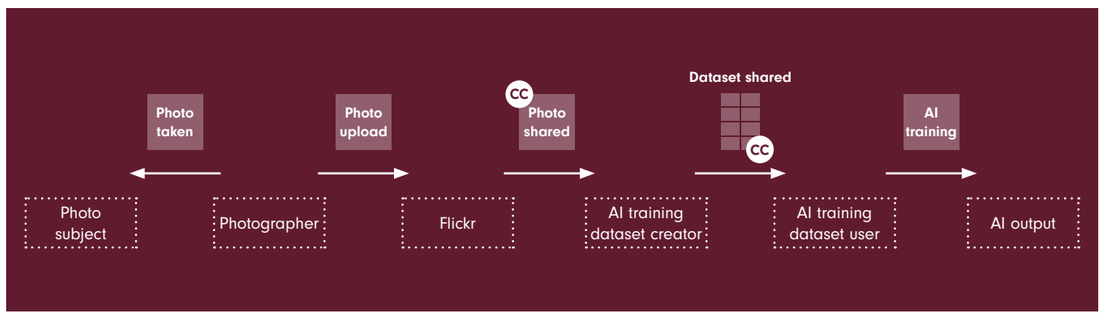


Figure 35: Visual presentation of the problem definition

Problem Owners

Based on the general problem and examples described in the previous section, this design case will focus on the digital platform organisation Flickr. As CC-licenses allow wide exploitation of content without taking the ethical dimension into consideration, Flickr is a problem owner of this case by being in an intermediary position. They are in the uncomfortable situation of balancing between privacy consideration from the users' community and the scientific interest of the AI community.

In addition, Flickr's users partially own the problem as they freely license their personal content which is used for unwanted and unplanned purposes that collide with normative privacy and ethical considerations at the heart of liberal democracies. For instance, facial recognition implemented in surveillance apparatuses from the USA and China.

Lastly, the scientific community partially owns the problem as they need to find their way through legal barriers and intricacies to have rightful access to content to train their AI systems. In many instances, they may willingly or unwillingly breach the law to have access to content. This process is complicated under EU law where, for instance, openly licensed content can be processed only after receiving clear and explicit consent from users per image.

Stakeholders

The stakeholders of this problem and the design case are distinguished by their degree of involvement: problem owners, directly involved and indirectly involved. The stakeholder map is displayed in figure 36.

Interests in the Solution

The identified problem owners all have a clear interest in the solution. Digital platform organisations (i.e., Flickr) want to guarantee rightful and legal access to open content while being compliant with data protection legislation. Therefore, avoiding breaches of EU law and loss in credibility as perceived by the platform users' community. In addition, platform users (i.e., content creators) want to have adequate data protection and privacy standards. Finally, the broader AI scientific community wants to exercise rightful access to images for the purpose of AI training, thereby bolstering innovation in industry. Furthermore, directly involved NGOs, academic institutions and organizations involved in digital rights and open access conversations want to address this conundrum.

The practice of open sharing, which should bolster societal gains, has actually shined light on important data protection and privacy risks. To this end, the EU, its national governments, national data protection authorities and the European data protection board have an interest in filling this regulatory gap.

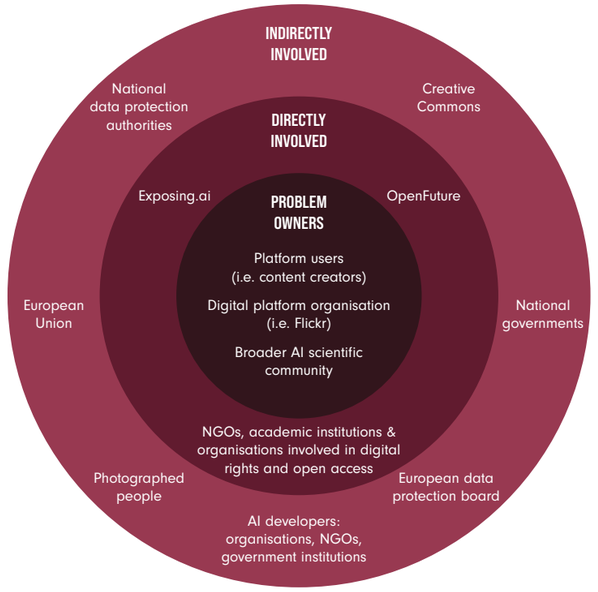


Figure 36: Stakeholders of the design case

Raised Attention & Resolution

As previously mentioned, Adam Harvey and Jules LaPlace (2021) raised attention to this issue through their research work, which exposed 29 data sets used in approximately 900 research projects (Van Noorden, 2020). Following the public exposure of this issue by the New York Times and the Financial Times (Hill & Krolik, 2019; Murgia, 2019; Murgia & Harlow, 2019), Flickr updated its terms of use and service. In 2019, Microsoft and several universities including Duke University and Stanford University, removed their datasets. This measure was intended to protect the reputation of these actors rather than the privacy of the images, as once these datasets are shared, it is impossible to prevent forwarding or re-uploading them, as well as deriving new sets from the removed initial one (Murgia, 2019).

The problem has been generally left unaddressed and lays mostly in the hands of digital platform organisations, who are required to comply with difficult legal requirements. This has led to the situation in which intelligence and private organizations enjoy unrestricted access to open content and material. The presence of a regulatory loophole urgently requires (to be addressed with) more effective solutions. At the time of writing, no existing EU regulation tackles the identified issue directly. While the General Data Protection Regulation (GDPR) is, internationally, the best effort so far, it only touches on the problem indirectly (Jasserand, 2020). Likewise, the recently introduced AI Act does not tackle ethical controversies surrounding the use of permissive copyright licenses for AI facial recognition training (Vogelezang & Tarkowski, 2021). However, in contrast to the absence of a legal foundation in the EU, the state of Illinois (USA) allows individuals to sue commercial firms for use of biometric data without consent. As a result, multinationals such as Facebook, Clearview AI, IBM, Google, Microsoft, Amazon and Facefirst were all sued for non-consensually harvesting billions of photographs from online digital platforms to develop, train and test facial recognition systems (Van Noorden, 2020).

Solution Space

A possible solution can be found in creating a new set of ethical standards concerning the use of publicly available images for AI training. This should contribute to stronger, more managed commons and data governance. In addition, potential solutions can be found in increasing users' awareness in the context of AI deployment. For instance, new consent practices may signify that licensed photos can be used to train facial recognition algorithms. In addition, other guidance throughout the consent practice may be required as well (Vogelezang & Tarkowski, 2021).

CONNECTION TO EMPIRICAL DESIGN RESEARCH

Fit between Design Case & this Thesis

Currently, the identified solution space of the design case includes the fields of policy, licensing, norm-building and awareness-raising (Vézina & Hinchliff Pearson, 2021; Vogelezang & Tarkowski, 2021). However, this thesis takes a parallel design-led investigation as a foundation for recommendations to this case. The design solutions may open up the conversation and solution space beyond contemporary legal solutions.

The following real-life design case is used to make the design phase as concrete and tangible as possible. This case, in fact, already provided clear boundaries and conditions, as it already presents both a consent practice as well as a disclosure interaction to be manifestly redesigned. The digital platform on which the design case is built is "Flickr", and both its end-users as well as the organisation behind the platform are involved. The data in analysis consists of the photos uploaded by the end-users on the platform, which is disclosed by the platform for creating large data sets to train facial recognition algorithms.

The concreteness of the stakeholders and context allows for identifying how to compose a design concept tailored to this context from a set of ideas. Furthermore, it allows for providing specific and effective recommendations on the consent practice proposal for this design case and on the process of creating consent practice proposals for different digital consent cases.

One limitation of the empirical design research consists in the focus being mainly on individual implications of data practices, rather than on disclosure purposes on a wider societal level. While on one side this might affect the proposal for the redesign case, on the other it is also worth considering that the choices on if and how to give consent remain inherently individual. Therefore, the impact on the analytical lens is minimal, allowing the design case to fit to this thesis.

Another limitation of the empirical design research is that the investigation covers two main stakeholder views: the one of digital platform organisation and the one of digital platform end-users. This design case is quite unique as there is another important third stakeholder, which is the AI development/research community. Ideally, additional research would be conducted on defining future visions from this third perspective, and to compare their value drivers with those from the organisation and end-users. However, to maintain the focus of this graduation project, additional research will not be performed. Nevertheless, the perspective of the AI development/research community is taken into account in the evaluation of the final proposal for this design case (see chapter 9).

As a starting point to developing a new consent practice and disclosure interaction for this design case, the next section presents a brief review of Flickr as a digital platform, and of its current consent practice. After that, case guidelines are formulated in section 6.2. They are case-specific design requirements, and they are extracted from the problem definition. Subsequently, chapter 7 presents the development of (aspects of) new consent practices and disclosure interactions based on the design proposal (section 5.1). Finally, chapter 8 presents the process of creating the proposal for this design case and a step-by-step explanation of the proposal itself.

FLICKR'S CONSENT PRACTICE & DISCLOSURE INTERACTION

About Flickr

Flickr is a photo management and sharing platform that allows their end-users to store, organise and showcase their photos. It can be used, for instance, by an amateur photographer or professional to show their work. It may be used by teenagers, retired people who recently got into photography, as well as by organisations or individuals who want to privately share photos of events or family gatherings. End-users can search for photos via categories and tags. They may comment and "fave" each others' photos. All photos can be accompanied by metadata and other information, such as camera specifications, the place and time it is taken and what albums, groups and galleries the photo is in. Before this functionality is accessible on the platform, the end-user must give consent to data disclosure. This section describes briefly what an end-user sees on their desktop when they access the digital platform for the first time.

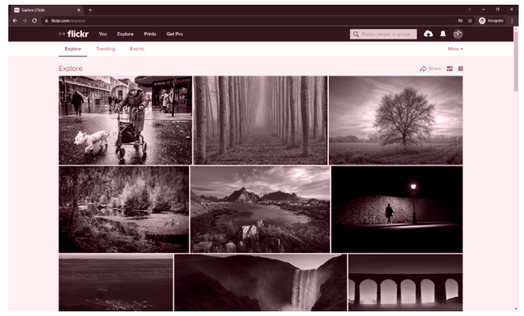
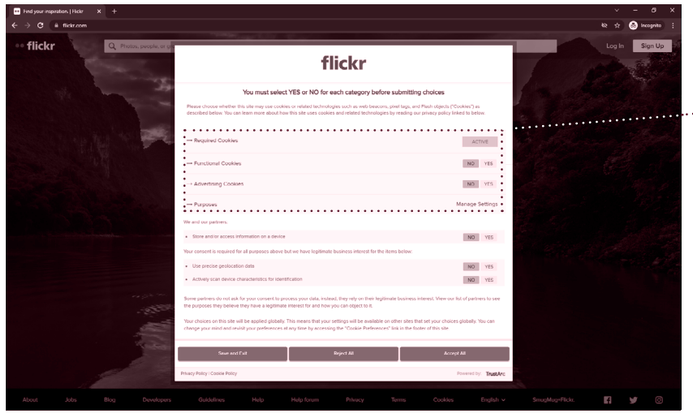


Figure 37: Screenshot of Flickr's explore page

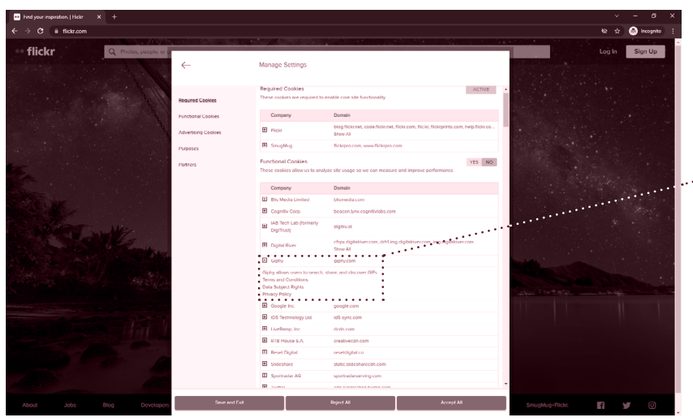
Cookie Pop-up

When someone accesses Flickr for the first time, they are shown a cookie pop-up (figure 38). They are presented with different types of cookies for which they have to select yes or no. If the settings are selected, they can Save and Exit by clicking the left button on the bottom of the pop-up. The other options are to Reject All or Accept All. The default of all settings is set to 'No'.

However, Flickr makes use of a slight nudge by positioning the Accept All button on the bottom right which is the location people often click to continue. Other information that the pop up presents is a summary of information and links to Flickr's Privacy Policy and Cookie Policy. It also informs people on how to change their Cookie Preferences at a later time.



By clicking on the specific types of cookies, for instance *Required Cookies*, end-users are prompted to a *Manage Settings* menu (see figure below). End-users can also access this section by selecting *Manage Settings* by clicking on it in the *Purpose* row.

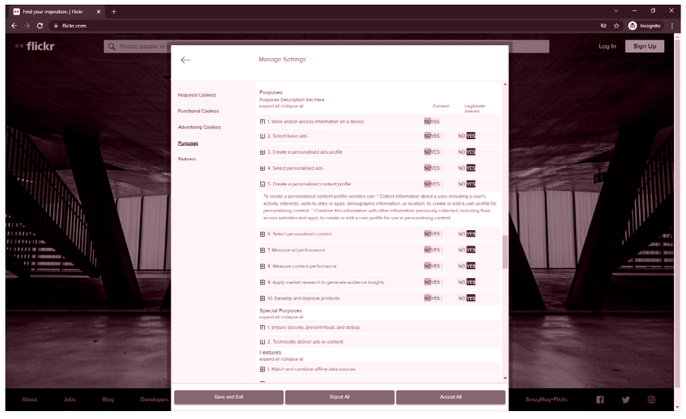


Per cookie type, the *Manage Settings* page shows the number of organisations:

- Required Cookies: 2
- Functional Cookies: 14
- Advertising Cookies: 77
- Partners (Consent): 56
- Partners (Legitimate Interest): 27

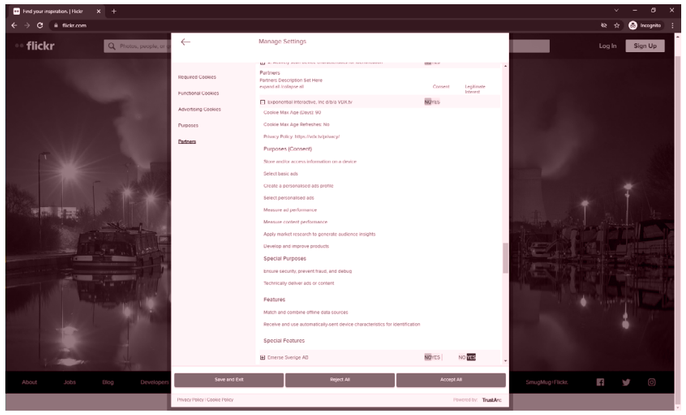
The Manage Settings page contains a lot of detailed information. It shows per cookie type (e.g. Functional Cookies) what organisations are involved. Per organisation, Flickr explains what type of organisation they are, and they link their Terms and Conditions, Data Subject Rights and Privacy Policy.

Figure 38: Screenshots of Flickr's cookie pop-up



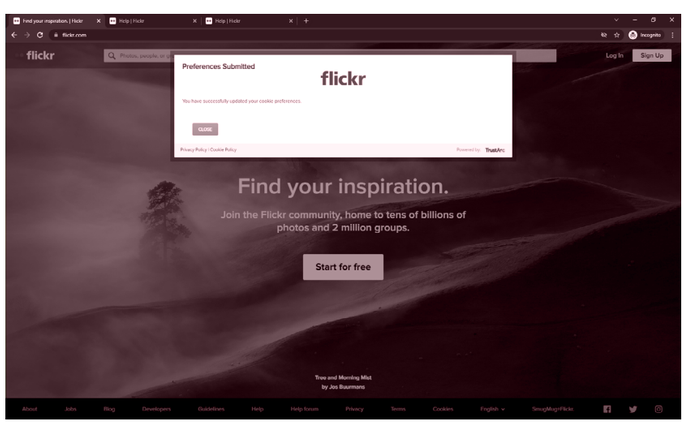
In addition to the different types of cookies, the *Manage Settings* page also shows the different *Purposes, Special Purposes, Features* and *Special Features* the collected data is used for. It also provides an explanation per each individual *Purpose* and *Feature*. The end-user may choose per *(Special) Purpose* and *(Special) Feature* whether they give Consent and/or Legitimate Interest. The total number of purposes and features are:

- Purposes: 10
- Special Purposes: 2
- Features: 3
- Special Features: 2



Consent and/or Legitimate Interest applicability is specified per *Partner*. It also shows the maximum number of days for which they may collect data from their cookies. The duration of this period ranges from 60 to 2190 days, with most partners collecting data for either 90 or 365 days.

Notably, one of the *Partners* which may place *Advertising Cookies* is 'Unknown' as they do not know what company or organisation is associated with the domains (see screenshot below).



After clicking on one of the three buttons (i.e. *Save and Exit, Reject All, Accept All*), the pop-up shows the end-user a notification that their preferences have been submitted. As previously, the pop-up provides links to the *Privacy Policy* and the *Cookie Policy*.

Figure 39: Screenshots of Flickr's cookie pop-up

Policies & Guidelines

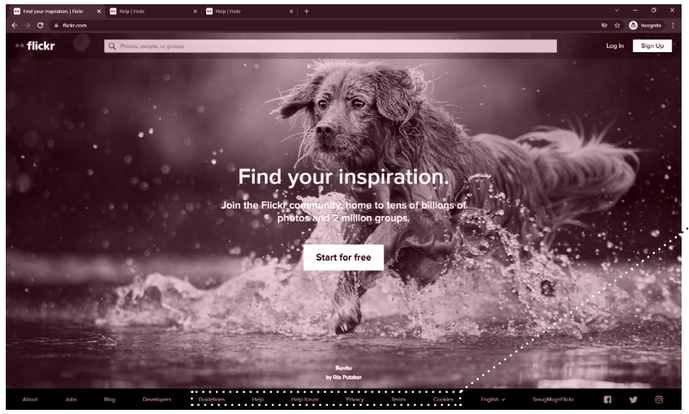
Flickr provides easy access to their policies and guidelines by including links in the main menu bar. They split them up in Flickr Terms & Conditions of Use (24 pages), Privacy Policy (14 pages), APIs Terms of Use (8 pages), Community Guidelines (4 pages), Policy on Cookies (4 pages) and Data Processing (14 pages). In addition, the Terms and the Privacy Policy of Flickr link to the Terms (52 pages) and Privacy Policy (22 pages) of SmugMug, the parent company of Flickr. If an end-user wants to be informed on all the policies, (s)he has to read 68 pages in total from Flickr and 74 pages in total from SmugMug which both contain a lot of legal and technical jargon. To give an estimated indication of how much reading time this is, a reading speed of 200-250 words per minute is taken. For the Flickr Terms & Conditions, an end-user will take approximately 36-45 minutes and for the SmugMug Terms & Conditions, an end-user will take approximately 46-57 minutes.

The Terms & Conditions provide information on general terms, including user content, restrictions, licenses, accounts, ads, disclaimers and liability etc. There are additional terms for Flickr Pro Services (i.e. the paid subscription), Terms of Sale and Copyright Policies. The Privacy Policy provides information on data collection, use of information, sharing of information, security, analytics, privacy and permission settings, data protection rights etc. The API Terms are about licensed uses and restrictions, commercial use and ownership. The Community Guidelines specify the intended and allowed end-user behaviour. The Cookie Policy gives information on their purpose and how to control them. The Data Processing adds to the Terms & Conditions..

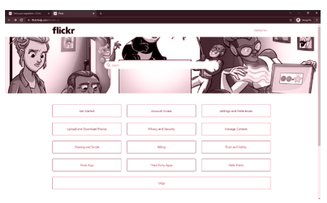
Every document shows the date of the last revision, either at the top or bottom of the page. However, it does not indicate the revisions that are made in comparison to the previous version. The Privacy Policy mentions:

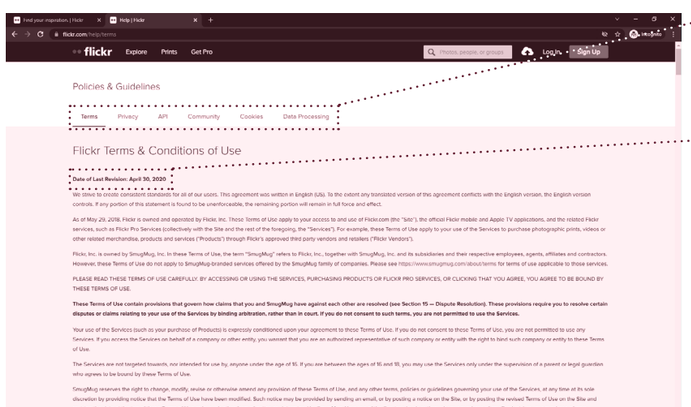
"We may change this Privacy Policy from time to time. If we make changes, we will notify you by revising the date at the top of the policy and, if the changes are significant, we will provide you with additional notice (such as adding a statement to our homepage or sending you an email notification). We encourage you to review the Privacy Policy whenever you access the Services to stay informed about our information practices and the choices available to you."

This signifies that it is the end-users' responsibility to stay up-to-date on changes.



The main menu bar on the home page refers to the *Community Guidelines* with the *Guidelines* tab. The *Help* tab leads to a page which provides information on different topics related to digital platform use (see below). It also hosts the *Frequently Asked Questions* section. The *Help Forum* refers to a community forum on which end-users can help each other with any issues that arise. The *Privacy, Terms* and *Cookies* tabs refer to the *Privacy Policy, Terms & Conditions* and the *Cookie Policy* respectively.





The first box shows the menu bar that contains the different *Policies & Guidelines* including *Terms, Privacy, API, Community, Cookies* and *Data Processing*. The second box shows the *Date of Last Revision*. For the Flickr *Terms & Conditions of Use*, the date is April 30, 2020.

Figure 40: Screenshots of Flickr's homepage and policy & guidelines page

6.2 Case Guidelines

This section describes what design requirements are extracted from the design case's problem definition. These case guidelines are used to determine how to create a design concept for the design case from a general set of created ideas (see chapters 8 and 9).

CASE GUIDELINES

From the problem definition, several design requirements from the design case, here defined as 'case guidelines', are extracted (see figure 41). The case guidelines are classified in two dimensions:

1. **The importance of informing**
2. **The meaning of consenting**

The first dimension is about the importance of informing the Flickr community regarding the explanation of data practices and the purpose of use of this data. The second dimension is about the meaning of consenting. More specifically, it is about the impact of providing consent on the end-user and involves both the collective contribution and the ethical dimension of consenting in this context.

The case guidelines are used to evaluate the suitability of new ideas on (aspects of) consent practices and disclosure interactions to the design case. Chapter 8 explains how they are used as 'filters' in the process of selecting ideas to create a proposition and recommendations for the design case.

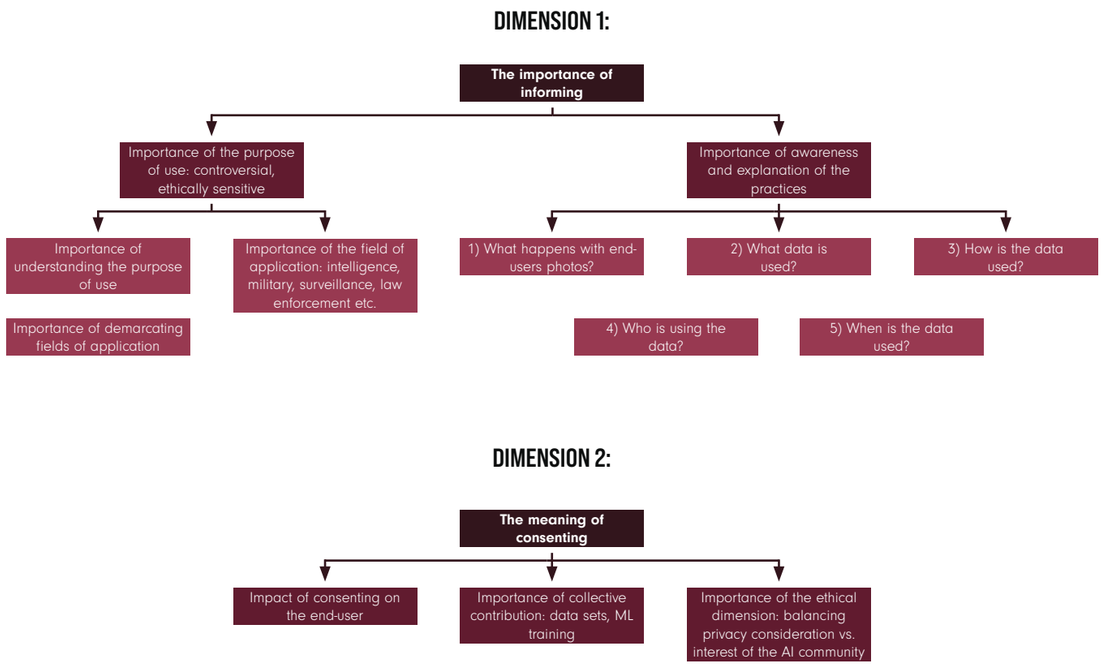


Figure 41: Diagram with case guidelines extracted from the design case's problem definition

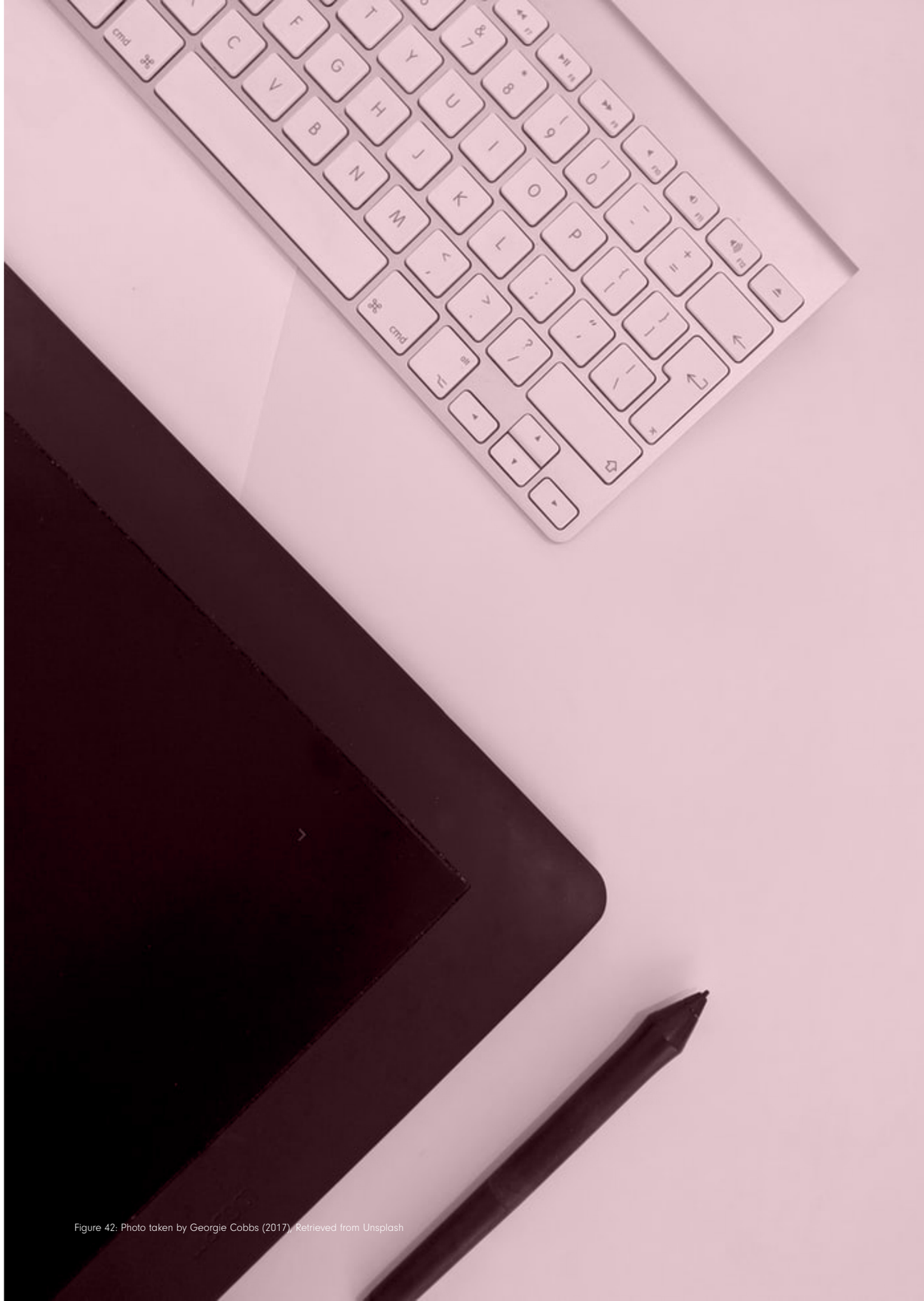


Figure 42: Photo taken by Georgie Cobbs (2017), Retrieved from Unsplash

07

Developing new practices & interactions

This chapter describes two ideation processes. First, the one executed to explore how the set of identified value similarities and value tensions can be leveraged in a potential new consent practice. Second, the one to develop new (aspects of) consent practices and disclosure interactions.

It also elaborates on the different ideation activities, on their purposes and on their contributions. Furthermore, it provides explanations on the employed methodology and tools to facilitate creative sessions with peers, leading to answering the design questions from the design proposal.

After the sections that explain the setup and approach of the creative sessions, the results of the sessions are described. First, the strategies to leverage similarities and tactics to resolve tensions are presented. Second, the design directions defined by clustering and labeling all generated ideas are presented. The chapter concludes with a review of the relevance of the ideas from a policy perspective.

7.1 Ideation Approach & Process

This section describes the approach taken during the ideation process. It briefly explains the different ideation activities performed and it elaborates on the goals and contribution of each step. In addition, the section describes the process of going from a general overview of ideas to mapping design directions. The section finishes with the main contribution of the ideation process itself.

APPROACH

This section elaborates on what approaches are taken and tools are used to answer the two identified design questions in chapter 5:

1) How can the set of identified future value similarities be leveraged in a consent practice redesign?
For example: How can trust be leveraged in a redesign of consent practices?

2) How can the set of identified future value tensions be resolved in a consent practice redesign?

An overview of the ideation process and activities is displayed in figure 43. Three main ideation activities are performed. First, several presentations and a customer experience (CX) conference are attended. Second, initial ideas derived from the performed empirical design research are identified and summarised. Third, three different creative sessions are developed and executed with (former) MSc graduate students from the faculty of Industrial Design Engineering, Delft University of Technology. In addition to the three main activities, individual ideation also occured throughout the design phase.

CX Conference & Presentations

The CX conference "Customer Experience Estafette" took place in several webinars online from the 14th to the 21st of September (2021). Each webinar consisted of 3 or 4 presentations by different industry experts on: data driven CX management, CX technology, digital CX, CX in the public sector through engagement, and the future of CX. Other presentations that were attended are for instance the inaugural lectures by Prof. dr. ir. A. Bozzon and Prof. dr. P.A. Lloyd on design and AI. Furthermore, during the first few weeks of the project, presentations were attended at inhouse days from Cognizant on AI & analytics, connected products and digital engineering, and from CGI on advanced analytics and gamification.

Consent practices are part of the larger customer experience of a digital platform. Therefore, the purposes of attending the conference and presentations were to confirm trends found earlier during the project, to gain relevant insights to be used for the project, and to get inspiration for new ideas. The information gathered from the conferences and presentations contributed to creating three ideas on new (aspects of) consent practices and disclosure interactions.

The first idea is to use conversational intelligence to extract consent preferences from the communication between end-users and digital platforms. The second idea is inspired by image annotation, where parts of an image are labeled and prepared to be used in datasets. Consent annotation is the process of selecting which images (not) to disclose. The last idea is about using game mechanics in consent practices. Appendix F contains an elaborate overview of all generated ideas.

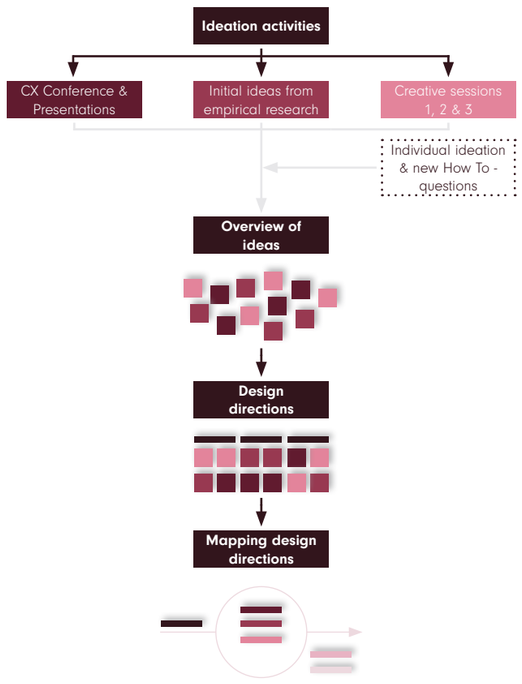


Figure 43: Overview of ideation approach and ideation process

Initial Ideas from Empirical Design Research

Several ideas on how to improve consent practices were already discussed during the creation of future visions with experts and end-users.

From the expert research, 6 ideas are extracted and added to a total overview of ideas. They address different topics such as delegating consent decisions to AI, employing process consent, case-by-case decision-making and data donation, supporting consent decisions of end-users by providing role-models they can learn from, and using profiles with consent preferences.

From the end-user research, 7 ideas are extracted and added to the total overview of ideas. Similar to the expert research, they address different topics. For example, making requests to review previous consent choices which is similar to follow-up consent, applying the concept of annual healthcare plans to annual data and consent plans, emphasising the value of the data and the value of the contract, and using the concept of festival age wristbands in the disclosure interaction to indicate characteristics of the end-user and his/her preferences.

Creative Sessions 1, 2 & 3

Three different creative sessions with different participants are designed and performed to answer the two identified design questions. The first and second session both focus on investigating how to leverage value similarities. The third session focuses on how the identified value tensions can be resolved.

Sections 8.2, 8.4 and 8.5 explain in detail how the sessions are composed, which tools are used and what results are delivered. The main results of the sessions are presented in sections 8.3, 8.6 and 8.7. First, a summary of strategies to leverage the set of identified value similarities is presented. Second, a summary of tactics to resolve value tensions is described. Third, a map of design directions that answer to the main research question (i.e. How to redesign consent practices and disclosure interactions... etc.) is provided.

Individual Ideation

Throughout the ideation process, individual ideation also occured. This activity was not structured and no specific creativity tools were used to stimulate ideation. Ideas came for instance from reading creative session results and meetings with supervisors. 8 different ideas are created and added to the overview of ideas. As previously, they all have a different focus, including supporting end-users with their decision-making process, gaining interest over data, and "borrowing" data by symbolically giving it back to the end-user through making the system forget/delete the data after a certain period of time.

From Ideas to Mapping Design Directions

All results of the sessions, initial ideas from the empirical design research, individual ideation and output from the conference and presentations are added to the previously mentioned overview of ideas. Many of them have a similar foundation and/or focus. Therefore, they are clustered and labeled into design directions. To map the design directions meaningfully and an easy to understand manner, they are plotted on a timeline. This emphasises the core contribution of the ideation process: **consent is taken as a process, therefore presenting a temporal element. It should not be interpreted as a single moment in the relationship between end-users and digital platform organisations.**

7.2 Creative Session 1

The first creative session focuses on leveraging value similarities. This section describes the setup and results by first reporting, explaining and arguing the research question, the session process and the participants. After that, the results of the exercises are reported and compiled into strategies to leverage value similarities.

APPROACH

The ideation approach is twofold based on the formulated design brief. On one hand, the focus is on leveraging the concluded value similarities. On the other hand, the focus is on resolving the identified value tensions. The first creative session elaborates on leveraging value similarities.

The session addresses the first two diamonds of the content finding sub-process of integrated Creative Problem Solving (Buijs & van der Meer, 2013): problem finding to define the problem and idea finding to generate and select options (Heijne & van der Meer, 2019).

The session is conducted online via Zoom and uses boards created in Miro to facilitate the brainstorm. The session is intended to last 1,5 to 2 hours. Prior to the session, the exercises are piloted with a recent graduate to test their suitability. In addition, the Miro boards are provided to the participants before the session so they could read the case information and familiarise with the exercises. The designed Miro boards can be found in figures 45-48.

Research Question

The main research question at the foundation of the creative session, and which leads its course, is:

How can the value similarities be leveraged in a future concept of consent practices?

Session Process

An overview of the different phases and corresponding exercises is displayed in figure 44. Prior to performing the exercises, participants are provided with a short summary on the topic and research scope of this thesis, of the design case and the proposed design brief. Subsequently, they are given the opportunity to ask questions clarifying any doubt and ensuring a common understanding of the scope of the creative session.

Problem Finding
Flower Association (Heijne & van der Meer, 2019) is selected as the first exercise to warm up, get the group in a divergent mindset and explore key terms of the design case. How To – Questions (Heijne & van der Meer, 2019; van Boeijen et al., 2020) is selected as the second exercise to explore the problem space by generating variations from multiple perspectives of the problem, as described by the design case. The Flower Association results are used as inspiration to formulate the questions. The identified How To – Questions are not selected to answer during the follow-up exercises in the session, but expand the current problem space which can be investigated in subsequent individual and/or collective brainstorms.

Idea Finding
The exercise chosen to identify how to leverage the concluded value similarities is Brainwriting (Heijne & van der Meer, 2019; van Boeijen et al., 2020). It uses predefined How To – Questions to stimulate a variety of options. The Brainwriting exercise is combined with Creative Confrontation (Heijne & van der Meer, 2019) based on Analogies (van Boeijen et al., 2020). This approach is aimed to inspire ideation through abstraction and transformation, hence adding potential solutions to the How To - Questions coming from diverse and distantly related domains. Five value similarities have been identified as a result of the research, however explainability and learning/understanding can be divided in two sub-values. Therefore, three rounds of brainwriting and identifying analogies are performed by assigning two participants to one How To – Question to build on each other's ideas. From the analogies, the essence of the relationships found are captured and transferred to fit the How To – Question.

Reverging the findings is done through clustering, labeling, reviewing and discussing the answers. To converge the findings, Morphological Synthesis (Heijne & van der Meer, 2019) is modified to fit this session. Instead of functions or attributes of a product, each row represents one value similarity. The options provided in the columns are the concluded clusters from the Brainwriting exercise.

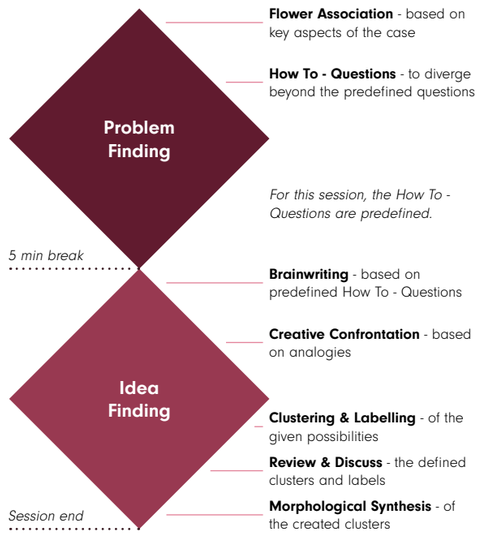


Figure 44: Overview of the session's process

Participants

Four designers, including myself, participated in the first creative session. They are recruited based on their study background in design. The participants' study background and current occupation are displayed in table 5.

	Study background	Current occupation
P1	MSc. Strategic Product Design	Business designer
P2	MSc. Strategic Product Design	Visual consultant
P3	MSc. Strategic Product Design & MSc. Design for Interaction	Graduate student
P4	MSc. Strategic Product Design & MSc. Design for Interaction	Graduate student (me)

Table 5: Participants of Creative Session 1

RESULTS

Problem Finding

Three key terms are chosen by the group to investigate with Flower Association: permission, right to choose/decide, and transparency. Identified themes include awareness, understanding, information, communication, decision-making, support, deliberation, purpose, honesty, implications, democracy, showcasing, clarity, no surprises and actions speak louder than words.

The How To – Questions are clustered after the session and represent similar themes as concluded from the Flower Association. New topics identified are being in support of your own decision, detecting undeliberate decisions, providing consent over time, providing a safe space to deliberate and aligning objectives. A visual presentation of the results of both exercises is presented in Appendix F.

Idea Finding

The end result of this session is a Morphological Chart which can be used to create concepts based on making combinations of the identified parameters. The intermediate results of the Brainwriting exercise and analogies are summarised in Appendix F. The Morphological Chart is displayed in figure 50.

How To - Questions
This Miro board is created to facilitate the How To - Questions exercise. It shows the filled in board after brainstorming about potential questions.

To be able to read the contribution of this visual, the thesis report should be read digitally.

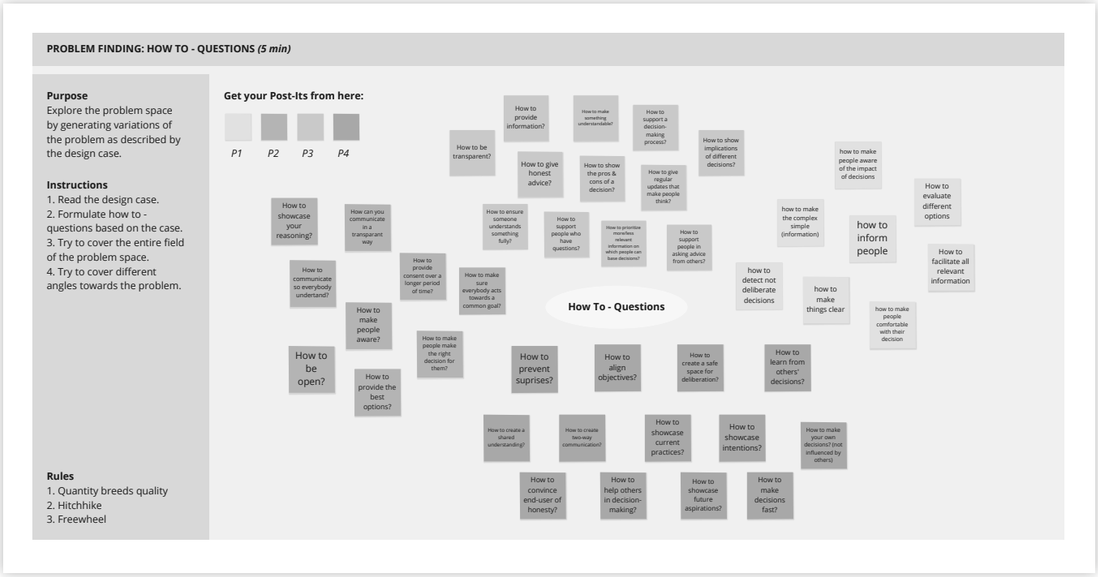


Figure 45: Designed Miro board for the creative session

Brainwriting & Creative Confrontation
This Miro board is created to show a filled in example of the steps to be taken during the exercise. Besides the purpose, instructions and brainstorm rules, it shows the four different steps in detail.

To be able to read the contribution of this visual, the thesis report should be read digitally.

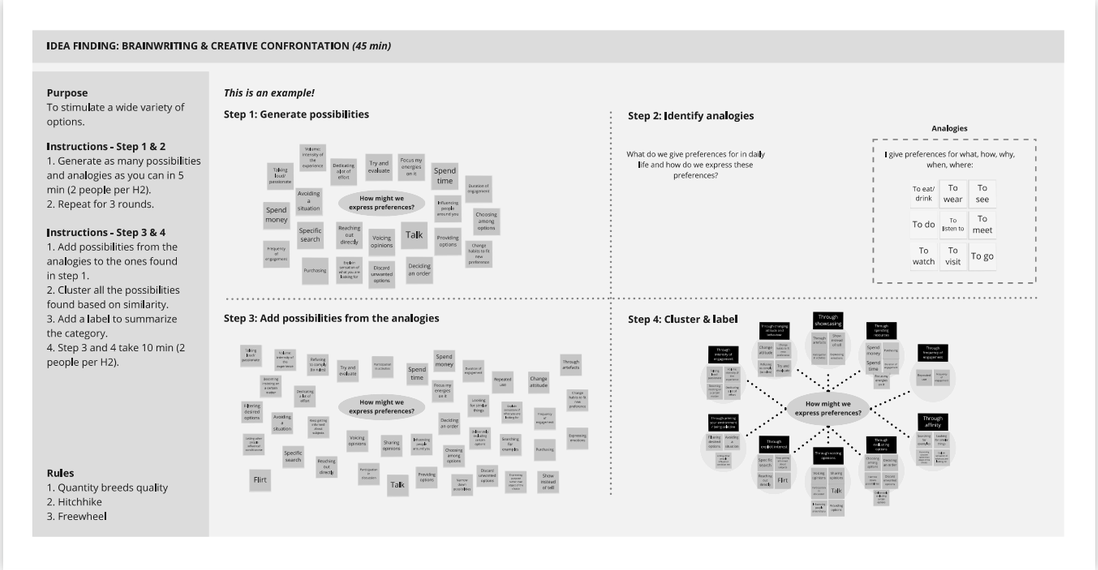


Figure 46: Designed Miro board with an example to explain the exercise steps

Brainwriting & Creative Confrontation
This Miro board is created to facilitate the Brainwriting and Creative Confrontation exercise. It shows the filled in board after generating possibilities, analogies, clusters and labels for one of the value similarities (i.e. trust).

To be able to read the contribution of this visual, the thesis report should be read digitally.

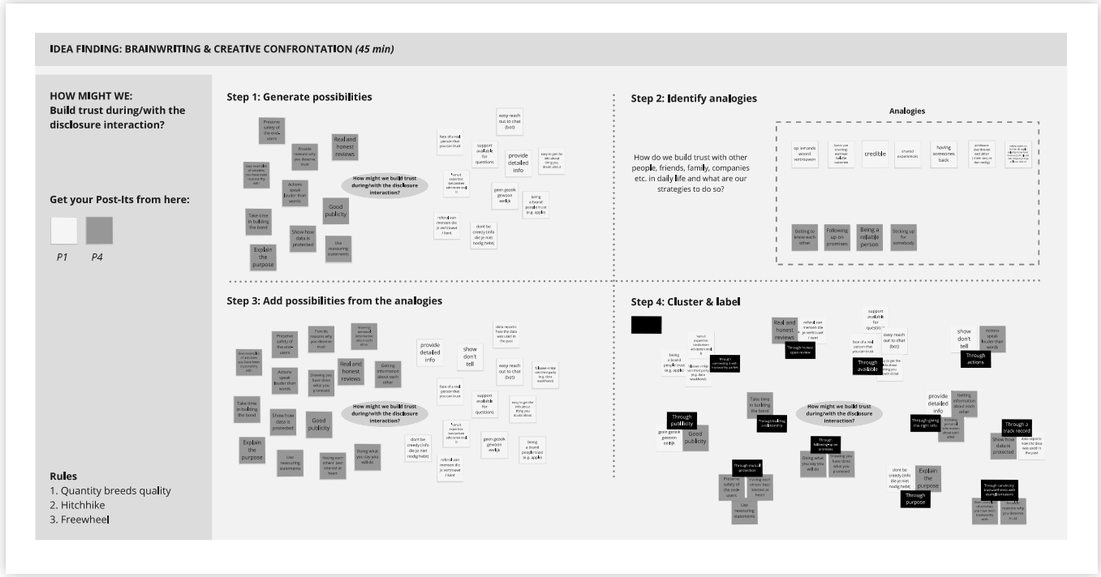


Figure 47: Designed Miro board to facilitate the Brainwriting & Creative Confrontation exercise

Brainwriting & Creative Confrontation
This Miro board is created to show the results of one of the value similarities (i.e. trust). It shows the How To - Question and square and rectangular post-its. They are the generated possibilities from the exercises and the labels to summarise the cluster.

To be able to read the contribution of this visual, the thesis report should be read digitally.

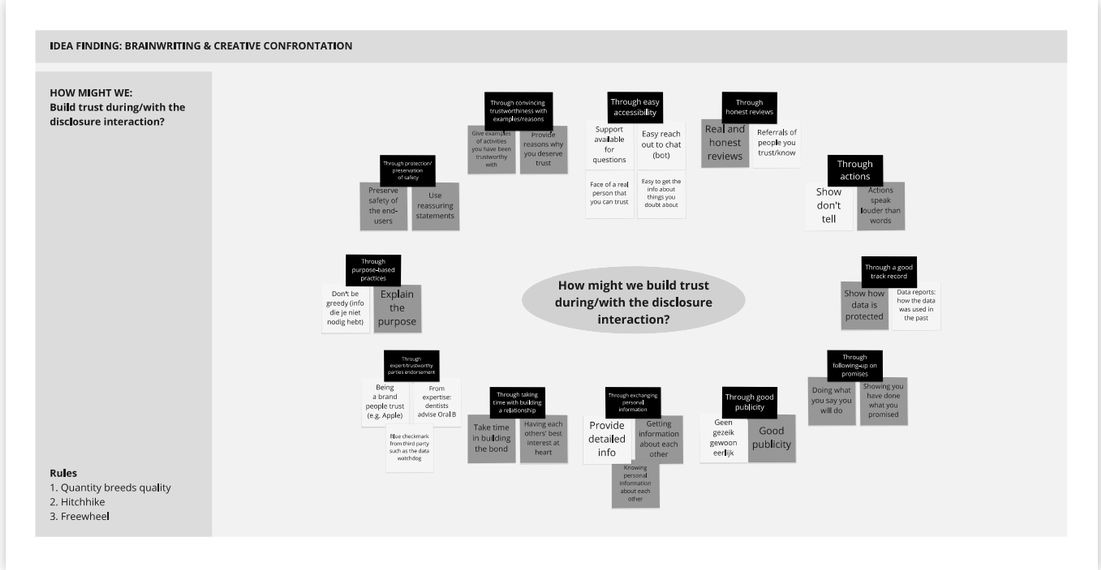


Figure 48: Designed Miro board with mindmap of clusters as input for the morphological chart

7.3 Strategies to Leverage Value Similarities

MORPHOLOGICAL CHART

The morphological chart results from the first creative session. The column on the left displays the extracted value similarities. The different possibilities for leveraging each value are listed in the respective row. For instance, 12 different options are generated in the creative session that may be employed to leverage the value trust in a redesign of (aspects of) consent practices and disclosure interactions. The morphological chart may be used as an ideation tool by randomly selecting an option from each row and use these options as a foundation for a new idea (see figure 49).

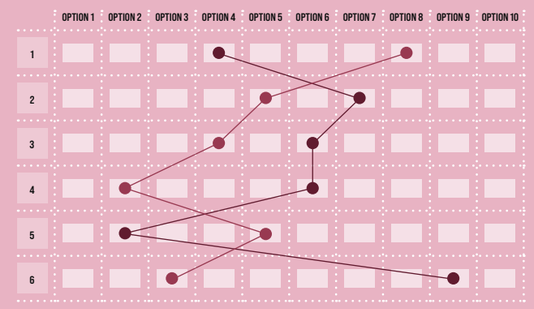


Figure 49: Explanation of how a morphological chart works as ideation tool

	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5	OPTION 6	OPTION 7	OPTION 8	OPTION 9	OPTION 10	OPTION 11	OPTION 12	OPTION 13	OPTION 14	OPTION 15
TRUST	Through convincing with reasons/ examples	Through protection of safety	Through purpose-based practices	Through expert party endorsement	Through taking time with building a relationship	Through exchanging personal information	Through good publicity	Through following up on promises	Through a good track record	Through actions	Through honest reviews	Through easy accessibility			
PRIVACY	Through blocking access	Through sharing only necessary data	Through ability to change preference at any time	Through avoiding the suspicious	Through multiple degrees of sharing	Through strong protection	Through not deciding on consent	Through being informed	Through storing in a protected space	Through not disclosing at all	Through covering /hiding real information	Through proof of privacy	Through deletion of data		
EXPLAINABILITY	Through campaigns	Through experts' opinions	Through tangible examples	Through asking questions	Through creative form to engage	Through interactive user interface	Through teaching modules	Through open access	Through experiencing it	Through easy to understand language	Through historical facts	Through a descriptive explanation	Through engaging stories	Through showing what happens	Through humorous content
LEARNING	Through visualisation	Through advice from others	Through taking someone by the hand	Through reflection	Through evaluating implications	Through making information tangible	Through speculating	Through experiencing it	Through saving preferences						
FREEDOM OF CHOICE	Through equal presentation	Through transparency	Through avoiding steering	Through keeping the choice made private	Through doing it your way	Through accessibility of information	Through supporting decision-making	Through no possibility for bad consequences							
TRANSPARENCY	Through complete information	Through communication	Through managing expectations	Through trust	Through showing business' interests	Through showing consequences & implications	Through being open to wisdom of the crowd	Through showing also the negative of the practices							

Figure 50: Morphological Chart - Results of Creative Session 1

7.4 Creative Session 2

The second creative session is a continuation of the first session and therefore also focuses on leveraging value similarities. First, it reports, explains and argues the approach, the research question, the session process and the participants. Second, it presents the results of the exercises. Third, the results are summarised in ideas that are part of the overview of ideas which is presented in section 7.7.

APPROACH

The second creative session builds on the output delivered by the first session and therefore focuses on leveraging value similarities. The session addresses the second and third diamond, Idea Finding and Solution Finding respectively, from the integrated Creative Problem Solving model (Buijs & van der Meer, 2013). It is again conducted online via Zoom and makes use of boards in Miro which can be found in Appendix F.

Research Question

The main research question at the foundation of the creative session, and which leads its course, is:

How can the identified strategies to leverage value similarities be applied to create a future concept of consent practices?

Session Process

An overview of the different diamonds and corresponding exercises is shown in figure 51. Prior to the session, the design case and proposed design brief are presented to participants unfamiliar with the topic. Similar to the first session, participants may ask questions at any time throughout the session.

Idea Finding & Solution Finding

The starting point of this session is the Morphological Chart (van Boeijen et al., 2020) created in the first session. Morphological Synthesis in combination with Interactive Brainsketching/writing (Heijne & van der Meer, 2019) are selected as the main exercises to create potential solutions for the design case. Three rounds of brainstorm are conducted in which every participant creates three ideas based on three different parameter combinations selected from the Morphological Chart. In the second and third round, participants rotate to redesign the previous participants' ideas and, if possible, come up with new ideas as well.

Subsequently, two excursion exercises are performed to boost creativity and out-of-the-box thinking. A Criminal Round (Heijne & van der Meer, 2019) is conducted in which participants come up with ideas that would be bad or illegal, to then force fit its essence into a positive idea that may contribute to solving the case. A variation of Criminal Round called Problem Reversal (Heijne & van der Meer, 2019) is then used to guide the fifth brainstorming round.

To conclude, ideas are evaluated through the Hits or Dots technique (Heijne & van der Meer, 2019) in which the ideas are assessed based on them being on target, relevant and/or intriguing. For the most promising ideas, Itemised Response method (van Boeijen et al., 2020) is used to identify advantages, limitations and interesting aspects. This investigation is led by applying Devil's and Angel's Advocates (Heijne & van der Meer, 2019), an acceptance finding conversation in which critical questions are raised and positive aspects are identified.

Participants

Four participants took part in the second creative session, including myself. They are again recruited based on their study background in design. Table 6 displays their study background and current occupation.

	Study background	Current occupation
P1	MSc. Integrated Product Design	Graduate student
P2	MSc. Architecture	Project manager
P3	MSc. Design for Interaction	Design researcher
P4	MSc. Strategic Product Design & MSc. Design for Interaction	Graduate student (me)

Table 6: Participants of Creative Session 2

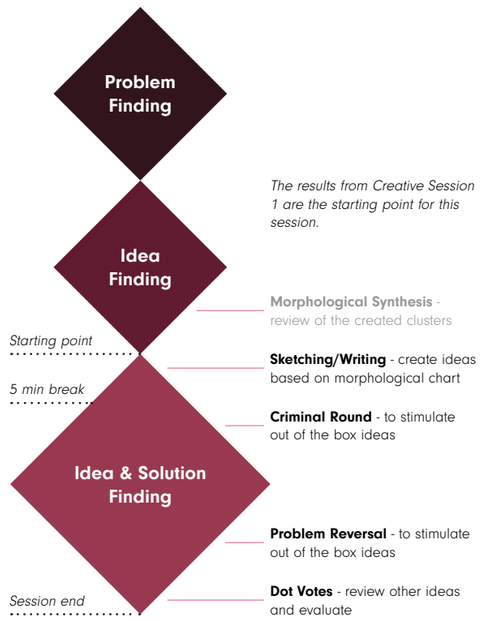


Figure 51: Overview of the session's process

RESULTS

After the creative session, all boards are analysed by extracting the ideas as written by the participants, and summarising them in a concise description. Each idea is assigned a number, name, description and strategy from the Morphological Chart (see for example figure 52 and 53). Since the ideation exercise is designed to follow up on each others' ideas, some ideas received a letter as well to indicate their connection (e.g. 11a and 11b). Not all ideas are based on selected options from all parameters of the Morphological Chart.

In total, the ideation exercise based on the Morphological Chart produced 34 different ideas on how to redesign consent practices by leveraging value similarities. The Criminal Round and Problem Reversal exercises jointly produced another 10 different ideas. The full overview of ideas can be found in Appendix F.

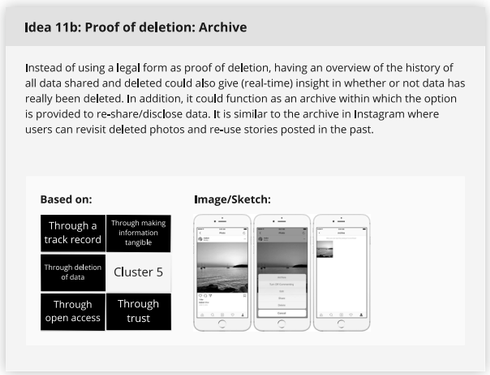


Figure 52: Example of an idea Miro board to show the ideas documentation

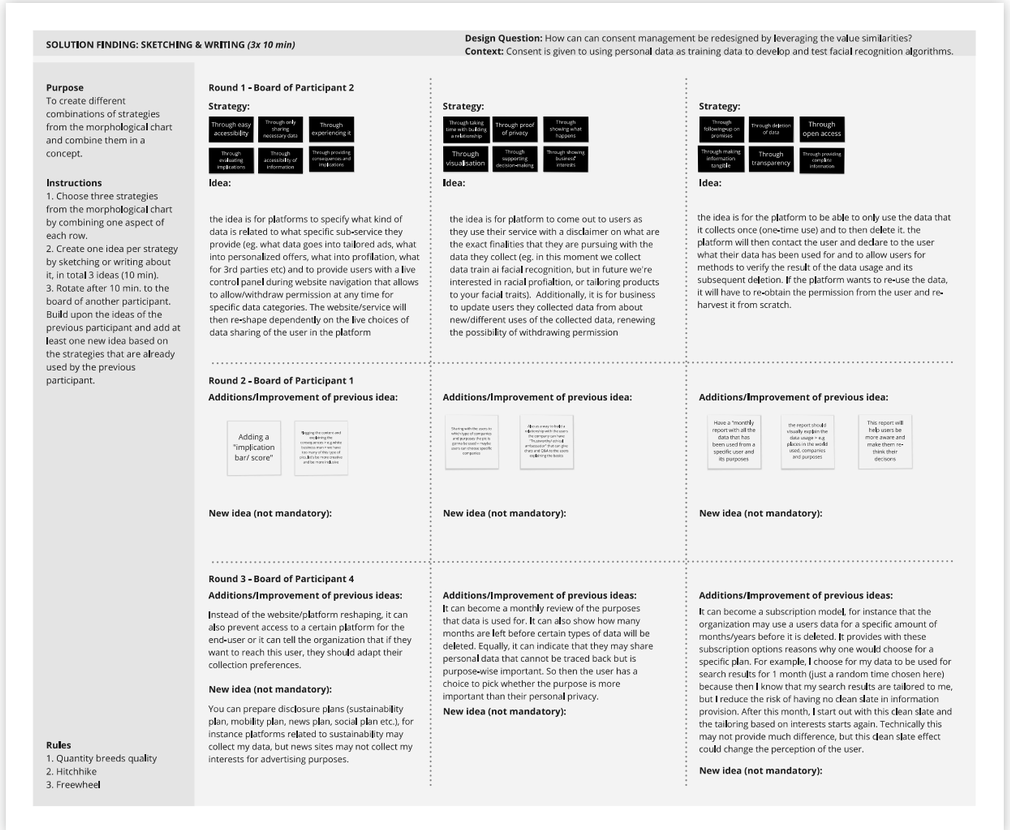


Figure 53: One of the filled-in ideation templates from Creative Session 2 (should be read digitally)

7.5 Creative Session 3

The third creative session focuses on resolving value tensions. This section describes the setup and results. First, it reports, explains and argues the approach, the research question, the session process and the participants. Second, it presents the results of the exercises which are translated into tactics to resolve value tensions.

APPROACH

The third creative session is focused on resolving the identified value tensions. It addresses the first diamond of the content finding sub-process of integrated Creative Problem Solving (Buijs & van der Meer, 2013) through a sensitizing exercise prior to the session. During the session, the focus is on idea finding and solution finding (Heijne & van der Meer, 2019). This session is also conducted online via Zoom and uses boards in Miro to facilitate ideation (Appendix F).

Research Question

The main research question at the foundation of the creative session, and which leads its course, is:

How can the value tensions be resolved?

Session Process

An overview of the phases and exercises is displayed in figure 54. Participants are given the opportunity to ask questions for clarification at all times throughout the session.

Sensitising
A sensitising exercise is created to ensure equal understanding of the design case and sufficient preparation for the exercises prior to the session. The design case and the design brief including value tensions are introduced and explained with examples. Subsequently, an introduction exercise is added to familiarise the participants with the topic and get into the brainstorm mindset. Two mind maps are created based on answering the following two questions:

- What type/kind of agreements or contracts do you know?
- What situations do you know in which consent is involved/ needs to be given?

In the second exercise Personal Analogy (Heijne & van der Meer, 2019), participants imagine themselves to be part of the problem and explore their experiences as they become the object. Each participant is assigned with one value from the identified value tensions. For instance, the role of end-user who wants to cooperate, or the role of digital platform organization who wants end-users to handle consent autonomously. The problem of the exercise (i.e. How to get to an agreement?) is explored by the following questions:

- How do I negotiate?
- What information do I need?
- What support do I need?
- What would I say and do?
- What would annoy me?
- What response would satisfy me?
- How would I react to their satisfying and unsatisfying response?

Idea Finding & Solution Finding
The session contains two ideation exercises based on fluency and systematic approaches respectively. The first exercise of the session, Role-Playing (van Boeijen et al., 2020), follows up on the answers provided by the Personal Analogy exercise. Two participants, each one representing an opposing value, are requested to play out how to get to an agreement based on their role. The roleplay takes place in three different rounds, one for each of the identified value tensions. The remainder of the participants observe the roleplay to answer the following questions:

- What kind of interactions do they have?
- What kind of vocabulary do they use?

The next exercise is based on the 40 Inventive Principles of TRIZ (Heijne & van der Meer, 2019), which is a method with predefined strategies and tools to solve problems that include a striking paradox. The method is originally created to solve technical problems, due to their often contrasting nature. However, several principles could also be applied to social issues that contain contrast. Five principles are preselected and explained at the start of the exercise.

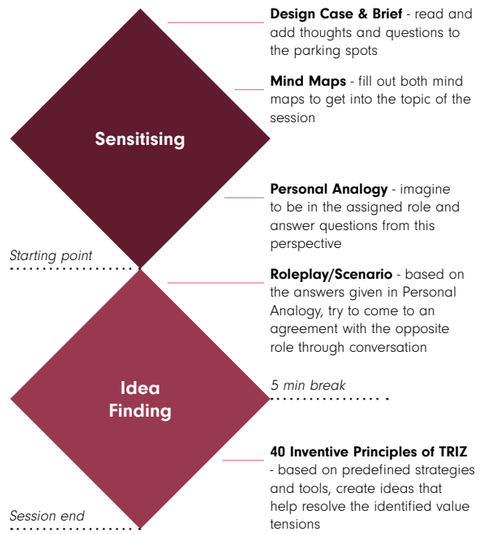


Figure 54: Overview of the session's process

Subsequently, Brainwriting with Post-Its (Heijne & van der Meer, 2019; van Boeijen et al., 2020) is used to document ideas on how to resolve the tension by applying the principle. The selected principles are:

1. **Intermediary** – chosen because an intermediary acts between the information provider and receiver and both roles are present and rotating between end-users and organizations in consent practices.
2. **Self-service** – chosen because the identified value tensions are about involvement, participation and responsibility which could potentially be reduced by making the consent practice system self-serving.
3. **Preliminary action** – chosen because of the different moment and focus of intervention (i.e. prevention, reduction or bypass) in the resolution of the value tensions.
4. **Feedback** – chosen because of its ability to preserve communication between both parties and because it addresses another moment and focus of intervention.
5. **Turn lemons into lemonade** – chosen because the value tensions seem to be by definition a negative aspect in the future vision on consent management, and may bring new perspectives if they are considered from an asset/positive view.

Participants

Five participants took part in the third session, including myself. Their study background and current occupation are shown in table 7.

	Study background	Current occupation
P1	MSc. Strategic Product Design	Service designer
P2	MSc. Strategic Product Design	Recent graduate
P3	MSc. Design for Interaction	Recent graduate
P4	MSc. Strategic Product Design	Graduate student
P5	MSc. Strategic Product Design & MSc. Design for Interaction	Graduate student (me)

Table 7: Participants of Creative Session 3

RESULTS

Sensitising
All mindmaps have been filled in with different kinds of agreements and situations in which consent is involved. Examples are adoption of children, renting a home, starting a bank account, purchasing a mortgage, marriage, appointments with healthcare providers, taking photos of children and sexual relationships. A complete overview of the mindmap results is provided in Appendix F. In addition, all answers given in the Personal Analogy exercise are also presented in Appendix F.

Role-Playing & Scenario
An example of a filled in Miro board created for and used during the session for the first conversation (i.e. Facilitation vs. Control) is shown in figure 56. Results from the other conversations are provided in Appendix F.

All conversations were recorded for further analysis after the session. The synthesis process of listening back, summarising the conversation in steps, extracting tactics, comparing them and drawing a conclusion is explained on page 101.

40 Inventive Principles of TRIZ
An example of a filled in Miro board created for and used during the session for principle 2 (i.e. Self-service) is displayed in figure 57. Results from the other principles are described in Appendix F.

After the session, the ideas provided by the TRIZ exercise were summarised/rewritten into the idea format as explained in section 7.3. See for example figure 55.

In total, the exercises from Creative Sesion 3 have led to 22 different ideas on how to redesign (aspects of) consent practices and disclosure interactions. From the total number, the Role-Play exercise produced 4 ideas in addition to all input for the extraction of tactics to resolve value tensions. TRIZ has produced 18 ideas. The full overview of ideas is provided in Appendix F.

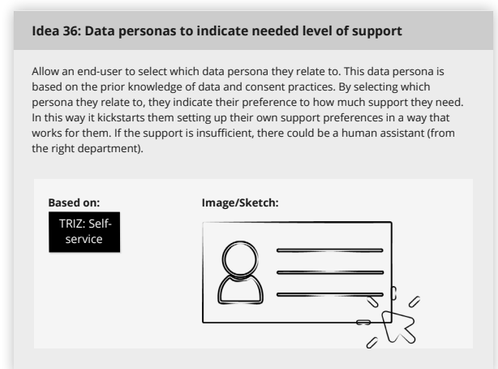


Figure 55: Idea Miro board example to show idea documentation

Role-Play & Scenario
This Miro board is created to show a filled in example of the steps to be taken during the conversation and the reflection. Besides the purpose, instructions and steps, it shows the post-its on which the actors and observers reflect on the conversation.

To be able to read the contribution of this visual, the thesis report should be read digitally.

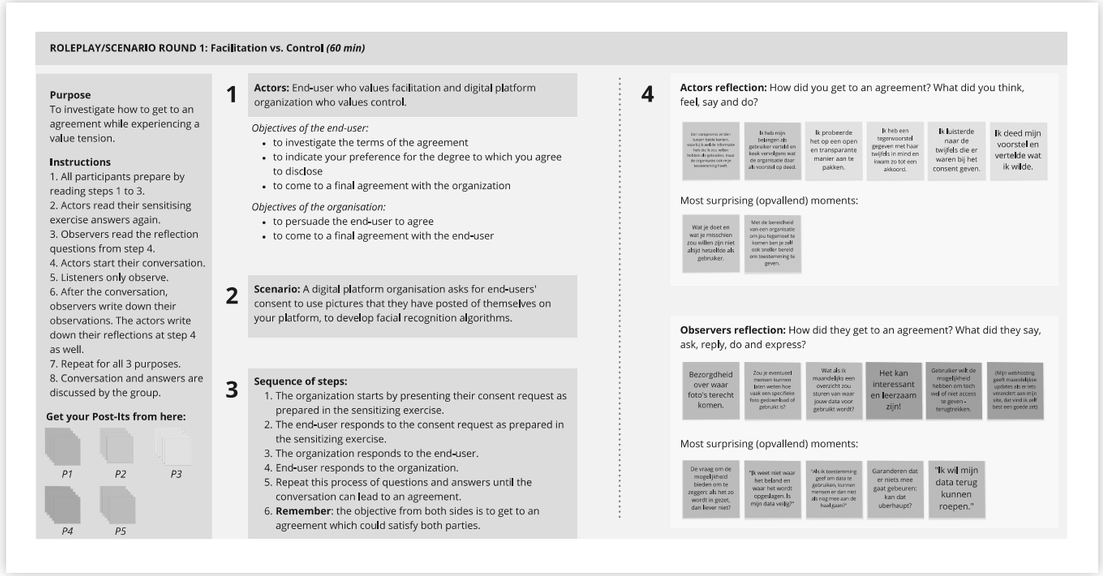


Figure 56: Designed Miro board for Creative Session 3

40 Inventive Principles of TRIZ
This Miro board is created to facilitate the 40 Inventive Principles of TRIZ exercise. Besides the purpose, instructions, principle explanation and principle example, it shows the filled in board after brainstorming about potential interventions.

To be able to read the contribution of this visual, the thesis report should be read digitally.

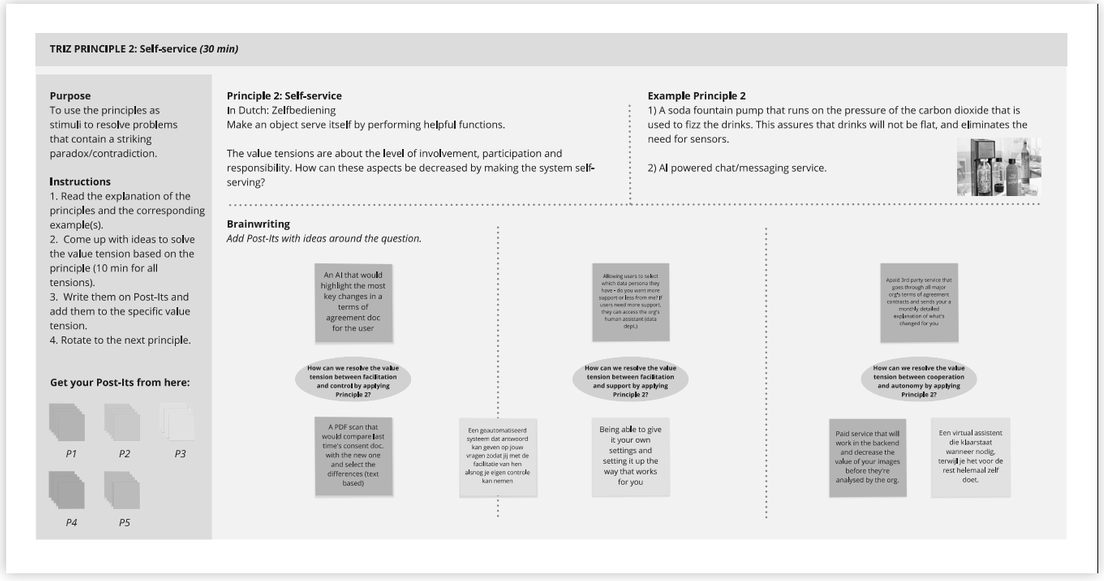


Figure 57: Designed Miro board for Creative Session 3

SYNTHESIS OF RESULTS

The goal of the Role-Play exercise is to investigate how to get to an agreement when end-users and digital platform organisations prioritise opposing values. From the reflections and observations written down directly after the conversation, it is not yet possible to conclude exactly how the participants came to an agreement and what tactics they used. Therefore, the conversations are analysed after the session. The four steps undertaken are:

1. Listening back to the conversations
2. Summarise by describing the steps taken
3. Extract tactics from the steps
4. Compare tactics between conversations and draw conclusions

The first two steps focus on listening back to the conversations and describing the steps taken by the participants in four identified phases: the request, the reaction, the negotiation and the agreement. The elements described include attitudes, considerations, argumentation and quotes. For example:

"If I am more transparent about the facial recognition purpose, would you agree to my request? Is it enough to know what happens or would you still like to say, no, I disagree?" - P4

The third step extracts approaches and strategies taken by the participants in their conversation. For example, a tactic used in the first conversation is to base a counter proposal on meeting end-users' doubts and concerns to create satisfaction for both parties, essentially through both accepting their reciprocal requests. See figures 58 and 59 for the (filled in) Miro boards created for the synthesis process.

The last step compares tactics used between the three different conversations. Matching tactics can be potentially used as a general option, regardless of the value tension that occurs between end-users and digital platform organisations. All tactics are described and compared in section 7.6.

To be able to read the contribution of this visual, the thesis report should be read digitally.

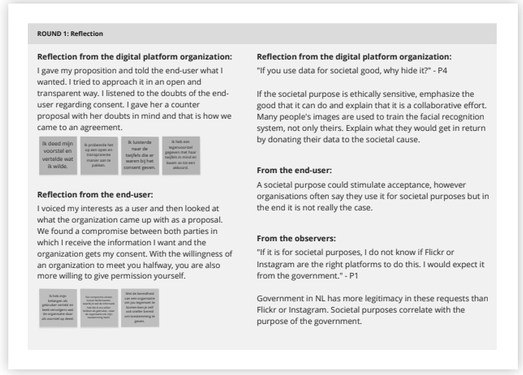


Figure 58: Designed Miro board filled in with reflections on the first conversation

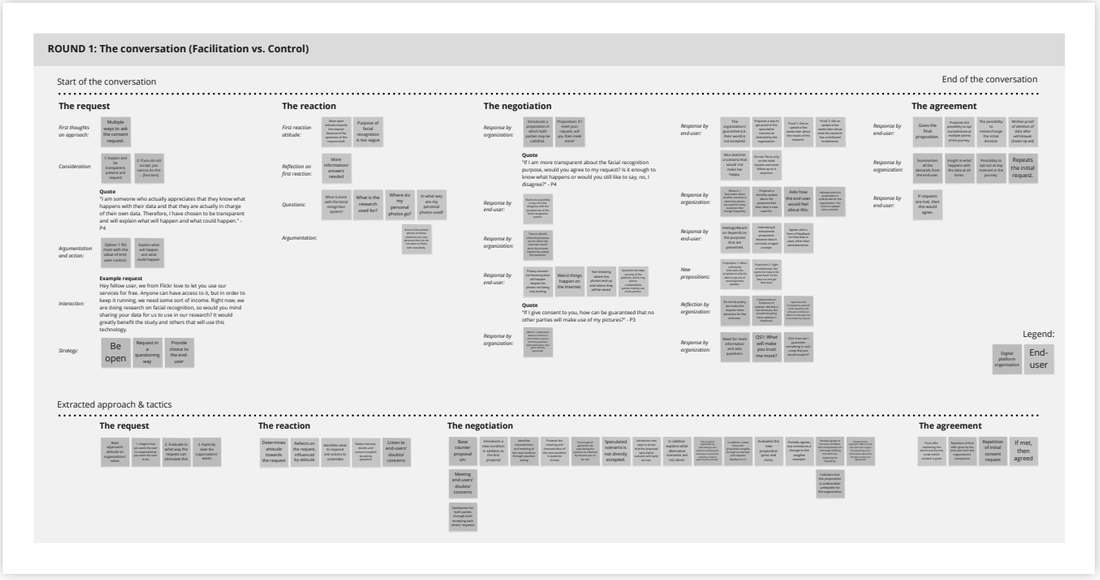


Figure 59: Designed Miro board with filled in steps and extracted tactics from the first conversation

7.6 Tactics to Resolve Value Tensions

VALUE TENSION: FACILITATION VS. CONTROL

THE REQUEST

Base approach/attitude on organisation's value:

1. Imagine how you want the end-user to respond
2. Evaluate in what way the request can stimulate this
3. Explicitly state the organisation's wants

THE REACTION

1. Determine attitude towards the request
2. Reflect on the request (influenced by attitude)
3. Identify what to respond and actions to undertake
4. Make interests, doubts and concerns explicit by asking questions

THE NEGOTATION

Base counter proposal on:

1. Meeting end-users' doubts/concerns
2. Mutual satisfaction through both accepting each others' request

1. Introduce a new condition to the first proposal
   1. Identify characteristics and meaning of the new condition through questions
      1. Present characteristics and meaning of new condition in question format
         1. Try to get an agreement by speculating the sketched scenario to be met

Speculated scenario is not directly accepted:

1. Introduce new ways to prove that speculated scenario will be met
2. Explain what alternative scenarios are undesired

1. Try to get to an agreement by speculating new scenarios
   2. Make proof-condition tangible by example and request feedback on it

1. Evaluate new proposition (pros & cons)
   2. Partially agree, if needed introduce change(s)

1. Compromise on the new wish from the end-user
   2. Indicate why the wish is partially undesirable for the organisation
      3. Review initial proposal and validate confirmation to ensure agreement

THE AGREEMENT

1. Final offer: explain the terms one by one under which consent is provided

1. Repeat final offer from the organisation's perspective
   2. Repeat initial consent request
      1. If conditions are met, then agree

VALUE TENSION: FACILITATION VS. SUPPORT

THE REQUEST

Base approach on getting desired end-user reaction

1. Imagine what you want to achieve with the request
2. Imagine what reaction you do not want to evoke with the request
3. Evaluate how the request can stimulate 1. and avoid 2.
4. Stimulate participation without being obtrusive

THE REACTION

1. Voice attitude towards the request
2. Reflect on what information is missing
3. Identify what questions to ask and ask them

THE NEGOTATION

1. Explain to the end-user what organisation finds important/their goal is
2. Define strategy/steps on how to meet this goal
3. Base the steps on assumptions about what you think end-users want
4. Share the steps with end-users for validation

1. Express gratitude for the organisation's empathic approach
   2. Validate organisation's assumptions by confirming shared interests
      3. Speculate about agreement if the organisation's proposal is executed

1. Repeat first proposition to confirm its execution and importance
   2. Elaborate on the organisation's mission behind the steps
      3. Voice other assumptions made about end-users

4. Add to the proposition by ... (e.g. providing personalisation)
   5. Add to the proposition by ... (e.g. providing end-user control)
      6. Reflect on the actions required for it to be relevant to the end-user

7. Open up about the organisation's objective behind the proposition
   8. Add again to the proposition by providing additional support
      9. Repeat part(s) of the proposition to emphasise its presence

THE AGREEMENT

1. Explain what parts of the proposition seem undesirable
   2. Propose counter proposal with a change in condition(s)
      3. Repeat explanation on why the change should be made

4. Give tips on how end-user can be stimulated
   5. Emphasise contrbution for end-users
      6. Emphasise self-less aspect from the organisation

1. Show understanding of the end-users concerns & proposed change
   2. Agree to the conditions proposed by the end-user

VALUE TENSION: COOPERATION VS. AUTONOMY

THE REQUEST

Present information about the request and its purpose

Persuade engagement by:

1. Branding autonomous decision-making as a privilege/something good
2. Presenting its benefits for the end-users

THE REACTION

1. Respond based on first impression of the request
2. Defensive approach: explain what from your perspective is wrong

THE NEGOTATION

1. Defensive approach: defend and elaborate on your own position
2. Argument why you think it is good when end-users have responsibility

1. Introduce a new proposal: more specific to organisation's responsibility
   2. Trade-off approach: comply to my wishes then I comply to yours
      3. Explain what of the organisation's request you will not comply to
         4. Explain your desired situation

1. Express emotion to the trade-off approach
   2. Try to identify the necessary conditions for autonomous decision-making

1. Give an example of a request that would satisfy you
   2. Introduce a new proposal based on the example
      3. Give argumentation on why this proposal is presented
         4. Give argumentation on why this example request is satisfying

1. Check with if decisions are made autonomously if this proposal is facilitated
   1. Introduce additional aspect(s) to the proposal to meet autonomy

1. Test if end-user will do what they say they will
   2. Check again if decisions are made autonomously in the new circumstances

THE AGREEMENT

1. Confirm autonomous decision-making with an example of new behaviour
   2. Repeat your ideal situation and voice expectations
      3. Explain what benefit organisations would get by facilitating this
         4. Strict attitude: if you want end-users, you need to facilitate this

1. Summarise proposal from the organisation's perspective

1. Agrees to the agreement

TACTICS IN COMMON

THE REQUEST

Imagine what you want to achieve with the consent request and how you want the end-user to respond.

In addition, evaluate how the request can stimulate this achievement/desired response.

THE REACTION

Voice your attitude towards the request by making your interests, doubts and concerns explicit.

One way of doing this is by identifying what questions to ask and ask them directly after the request.

THE NEGOTATION

Explain to the end-user where you are coming from: 1) by elaborating on important aspects, 2) by explaining the organisation's goals/objectives and 3) by explaining the organisation's limitations.

Explain and give examples of satisfying requests, scenarios and/or communication from the end-users' perspective.

Or take the opposite approach by explaining what is "not done".

Introduce new proposals, counter proposals, new conditions and new aspects to previous proposal(s).

Provide argumentation for them and ask feedback from the other party.

Evaluate and reflect on the propositions and conditions.

Express emotion to/how you feel about the proposals and approach of the other party.

Identify conditions for compromise. For instance through speculating about potential scenarios to discuss ways to get to an agreement. Or accept each others' requests to reach an agreement immediately.

Validate and confirm propositions and conditions throughout the negotiation.

Repeat and review proposals to check whether there really is a potential agreement.

THE AGREEMENT

Go over the final proposition and propose last changes if necessary. In addition, make the last arguments about why this is the mutually desired outcome, or why it is beneficial to each party.

To conclude, the organisation summarises and repeats the final proposition from their own perspective.

LEGEND:

- Organisation
- End-user

Figure 60: Tactics used to resolve the identified value tensions

7.7 Design Directions

These pages present the identified design directions resulting from the ideation process. The directions are placed on a timeline divided by a 'before', 'during' and 'after' section. Each direction, shown as a white label surrounded by a dotted border, is accompanied by three ideas that are part of the cluster. Their explanations and additional ideas are provided in Appendix F.

MAPPING DESIGN DIRECTIONS: CONSENT AS A PROCESS, NOT A MOMENT

THROUGHOUT

Assistance: (formal) general information
- Checkmarks by authorities as proof stamps
- Labels to indicate digital platform properties
- Showing and ranking the data journey

Assistance: conversational
- Guided tour & support page with rights
- Trustworthy/Ethical ambassador
- Consent chatbot/Virtual assistant

Personalised consent practice support
- Data personas to indicate needed level of support
- Automated support tools in collaboration
- Set conditions for end-user autonomy in decision -making

(Regular) Updates from extensions
- AI extension to highlight key changes in ToS
- ToS contract comparison & update service

(Regular) Updates from the organisation
- Regular updates on collection purpose changes
- Monthly privacy policy & security updates

Data sharing/disclosure plans & subscriptions
- Interest-based disclosure plans
- Sharing plans based on purpose of use
- Personal private trial period

Donating data for societal purposes
- Crowdsourcing data / data donation
- Emphasise societal contribution of disclosure
- "Borrowing" data

Persona & profile-based indication of preferences
- Personal profile with consent preferences
- Different acceptance profiles for different owners
- Conversational intelligence extracts preferences

Defining data owners
- Assigning data owners
- Disclosing to friends of friends

OR:

ALTERNATIVE

Outsourcing disclosure decisions
- Intermediary data protector & manager
- Delegate consent decisions to AI

Before the disclosure interaction

During the disclosure interaction

After the disclosure interaction

BEFORE

Relationship building
- Speeddating with the digital platform
- Honest consent workshops
- Digital "cohabitation" contract

DURING

Stimulating engagement
- Use of game mechanics in consent practices
- Visualised/animated terms of agreement
- An as easy as possible interaction

Advice to inform disclosure decisions
- Role-model support in decision-making
- The expert's voice and suggestions
- The fellow-user-as-expert voice

Preferences/decisions as (real-time) filter system
- Live control panel & adjustable platform content
- Digital platform blocker / Browser filter system
- Different platform "levels" based on disclosure

Stimulating reflection to inform consent decisions
- Presenting consent decision dilemmas
- Speculating scenarios based on decision options
- Communicating value of the data & the contract

Case-by-case decision-making
- Consent annotation based on image annotation
- Case-by-case decision-making
- Decreasing data-value service

AFTER

Saving disclosure decisions
- Consent manager inspired by password manager
- Saving consent decisions
- Memorising decisions and make them the default

(Regular) Reporting of data practices
- Showing the data journey of end-users
- Show downloads of used content by third parties
- Proof of deletion through legal forms

(Regular) Review & Revise
- Process consent / Follow-up consent
- Proof of deletion: archive
- Regular review of purpose changes & prior agreement

Compensation/reward for disclosure
- Incentives to accept disclosure
- Getting paid for your data
- Shorter relevant ads in return for data

Consequences for undesired data/consent practices
- Getting interest over data
- Accountability through compensation for mistakes
- Punishment for not complying to consent values

Figure 61: Design directions with a selection of ideas

7.8 Design Directions Review: Policy Perspective

This section describes how an online review of the design directions and specific ideas led to their assessment on policy relevance. In the policy relevance review, ideas are compared to current policy developments. The contribution of this section is mainly provided by a representative from Open Future.

APPROACH

An overview of all ideas were sent in for review prior to the session, which was held between me, a representative from Open Future (policy analyst) and chair Elisa Giaccardi. During the review session, a first selection of promising ideas was discussed and reviewed from a design and policy perspective. The outcome of this session led to a review of the ideas based on policy relevance. This section describes what ideas match with current policy developments (contribution by Open Future).

POLICY RELEVANCE

Ideas in line with the General Data Protection Regulation (GDPR)

Subscription-based application
An idea to use different subscription plans based on how and how long data may be used by digital platform organisations is aligned with the right to be forgotten in the GDPR. This right is translated into a right to be de-indexed following the Google Spain case in 2014 (Google Spain SL and Google Inc. V Agencia Española de Protección de Datos (AEPD) and Mario Costeja González, 2014).

Communicate the value of data
An idea to communicate the value of the disclosed data and the relevance of the contract that is essentially signed by providing consent is in line with ongoing discussions on how to reform consent in the GDPR with the goal of making it clear and unambiguous. Many argue that the value of data should be explained to consumers when licensing it.

Checkmarks by authorities as proof stamps
An idea about providing a form of proof that the same information regarding consent and disclosure is provided to all end-users of the particular digital platform reverses the burden of proof for companies before operating in the market. It is a view advanced by Frank Pasquale in his piece 'Licensure as data governance: ex-ante control of data protection adherement.'

Proof of deletion & Showing the data journey
The ideas of proof of deletion and showing the data journey share their purpose to give end-users more insight in where their data goes and whether or not it has been deleted. These ideas are in line with discussions about Personal Management Information systems typical of MyData, but also broader debates about identities where end-users are given more agency through a codified digital persona when accessing platforms or search engines. In addition, it is in line with the right to be forgotten from the GDPR.

Ideas in line with the ePrivacy Directive reforms

Consent preference profiles & Memorising consent decisions
The ideas of setting up profiles in which consent preferences are indicated, managed and memorised are all ideas encapsulated in ongoing reforms of the ePrivacy Directive (i.e. ePrivacy Regulation) where metadata and cookie collection can be regulated ex ante by default based on end-users' preferences.

Ideas in line with the Data Governance Act (DGA)

Borrowing data, Crowdsourcing data & data donation
The ideas of donating data to causes that end-users find relevant, and borrowing data for a specific purpose and a specific period of time are very much linked to the notion of Data Altruism currently discussed in the Data Governance Act (DGA) where end-users can freely donate and make their data available for certain general interest uses, including scientific research and climate change.

Ideas in line with the Digital Services Act (DSA) & Digital Markets Act (DMA)

Data reports
The idea regularly sending reports with data that has been used from a specific end-user is very much aligned with the DSA and DMA. In these acts, platforms, dependently on their size, are subject to specific transparency and communication requirements which may include monthly and yearly reports on their conducts.

Punishment for not complying to disclosure values
An idea to cancel an end-user's subscription or access if the content shared does not match the digital platform's consent and disclosure values is based on the DSA logic through greater scrutiny and monthly / yearly reporting mechanisms.

Show disclosure decision percentages from other users
Another idea is to learn from other end-users by being informed about their disclosure decisions which is in line with article 31 of the DSA about a right for researchers to access platform data about the platform itself. Digital platforms, first and foremost Facebook, have long prevented this.

Ideas in line with Propertarian Reforms

Paid for data & interest over data
The ideas to get paid for disclosing data in money or other credit and getting interest over it if data is used for a longer period of time than set, put forward an idea advanced by Propertarian reforms for data governance where it is to be defined as one's property. Based on this idea of data as one's capital production, end-users should be entitled to trade it for services. The reform they advance is based on remuneration. As data is a valuable source in the economy, end-users should be able to sell it in exchange for services. From a policy perspective, it would be advised against, because it incentivises ongoing market practices based on extraction and analysis. Nonetheless, it is also against commons and open access approaches to data as a non-rivalrous resource to be used for society-wide interests.

Ideas in line with discussions on Data Steward Models

Intermediary data protector & Consent manager
Giving consent to an intermediary consent organisation and/ or using a consent management system encapsulate one of the most popular discussions in the debate about data stewards models in data collection. Basically these are entrusted third parties that can collectively guard end-users' data and act on behalf of the consumer. It is the preferred approach in solving some privacy and data protection issues by collective privacy scholars which is elaborated on by the Adalovelace Institute. In addition, data stewards are important for the commons because they allow for data aggregation and use in the public interest.

Confidential Information

Advised Against

Accountability through compensation for mistakes
The idea that digital platform organisations could provide compensation to end-users for the mistakes they make regarding mistreatment of the data or using it for unethical purposes would be advised against from a policy perspective since much of the EU and national regulatory frameworks are based on public authorities' scrutiny which then compensates end-users based on the infringement at stake.

08

Redesign Proposal

This chapter describes the process of creating a design for a new consent journey for Flickr. First, it explains the different steps that are taken to select design directions and specific ideas. For instance, it elaborates on how a selection of ideas ensures that the formulated case guidelines are met.

Second, it presents a procedural and visual summary of the proposal for the design case. The selection of design directions and ideas is presented on a timeline which indicates a generic consent journey.

Third, all steps from the proposal are elaborated on. The detailed description of each step is complemented by a corresponding visual representation. In addition, the meaning of the ideas for end-users, Flickr and the AI research community is identified.

The last section describes how the identified tactics to resolve value tensions are implemented in the proposal, and it visually shows what tactics are connected with what ideas. To conclude, it briefly elaborates on how the tactics are implemented in the consent journey.

8.1 Concept for the Design Case

This section describes how the concept for the design case is created. It explains the selection process step-by-step including how the case guidelines and policy relevance review are used as filters in the selection process. It also elaborates on the process steps taken to come to a final proposal.

APPROACH

The objective is to create a proposal that complies to the design requirements and case guidelines, that is composed from the set of identified design directions, and that contains tactics to resolve value tensions. Consequentially, several steps are taken to define the proposal for the design case that is elaborated on in chapter 6. The steps are visualised in figure 62.

The process originates from the design directions. The case guidelines drawn from the problem definition of the design case are used as filters through which to evaluate what design directions and specific ideas are most suitable for the proposal. In addition, the outcomes of the policy relevance review contribute to this selection process. The selection of a final set of design directions and ideas is then followed by the implementation of tactics to resolve value tensions in the proposed consent journey. Finally, the proposal is evaluated against the design requirements and design wishes resulting from the literature and empirical design research. The contributions of each step result in the redesign proposal for the design case: Open Licensing in the Age of AI.

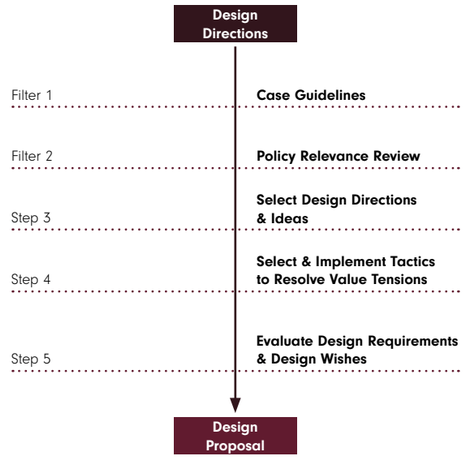


Figure 62: From design directions to proposal

SELECTION PROCESS

Objective, Context, Level of Detail & Limitation

This section describes Flickr's main objective, the context of the redesign proposal, the level of detail it targets and its limitation, eventually explaining the steps of the design direction and idea selection in detail.

Flickr's main objective is to remove themselves from their uncomfortable intermediary position by balancing between privacy considerations from the end-user community and the scientific interest of the AI research community (see chapter 6). The proposal takes place in the context of the desired future vision which is described and visualised in chapters 3 and 4. Therefore, the proper level of detail of the proposal is identified as the conceptual level. Furthermore, delivering a more abstract proposal is to encourage discussion and speculation on the core proposition of the ideas, avoiding to speculate on downstream elements such as, user interface details. A limitation of designing on a conceptual level for a desired future vision is that it assumes that the Sources of Friction (see chapter 3) are resolved and a desired future vision can be reached. Likewise, a representative from Open Future identified this assumption:

"Keep in mind the general limitations of implementing some of these solutions in current industry practice. It is important to acknowledge that any meaningful and concrete change will only occur through a systemic value change which underpins social interactions, and not only through technological solutions which might suffer from determinism."

Process Steps

This section provides a summary of the selection process (consult Appendix G for an elaborated overview). The first step is to read all the design directions and ideas with the case guidelines in mind, and to make a selection of potential candidates for the final proposal. From a total of 21 identified design directions, 13 are selected for further evaluation. An example of an excluded design direction is 'Relationship building between end-users and the digital platform organisation', taking place prior to the digital platform being used. This direction was excluded because no case guidelines emphasised this need. Another example is that the design direction 'Conversational assistance' is prioritised over 'Assistance through formal general information', due to the complexity of Flickr's data practices and therefore the consent requests of this design case.

The second step is to plot the selected design directions and ideas on a timeline to ensure that all phases of a new consent journey are covered (i.e. throughout, during, and after the disclosure process).

The third step is to assign the design directions and their chosen ideas to a matching case guideline. The result of this process is visualised in figure 63, which shows to what case guideline each design direction and idea contribute. In addition, it indicates with a chechmark what ideas are mentioned in the Policy Relevance Review.

The fourth step is to start creating a general journey, which might require further simplification of the set of ideas. For instance, it is important to recognise overrepresented case guidelines, as well as to track down any given point of the timeline in which the implementation of too many ideas may lead to an information overload for end-users. In such cases, the effectiveness of the journey shall be preserved by selecting among the overlapping directions and ideas, thereby excluding some of them.

The last step is to evaluate which ideas can be combined or can occur in parallel, as in a different journey dependently on the type of end-user. Completing these steps led to a final proposal, made of 12 design directions and 14 ideas in total, which is summarised in the following pages. After that, every idea is given an in-depth explanation, including detailed descriptions and arguments, including on the relevance for Flickr, the AI research community and Flickr's end users.

LEGEND:

- Design direction from: '**Throughout** the disclosure process'
- Design direction from: '**During** the disclosure process'
- Design direction from: '**After** the disclosure process'
- Chosen idea from the indicated design direction
- Mentioned in: Policy Relevance Review

Timeline

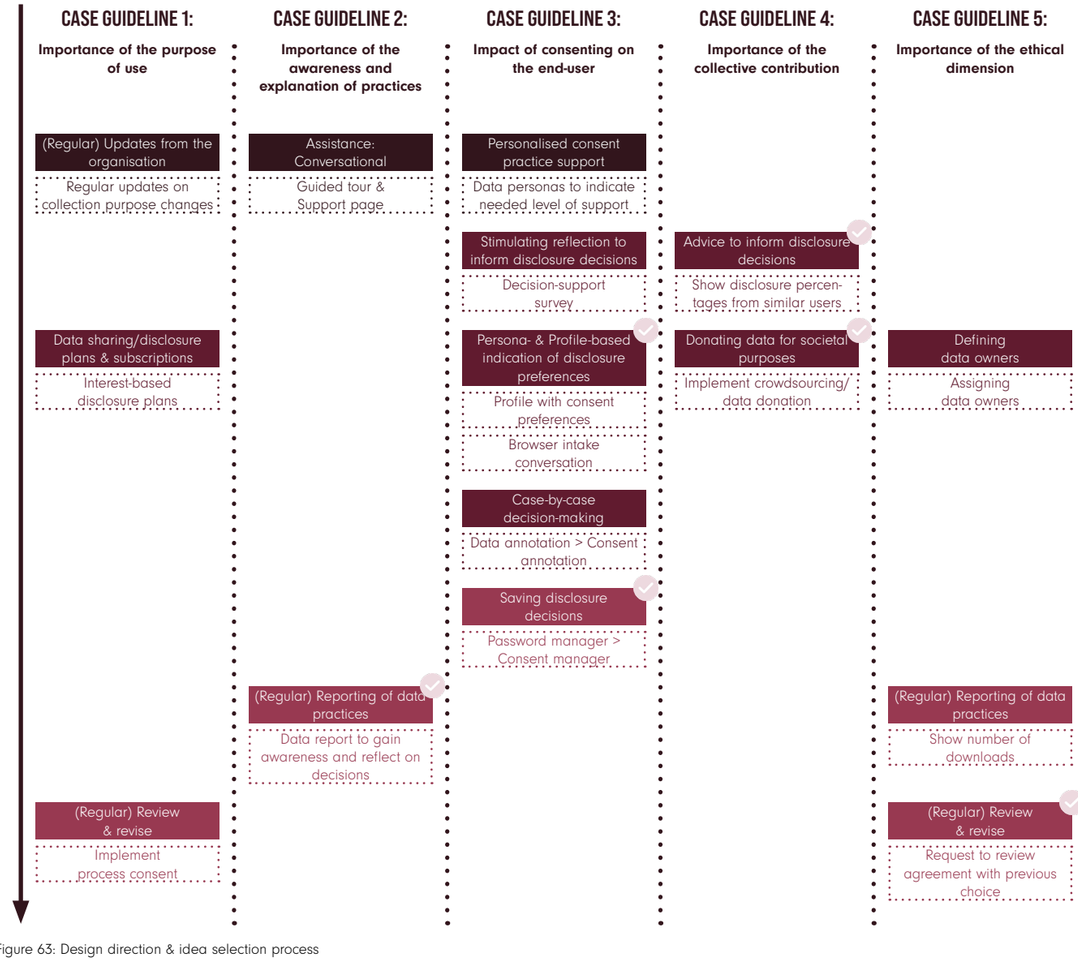


Figure 63: Design direction & idea selection process

8.2 Proposal for the Design Case

These pages present the proposal for the design case resulting from the selection process explained in section 9.1. In this new consent journey for the end-users of Flickr, some ideas are optional, others occur in parallel, dependently on end-users' choices earlier in the journey. Therefore, not all ideas occur chronologically. To conclude, the visual shows where tactics to resolve value tensions are implemented.

LEGEND:

- Design direction from: '**Throughout** the disclosure process'
- Design direction from: '**During** the disclosure process'
- Design direction from: '**After** the disclosure process'
- Implemented tactic to resolve value tensions

THROUGHOUT

Assistance: conversational

1. Guided tour & support page

(Regular) Updates from the organisation

9. Regular updates on collection purpose changes

Personalised consent practice support

2. Data personas to indicate needed level of support

DURING

Option 1: More support

Stimulating reflection to inform consent decisions

3a. Decision-support survey

Option 2: Less support

Advice to inform disclosure decisions

3b. Show disclosure percentages from similar end-users

Data sharing/Disclosure plans & subscriptions

4a. Interest-based disclosure plans

Donating data for societal purposes

4b. Implement crowdsourcing/data donation

Defining data owners

4c. Assigning data owners

Combined

Case-by-case decision-making

5. Data annotation > Consent annotation

AFTER

Saving disclosure decisions

6. Password manager > Consent manager

Option 1: More insight

Option 2: Less insight

(Regular) Reporting of data practices

7a. Data report to gain awareness and reflect on decisions

7b. Show number of downloads

(Regular) Review & revise

8a. Process consent

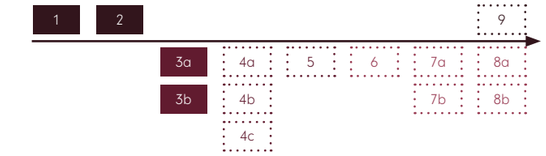
8b. Request to review agreement with previous choice

Combined

Figure 64: Summary of the final proposal for the design case

8.3 Explanation of the Proposal

This section elaborates on all the steps of the proposal for the design case (as explained in section 9.2). It gives descriptions per each individual step and it explains their meaning for the end-users, Flickr and the AI research community. In addition, it indicates whether or not a tactic to resolve value tensions is connected to a specific idea, mentioning the type of tactic when relevant.



1. GUIDED TOUR & SUPPORT PAGE

Description of the Idea:

Sometimes digital platforms make use of guided tours to introduce the main functionalities available to the end-users. This idea incorporates this aspect and applies it to consent. The guided tour shows the end-user around the platform and introduces them to where they can find explanations regarding disclosure, data practices and consent, among other topics.

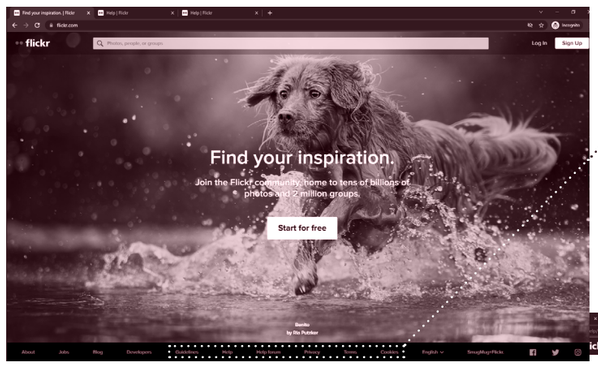
In addition, a visual support page is created to provide general information about end-users' digital rights. This allows for less repetition in long documents like the Terms & Conditions and Privacy Policies.

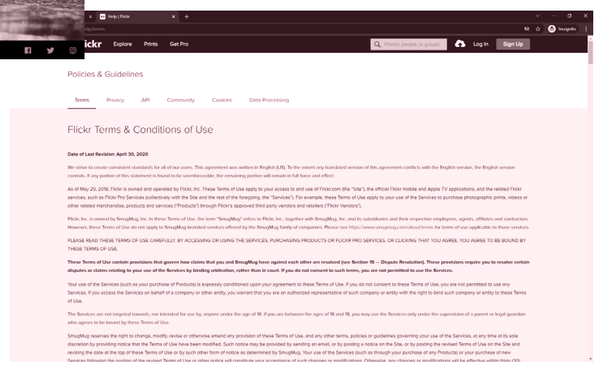
Meaning for end-users
The idea can be part of an onboarding process or be available if/when interested. The main focus is on increasing awareness and stimulating education.

Meaning for Flickr
A lot of information is provided already, but it is spread out over the platform and not yet introduced to the end-user. This idea enhances and simplifies the fruition of the information.

Meaning for AI research community
An ethical implication is that they can be more sure that further action is taken to inform end-users of their choices.

Tactics to Resolve Value Tensions
Organisation can explain objectives and purposes.





Flickr currently already provides a lot of information about their terms, guidelines and policies. However, the information is fragmented and sometimes repeated. Furthermore, the end-user is currently not actively introduced to this information. Therefore, this idea makes use of the resources that Flickr already has available.

Figure 65: Screenshots of the Flickr platform

2. DATA PERSONAS TO INDICATE LEVEL OF SUPPORT

Description of the Idea:

End-users are presented with different data personas. These personas are fictional profiles that represent types of end-users, differentiated by their knowledge of, and familiarity with, data practices, disclosure and consent. End-users select which persona they recognise themselves in, thereby indicating how much support they think they need with being informed on consent practices and decision-making, and in being facilitated in their choices.

Consequently, the support throughout the consent journey of end-users is based on their more advanced/basic necessities and preferences.

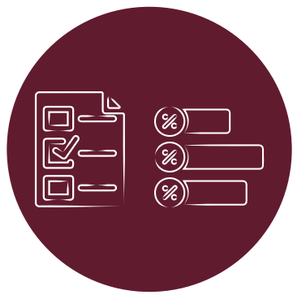
Meaning for end-users
This idea helps to kickstart the consent process and to start defining their own consent preferences in a way that works for them: a lot or a little support (i.e. personalisation).

Meaning for Flickr
Providing different options of personalised support may affect the relation between the digital platform and the end-users in a beneficial way.

Meaning for AI research community
An ethical implication is that it allows them to discard more sensitive information from low-knowledge end-users, who may give it unconsciously.

Tactics to Resolve Value Tensions
End-users can make their interests and needs explicit.

3A. DECISION-SUPPORT SURVEY & 3B. SHOW DISCLOSURE PERCENTAGES OF SIMILAR END-USERS



Description of the Idea:

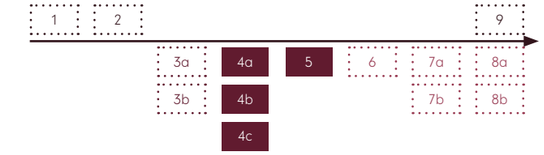
Due to the collective contribution in the core of the design case's consent request, the community aspect is emphasised by providing advice to inform disclosure decisions. If an end-user needs a lot of support, they can answer to a few questions that help them narrow down their options and make a disclosure decision that they support (3A).

If an end-user needs less support, they can learn from what similar end-users are choosing through being informed about their decisions. Flickr can, for instance, show the percentages of different options from one consent decision (3B).

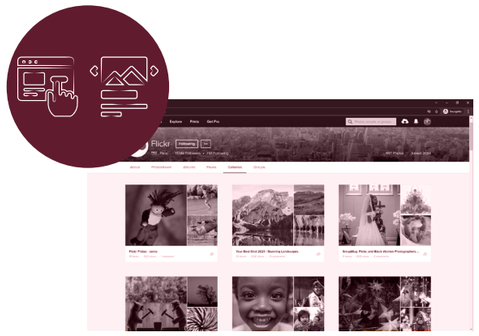
Meaning for end-users
Based on end-users' decision on what data persona they relate to, they either receive extra support in the decision-making process from 3A or 3B.

Meaning for Flickr
Flickr would need to provide the decision-support tools at the moments that disclosure decisions occur. In addition, they would need to provide data on end-users decisions.

Meaning for AI research community
This idea provides further sources if anonymous but profile-related information that might persuade them to avoid opting for profilation-like methods per individual user.



4A. INTEREST-BASED DISCLOSURE PLANS



Description of the Idea:

The idea is to make use of prepared disclosure plans based on interest. Similar to how subscription with multiple tiers or themes work, but then applied to consent.

For instance, there can be a sustainability plan, mobility plan, news plan etc. If an end-user selects the sustainability plan, researchers/research organisations related to sustainability may collect the photos related to this category. But in that instance, news sites may not collect it. In the case of facial recognition, a mobility plan can allow facial recognition algorithms to be trained with photos from a specific end-user for security purposes at airports.

Meaning for end-users
End-users can give consent for interests that matter to them. Furthermore, their consent is valid and has a faster process, because they give it for a selection of photos.

Meaning for Flickr
Flickr currently offers subscriptions, and the idea would be similar to this. In addition, this idea makes use of features already available to end-users: categories, albums, tags etc.

Meaning for AI research community
The community would get access to end-users' photos based on their chosen interest-based disclosure plans.

Tactics to Resolve Value Tensions
Organisation can explain objectives and purposes. End-users can explain what is satisfying and relevant for them.

4B. IMPLEMENT CROWDSOURCING/DATA DONATION

Description of the Idea:

Giving consent for interests that matter to end-users can be compared with the concept of donating to a charity. Their donation consists of data rather than money.

End-users would be donating their data to causes that they think are important. For instance with nature, landscape photos are donated to contribute to environmental or climate causes. In return, end-users could get information about real life activities concerning climate-friendly behaviour. It becomes their choice to be involved with these topics, and the limitations they set are their own and not imposed.

Meaning for end-users
This idea allows end-users to give consent for meaningful/ relevant purposes that the they connects to. It also provides the opportunity for end-users to get something in return.

Meaning for Flickr
Flickr would be the intermediary that facilitates this exchange of photos to the research community and information or something else in return from the research community.

Meaning for AI research community
The research community would get access to photos, but also to provide related data, or evidence of data use in return.

4C. ASSIGNING DATA OWNERS

Description of the Idea:

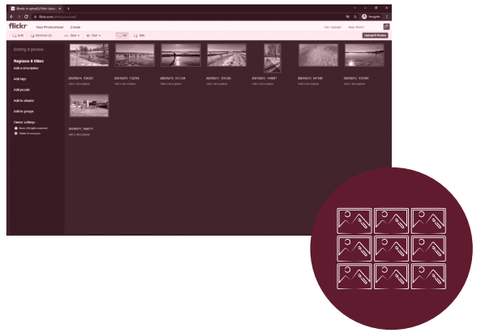
In order for ideas 4A and 4B to work, participants of the exchange need to be identifiable. Therefore, the digital platform should share with end-users who the parties are that they have given consent to, based on their chosen interest-based disclosure plan.

Meaning for end-users
This idea would provide the end-user with additional insights on who owns/uses their photos.

Meaning for Flickr
Flickr would need to facilitate the disclosure of involved parties from the AI research community to end-users.

Meaning for AI research community
The AI research community would need to disclose their identity directly to end-users.

5. CONSENT ANNOTATION



Description of the Idea:

With image annotation, (sub-parts) of an image are labeled and prepared to be used in a dataset to train algorithms. This process is applied to consent.

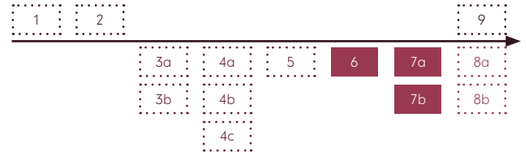
After selecting a disclosure plan, end-users can evaluate if they want to disclose all of the pictures that belong to this plan or not. Consent annotation allows for making changes to their batch of to-be-disclosed photos by offering opt-in and opt-out on the level of individual photos. This step is optional for the end-user in their consent journey.

Meaning for end-users
This idea provides end-users with an optional extra layer of control if desired.

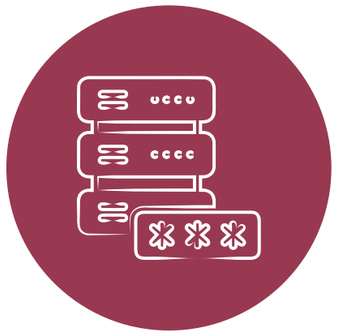
Meaning for Flickr
This idea makes use of infrastructure that is already implemented on the digital platform. Consent annotation can for instance be done when uploading new photos.

Meaning for AI research community
The AI research community has to be aware that photos still may be excluded from consent despite the chosen interest-based disclosure plan.

Tactics to Resolve Value Tensions
End-users can indicate conditions for compromise.



6. CONSENT MANAGER



Description of the Idea:

The design case states that under EU law, end-users' photos may only be processed after receiving clear and explicit consent per image. As a consequence, the risk of decision-fatigue and blind acceptance must be reduced. For instance, through a consent manager.

This idea uses the concept of password management in consent. A password manager fills in the password for specific accounts automatically. A consent manager fills in the preferences for specific digital platforms automatically as well. Password managers can indicate real-time security breaches. This concept could potentially be applied to the consent manager in the future.

Meaning for end-users
This allows end-users not to repeat their consent preferences often. It enhances the interest-based disclosure plan idea as it automatically fills in previous preferences/choices.

Meaning for AI research community
In case the database is not received first-hand from Flickr, researchers could access consent managers and trace back what consent has been given for every photo.

Meaning for Flickr
This idea could be facilitated by Flickr, but may be technically challenging. Therefore, this can also be provided by a third party that collaborates with Flickr.

7A. DATA REPORT

Description of the Idea:

The digital platform organisation is required to update end-users when their policies change. This often occurs via e-mail. In addition to this message, they could send a (monthly) report with a summary of the photos that have been used from a specific user. The report should visually explain who has taken the photos and for what purposes. Reading this report is an optional step for end-users.

Meaning for end-users
The report will help end-users be aware and motivate them to evaluate previous consent decisions. In addition, they would get more insight into the data journey.

Meaning for AI research community
This idea motivates the AI research community to provide more transparency towards end-users.

Meaning for Flickr
Flickr would need to add additional information to the updates they already send.

Tactics to Resolve Value Tensions
End-users can evaluate and reflect on the proposition and disclosure.

7B. SHOW NUMBER OF DOWNLOADS

Description of the Idea:

To give insight into whether specific photos are downloaded and/or used by other parties, the digital platform could show per photo how many times it has been downloaded. The reason for this is to provide a feedback loop to the end-users. They have given consent, but have no knowledge on whether or not their photos are actually used. With this idea, providing consent does not end in an unknown space.

Perhaps as an extension in a far future, it could show for what purposes a specific photo is used.

Meaning for end-users
This idea provides end-users with quick and easy insight in whether and how many times their disclosed photos are used.

Meaning for AI research community
This idea requires the AI research community to be more transparent towards end-users.

Meaning for Flickr
Flickr would need to provide this data to the end-users.

Tactics to Resolve Value Tensions
End-users can evaluate and reflect on the proposition and disclosure.

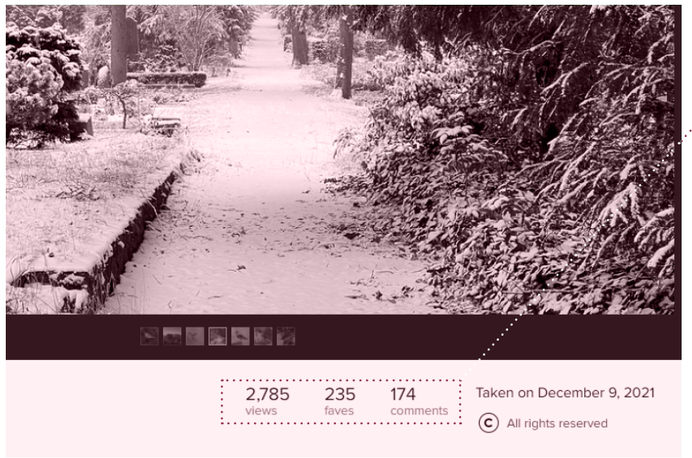
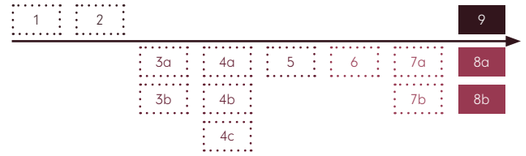


Figure 66: Screenshot of Flickr platform



8A. PROCESS CONSENT

Description of the Idea:

Process consent is an evolving mechanic in the context of field studies in academic research, as you often cannot account for everything in the first consent. In process consent, there can be some kind of waypoints, as in "we will change this now, are you still ok with it?". The core is that the consent process is ongoing throughout the entire relation and interaction between the digital platform organisation and end-user.

This is not a separate step in the journey, but an ongoing process throughout the relation between Flickr and end-users.

Meaning for end-users
This idea focuses on the ethical dimension: keeping end-users up-to-date on their choices and stimulating them to reflect on/ evaluate their previous decisions.

Meaning for Flickr
Flickr would need to send regular reminders about consent decisions that end-users made to indicate that it is an ongoing process and not a single moment in their relation.

Meaning for AI research community
The implication of this idea for the AI research community is that consent from end-users may change over time.

Tactics to Resolve Value Tensions
Organisations and end-users can validate and confirm propositions and consent.

8B. REQUEST TO REVIEW AGREEMENT WITH PREVIOUS CHOICE

Description of the Idea:

This idea explains in more detail what are the possible waypoints mentioned by idea 8A.

With this idea, the digital platform notifies and asks end-users to review set preferences and/or previous consent decisions to ensure that they stay up-to-date and accurate. For instance, when end-users upload new photos, Flickr could propose to select the same interest-based disclosure plans as the previous time: "This is what you filled in last time, did this work for you?"

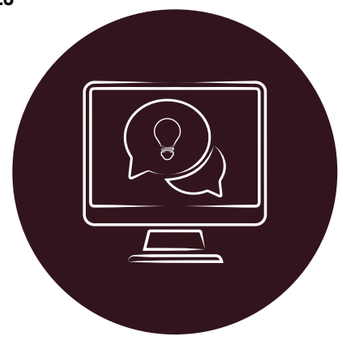
Meaning for end-users
This idea focuses on the ethical dimension: making sure end-users still agree with their previous choices.

Meaning for Flickr
Flickr would need to notify and ask end-users to review their previous consent decisions at different moments throughout the consent journey. For instance when uploading new photos.

Meaning for AI research community
The implication of this idea for the AI research community is that consent from end-users may change over time.

Tactics to Resolve Value Tensions
Organisations and end-users can validate and confirm propositions and consent.

9. REGULAR UPDATES ON COLLECTION PURPOSE CHANGES



Description of the Idea:

The idea is to clearly explain the exact finalities that AI researchers are pursuing with the data they collect. For instance, in a certain moment they collect data to train AI facial recognition, but in the future they might be interested in racial profiling, or tailoring products to people's facial traits.

With this idea, end-users should be updated about new/ different uses of the collected data, thereby renewing the possibility of withdrawing permission.

Meaning for end-users
This idea provides end-users with more transparency from the AI research community and allows them to withdraw permission at any time.

Meaning for Flickr
Flickr would need to facilitate this exchange between end-users and the AI research community.

Meaning for AI research community
The AI research community would have the responsibility of following updates in collection purpose changes and renewing end-users' chance of withdrawing consent.

8.4 Implementing Tactics to Resolve Value Tensions

This section describes what identified tactics can be implemented to resolve value tensions in the new consent journey described in the proposal for the design case (section 8.2). It visually presents what tactics and steps of the proposal connect and briefly elaborates on how and why they are matched.

IMPLEMENTING TACTICS IN THE PROPOSAL

To determine which tactics to select (see section 8.6), only the 'Tactics in common' are considered. Common tactics contribute to resolving all identified value tensions, not just one or two (i.e. facilitation vs. control, facilitation vs. support, autonomy vs. cooperation). Therefore, implementing them ensures that the value tensions are being resolved, regardless of what specific value tension is present throughout the consent journey.

Figure 67 shows all the identified common tactics and connects them to their respective step in the proposal.

End-users can make their interests and needs explicit
An end-user is able to voice their attitude towards consent, indicating their interest and needs by selecting a data persona that they relate to. Depending on their need, they will get personalised support throughout their consent journey.

Organisations can explain objectives and purposes
The organisation has the opportunity to explain their objectives on the support page and while explaining the interest-based disclosure plan mechanism.

End-users can explain what is satisfying for them
An end-user can express what requests they are satisfied with through selecting interest-based disclosure plans that they find interesting and meaningful. Similarly, they indicate what requests are unsatisfactory to them by not selecting the relative disclosure plans.

End-users can indicate conditions for compromise
After selecting a disclosure plan, an end-user can evaluate if they want to disclose all their pictures from this plan or not. Consent annotation allows for making changes to their batch of to-be-disclosed photos by offering opt-in and opt-out on the level of individual photos. As a consequence, the final selection of to-be-disclosed photos is a compromise tailored to the end-users wishes.

End-users can evaluate and reflect on the proposition and disclosure
End-users get informed by data reports and/or the number of downloaded photos. This information is meant to stimulate awareness and reflection.

Organisations and end-users can validate and confirm propositions and consent
By implementing process consent and regularly asking end-users to review their agreement with previous decisions, the consent propositions are validated and confirmed.

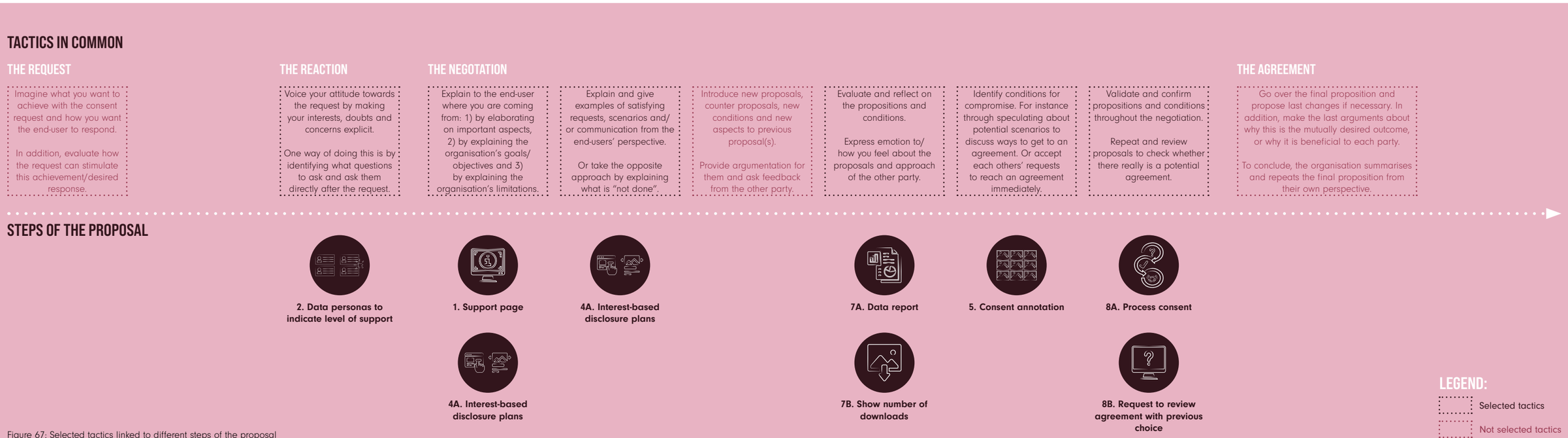


Figure 67: Selected tactics linked to different steps of the proposal

09

Validation & Recommendations

This chapter describes how the proposal for the design case is evaluated, and the results and insights of the evaluation. First, it explains how a feedback and validation session is set up and executed with the three most important stakeholders from the design case: digital platform organisation Flickr, AI research developers, and Flickr end-users. Second, it provides the results of these sessions. It lists positive aspects, points of attention, idea-specific recommendations and tips for further development, all per idea of the proposal. In addition, it provides the positive aspects and points of attention from the overall proposal. Third, the proposal is specifically evaluated on the presence of the identified set of value similarities and value tensions. Therefore, it provides a summary of the participants' feedback on the presence of values. Fourth, the proposal is specifically evaluated on its desirability, feasibility and viability which is also provided with a summary. The last section contains recommendations on the overall proposal as provided by the participants. It distinguishes between general recommendations and tips for further development.

9.1 Feedback & Validation Sessions

This section describes the approach taken to gather feedback on, and validate the proposal for the design case. It explains the objectives of the evaluation session, the characteristics of the participants, and the process of the session and the analysis of the insights. Subsequently, it provides the results of the sessions by listing positive aspects, points of attention, recommendations and tips for further development.

APPROACH

To validate the created proposal for the design case, feedback and validation sessions are organised with the three identified problem owners: digital platform organisation Flickr, AI developers from the research community, and Flickr end-users. In addition, written feedback is provided on the proposal by a case representative from Open Future Foundation. The involvement of different stakeholders brings a broad and enriched understanding of the desirability, feasibility and viability of the proposal. As a result, the proposal is evaluated with a policy, technical, organisational and user experience lens.

The goal of the feedback and validation session is to evaluate the proposal from the perspective of the participants' expertise (gained from industry, academics and/or experience) on:

- The fit with the design case
- The extent that the identified value similarities are present
- The extent to which the identified value tensions are in balance
- Positive and negative aspects per idea
- Points of improvement and attention per idea

From all the sessions and the written feedback, insights are generated and translated into recommendations for further development of the proposal.

Session Process

The feedback and validation sessions are conducted with one participant at a time. They are conducted online via Zoom or Jitsi Meet and took approximately one hour. Prior to the session, all participants received information about the graduation project and the design case. The documents created and used are displayed in Appendix H.

The session consists of three components: introduction, presentation of the proposal, and evaluation of the proposal. The introduction contains personal introductions, the goal of the session and a brief summary of the graduation project. The presentation of the proposal contains a step by step explanation of the redesigned consent journey. This was done in a storytelling way to focus on the conceptual improvements this proposal could contribute and to avoid discussing the form/specific interfaces. The evaluation of the proposal contains evaluation topics that match the goal of the session: **case fit, presence of value similarities and tensions, positives & negatives, points of improvements & attention**. Between all components, there was the opportunity to ask questions.

The session is structured by a slide deck and meeting guide which are both available in Appendix H. In addition, an evaluation form accompanied with an explanation sheet is used to discuss the presence of the value similarities and tensions.

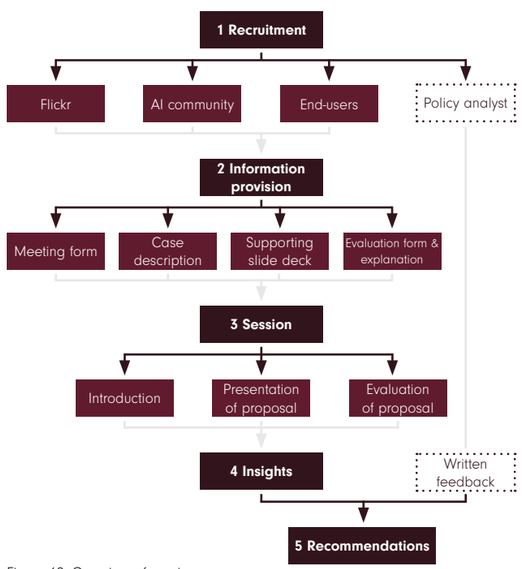


Figure 68: Overview of session process

Participants

The participants are recruited by using key informants sampling (Patton, 2015) for the representative from Flickr and AI developers from the research community. This sampling strategy is employed because the participants should be able to provide critical feedback from their stakeholder position and perspective. The end-user is recruited through purposeful random sampling (Patton, 2015), because Flickr members are contacted randomly. An overview of the participants' characteristics is provided in table 8.

	Problem owner	Characteristics
V1	-	Representative from Open Future & background in policy analysis
V2	Representative from digital platform organisation Flickr	Director of community
V3	Representative from AI developent research community	Representative from Exposing.ai & background in AI development
V4	Representative from AI developent research community	Representative from DCODE & background in interaction design
V5	Representative from AI developent research community	Representative from DCODE & background in strategic design
V6	Representative from Flickr's end-user community	-

Table 8: Participants of the feedback and validation sessions

The next sections describe the insights gained from the sessions and written feedback provided by a representative from Open Future. The insights are concluded by clustering quotes extracted from the transcripts of the feedback and validation sessions. The quotes from this process are available in Appendix H.

The proposal evaluation contains per idea its positive aspects, points of attention, tips for further development, and idea-specific recommendations. In addition, it presents positive aspects and points of attention regarding the entire proposal.

This section also contains a reflection on the fit of the proposal with the design case and the presence of the set of identified value similarities in the proposal. Subsequently, this section presents a review of the proposal's overall desirability, feasibility and viability.

To conclude, the insights presented in the proposal evaluation are translated into general tips for further development of, and general recommendations for the proposal (see section 9.2).

1A: GUIDED TOUR

Positive Aspect(s)

The participants see an integrated guided tour with an overall onboarding to Flickr as a good idea, because in this way members gain understanding of the disclosure practices for the specific actions they might take on the platform. It is a helpful addition that would make a lot of sense to end-users.

Point(s) of Attention

End-users are approaching Flickr with the idea of sharing their photos and may gradually learn more about the platform. Therefore, they might not be interested in understanding everything that the platform entails regarding consent during their first encounter.

"What I would value the most is to see the core functionalities in this moment of the platform. I'm not really interested in understanding everything that the platform entails. Initially, I just want to make sure how easy it is for me to do what I want to do on Flickr and nothing else, because I am going to start slowly." – V6

Another point of attention is that end-users can often dismiss guided tour scenarios or exit them after each step. Therefore, information that is very important could be presented in a form that is mandatory for the end-user to go through.

Tip(s) for Further Development of the Idea

- Evaluate how to classify and prioritise different information regarding consent to decide on the need and suitability for presenting it in a mandatory form.
- Test with end-users what moments are most suitable to present important information throughout the guided tour.
- Test the effect of presentation in a mandatory form on the overall user experience.

Idea-specific Recommendation(s)

An addition to the idea is to divide the guided tour in different modules that relate to the main functionalities on the platform. In addition, every time an end-user starts using a new feature of the platform, they can learn about the feature's consequences regarding data practices and consent. For instance:

"I want to write a comment under other pictures and the system tells me 'Good, your comment is anonymous or your comment will be altered or it is going to be trackable, so don't write any sensitive information because it's not going to be deleted. On top of that please note that we will use any comment to train our AI', for instance." – V6

1B: SUPPORT PAGE

Positive Aspect(s)

A positive aspect of the support page is that it provides a central place in which all presented information regarding consent and data practices is stored. It may serve as a repository for the information presented during the initial guided tour(s). Other benefits of the support page are that they are relatively easy to create, implement and maintain.

"I think the support page is a good idea because from a Flickr perspective, those are really easy to create and to maintain." – V2

Point(s) of Attention

The difficulty with a support page is to get end-users to find it and proactively read it.

Idea-specific Recommendation(s)

An addition to the idea is to link the support page actively with the onboarding process on Flickr. When this process is completed by an end-user, it can refer them to the support page to familiarise themselves.

Another addition is to notify end-users when the support page has changed and highlight the changes. For instance:

"It would be nice if every time that something changes, I am prompted to see the changes. So, if today I upload an album, but in two weeks I will upload another album but the policy is different, I would like the system to tell me 'Look the policy is different now'. Or if it doesn't change, perhaps maybe at regular intervals to remind me of what am I doing in terms of consent." – V6

2. DATA PERSONAS TO INDICATE LEVEL OF SUPPORT

Positive Aspect(s)

The participants are positive about the data personas. The Flickr end-user would be in favour of this idea because he thinks it will be helpful to end-users. It fits the consent understanding to the capacity that a Flickr member has. Usually, those who have a full investment in the digital platform, also have a higher capacity of understanding and willingness to know. This idea facilitates the experience and additionally improves the overall experience of the platform.

Representatives from the AI research community evaluate it as a good and smart step:

"And I like the direction you're going and the characters to decide which experience, beginner or intermediate, to guide the consent process." – V3

Point(s) of Attention

A point of attention is the timing in which data personas are presented. If it is part of an onboarding process, end-users may not be able to make an informed decision yet as they are only briefly introduced to the main functions of the Flickr platform.

"If this is part of onboarding and we're connecting it to individual actions that they might take on the site, for example, maybe there's something specific about the data when they upload their own photos. Just make sure that they have a working understanding of what Flickr is before they make those decisions, because as they get familiar with Flickr, their responses might change as well." – V2

Another point of attention is to evaluate if end-users go for similar data personas. From an organisation's perspective, the viability and development effort of providing different options when the majority of end-users chooses only one or two options should be evaluated. However, providing less or unmatching options may affect the community in the way that they could decide to leave the platform if their experience is insufficient.

"Maybe to also see how many people would go for a certain option, if that's very much the same or not. I guess it would be interesting to find this out. I think, especially from an organisation perspective, you also need to weigh the development effort for different options." – V4

The last point of attention is to not assume that all end-users from Flickr upload photos. Therefore, the data personas should also serve different types of platform uses.

Tip(s) for Further Development of the Idea

- Think about how end-users can change their preferences/ their persona over time and also design what prompts them to do that.
- Evaluate and test the timing of presenting the data personas.
- Evaluate the viability and development effort of providing multiple data personas.
- Evaluate the effect of providing less and/or unmatching data personas on the community.

Idea-specific Recommendation(s)

As an addition to the idea, the data personas could come with enable-disable settings. End-users could get reminders about their data persona preferences as nudges to evaluate and change their settings, if necessary, throughout their relation with the digital platform. Another option would be to relate it to specific actions that end-users take on the platform.

Another recommendation is to make sure that the data personas cover different types of uses of the digital platform as well. For instance, not all end-users are there to upload photos. Some may consume the photography, give comments or seek inspiration.

An alternative to the idea being part of an onboarding process would be to incorporate it in the end-users' creation of their own account and profile. This is the place where they give information about themselves and their photos are displayed for the community to see.

3A: DECISION-SUPPORT SURVEY

Positive Aspect(s)

Representatives from Flickr and the end-user community are very enthusiastic about this idea. They find the idea helpful as it makes it easy for the end-users to understand the disclosure and it supports them in making an informed decision. In addition, the aspect of proactively providing information is highly valued.

"I thought the decision support survey was a great idea. That reminded me of some of the tools that Creative Commons offers to people to help them decide which license type would be correct for their photos. Any type of decision tree or support survey that makes it easy for the member to understand the disclosure and also helps them make an informed decision I think would be great...so proactively giving them that information I think would help a lot. " – V2

"I think that in this case, especially as a professional for 3B, the platform would earn trust from me because of this thing while in step 3A, the platform would earn my happiness because I would feel like my experience is being facilitated. It will give me trust because I know that I'm using a product, that it's not there and then I have to do everything. Not only the product is available for me, but the company goes one step further and takes all the other users like me, looks at what we do, how we use the platform, and already suggests a way to start using it so it earns me time, it earns me energy, it facilitates my access. So it is like providing customer service before I need it and tailoring the experience on my needs before I realise that I need this experience to be tailored." – V6

Point(s) of Attention

However, an important point of attention is that ideas 3A and 3B can potentially be manipulated for indirect nudging by private organisations:

"Users could find themselves being the victims of an undesired snowball effect. If implemented, they really need to be accompanied by strong transparency requirements by private companies to make sure that data is kept up-to-date and that users are properly informed." – V1

In addition, liability could become an issue. If end-users declare that I want to use the service of a decision-support survey, despite end-users having little to no understanding, the organisation may become liable for what they assist their end-users on.

Another point of attention is that there might be some resistance to the support survey as it takes more time from the end-user.

Tip(s) for Further Development of the Idea

- Develop strong transparency requirements.
- Test different durations of the decision-support survey with end-users.

Idea-specific Recommendation(s)

From an end-user perspective, a high level of consent end-user wants the advice and decisions to be completely different from low level of consent end-users. In addition to this idea, a wizard

to set up the full consent experience would be more useful for high level of consent end-users. Otherwise, they might not see the purpose of engaging with 3A and 3B if it is only about understanding and not about helping.

3B: SHOW DISCLOSURE PERCENTAGES

Positive Aspect(s)

In addition to the feedback provided jointly to 3A and 3B, showing disclosure percentages would make a lot of sense.

"For people that are more informed, just giving them that information like you've described it in 3B makes a lot of sense." – V2

Idea-specific Recommendation(s)

Flickr could provide a 'fast-lane' option for end-users who do not want to engage with consent practices by using idea 3B for this.

"I think there are some people who just want to click through, they just want to exit this and move on to whatever it is they're hoping to do on Flickr, right? So you can imagine that they get pretty frustrated and they just don't want to see this thing and they want to get rid of it as soon as possible. So you know, as long as I guess there's some option for them to exit the survey if they don't want to take it, and then maybe they're taken to 3B and it says like, OK, this is what it is and you can agree to that and move forward." – V2

4A: INTEREST-BASED DISCLOSURE PLANS

Positive Aspect(s)

A positive aspect of this idea is that allowing end-users to give interest preferences matches with Flickr's objective to connect end-users with content on Flickr that they are interested in.

In addition, it would provide end-users with more control over expressing their interests. This provides a benefit for Flickr as they can use the information to provide an improved and ensured personalised experience on the platform. Furthermore, it is a benefit to end-users because they give consent for relevant and meaningful matters, thereby contributing (with their consent decisions) to a desired experience on Flickr.

"So we've spoken a lot about giving members more control to tell us what they're interested in. And then, I'm using that information to build the Flickr experience that they want. So I think if members have flexibility to choose different interests, to change their interests over time and also to control how that relates to what they see on the platform, then this is a great idea that I would love to see Flickr." – V2

Another benefit that this idea provides for Flickr is that it makes use of the structure and the habits that are already on the digital platform (e.g. categorising, labelling, tagging) and applies it to the consent journey.

Point(s) of Attention

Not all participants agree that the end-user would get something valuable out of this exchange. They express worry about the burden that is put on end-users to indicate their interests.

Another point of attention is that not only on the end-user side the structure for selecting interests-based disclosure plans must be set up, but also the platform needs to categorise and verify the AI developers' purposive downloading and their use of the photos.

Another important point of attention is that end-users may not be interested in selecting these interest-based disclosure plans.

"I want the exchange to be fair, so more than give it to who..., how much does the extent that I provide to the platform, enable the perks that I receive? For instance, it would be useful for me to understand that if I do not allow an algorithm to scan for faces in my pictures, for the platform, it is not sustainable to keep providing album features. So stuff like this would be more interesting to me rather than who does what?" – V6

Tip(s) for Further Development of the Idea

- Evaluate the willingness of end-users' to select interest-based disclosure plans.
- Research the technical feasibility of providing this service.

Idea-specific Recommendation(s)

As an addition to the idea, provide the option to select multiple disclosure plans if the end-user wants that.

Another recommendation, similar to one provided for idea 2, is to not make the assumption that all users are actually uploading. This idea should also match their behaviour and their needs.

"I would also add that we have a lot of people who sign up for Flickr accounts and only ever upload one photo, or maybe don't ever upload any photos. And their relationship with Flickr is consuming or observing content. Maybe they are viewing photos, maybe they are leaving comments and those types of things. So I think for those people it might, maybe it's just in the way we explain the plans, but getting them to understand that even though they're not sharing, if you have this other relationship with this content like you're downloading it, or you're viewing it or you're sharing it in another place, this still relates to them." – V2

4B: CROWDSOURCING & DATA DONATION

Positive Aspect(s)

A positive aspect of data donation in combination with assigning data owners is that it would enhance end-users' empowerment.

Furthermore, the participants find this idea interesting as it gives end-users a sense of ownership and build a connection between end-users and research communities. In addition, the idea provides a mutual benefit for end-users and research communities as offering rewards that matter to end-users and aligning them with the values of what they are sharing, is meaningful for all stakeholders.

Another reason why participants like this idea in combination with 4C is that it is perceived as rightful use of end-users data. If end-users decide to give something for free, it is their right to do so and they would be happy to if it enhances their experience.

Point(s) of Attention

A point of attention is that donation has a connotation with a good cause. However, there might be causes that end-users donate to that in hindsight are based on intentional misuse or unintentional use.

Idea-specific Recommendation(s)

A recommendation for this idea which also relates to interest-based disclosure plans is to list sensitive uses and provide a consideration of pros and cons to emphasise the sensitivity of purposes/causes that end-users might consent to.

"I wonder if you can list some sensitive uses for the users to also say no to, like very explicitly say no. Because here you are encouraging users to say yes to good causes. But maybe also list some sensitive settings where they have a very clear say: I don't want the pictures to be used for these purposes. I think it is just a kind of warning or reminder for the user of an intended use of the data and the potential harms to this. To make the user more aware of what could go wrong. I think it's just like another layer that might be optional, but might be interesting to add." – V4

4C: ASSIGNING DATA OWNERS

Positive Aspect(s)

A positive aspect of this idea is that it facilitates a way for end-users to understand who is using their data and for what purposes.

Point(s) of Attention

However, this idea contains important points of attention. For instance, it would be difficult to truly know who is using it and for what as AI developers can give fake names or offload their identities to smaller organisations bought by large organisations. Furthermore, data would get passed around after it is downloaded and subsequently would be hosted by other people which makes it very difficult to trace back the creator of the image.

"The provenance is decimated by the time the data finally reaches the API developer. They don't even know where it came from and they don't really care because it just says Creative Commons somewhere. And then they go oh, it's free." – V3

Another point of attention is that there is the need to provide an identification management system. This could complicate the process and the relationship as it is unclear who is in control of the identities.

Tip(s) for Further Development of the Idea

- Evaluate the technological possibilities and limitations of an identity management system.

5: CONSENT ANNOTATION

Positive Aspect(s)

A positive aspect of consent annotation is that it gives end-users the option to consent on the level of individual photos. This control should ideally always be up to the photographer, but is currently not provided on Flickr.

In addition, this idea is useful for both low and high level consent end-users:

"I love it. I think that this would be, for both ends of the spectrum low and high end-users, would love it. I think that for low end-users it would be a nice feature. It would reinforce point 4A. While for high end-users this is a needed feature, so I would consider this platform less reliable if it didn't have this option." – V6

Point(s) of Attention

Although this idea is presented as optional, it would cause extra work for end-users to manage their consent.

Tip(s) for Further Development of the Idea

- Investigate and design ways to reduce the workload but still provide consent on the level of individual photos.

Idea-specific Recommendation(s)

Consent annotation can perhaps be automatically done by the system. By making use of the combination of photos and labels that end-users attach themselves, the end-user could select a certain combination of tags and maybe let the system do the filtering work. It would make use of the established practices of categorising and labelling and the chosen interest-based disclosure plan. As a result, the system would do the work and end-users do not have to scroll through their albums of photos.

6: CONSENT MANAGER

Positive Aspect(s)

Positive aspects of the consent manager are its usefulness for end-users who have a high investment in the platform and the possibility to change consent remotely.

"The high end-users would like it a lot. Especially when they are paying for a pro subscription. So to have the full platform that they use, this would be this would be very, very good. I would say especially also to change the consent remotely. Not from Flickr, but having it always at a glance." – V6

Point(s) of Attention

An obstacle for this idea is that it requires a lot of technical development since it can become a quite complex system that has to comply to many regulations. Therefore, the idea is not yet feasible for Flickr to pursue by themselves.

"Like the consent manager for example, I think it's a great idea. I have no idea how complex that would be for us to develop. My feeling is that it would be challenging, from a team bandwidth perspective. We're a small organisation, so doable, probably yes. When, in what time frame, that seems like a really big challenge to me." – V2

Another point of attention is that this idea might not be interesting for end-users with a low level consent persona. They do not have much data investment in the digital platform.

Tip(s) for Further Development of the Idea

- Investigate possibilities for making this a shared resource across multiple (similar) digital platforms.

Idea-specific Recommendation(s)

Instead of developing the feature for one platform, a consent management organisation may provide it for multiple similar digital platforms. Similarly to how cookie banners are currently outsourced.

"I think it would be cool maybe if like a bunch of communities got together and develop this as a shared resource, that way it not only worked on Flickr, but it worked across a bunch of other similar services. That way it's easy for, or easier for us to develop. It also makes it easier for users who are going through similar journeys on several different platforms or online communities." – V2

7A: DATA REPORT

Positive Aspect(s)

Participants find this idea interesting because it provides more transparency with Flickr's end-users on how their data is used. The new insights may help end-users to use Flickr in the way they want to.

Point(s) of Attention

A point of attention is that a data report might be irrelevant for end-users who have selected a low consent persona. Furthermore, even for end-users with a high consent persona a data report might be too timely expensive.

"A high end-user knows that this thing (i.e. the data practices) is going to happen in so many ways, and so uncontrollably that the fact that this happens is already taken into account when he uploads." – V6

Tip(s) for Further Development of the Idea

- Analyse the relevance of a data report for different data personas.

Idea-specific Recommendation(s)

Instead of providing a monthly summary, it could only disclose information if there are problems about end-users' data being used in controversial situations or in specific areas for certain uses, such as racial profiling or military training.

7B: SHOW THE NUMBER OF DOWNLOADS

Positive Aspect(s)

A positive aspect is that Flickr has this data available and thinks it is good to implement. This would be a good idea for photos that have to copyright restrictions or when the photographer wants it to be openly shared. It facilitates feedback to the end-users about whether or not people are actually interested in the photo and/or want to share it further.

"We have talked about just exposing how many people come, so the number of people that have downloaded your photos. We don't even share that information right now. So I could definitely see that as being a first step." – V2

Another identified positive aspect is that it is interesting for end-users that are both highly interested and less interested in consent.

"If I was if a low user or an enthusiast, I would be curious, but it would be a curiosity. If I am a professional, I want to know it. I really want to know it. If I am a photography institution, archive photographer for weddings or for anything, I want to know this. Idea 5 and 7B are very much related like, cause and consequence. If I had to pay for enabling 5 and 7B as a professional, I would. Because I know that nothing is for nothing and I know that the service that I get is what I want. So if I want to have that service and to have it my way I need to pay, I will pay. But then it has to be it that way." – V6

Point(s) of Attention

The number of downloads do not necessarily mean that photos are being used. Even if a photo is included in a dataset, there may also be potential data cleaning processes in which potentially the photo can be excluded. This matters for the communication of the meaning of the number of downloads.

Tip(s) for Further Development of the Idea

- Investigate how to clearly communicate the meaning of the number of downloads.

8A: PROCESS CONSENT

Positive Aspect(s)

Process consent is seen as an idea with great potential that enhances the continual aspect of consent as part of the relationship between end-users and Flickr.

"I think that's great. The challenge right now is for some people, they want to read and make an informed decision as soon as they see the cookie consent banner, and others do not. So I like that this gives people a reminder that you know this isn't a one-time decision that you're making. This is a continual part of your relationship with Flickr and what you share here." – V2

Point(s) of Attention

A point of attention is that it is still undefined how process consent should be properly implemented in practice.

"Process consent is potentially super powerful, but needs to be seen how it is properly implemented by businesses, namely which language and modalities they will employ when informing users about new uses." – V1

Another point of attention is that it might cause an information overload for end-users.

"This is adding up to all the other consent information that I've been given in step 4, 5, 6, and 7. Instead, I would like this reminder to be focused on me, not on the consent. So on the use that I have of the platform, as patterns of use, an investment and as features of use and functionalities. I would focus on this, but this is good. I really think it's good." – V6

Tip(s) for Further Development of the Idea

- Identify what language and modalities the practice of process consent should employ when informing end-users about new uses.
- Investigate possibilities for adapting process consent to the features of use and functionality.

Idea-specific Recommendation(s)

As an addition to the idea, end-users could have more flexibility into when they would like to be reminded. For instance, every 24 hours, a month or longer. In this way, Flickr would know that end-users understand why they are seeing this.

Another ideation to the idea is to focus process consent more on the end-user itself instead of solely on the consent. For instance:

"So I think that this kind of mechanic would be highly beneficial, but not in function of the consent but in function of the features that I use as I told you before. And also to make me aware if I moved into another persona." – V6

8B: REQUEST TO REVIEW AGREEMENT WITH PREVIOUS CHOICE

Positive Aspect(s)

Only the representative of the Flickr end-users has responded to this idea specifically:

"I would say make it a legal requirement, personally. If anything changes, especially for enthusiast and professional users that have opted in for an extended high level consent profile, this would be legal. So to recognise every time what is that it might affect me, so always to remind me what is that I opted in for, what is that it means for me and if I am still up for that...As enthusiast and professional, by accepting data disclosure I sign an unlimited time contract. So by law, I would love if that unlimited type contract had a revision time because otherwise my guarantees are zero." – V6

9: REGULAR UPDATES ON COLLECTION PURPOSE CHANGES

Positive Aspect(s)

The participants find this idea interesting and necessary. It is important to always try to make end-users understand what the ethical and usage implications are of the disclosure of their photos.

"Basically, explaining that if people use the licenses incorrectly that there's a discourse between the people using the photos and sharing the photos and more of a set of norms around the licenses and their expected usage. So to me this this kind of aligns with that. Like, we have this set of norms around how the data will be used and the end user has agreed to that, and if there's ever any type of change, then yes, both parties need to be on the same page about that. And I think for good actors, they'll want to do this." – V2

"Perhaps I'm a black people photographer because I'm a black activist. Then you tell me that your pictures are going to be used for skin care just for black people or to create props and characters for a video game in which there is a black people mass. I have to have the rights to refuse because I am professionally dedicating my effort in reproducing those images. If you're using it for something that ethically goes out of my profession, I have to know it." – V6

Point(s) of Attention

However, despite the good intention, there are quite a lot of points of attention with this idea. First, there are probably many people leveraging Flickr for all sorts of purposes that they are not aware of. With Flickr being open, there is a risk that organisations might scrape the site or do different things without being transparent to Flickr end-users.

"I think for bad actors or not even bad actors, but people who are less informed about this data disclosure that it might be more of a challenge, so maybe there's like more education that needs to happen for Flickr and for the researchers." – V2

Second, the previously explained issue about the difficulty of tracking data from the original creators makes this idea not possible. The structure for tracking the data first needs to be in place before purpose updates can happen.

"You could think of Creative Commons as one of the original kind of fountainheads of data from which flows many of the smaller datasets and then smaller datasets and then there are mixed versions and more and the derivatives go you know five, often 5 layers down, so the creators of the original licensing requirements are often changed." – V3

Third, the use of a photo can also be a process in itself. Similar to how sharing is a process, using it is a process as well.

"I feel like the use of the image can also be a process, right? It's not a one off or onetime thing. I mean from a personal perspective, if I download a picture I might or might not use it later. So I guess the purpose can also change. I wonder how you know. I'm sure it's very difficult to capture these changes and the intentions." – V4

In conclusion:

"So this only becomes necessary in the moment that everything that you explain until now is carried out. Otherwise, it would be a drop in the ocean." – V6

Tip(s) for Further Development of the Idea

- Investigate and design ways to track the photos from the original creator.
- Design how the process of using the photo by the AI research community can be tracked and communicated to end-users.

GENERAL FEEDBACK ON THE OVERALL PROPOSAL

Positive Aspect(s)

Overall, the participants are positive about the proposal. They think it contains interesting ideas and evaluate it as a well thought through and complete proposal. It is holistic and therefore covers many aspects concerning consent and disclosure practices.

"I think it's a really nice project and I think it's really well thought through...I think the process is really holistic, that it really covers many aspects." – V4

"I am just surprised that it is a very complete proposal from A-Z. I do not see any gaps in experiencing the proposal and I think it is a very good 80% to start from to build 100%." – V6

Regarding the fit with the design case, the ideas that occur throughout and during the disclosure interaction are identified to be the most interesting.

"As a baseline, I really see the "throughout" and "during" concepts as the most interesting for the design case." – V1

In addition, the participants think that the proposal is especially well-addressed from a user perspective. One of the reasons is because the proposal leverages the community aspect of Flickr.

"I think you did a really good job addressing it from the user perspective." – V2

"Flickr is a community. It's good that you gave the users ownership and understanding of what they do." – V6

The proposal is also identified to be valuable for Flickr. It serves as a trigger to rethink current consent practices and disclosure interactions on their digital platform. Furthermore, the proposal fits well with the value proposition that Flickr currently provides to their members. Therefore, the proposal is evaluated to be sensible and effective, and could potentially fit into the value proposition for end-users and company stakeholders.

"I thought this was a really great proposal and thank you for using Flickr as the use case, because it gives us a lot of things to think about." – V2

"What you are proposing over here not only is sensible, but I believe that applied with the right nudges, it's a sensible and effective...That could fit into the value proposition for the users and for the company stakeholders" – V6

To conclude, the participants think it is smart to treat consent as a process. Furthermore, engaging with deeper levels of consent is well done and important.

"I like the overall concept to treat consent as a process. I think that's a really smart way of doing this." – V4

"Engaging with deeper levels of consent is good, and it is important." – V5

Point(s) of Attention

One identified point of attention by a representative from the AI research community is that end-users seem to be burdened with extra work without getting anything in return for it.

"I see one friction point in that the user is burdened with a lot of choices and additional work to understand the context for how their images would be used and don't really get anything in return for it." – V3

As a result, he formulates two challenges.

- Challenge 1: How not to burden the user?
- Challenge 2: What do they get in return?

"But I think the one challenge that remains, is how to not burden the user in one, they are providing all the data and they're doing all the work to structure the license around it. But then two, they don't really get anything in return." – V3

However, not all participants experience this proposal as a burden for end-users. A big difference between Flickr and other digital platforms, is that the end-user itself is not the product, but their photos are. A photographer that cares about his work, is therefore most likely interested in knowing what happens with them.

"For Facebook and Instagram, I am the product, you know? But for instance, for Flickr, my pictures are the product. That means that I am not the subject of the transaction. I am the owner of the transaction, like I am the parent of my pictures and my pictures are minor children. So I am really interested in knowing what is of my pictures." – V6

Furthermore, not all participants agree that end-users currently get nothing in return for their data. From an end-user perspective, one type of compensation is being able to showcase and share photos with other people.

"You need to be very engaged or very untrusting of a system to be conscious of where your photos will be used if you're uploading it to Flickr or any service. You upload your data very freely to social media to Flickr to wherever, because you're getting something in return. Because you're able to share those photos with other people." – V5

In addition, the representative of the Flickr end-users explains how using a free service such as Flickr decreases his costs to showcase and maintain his photography on a website. Therefore, he saves money by using Flickr compared to setting up and maintaining his own website.

"I'm using a free platform. For many photographers, for many institutions, for many cases, this service is the equivalent of the website. And you have to know that maintaining a website of a photographer is very expensive because websites run on pay per use. So the more pictures that people look at on my website, the more I have to pay to show it to them. And those costs are massive." – V6

In addition, not only are end-users saving money, they can also earn money by choosing Flickr over their own website.

"Many photographers use Flickr to give courses. So they provide webinars, seminars, lessons and what they tell students or other users is to upload your pictures in this album, share this album with me with, the X rays with the metadata you know and everything. I will look through your pictures, evaluate them and so I'm actually using Flickr for making a profit." – V6

Therefore, an end-user may not directly get money in return for their photos, but using Flickr allows them to be compensated in for them currently satisfying ways. However, not all end-users leverage the platform in the way the participant does. They may not experience these benefits and compensation, and therefore it is still highly relevant to investigate how to address the challenges for different types of end-users.

Another identified issue from an AI development perspective is that this proposal legitimises the use of online photos for AI development. As a result, it can and probably will be used for anything and everything.

"I can think the way one of the negatives will be that it legitimizes the use of it, and then the researchers will use it for everything and anything." – V3

Furthermore, AI developers may try to find loopholes in the system and the proposal, trying to get the data for free, to obtain it without consent and/or without crediting the original owner.

"They'll try to find loopholes in the system in order to get the data for free and that should be something that you're aware of. For example, they'll take an image and then interpolate it or mix it with another image and then say no, we didn't use the image. Now we use a combination so it's our original work. Just as an example, if there is a high value to be obtained, then I think researchers will try to find ways to circumvent paying for it. That's one vulnerability." – V3

An important identified point of attention that is also mentioned specifically in the contexts of ideas 4C and 9, is that tracking where the data goes is highly complex and difficult.

"Managing the complexity of the derivatives and following the provenance of data as it moves from one developer to another, would likely get lost." – V3

From a policy perspective, one point of attention is that some of the ideas contain issues linked to effective enforcement.

"These are more problems of the "policy world" - aka issues linked to effective enforcement." – V1

A last point of attention is that without understanding, an end-user has little power to make informed decisions. However, educating end-users on digital platforms is in general difficult to achieve.

"When it comes to consent, it's like, yes I want to be trusted. I want to be able to trust the system, I want my data to be private. I care about my privacy, but why and when is it good for me to know that my consent matters? And that there is this kind of, it's good for me, or it's like good for society, or it's good for others? It is very much about very soft education. And that is very difficult to do." – V5

Presence of Values

This section describes to what extent the set of identified values from the empirical design research is present in the proposal. The design approach is created to ensure that the value similarities are leveraged and the value tensions resolved. Therefore, it is expected that all values are present in the proposal. The extent to, and manner in which, values are present is explained on these pages.

Another topic of evaluation during the feedback and validation sessions is the presence of the set of value similarities in the proposal (i.e. trust, privacy, understanding, freedom of choice, and transparency). In general, all values seem to be present, however this section elaborates on their presence in detail.

"I can definitely see all of the values present in the overall process." – V4 and **"They are definitely present...it is obvious that you have addressed these." – V5**

TRUST

Trust is present because the proposal aims to give complete clarity on what is in the first degree of control from the organisation. The presence of trust is mentioned specifically with providing a decision-support survey (3A) and showing the disclosure percentages from similar end-users (3B).

However, trust in the digital platform can be improved:

"If, for instance, those pictures were trackable even afterwards, or there was a unique tag for all the data that was shared, it would allow me to trust also what is done after it is given to other parties. Then I would trust it even more. So for now, it improves highly the trust between me and the platform, but not the trust in the platform too much." – V6

PRIVACY

Privacy is present, but less than trust. The reason for this is because a higher involvement in the decision process also involves higher exposure. Therefore, this provides trust, but within this relation there is less privacy. The proposal stimulates personal involvement to leverage trust. By staying anonymous, trust cannot be leveraged.

EXPLAINABILITY, UNDERSTANDING & LEARNING

"Flickr is a community. It's good that you gave the users ownership and understanding of what they do." – V6

Explainability, understanding and learning are all very present in the proposal. For instance, by going through the consent journey, the end-user learns potentially more about how their data is used. But the process itself is also a learning as it may help end-users reflect on consent and data practices on different types of digital platforms.

The presence of explainability, understanding and learning is mentioned specifically with the guided tour (1), decision-support survey (3A), and regular updates on collection purpose changes (9).

Participants find this value very important because it is only when end-users have the vocabulary and understanding to engage with consent and data practices, that they can appreciate why it is important.

"It is very difficult to make someone aware that those photos could be used by an algorithm when they don't understand what algorithms are, nor do they care. And that though, those algorithms can be used in positive ways, but may have unintended consequences. So without understanding, there's little power that the user has to make an informed decision." – V5

"I think what you're getting at is good and interesting. That there should be some way for the user to understand who's using it and for what they're using it." – V3

"I think what's positive about the proposal is that you've done a good job to show these different levels of how and options for them to engage with consent throughout the process which offer really nice kind of snippets of how you can help them learn through the process." – V5

FREEDOM OF CHOICE

Freedom of choice is present as a value, but its presence also depends on the feasibility of the proposal. However, if the proposal can be implemented in the presented way, it would be a good way of giving end-users choices with a good chance of them really having these choices. Freedom of choice is mentioned specifically with the decision-support survey (3A).

"Freedom of choice, I think here there are multiple steps where you give the user multiple choices where they can choose from. And I guess also different levels of content, so I think that is also quite nice." – V4

TRANSPARENCY

Transparency is present, but a distinction can be made between the intention and the control of it. The intention to provide privacy is reflected in several ideas of the proposal. It is specifically mentioned for data reports (7A) and regular updates on collection purpose changes (9).

However, the control on transparency is more difficult, especially with many parties involved from the AI research community.

"I think just in terms of transparency, this comes back to our question of like how do you capture the purposes? I feel like there's much more work that has to be done on the other side of this practice to establish transparency. But at least for now, I think the user is presented in different ways with different information, so I think that's good." – V4

FACILITATION

Facilitation is present as it is mentioned specificially for the introduction of data personas (2) and decision-support surveys (3A).

The aspect of guiding end-users is mentioned in the evaluation of data personas as they determine how end-users' consent journeys will be facilitated. Furthermore, end-users' decision-making process is facilitated by the decision-support survey.

CONTROL

Control is explicitly mentioned for showing the number of downloads per photo (7B). In this instance, photographers would be in control over their consent decisions on the level of individual photos. Control is also mentioned in the context of interest-based disclosure plans (4A). With this idea, end-users have control and flexibility over indicating their interests, making changes to them over time, and control how that relates to what they see and do on the digital platform.

SUPPORT

Support is present, which is clear from ideas such as the support page (1) and the decision-support survey (2). They are both supportive tools that end-users can use to get informed and get help with making consent decisions.

AUTONOMY & AGENCY

Autonomy and agency are not explicitly mentioned by the feedback and validation session participants. However, they connect the value of ownership to autonomous practices. For instance, with the concept of data donation (4B), providing end-users with a sense of ownership allows them to autonomously make contributions to causes that are relevant and meaningful to them by disclosing their photos for specific purposes.

COOPERATION

Cooperation is not explicitly mentioned by the feedback and validation session participants. However, they did reflect on the ability to build relationships between end-users and Flickr which is encouraged by different ideas. For instance, through reminding people of consent as part of the continual relation with Flickr (8A). Another example is that data donation (4B) allows end-users to build relations not only with Flickr, but also with the AI research community.

LEGEND:

- Value from the identified set of value similarities
- Value from the identified set of value tensions

Proposal Evaluation

The Proposal Evaluation is a summary of the feedback provided by the participants on the proposal's desirability, feasibility and viability. The goal for the proposal is to meet all criteria. Therefore, this section describes if the proposal meets them or not according to the participants. In addition, it explains how and why the proposal is evaluated to be desirable, feasible and viable.

The feedback and validation provided by representatives from the AI research community, the organisation Flickr, and Flickr's end-users is used to evaluate the proposal on its desirability, feasibility and viability. Therefore, this section provides a summary of the participants' opinions regarding these criteria.

Desirability is about to what extent the proposal fits the needs and wishes of people. In addition, it is about enhancing people's lives and creating a better society. **Feasibility** is about whether the proposal can technically be done with the assets and resources available (i.e. technology, processes and people). **Viability** is about whether the proposal should be pursued based on the performance objectives of the organisation. In addition, it is about whether the proposal can be sustained effectively to generate value in terms of Key Performance Indicators (Calabretta et al., 2016).

DESIRABILITY

The desirability of the proposal is, for instance, indicated by the **helpfulness** of ideas for end-users, like the guided tour, data personas and providing a decision-support survey. Similarly, desirability is reflected in ideas that contribute to enhanced end-users' **empowerment**, which is the case with data donation.

Desirability also comes from **other benefits** that the proposal provides. For instance, a decision-support survey and showing disclosure percentages from similar end-users earn end-users time and energy. In addition, interest-based disclosure plans provide Flickr with data that they can use to provide improved and ensured personalised experiences. Another specific instance in which the desirability of the proposal for Flickr is expressed, is the **match between interest-based disclosure plans and the organisations' goal to connect people with the content on Flickr that they are interested in**. Furthermore, participants say that several ideas would just **make a lot of sense** to end-users and to Flickr as several ideas match well with the stakeholders. This is mentioned about the guided tour, showing disclosure percentages, interest-based disclosure plans, showing the number of downloads and regular updates on collection purpose changes.

Desirability for end-users is also expressed by statements such as "it **improves the experience of the platform**" (e.g. data personas) and "this is **a needed feature**" (e.g. consent annotation). An improved experience relates to mentions of **enjoyment** for some of the ideas, such as the guided tour. A needed feature relates to desirability expressed in the form of **willingness to pay** for certain ideas, including the consent manager for pro-subscriptions, consent annotation and getting insight into the number of times photos are downloaded.

"For Flickr, I think these are all really great suggestions and I think there are parts of this that you know, we've talked about doing, we have a lot of interest in doing, and that I think we will definitely do. And I think all of this is good for us to work towards in some type of way." – V2

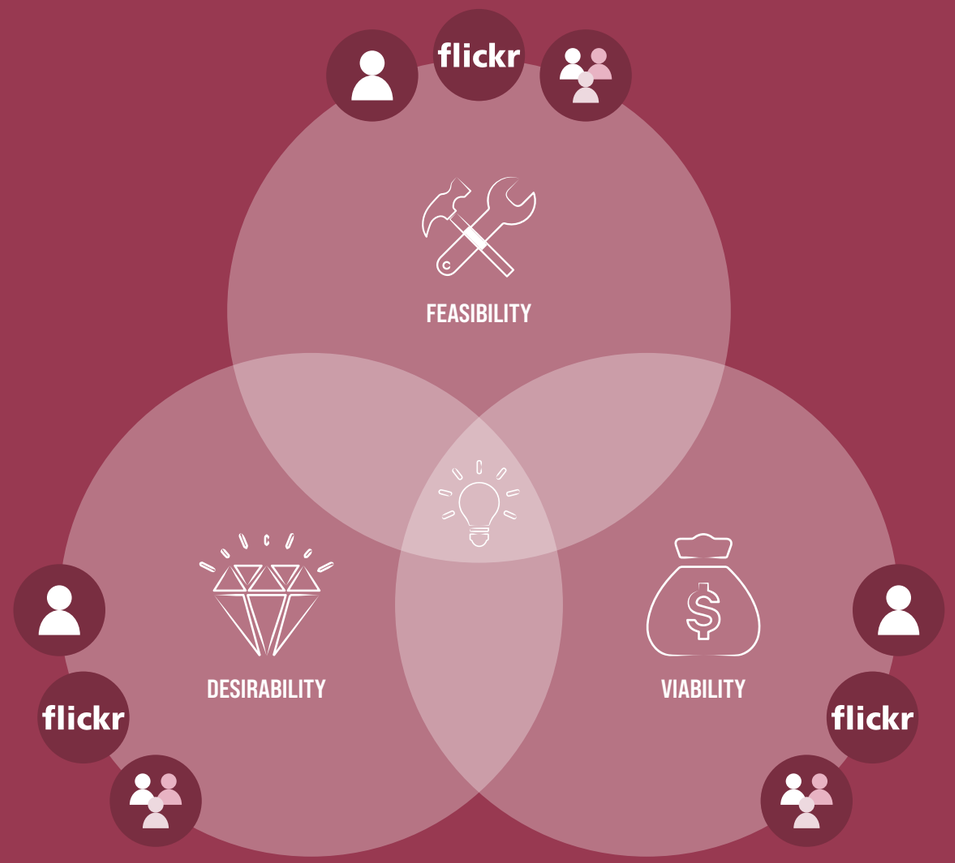


Figure 69: Desirability, feasibility & viability determined by end-users, Flickr & the AI research community

FEASIBILITY

Several ideas from the proposal are evaluated to be feasible for Flickr. For instance, the support page is relatively **easy to set up, implement and maintain**. Also showing the number of downloads per photo is feasible and exposing this information is something that is already being discussed.

Another reason why several of the ideas from the proposal are feasible is because they **make use of existing platform structure and end-user behaviour**. This is for example the case with interest-based disclosure plans. Therefore, the participants from the feedback and validation sessions think that this could be completed. However, Flickr expects to need help for developing an overall preference centre.

Some of the ideas are not (fully) feasible yet. For instance, the consent manager is too complex to pursue without other partners since Flickr only has a small team available for the idea's development. Likewise, updating end-users on collection purpose changes is technically very difficult and complex.

Overall, the proposal is evaluated to be feasible:

"I think it's very feasible. I think it makes a lot of sense. I don't think it's a very far-fetched idea. I think it would be very valuable for Flickr. This is definitely an example of a kind of project that a client like Flickr would pay for it because they know that consent is important. And if a client is willing to pay for something, it's a good measure that it's valuable." – V5

"It seems real, you know, it seems like it can happen." – V6

VIABILITY

The viability for Flickr needs to be evaluated for some of the ideas. For instance, to provide multiple data personas, the viability should be evaluated by analysing the development and maintenance effort and costs. The general viability for end-users is, for instance, indicated by statements like "If I decide that I want to give something for free, it is my right to do that and I would be happy to do that if it enhances my experience", because it shows a **willingness to sustain donating data if they get an enhanced experience in return**.

To conclude, the **willingness to pay** not only indicates the desirability, but also contributes to the viability of the proposal. If end-users want to pay for features such as a consent manager, consent annotation and getting insight into how many times their photos are downloaded, it provides value to Flickr and the AI research community.

"I know that the benefit might be very high. Therefore, to keep it my way, I'm also willing to pay. It will be anyway, likely a fraction of what I would pay for my own website." – V6

9.2 Recommendations on the Proposal

This section describes the recommendations on the proposal provided by the participants from the feedback and validation sessions. It elaborates on general recommendations that can potentially enhance and add new aspects to the proposal. In addition, it lists tips for further development of the proposal, including the recommended design steps to undertake during next iterations.

GENERAL RECOMMENDATIONS

The general recommendations are an addition to all the idea-specific recommendations described in section 10.1. The recommendations in this section address the full proposal and are drafted from the feedback and validation sessions. They are ideas from the participants that enhance, add new aspects, and make changes to the proposal (see sections 9.2 & 9.3).

Instructions of Flickr use for the AI research community

Flickr currently does not offer any support or tools that help with educating the AI research community, in contrast to all the available resources to end-users about consent and data practices. Therefore, there could be some type of landing page or other resource that explains how to use Flickr if people want to conduct research. It can contain the things that they should be aware of, what Flickr members have agreed to, and how they should engage with Flickr members. So, there would be specific instructions available.

"We also need to provide education to the researcher and developer community. We don't offer any of that right now. So I think we need a set of norms that we put out there. I think we need to do more education on the developer side in order for this to be the most impactful that it can be." – V2

Integration of the Consent Journey with Overall Platform UX

The consent journey should be more integrated into the current functionality of the Flickr platform. As a result, the focus of the proposal is less on the consent itself and the reasons why consent is important, but more on the overall experience of the end-user on the digital platform.

"In my opinion it only works if the focus is less on the 'why', concerning consent. The focus is less on the consent itself and more on the user experience." – V6

Time- and Money-based Licenses

In addition to the proposal, different types of licenses can be developed. Their goal is to make the exchange between end-users and the AI research community fair and equitable. For instance, one license can be based on setting a strict period of time on the use of photos in a dataset.

"It could be interesting to imagine or even speculate a different kind of license that says you're allowed to use this image in for one data set for one year?" – V3

Another option is to create a license in which the AI research community has to pay for the photos they take.

"One of the problems is, in economic perspective, users don't really have a choice. Well, you can do copyright, Creative Commons or no license at all. But what about a license where you could monetize it? Can you create a machine learning license that's both useful for AI/ML developers and helps creators make money?" – V3

This is already being tested in the context of photo sharing, according to one of the participants.

"They created a photo sharing platform where creators would get $0.15 per photo. They share it with a AI/ML developer. They're just sidestepping all of the complexity of consent and licensing and simplifying it into a monetary transaction." – V3

Registration & Approval Numbers for Academic Research

An important difference between AI developers from the research community and from industry is that they have to specify where the data comes from that they used. They have to share where the photos are from, how they obtained them, and perhaps even share the work so that the research is reproducible. This situation requires transparency about the data and can contribute to solving the issue of tracking where data goes (see 'Points of attention' in 'General feedback on the overall proposal').

For instance, researchers need to register for approval numbers for each research paper. In this way, they validate and get an approval ticket for the photos they want to use. They should fill out a form with the photo IDs of the pictures they want to use. Then, the request is submitted to a management entity that checks whether licenses have changed and if the photos are still available. Based on this evaluation, the researchers may use the available photos and must mention their approval number for each academic paper they publish.

"Here's what you can use, and here's your approval number. We could just try to normalize the fact that then when they publish that in their academic research paper, they have to mention the validity of their data." – V3

TIPS FOR FURTHER DEVELOPMENT OF THE PROPOSAL

The tips for further development are an addition to all the idea-specific tips described in section 10.1. The tips in this section address how the proposal can be iterated on. Therefore, they specify the actions necessary to improve the proposal. All tips for further development are drafted from the results of the feedback and validation sessions.

Tip 1: This proposal makes the assumption that the photos should be accessible and used by AI developers. However, for the iteration on this proposal it is relevant to **reflect on why AI developers should get access to these photos.**

"There's complete misalignment between me going on vacation and sharing photos on the beach and a company developing a citywide surveillance system. This had nothing in common and they shouldn't. So I don't see a need to try to bring them together." – V3

One reason is because in the future, there might be many more AI developers.

"I think it would be useful to like deconstruct this term a little bit and consider that I'm an AI developer and you might be an AI developer too in a few years because it's going to be taught more in school." – V3

Another reason is that the reason of use and actual use of end-users is currently not intended to be used by the AI research community.

"Arguing for the side of the user, they are doing something entirely different. They are sharing and communicating with other people. Typically, Flickr has a lot of vacation photos, wedding photos, party photos and conference photos. It's like not personal, but journal chronicling of life. And I don't see why AI developers have any right to use that data which was never intended to be used by them." – V3

Tip 2: To search for solutions and/or iterations, **step outside of the two parties that are closest to the problem** (i.e. the digital platform organisation and end-users). Sometimes, they do not see (all) the problems and they need to bring in external parties or hear external views that are outside of their perspective.

Tip 3: Investigate how identified issues linked to effective enforcement from a policy perspective can be solved.

Tip 4: This proposal legitimises the use of online photos for AI development. As a consequence, **clear norms and limitations must be defined** to prevent people to make use of end-users' photos for anything and everything.

Tip 5: Not all types of end-users may be compensated by the monetary benefits they receive by choosing Flickr over their own website. This depends on how they make use of Flickr. Therefore, it is relevant to **investigate how to prevent different types of end-users to feel burdened by the proposal**. In addition, an analysis should be made regarding the benefits that different types of end-users get in return for their active participation with the proposal.

"Why do users need to consider consent? And what is the value proposition? How do they benefit from having more involvement in consent of these platforms. And there is a lot of benefit for them, but maybe in framing this as a proposition for users, you need to consider how does it benefit them." – V5

Tip 6: Make a distinction between what steps happen on the Flickr platform and what steps may happen outside of it and make use of other channels. There are ideas, such as the consent manager and data reports, that can have touchpoints beyond the digital platform.

"I think especially if we want to consider consent as a process, it's also important to have some touch points outside of the immediate disclosure interactions. You can have this sense of process or kind of recursive interaction." – V4

Tip 7: Analyse for every step what the assumptions are for that particular idea and define what needs to happen regarding if and when end-users would engage. These are the assumptions that must be tested in further iterations of the proposal.

"From a user perspective, for this step to work, what needs to be true? So what is your assumption around what needs to be true? A user needs to have this much and kind of knowledge and they need to be willing to give this much time. Because when you talk about the user, you often refer to if they do or don't want to engage. It's usually not as simple as if they do or don't. I find that with these interactions, which are not a part of the everyday language or vocabulary or understanding of users, it's more of a question of if and when...I would say that you need to build out these specific concepts. And building the assumptions into these concepts so that you can actually start testing them and going from there." – V5

Tip 8: Identify where in the consent journey basic nudges can be implemented to persuade interaction with the different ideas.

"It's like they want to get through something quickly and that is an issue when it comes to consent. So I think it's important to consider where are you building this kind of very basic level of nudging, let's say." – V5

Tip 9: Evaluate how the cognitive load for end-users may be reduced. For instance, by reducing the number of steps that are mandatory to go through but still get the value for this process across.

"So how can you get the most value for this process with the minimum amount of steps or create some kind of useful experience for them that keeps privacy, that keeps consent, that keeps informed consent with them without it being too loaded." – V5

In addition, identify where snippets of information can be added that explain the 'why' and the relevance of the consent process. This information should not be forced on end-users all at once, but they should be informed over time.

10

Conclusion of the Project

This chapter describes the discussion and conclusion of the graduation project. In addition, it contains a personal reflection.

First, the discussion provides a summary on the key findings of this thesis. In addition, it briefly reflects on the research problem and design outcomes. Furthermore, it discusses the validity, reliability and generalisability of this thesis. Subsequently, it defines and describes the limitations and proposes opportunities for future research.

Second, the conclusion contains the most important findings from the empirical design research, the design phase activities and the creation of the design case proposal. Additionally, it reflects on the contribution that this thesis makes to the field of design and beyond.

The last section contains a personal reflection on the graduation project. It reflects on the graduation journey, graduating during the COVID-19 pandemic, and on the personal ambitions set prior to the start of the project.

10.1 Discussion

Summary of key findings
Interpretation & reflection
Limitations
Recommendations for future research

10.2 Conclusion

10.3 Personal Reflection

Reflection on the graduation project

10.1 Discussion

SUMMARY OF KEY FINDINGS

Data practices performed by digital platform organisations contribute to serious societal issues, such as fake-news diffusion, increasing polarisation and threats to democracies. Additionally on the individual level, end-users are affected by data leaks and privacy intrusiveness. Therefore, people are increasingly concerned about sharing their data without knowing what they reveal, for what purpose and to whom. Consequentially, they are unable to exercise their digital right to privacy and consent. Therefore, this thesis investigated how consent practices and disclosure interactions can be redesigned to instate future data practices and digital platform relations which both digital platform organisations and end-users desire. This thesis argues and demonstrates with a real-life design case that consent practices and disclosure interactions can be redesigned by leveraging value similarities and resolving value tensions between the identified future visions on consent and disclosure from digital platform organisations and end-users. Value similarities provide a foundation for solution exploration. Tactics to resolve value tensions are required to create the conditions in which new practices can be effective and meaningful.

INTERPRETATION & REFLECTION

Brief Reflection on the Research Problem and Design Outcomes

This thesis answers the main research question by demonstrating how consent practices and disclosure interactions should be redesigned by leveraging value similarities and resolving value tensions. The practices are able to instate future data practices and digital platform relations because the future vision of consent is created within a broader context, including data practices and digital platform relations. Furthermore, the approach taken ensures that the consent redesign is desired by both digital platform organisations and end-users because it uses different strategies to leverage value similarities as a foundation for new (aspects of) consent practices and disclosure interactions. Additionally, it ensures that the identified value tensions are resolved by implementing tactics that are common between all tensions throughout the redesigned consent practice journey. A better solution does not cover all the tensions, but tackles those that can work out in synergy for making a good design proposal.

Reflection on Validity, Reliability and Generalisability

Regarding validity, this thesis argues that the decision to select end-users and digital platform organisation representatives for the empirical design research is appropriate. This is because the knowledge gap identified from the literature review suggests a need for a holistic and multi-perspective approach to investigating and redesigning consent and disclosure on a conceptual level. Notably, it is important to consider that disclosure and data policies should be sustainable for all parties involved. Furthermore, this thesis argues and demonstrates that the employed methodology for the empirical design research is appropriate, as within its results, this thesis recognised value similarities and tensions that successfully provide the foundation for new (aspects of) consent practices and disclosure interactions. Additionally, the appropriateness of the design tools and methods used to define how to leverage value similarities and resolve value tensions is endorsed by representatives from the most important stakeholders, who positively assess the results presented during the feedback and validation sessions. An example of that is their recognition of the presence of the extracted values in the proposal for the design case.

Regarding reliability, this thesis contains several ways to maintain replicability and consistency of the research and design activities. For instance, all research and design materials are verified with peers and with the supervisors of this graduation project. Likewise, the data analysis process from the empirical design research is verified with the supervisors during which also constant comparison is employed. Furthermore, consistency is preserved by not making changes to interview and session guides and materials between different participants. Finally, the replicability and consistency of the thesis is preserved by keeping detailed records of the thought processes and decisions made throughout this thesis. Specifically, this is done with the different steps taken in the data analysis and value extraction processes, which ensure consistency and transparency.

Regarding generalisability, this thesis suggests that the results from the empirical design research, specifically the sets of identified value similarities and tensions, are generalisable to other digital plat-forms and consent cases. However, this is influenced by the sample selection and therefore requires future research to confirm. For instance, values represented in future visions may differ between nationalities, cultures, worldviews and generations, among others. Regarding the generalisability of the design outcomes, while on one side the definition of case guidelines limits the generalisability of the design case proposal, on the other it provides insights into the process of defining the necessary steps to take to create case-specific proposals for different digital platforms. Therefore, when designing for other consent cases, practitioners should consider that different digital platforms may require different approaches.

LIMITATIONS

A first set of limitations of this thesis is due to sample selection. Regarding the empirical design research, the types of experts selected have an influence on the desired future visions obtained and therefore on the value drivers. The decision to include experts focusing on either practice and research within the fields of *AI and ethics*, and *digital platforms and ethics*, consequentially affects the final outcome and the generalisability of the results. Whether or not a future vision is desired depends on who you ask.

Additionally, new stakeholders beyond end-users and digital platform organisations may be considered in the future for determining their value similarities and tensions. This is already illustrated by the design case in which the AI research community is an important stakeholder. Their future visions' value drivers might not be represented in the proposal as they are not included in the empirical design research.

Furthermore, it is not yet known how this thesis is future-proof due to the many stakeholders, interests and factors involved. For instance, unforeseen scenarios might steer the created future visions towards other, perhaps unexpected, directions (e.g. distributed data ownership, blockchain applied to consent, centralised governmental management etc.).

Another limitation related to the selection of the sample is that the Tactics to Resolve Value Tensions are developed by using Roleplay with Personal Analogy with fellow (former) MSc graduation students in design. However, this approach assumes that there is space and willingness for conversation and negotiation between digital platform organisations and end-users. Therefore, these exercises are ideally performed with real stakeholders as they might be less flexible and/or negotiating from a position with constraints and limited resources available.

The last sample-related limitation concerns the selection of participants for the feedback and validation session of the proposal for the design case. The sample is small and the three main stakeholders unevenly represented. Ideally, the evaluation should be done with at least two representatives per stakeholder.

Another set of limitations concerns the generalisability of the empirical design research outcomes and the assumptions made for the design case proposal. One limitation of the empirical design research consists in the focus being mainly on individual implications of data practices, rather than on disclosure purposes on a wider societal level. While on one side this might affect the creation of proposals for specific consent cases, on the other it is also worth considering that the choices on *if* and *how* to give consent remain inherently individual. Therefore, the impact on the analytical lens is minimal and suggests that the results are generalisable.

Designing on a conceptual level for a desired future vision is also limiting, as it assumes that the identified Sources of Friction are resolved and the proposal operates within the identified desired future conditions. These Sources of Friction must be resolved before a desired future can be reached and the proposal to the design case can be effective, therefore providing meaning and value to the stakeholders. However, it is beyond the scope of this thesis to resolve the identified Sources of Friction.

RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the identified limitations and this thesis' results, several opportunities for future research are recommended.

First and foremost, future research shall investigate how to resolve the Sources of Friction.

Second, future studies may build on the process designed to define value similarities and value tensions. Specifically, they might build on the holistic and multi-perspective approach and the employed research methods. In addition, future research can investigate the generalisability of this process beyond the context of consent and digital platforms.

Third, future research may enrich the processes designed (incl. tools, methods) to leverage value similarities and resolve value tensions. Additionally, future research is necessary to evaluate the processes' applicability and scalability beyond the context of consent and digital platforms.

Fourth, future research is necessary to establish the generalisability of the outcomes of the design processes on how to leverage value similarities (i.e. Strategies to Leverage Value Similarities, Design Directions) and value tensions (i.e. Tactics to Resolve Value Tensions) to other consent cases in the context of digital platforms.

The last recommendation on future research concerns the identification of the different steps necessary for creating proposals for other consent cases and digital platforms. The steps taken in this research are used for a specific case (e.g. case guidelines as filters). If the same route is taken for other design cases, future research may investigate what other steps are necessary and/or relevant to consider, and what steps from this thesis' approach might be unnecessary and/or irrelevant.

10.2 Conclusion

This thesis investigates and identifies how consent practices and disclosure interactions can be redesigned to instate future data practices and digital platform relations which both digital platform organisations and end-users desire (RQ1). Based on qualitative data analysis obtained from empirical design research - specifically context mapping and semi-structured interviews performed with digital platform end-users and experts that represent digital platform organisations - it can be concluded that consent practices and disclosure interactions should be redesigned by leveraging identified value similarities and resolving identified value tensions between experts' and end-users' future visions on consent and disclosure (answer to RQ1). The results indicate that leveraging the value similarities ensures a match between desired practices. Furthermore, resolving value tensions reduces opportunities for dissension. Therefore, this thesis argues that these design propositions allow to redesign consent practices and disclosure interactions more meaningfully and effectively.

By exploring, defining and comparing experts' and end-users' future visions on 1) digital platform relations, 2) data practices, and 3) consent practices and disclosure interactions, this thesis shows what values drive their future visions, which values match and which ones clash (SQ1, SQ2 & SQ3). The identified value similarities between end-users' and experts' future vision on consent and disclosure are trust, privacy, understanding & learning, freedom of choice, and transparency. In addition, the value tensions between end-users' and experts' future vision on consent and disclosure are 1) cooperation, vs. autonomy & agency 2) facilitation vs. support and 3) facilitation vs. control (SQ3).

This thesis also investigates how the set of identified value similarities can be leveraged in a consent practice redesign (DQ1). Likewise, it explores and defines how the set of identified value tensions can be resolved (DQ2). Based on a creative session that employs different design tools and techniques (i.e. How To – Questions, Brainwriting & Creative Confrontation) performed with fellow (former) MSc graduation students in design, it can be concluded that every individual value similarity can be leveraged in different ways. The results indicate that different strategies to leverage value similarities can be created by applying the Morphological Chart design tool. This thesis argues that the different strategies identified should form the foundation of designing new (aspects of) consent practices and disclosure interactions to leverage value similarities (DQ1). Based on another creative session that employs the design tools of Personal Analogy, Roleplay and Scenarios - as previously, performed with (former) design students - it can be concluded that different tactics are used to resolve different value tensions. The results indicate that all value tensions can be resolved simultaneously by analysing what tactics the different value tensions have in common. This thesis argues that the tactics in common should be implemented in new consent practices to resolve the value tensions (DQ2).

The design objective of this thesis is to create new (aspects of) consent practices and disclosure interactions based on the previously explained design propositions. Based on a third creative session performed with fellow (former) design students in which different strategies to leverage value similarities are defined and applied to create ideas, it can be concluded that consent practices and disclosure interactions can be redesigned based on different design directions (i.e. 21 in total, containing 88 different ideas). The results indicate that these design directions intervene throughout, before, during and after a disclosure interaction, thus a temporal element is present. Therefore, this thesis argues that a redesign of consent practices should consider consent as a process, not as a moment.

A real-life design case is used to apply the research insights and design directions in a concrete and tangible context. The case elaborates on digital platform organisation Flickr's need for new consent practices and disclosure interactions that allow photos to be used to create image data sets to train machine learning algorithms, while preventing controversial applications and lack of end-user consent. Therefore, the redesign must balance between privacy consideration from the end-users' community and the scientific interest of the AI community. A design-led investigation is the foundation for recommendations provided by this thesis to the design case. The design solutions are aimed to open up the conversation and solution space beyond contemporary legal solutions. As a result, this thesis proposes a design for new (aspects of) consent practices and new disclosure interactions that complies to identified design requirements and case guidelines, that is composed from the set of formulated design directions, and that contains tactics to resolve value tensions. The proposal is evaluated to be desirable and sufficiently feasible and viable by representatives from Flickr, the AI research community and Flickr's end-users. Therefore, it can be concluded that parts of the proposal effectively contribute to solving the design case. Furthermore, it suggests that this proposal, intervening in the relation between individuals and digital platforms, has potential to contribute to solving issues regarding data practices and digital platform relations that are present on a societal level.

The results produced by this thesis contribute to the field of design in different ways. First, it addresses a knowledge gap in literature because prior research focused primarily on addressing form and substance issues and improvements from isolated perspectives in relatively narrow contexts. This thesis focuses on identifying conceptual improvements of consent practices by including multiple perspectives (e.g. end-users and digital platform organisations) in search for similarities and tensions between their visions on consent and disclosure. Furthermore, this thesis takes a holistic approach and includes data practices and digital platform relations in the context of consent and disclosure. Second, the design processes created to investigate how to leverage value similarities and resolve value tensions may have potential to be applied and scalable beyond the context of consent and digital platforms. Furthermore, the outcomes of the design processes, i.e. the strategies to leverage value similarities, the tactics to resolve value tensions and the design directions, may be generalisable to other digital consent cases.

Future research and testing is required to confirm the potential of these contributions.

Finally, the outcomes of this thesis contribute to informing several fields beyond design with ideas, solutions and processes. Those disciplines, also involved in the design case proposed, could potentially receive these contributions in a stand-alone way, without necessarily embracing the entirety of this thesis. On one hand, for instance, policy makers and license managers can find in the research highlights about the shortcomings of current consent practices and data-related-agreements. The research also relates them to end-users and organisations behaviours. These can be used for identifying points from which to generate viable improvements to the current practices, and possible directions to follow. On the other hand, the fields of Information Technology, Open Data and data analysis can find in this thesis preliminary discussions over possible future developments to their scopes, specifically aimed to more ethical, fair and responsible data-treatment and management solutions. Beyond case-specific solutions, they find in this thesis ideas and concepts for enhancing usability, clarity and accountability for developing more disclosure and consent-aware iterations of their products and services.

10.3 Personal Reflection

Before starting my graduation project, I set several goals for myself. First, I wanted to work on a topic that I am very passionate about. Second, I wanted to show that I am ready to work as a design professional. Third, I wanted to make use of my last opportunity to learn new things and improve my skills within the safe space of the faculty. I am very happy and excited that this graduation project allowed me to meet all of my goals. In this personal reflection, I elaborate on my experience of the graduation journey and on the personal ambitions defined at the start of the project.

REFLECTION ON THE GRADUATION PROJECT

The Graduation Journey

What I am most proud of, is that I kept surprising myself throughout the entire process. I dared to take risks by making certain decisions on what research and ideation activities to use. For instance, I had prior experience with performing quantitative research, but instead I chose to pursue qualitative research and analyse it according to the Grounded Theory Method. Another example is that I had never created and facilitated creative sessions before. Especially the inclusion of exercises inspired by speculative design was very far out of my comfort zone as I am generally a bit too shy to use these methods.

I am also very proud of having involved many people in different phases of the project. For instance, end-users, experts, fellow designers, knowledge partners, design case stakeholders and of course the collaboration with my supervisors and Francesco from Open Future. Prior to the start of the graduation project, I did not think that I had the confidence to reach out to experts to gain knowledge or showcase my work. I am very thankful for everything that I learned from their contributions, both related to the project's content and my personal development.

An example of personal development concerns my fear of not being "creative enough". Throughout my time at the faculty, I always told myself that I am not the creative type. Therefore, I thought that the design phase of my thesis was going to be my biggest struggle. This project has taught me that there is a difference between having a creative end result and being creative in how you solve problems. I learned that I am a designer that feels much more comfortable with the second category. I surprised myself by choosing not to take an existing design method and follow every step, but instead by really using everything that I have learned from other courses to develop my own research and design processes to solve problems. This project has shown me that designing how to design is where my creativity lies, which is for me the most important learning.

Graduating during the COVID-19 Pandemic

Despite getting used to studying from home due to earlier completed coursework, working on the graduation project was sometimes challenging but also provided opportunities. From earlier experience, I knew how valuable informal conversations are with peers, friends and family. Therefore, I could anticipate on that and set a goal for myself to discuss the project with others at least once a week. In addition, since we were all getting used to working from home, it felt very normal to have Heather as external mentor. The project would not have been the same without her input, and therefore I am very grateful for her involvement. Another benefit was that the threshold to meet with people online is much lower. As previously mentioned, I was able to involve many people throughout my project. Additionally, it was easier to organise creative sessions with fellow (former) design students because you do not have to physically be in the same room together. Despite that, I missed the physical meetings on campus. I enjoyed the few times I was able to meet on campus because the conversations are more open and allow for speculating about the project's content without following a fixed agenda or list of questions.

However, the pandemic did not only affect the graduation project and journey in a practical way. Throughout these times, I felt worry and concern about how the situation would develop. I felt frustration and sadness at times, because there was no outlook on improvement. Without a doubt, I experienced similar feelings as many others. It is just difficult to simultaneously fully focus on the graduation project and journey with all the beautiful, but also difficult moments it contains. Nonetheless, I was surprised by my own resilience which has taught me that periods of stress and worry may start, but also always end.

Personal Ambitions

Improve the skills visual thinking and visualising the processes and results
I am satisfied with the balance I found between writing and visualising the processes and results of the graduation project. I would have liked to showcase my design drawing skills as well, but choices have to be made about how to showcase the work in the most suitable way. Regarding visual thinking, I could have pushed myself more. I did sketch my thoughts in my notebook, but I did not use it, for instance, to (facilitate a) brainstorm.

Improve the ability to deal with time constraints
I think my ability to deal with time constraints has become better. The fixed number of days for graduation is helpful, but stressful at the same time as you want to showcase as much as possible.

Execute frequent validation and iteration
I planned to do multiple iterations on new (aspects of) consent practices and disclosure interactions. However, the involvement of the design case provided a valuable opportunity to continue the design work in a more concrete and tangible way. I would have liked to do more iterations, however I think that the involvement of the design case shows my flexibility to adjust the process accordingly when necessary.

Facilitate other people's participation
As previously mentioned, I was able to facilitate people's participation throughout the whole process. I am very happy that I achieved this personal ambition.

Figure 70: Photo taken by Olena Sergienko (2020), Retrieved from Unsplash

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Appendices

All appendices are provided in a separate report. They are only provided to the supervisory team. In case you would like access to them, please contact me personally or via e-mail.