

Implementing ethics and diversity in the design process of services in the digital realm

a research study on a scenario based design intervention on ethics and diversity for service designers in the digital realm

information

MASTER'S THESIS

SERVICE SYSTEMS DESIGN

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abstract

This thesis displays the research on the design of an intervention to implement ethics and diversity in the design process of service designers in the digital realm. Findings showed that it was needed to educate designers in their ethical behavior, and provide support for their moral understanding of diversity. The research specified the focus on services in the digital realm, this being supported by this type of services being reliant on an IT artifact, and the thereby changed service interaction and design process.

By execution of three research methods, insights into how the intervention could be staged through the topics of service design, ethics, and diversity and services in the digital realm came forth. Hereafter followed iterations on the design challenge, based on the needs and obstacles designers find when trying to implement ethics and diversity in the design process. Through analysis and ideation, the concept of 'scenario cards' was created. This concept, developed after prototyping into the final concept: CANVAS, your ethical cards for diversity.

CANVAS is an intervention to be used by designers, staged as a scenario-based card exercise. The goal of CANVAS is to assist designers to implement ethics and diversity in the design process of services in the digital realm.

Classifying diversity as: *"One should consider all members of the community, including, but not limited to; sexual orientation, national origin, religion, socioeconomic status, color, etc, and would be inclusive towards all users possibly affected (nonetheless the degree to how much)"*.

CANVAS will aim to include the diverse target user the design will address. By using CANVAS, the designer will provide insights into the ethics of their design process, and support to improve them. CANVAS can be used as an intervention throughout a design project and can be seen as an additional tool to workshops, facilitation sessions, or critical discussions on the design. CANVAS does not cohere to a certain phase in the design process and is therefore intended for circular use.

KEYWORDS

Service Design, Diversity, Ethics, Digital Services, AI, Service Systems, Intervention Design

"In Silicon valley it was always, 'Can we do it?' The tide is now turning, and a lot more people in the valley are asking, 'Should we do it?'"

QUOTE BY AMY FARELY, FASTCOMPANY (2019)

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introduction

In this report, the design process of the study: 'the design of an intervention for ethics and diversity, in the design process of services in the digital realm' is shown.

This thesis and service design project aims at researching the ethical awareness on diversity within service design practices. Through proposing different research methods in the fields of ethics and diversity, service design, and services in the digital realm, an intervention for diversity in the design process will be staged. The intervention aims at providing support to the designers' needs, and overcome obstacles to implement ethical practices on diversity within the design process of services in the digital realm.

The inclusion of users in the design process is a vital activity in service design practices. It leads to a design with the user, rather than for the user. We need to understand and engage on how a user would interact with a service system to enhance the user experience (Sangiorgi & Prendiville, 2017).

However, the use of services with digital components seems like an inevitable aspect of current society. Here, human actions are automated, causing more reliance on the so-called IT artefact within the application of services (Lindgren et al., 2019). The increase of this

reliance, calls for the importance of representing all users through the technology when aiming at working towards ethical designs for diversity.

"We have an implicit bias in society today ... and because so much of [AI] is a mimicry of our world, [computers] inherit the same problems of our world." (Farley, 2019)

Therefore, by staging an intervention to be used within the design process of services in the digital realm, we design for a practical application of ethics and diversity. The intervention can be seen as a tool for service designers in the digital realm and will foster improvements of diversity for the end-users of the service and technology designed.

approach & methodology

SERVICE DESIGN MINDSET

To define the initial structure of the design process, a methodology is to be established and applied throughout this thesis, aiming at the design for an intervention on ethics and diversity to be applied within the service design discipline. The proposed methodology and research do not focus on the actual design of a service and might therefore deviate from more 'standard' service design methods. It is important to state that this design process will be aimed at designing an intervention for service designers in the digital realm.

Nonetheless, the notion of service design will be referred to throughout and serve as the so-called 'service design' mindset. This entails that one would remind themselves of the mindset as proposed by Stickdorn et al. (Stickdorn et al., 2018);

“Pragmatic, Co-creative and Hands-on”, and, most important for this research; “Looking for a balance between technological opportunity, human need and business relevance”.

INSPIRATION, IDEATION & IMPLEMENTATION

To establish a guiding framework throughout the design process of the intervention, the 3I methodology has been chosen to structure the research. Here, it is important to state that whilst this framework will serve as a structure amongst the process, it should not restrict

the freedom of the designer in fluidity and iterations between the phases.

The 3I model; Inspiration, Ideation and Implementation, comes forth from the need of a less 'traditional' design process, but rather as a method for the design of social innovation (Tschimmel, 2012 ; IDEO, n.d.). The Inspiration phase allows to research the design challenge, Ideation aims at finding ways to solve this design challenge through observations, and the execution of these ideas can be found in the Implementation phase (Black, Gardner, Pierce, & Steers, 2019).

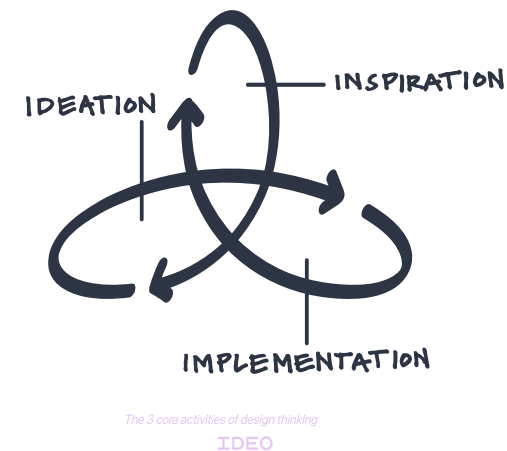


FIGURE 1, THE 3I MODEL BY IDEO (N.D.)

The three phases are applied within this research as IDEO states that they are at the core of the design process, and do not function as three different steps, but rather as a sequence of 'spaces' (Brown & Wyatt, 2010). This allows the designer to move 'freely' within the spaces and should therefore not see the design process as a structured framework, but rather as guidance through the process.

In addition, the 3I model proposes a convergent and divergent approach through the process (which can also be seen in other models, such as the double diamond), which allows to turn expansive ideas into detailed insights in a convergent phase and takes an innovative approach to foster new ideas in a divergent phase (Black et al., 2019).

RESEARCH PROCESS

To conclude from the previous section, for this research it was decided that the main research structure will be applied through the 3I model as proposed by IDEO (IDEO, n.d.). The proposed mindset of the 3I's can help to encourage the generation of ideas. As proposed by Brown & Wyatt (2019):

“There are three spaces to keep in mind: inspiration, ideation, and implementation. Think of inspiration as the problem or opportunity that motivates the search for solutions; ideation as the process of generating, developing, and testing ideas; and implementation as the path that leads from the project stage into people’s lives” (Brown & Wyatt, 2019)

This research will have an extensive inspiration phase, as it allows for a focus on the nature of literary research through understanding of current practices of ethics, diversity and service design in the digital realm. It is therefore important to note that this project could provide a different approach to the extent of stakeholder and user inclusion in the first phase of the project, if compared to other design processes.

The aim of the **literary review** is to establish the scope of this study, through researching current academia on digital service design, ethics by design and ethics & diversity. Through analysis on the findings of the literature review, a problem statement and a design challenge will be phrased. This problem statement defines why it is needed that an intervention on ethics and diversity needs to be staged within the design process of services in the digital realm, where the design challenge will state the desired outcome of this research.

The goal of the **Inspiration** phase is to set up different research methods and collect insights on the above-mentioned topics. In order to pursue this goal, a systematic literature research will be executed to map the current status of academia on service design within the digital realm with respect to the topics of ethics and diversity. Thereafter, the inspiration phase aims at providing a broader understanding of the perspectives of ethics, diversity and design within the digital realm. This allows for the opportunity to interview designers on their experiences with diversity in design and provide a practical research study on the ethics of diversity in technological/AI focused (service) design.

The **Ideation I** phase is about synthesizing key insights to reiterate on the design challenge, and further determine what the intervention on ethics and diversity needs to deliver. Through identification of the needs of designers, and the obstacles they experience when trying to implement ethics and diversity, the deliverable for the intervention was defined by specifying the inclusion criteria of the intervention.

Ideation II has a goal of designing the content for the intervention on ethics and diversity. This phase will use data from the inspiration phase, further research on existing interventions & methods, and combine these through an idea generation session to design the content of the intervention. Through addressing the designers needs as stated in the inclusion criteria, the intervention will be presented as a concept on how to assist designers in their ethical awareness for diversity within the design process of services in the digital realm.

At last, in the **Implementation** phase, the presented concept will be tested and evaluated with experts within the fields of service design in the digital realm. Here, a prototype on the concept of the intervention will be presented to the designers to set a stage for evaluation. Through relating the concept to a project or experience, the potential effects it can have on raising ethical awareness on diversity within the design process can be determined.

The result of the implementation phase is **the Product Report**, in which the concept of the intervention is presented. This concept will later be evaluated against the principles of change management to determine the effects of the intervention on the process of change. In addition, a critical reflection on the 'digital' aspects is provided, as well as future recommendations for development of the concept.

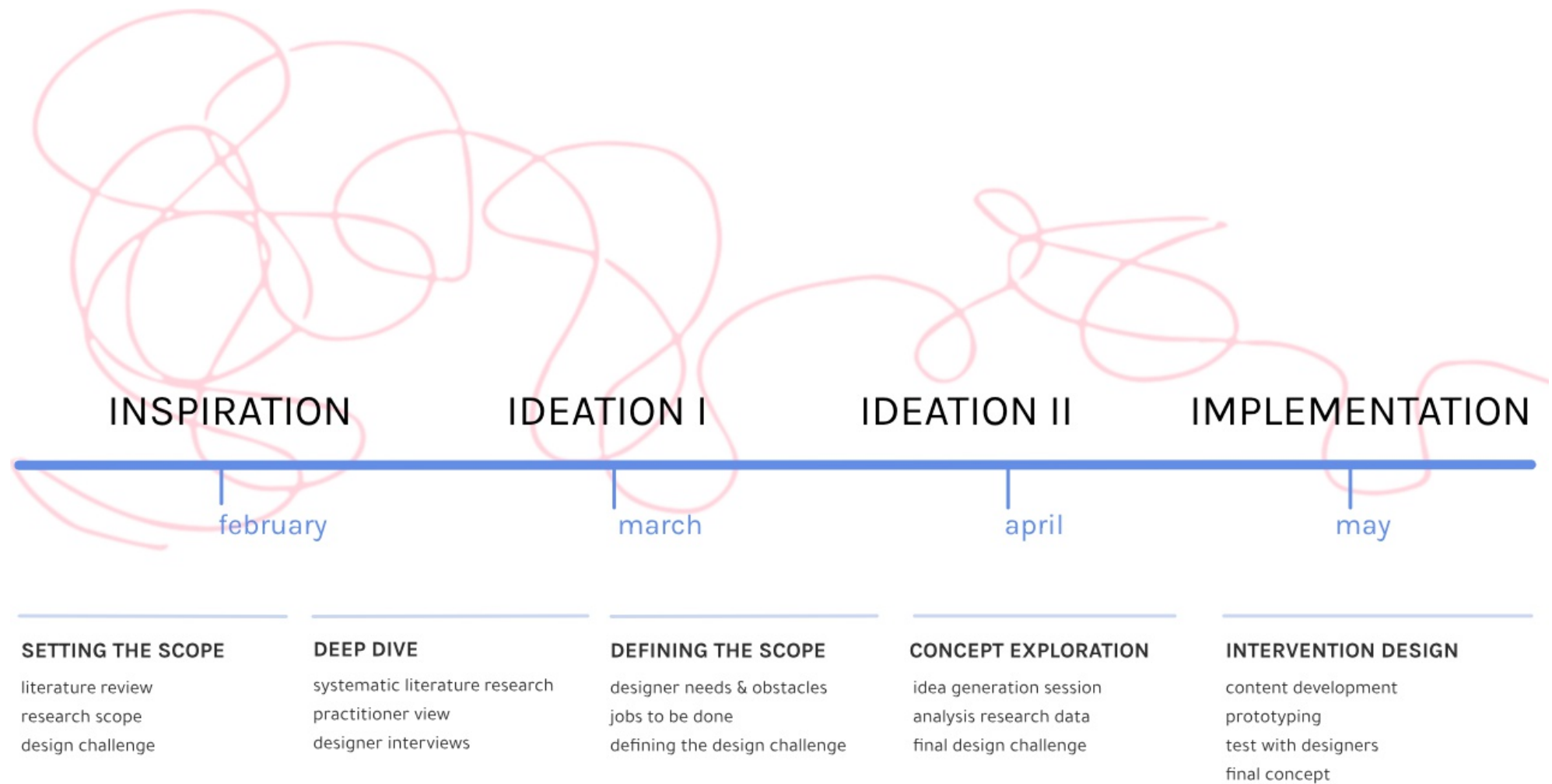


FIGURE 2, VISUALIZING THE RESEARCH METHODOLOGY

chapter one

literature review

This section will provide a literary background and explanation on concepts and theories to be discussed, and will serve as a fundamental to the need of an intervention on ethics and diversity.

At last, through synthesis of the literature review, a problem statement will be created. Here, the design challenge for this thesis will be presented, supported by its arguments on the relevance and need of an intervention on ethics and diversity.

methodology

As a methodology to this literature review, the approach of 'snowballing' has been chosen. Here, the systematic search for papers is defined through the reference list of other papers. The initial search was executed through defining key papers within the specific research areas, from which the reference lists were taken as a continuation for the research (Wohlin, 2014).

At first, the literature search was initiated through defining a 'start set': the initial papers for the snowballing search. Here, the following notions are important to consider: 1. Include different practices and perspectives in the start set, to ensure a broad perspective from the beginning; 2. Through analysis on citations, one can determine the relevance of the start set papers; 3. In order to reflect diversity on perspectives and disciplines throughout, be mindful of different authors and publishers (Wohlin, 2014). From here, the search could be continued, and iterations started from the so determined 'start set' of papers.

Once iterations start, it is important to consider careful selection criteria, and make sure to frame a subjective view on the selected papers. Although a snowballing approach does not carry that much weight in the systemic selection as a systematic review might do, it is important to be mindful of potential bias and relevance to the research study throughout.

For this specific research, the snowballing approach allows to take a broader look across multiple design disciplines. This is an important approach, as the discussed topics of ethics and diversity might not be all covered throughout research in the specific discipline of service design. Yet, through iterating on the paper inclusion, one could establish gaps in current literature, as well as zoom in on topics which show relevance to the discipline of service design.

service systems design

SYSTEMS THINKING WITHIN SERVICE DESIGN

What defines service design from other disciplines, e.g. user experience or interaction design is the holistic view and approach. Service design goes beyond an 'interface' and takes into consideration the processes, stakeholders, and organizational structures surrounding the service or product (Sangiorgi & Prendiville, 2017 ; Stickdorn et al., 2018). This method of systems thinking allows for the designer to go beyond the user and the product, and to exploit the service system, thus the environment the service operating within, as a whole (Marquez & Downey, 2015). Here, the interactions between the different actors within the system is what creates its value for the service (Peters, C. et al., 2016; Pakkala & Spohrer, 2019). This involves designing for all stakeholders, users and related organizations in the design process, as well as designing with them, e.g. through means of co-creation.

This user-centered notion of service systems design is important when setting a focus towards on ethics and diversity within design, especially when aiming on how to involve a diversity of users, stakeholders and organizations in the design process. In addition to designing for diversity, the concept of thinking holistically and viewing 'the service as a system' is gaining importance today's world, where society revolves

around the vast use of digital and information services (Penin, 2018).

As explained by Polaine et al. (2013), through service design practices, one can simplify and increase understanding of the complexity of network and technology systems, which can then help to make the service more approachable for the user. In the context of designing in a digital realm, it is therefore fruitful to understand the digital service as a system and use the service design perspective to create opportunities for improvement, as well as help the user understand the system they are interacting with.

SERVICES IN THE DIGITAL REALM

In its nature, service design is not focused specifically on digital or technical services. However, current practices of service design are almost inevitably being driven through a digital nature. This is also stimulated throughout the widespread digitalization of public services, in which the focus is merely on improving the so called 'public encounter'; where citizens and public service providers interact (Lindgren, Madsen, Hofmann, & Melin, 2019). This increase in pressure to digitize (across public services) can be caused by the emergence of the networked society and

digital infrastructure available, where citizens are aware of the convenience a digitalized service can bring (Polaine et al., 2013 ; Ruutu, Casey, & Kotovirta, 2017; Lindgren et al., 2019).

The digitalization of public services aims widely at digitizing previously 'analogue' services, which is explained in the paper of Lindgren et al. (2019), as providing a new way of service encounters. It is here where the importance of service design is stressed, when automating human actions, one should consider that everything relies on the systems design of the IT artefact (Lindgren et al., 2019).

In addition, the importance of design thinking in technological software and services has been valued more and more, due to its inclusion of user centered design, and specifically designing for customer needs (Hofemann, Raatikainen, Myllärniemi, & Norja, 2014). Over time, this has developed and emerged the practices of service design, where service design can now vary between the design of service slightly touching upon the digital, or through the design of technological and digital systems (Goodwin, 2011). As mentioned by Polaine et al., (2013);

“The challenge for service designers is to design for the complex intertwined networked society we live in, and design for flexible services operating in a constantly evolving environment.” (Polaine et al., 2013)

Hence, we can establish that parts of service design have emerged through the design of the digital. Yet, studies have shown that there can be differentiated between a digital service and a digital-driven service. Digital services can be defined through their properties, which sets them apart from digital-driven services. At first, a digital service has to be accessed through products of the user. Here, the promise that the service is dependent on the use of computing services, or the internet, already defines it from other non-digital services. To specify, Pakkala (2019) stated that a digital service is defined by the user applying co-creation through using 'Information, Computing, Communication and Automation Technology', where Ruutu (2017) discussed the use of 'IP-based internet'. Thus, it can be concluded that without access to hardware and internet, a digital service cannot be exploited.

Second, the service outcome being non-physical, or not having 'tangibility' sets a digital service apart from a digital-driven service. Here, the service outcome for the user can be an online AI doctor, which is non-physical, and can advise the patient on its symptoms (Aurich, Fuchs, & Wagenknecht, 2006; Ruutu et al., 2017), whereas a digital-driven service could be an AI optimized booking system, that still ensures a physical visit to a doctor. Hence, one can also observe the approach to using AI within a service, here the AI is seen as a non-human actor in the service, rather than an element of the service (Jylkäs, Aijälä, Vuorikari, & Rajab, 2018).

CHALLENGES OF SERVICES IN THE DIGITAL REALM

Defining a service as 'digital' is of great importance when understanding its connection within a system. As explained by Pakkala (2019), it helps to understand 'technology as an actor'. Digital services can differentiate in behavior if compared to 'traditional' services, such as allowing interaction between users, and the emergent properties of users, which both diminish the control by the service provider (Hofemann et al., 2014 ; Peters et al., 2016). Here, the perception between users, stakeholders and other agents in the system is different than in 'less technological' focused services, which changes the co-creational value of the service (Pakkala & Spohrer, 2019 ; Peters et al., 2016 ; Hofemann et al., 2014 ; Jylkäs et al., 2018).

Through providing a digital service, the service encounter the user is exposed to, is automated, and (sometimes completely) stripped from human actors (Lindgren et al., 2019). Instead, the service makes use of the IT artefact, as described by Lindgren et al. (2019). Here, the IT artefacts; AI or Automation technology, should not be considered as separate elements of the service, but there should be designed for them as non-human actors (Jylkäs et al., 2018 ; Lindgren et al., 2019).

Thus, where service design usually makes use of the study of human interactions, it should be considered that the IT artefact/AI is a non-human actor, and therefore, design for them as a meaningful actor (Jylkäs et al., 2018). Although the use of AI might be fruitful from many points of views, such as enhancing efficiency for both user and provider, there are challenges to automation. Services which require interpretation, as mentioned by Lindgren et al (2019); social or legal services, could unintentionally exclude 'atypical' citizens through

automation processes, and might therefore not represent the same norms as through a human actor (Lindgren et al., 2019). It is therefore important to consider how the AI is developed through the design. As stated by Jylkäs et al. (2018); one can transfer its human knowledge through the design, to apply human values to the IT artefact/AI.

ethics by design

ETHICS IN A DESIGN CONTEXT

As mentioned by Papanek & Fuller (1972), in their book 'Design for the real world':

"Social and moral responsibility is required if one should use the power of design to shape society." (Papanek & Fuller, 1972)

Designers have responsibility towards the society they are designing for, which should come from a moral or ethical standpoint (Papanek & Fuller, 1972). There is a responsibility of the final design by the designer and the process (Papanek & Fuller, 1972 ; Chan, 2018). Here, Chan (2018) argues that it is not simply the case of measuring to whom the designer should feel responsible (the user or society), since this notion can be personal and depending on context. It should be considered to what extent the designer would be able to understand ethical sensitivity; can the designer use moral awareness to address the ethical situation and possible consequences for the user (Corple, Zoltowski, Kenny Feister, & Buzzanell, 2020). Hence, does the designer have the knowledge to work with ethical issues?

In order to increase awareness of the designer, and create a

broader sense for responsibility, the focus should not be too much on the extent to where a designer can be held accountable in terms of an ethical outcome. Hence, the focus should be on the implementation of these responsibility measures into the process of the designer (Chan, 2018). As stated in 'Design for the real world';

"I bet that they never taught you this at school!" (Papanek & Fuller, 1972).

Following up on these ideas, Corple et al. (2020), stated that this means that there should be an understanding of ethics incorporated within the role (and education) of the designer. Thus, a designer should be educated in ethical responsibility, rather than rely on own morals of what is 'good or bad design'. Students should be encouraged to support social responsibility in their design (Papanek & Fuller, 1972).

Taking this into the context of service design, one should not be hold accountable for the service outcome, but rather be thought on the consideration and responsibility of the process the service is designed with.

We can see value-centred design as one of the ground rules of incorporating human values and ethics within design. It

highlights the importance of human values throughout the full cycle of the design process (Friedman & Kahn Jr, 2003). Significant to value-centred design is the iterative process of questioning to what extend the values of users are affected (Friedman & Kahn Jr, 2003). As mentioned by Peters et al. (2020), an important notion of responsibility, as referred to in the first paragraph, is taking into account the human considerations and respect for their wellbeing and values. How can we account for trade-offs between incorporating technology and human wellbeing (Peters, D., Vold, Robinson, & Calvo, 2020)?

Although the paper of Peters et al. (2020), is merely focussed on ethics within AI, their focus on incorporating ethics within the design process is also relevant for service design in the digital realm. As mentioned by Fiore (2020), ethical design can help to close the 'gap' between the use of technology and its ecosystem. It is here where it shows its relevance to designing for ethics in a service systems context, since designing with ethics requires full understanding of the environment a technology (or digital service) operates within (Fiore, 2020).

By incorporating ethics within the service design process, we can educate the designer in 'responsible' design and set ethical guidelines for the full design process. Thus, we can shift focus towards the effects for the design on users and can ensure that all decisions being made are based on ethical grounds (Peters et al., 2020).

ethics and diversity

When extending the topic of ethics towards diversity, we should consider the relation between the two. Here, we can observe ethics as a tool to evaluate the morality of opinions. As observed, the ethical standpoint for the discussion on diversity can be determined as the responsibility of the designer and respect to human values. Thus, the upcoming paragraphs will try to evaluate the moral understanding of diversity in design from an ethical standpoint.

When discussing the ethics of diversity, it should be considered if there is a conceptualization of diversity to be referred to throughout this research. Friedman & Kahn Jr. (Friedman & Kahn Jr, 2003), as mentioned previously in the section on value sensitive design, also specify the designs for diversity, in which they say that a design has to embrace a context and culture, as well as provide opportunities for exploration under different cultures. Thus, the design should not become a moral judgement of what is seen by the designer as a 'good society'.

As formulated by Dali and Caidi (2017); although diversity is used as a 'buzzword' in current society, it can hence be seen as the wide variety of societal members, or as an aspect of social

justice. Likewise, as mentioned by Helberger et al. (Helberger, Karppinen, & D'Acunto, 2018), finding a concrete definition for both 'diversity' as well as its corresponding notion of 'plurism' is hard to constitute. Yet, we can look at a library definition, which encompasses the idea of representing more than one sexual orientation, national origin, religion, socioeconomic status, color, etc (Dictionary, 2021).

Hence, from here we can establish that the inclusion of diversity within this research constitutes that:

One should consider all members of the community, including, but not limited to, the above-mentioned factors, and would be inclusive towards ALL users affected (nonetheless the degree to how much) within the research.

When setting the scope to including ethics and diversity within the design process, we should consider approaching diversity as a standard practice, rather than implementing it because it is a 'hype' (Dali & Caidi, 2017). Here, it is claimed that diversity 'should be there by design' (Dali & Caidi, 2017). In addition to this statement, Peters et al. (2020) poses the need to include the diverse user segment which the service

addresses, within the design process. This builds on to the ideas as proposed in the section on ethics in design, where it was said that there should be a focus on whether the designer should have the ethical knowledge themselves, or that they should be educated.

Although the inclusion of users is a standard practice in service design methods (Stickdorn et al., 2018), this statement exemplifies the inclusion of diverse users representing the complete user segment. The diversity of users should be included in order to understand their exact needs, of which these might be neglected if not including them in the design process (Peters et al., 2020). Therefore, when proposing the implementation of ethics and diversity in a design process, service exclusion can be diminished (Fisk et al., 2018).

setting the scope: problem statement

PROBLEM STATEMENT

From the research it can be concluded that ethics by design touches upon the responsibility of the role as a designer. It showed that it is necessary to educate and/or assist the designer in their ethical responsibility, rather than relying on one's personal moral understanding of 'the good and bad'. Hence, the notion of making service designers responsible of the 'diversity of their design' follows the same perspective. When stating that diversity should be there by design, one should educate and/or assist the designer in this responsibility.

It is important to specify why this research differentiates between services in the digital realm. At first, current practices of service design inevitably touch upon the digital. However, most importantly when making ethical decisions for diversity, working with services of a digital nature (through AI or other technologies) can add an extra layer of complexity. Since one should observe technology as an actor, the interaction (and co-reational value) between the user and the service changes. Hence it is important to identify how the initial understanding of designers on ethics and diversity is changed if the service is reliant on the IT artefact. In addition, when designing for diversity, it is important to consider the norms and values which might lack in a non-human actor, and how to transfer these values through the design, when using AI as a main form of interaction with the user.

DESIGN CHALLENGE

Currently, ethical or diversity guidelines for service designers to whom one can refer to during the design process of services in the digital realm are lacking. There are no specific frameworks to be used. Through staging an intervention in the design process of services in the digital realm, I aim to provide this assistance to the designers. Here, I ensure that designers do not have to rely on their personal moral understanding to be able to implement ethics and diversity within their designs, but that they can be guided by this intervention. Therefore, the following design challenge will be used in the design process:

HOW CAN ONE STAGE AN INTERVENTION IN THE DESIGN PROCESS OF SERVICE DESIGNERS IN THE DIGITAL REALM, TO IMPLEMENT ETHICS AND DIVERSITY?



Diversity refers to the approach: creating an inclusive design process, considering all those affected by the design

Ethics refers to the standpoint: educating the designer rather than relying on the designers' own moral values

The intervention aims at setting a stage for educating the designer in their responsibility for a 'ethical diversity'

chapter two

deep dive

INSPIRATION

This chapter aims to display the different research methods to collect insights on the topics of relevance to the intervention: service design, digital services, and diversity & ethics.

Through a systematic review, insights on the status of current academia were be visualized and discussed. Then, to further research the designer needs and their perspective on the topic of diversity & ethics, designer interviews were performed. At last, to explore the topic of technology, AI and diversity, a research on the practitioner view was executed.

The final product of this chapter are key insights on all the three research methods, which can then be used for synthesis on the project scope.

exploration

This explorational phase was initiated throughout the design challenge:

How can one stage an intervention in the design process of service designers in the digital realm, to implement ethics and diversity?

Before I can understand how to stage an intervention that can contribute to more ethical awareness for diversity in the design process, it is important to explore the underlying topics. Therefore, the topics of ethics and diversity, digital services and service design will each have to be researched to develop a critical perspective towards this design challenge. The questions to be answered, corresponding to the research topics are visualized in figure 2.1.

The aim of this chapter is to develop insights from these three concepts and understand what is needed from the intervention, to be able to guide designers to implement diversity and ethics in the design process, rather than relying on their own moral understanding.

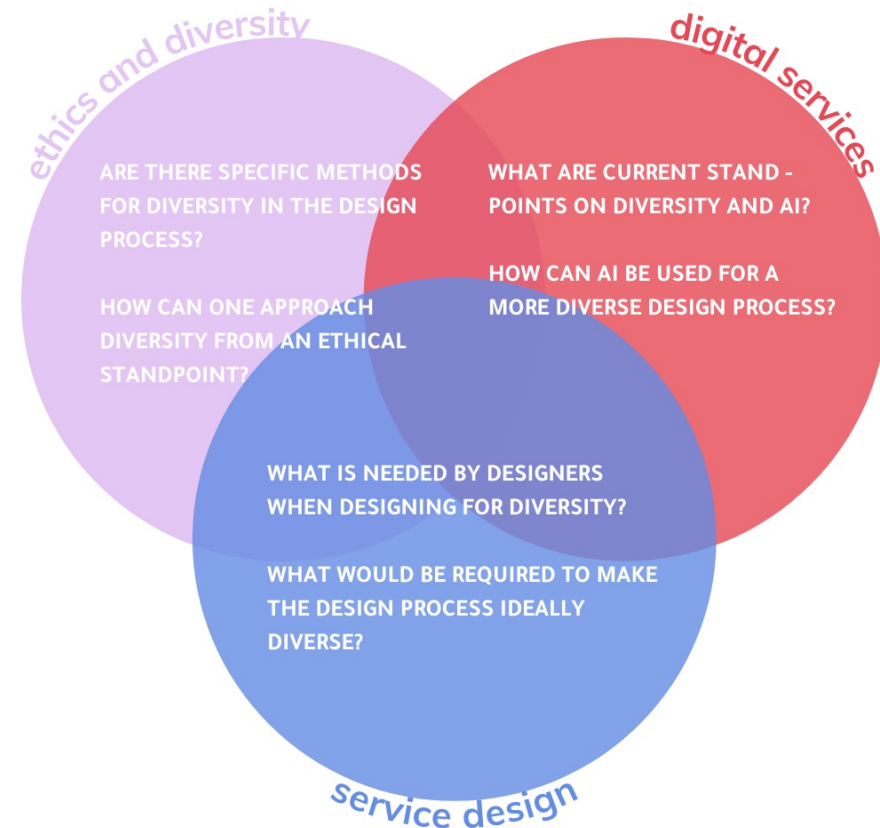


FIGURE 2.1, VISUALIZING THE THREE RESEARCH SUBJECTS

To ensure method triangulation, three different types of research will be conducted. At first, it is important to consider that by triangulating research, one could prevent bias. Second, through triangulation one could motivate insights through confirmation, but also find different notions to explain a certain phenomenon (Noble & Heale, 2019). Thus, through applying the three different methods as proposed below, I can develop a critical approach towards what is needed to be included in the intervention, to support designers in implementing ethics and diversity in the design process.

At first, a **systematic literature research** will be conducted, which allows to systematically explore the status of current academics on diversity and ethics within the design of services in the digital realm. The aim is to observe if the perspective from this systematic research can confirm the research question and scope of this research, and if there are references to specific phases in the design process where the intervention can be staged.

Secondly, **designer interviews** will be carried out to include a perspective on the topic of working on, and actively applying diversity in the service design process. The goal of the interviews is to gain more insights into the obstacles designers have when working with diversity, and to observe the designers needs for being assisted in their ethical understanding of diversity.

Thirdly, a **practitioner view** on diversity in design through services in the digital realm, and in particular AI, will be studied. The goal of this method is to research the relation between ethics, diversity, and AI. Here, different perspectives from digital consultancies and design

organizations will be explored to analyze their view on how to account for AI in a diverse and ethically aware design process.

PREVENTING BIAS

It is important to set a research context and boundaries to detect and prevent potential bias, that might arise through methods and analysis of the data. Through method & research triangulation, the first steps towards practices of bias mitigation were set (Stickdorn et al., 2018).

However, it is important to stay alert to potential bias throughout user research, especially when trying to find confirmation for one's stated hypothesis in the initial design challenge. Hence, cognitive bias can alter the behavior of the researcher to form confirmation bias through the analysis, by trying to find pain points aligning with the initial assumptions (Babich, 2020). Thus, as a design researcher, I should be considerate to stay open minded, and neglect previously made assumptions throughout the analysis to prevent influence on the cluster results.

Following confirmation bias, one should be mindful of clustering illusion, where one could establish faulty clusters, due to limitation in the size of data available (Babich, 2020). Therefore, it is important to gather enough data, for example, as has been done through research triangulation.

Lastly, due to the extensive nature of the research phase, spanning research over a few weeks' time, it is important to consider recency bias. Recency bias could lead to the researcher valuing the data gathered in latest weeks of research over the data found in the first

period, due to weighing recent experiences more (Babich, 2020). Hence, the researcher should equally weigh the data gathered through different time periods and stay updated on data gathered in previous sessions.

It is therefore important for the researcher to set metrics and methods for the analysis and synthesis of the data. Awareness throughout the analysis and synthesis stages can help one to stay alert to potential bias and keep an open-minded view throughout insights generation (Babich, 2020).

SYSTEMATIC RESEARCH

Visualize the current studies on ethics and diversity within service design in the digital realm

Identify in which stage of the design process to stage the intervention

DESIGNER INTERVIEWS

Observe how ethics and diversity are currently being applied within the design process

Understand the needs of the designers when being assisted in ethics and diversity

PRACTITIONER VIEW

Analyze the relationship between ethics, diversity and AI

Understand on how to account for AI in a diverse and ethically aware design process

systematic literature review

The use of a systematic search will help to visualize if there are current studies on the use of ethics and diversity within the design of services in the digital realm, that propose ideas for an intervention, or principles to guide the designer. In addition, the systematic search can help to identify where in the design process the intervention could be staged.

METHODOLOGY

As has come forth from the literature context, ethics and diversity by design have the need to be implemented in the design process, and serve as a tool to be used, and educate, the role of a designer. However, from the initial research, it showed that currently no academically grounded principles to implement diversity ethics have been set up to be used by designers.

Therefore, this research provides a systematic way to analyse if current academia proposes principles for designers to be used to implement ethics and diversity. Although the use of systematic research is not yet fully integrated within the social sciences, its tools are useful to display relevant research and its data from pre specified eligibility criteria (Snyder, 2019).

A systematic research serves as a limitation to potential biases, due to its critical selection of papers, diminishing researchers preferential

influence on paper selection. In addition, it is claimed to serve as a method to build on the best available knowledge within the specific discipline (Tranfield, Denyer, & Smart, 2003) (Snyder, 2019). Hence, it can deliver its purpose within this research study when mapping the current field of ethics and diversity within service design in the digital realm.

Systematic reviews are, as its name might indicate, characterized by their systematic approach and thorough steps of selecting relevant studies to be included in the review. The following steps are recommended for the meta-analysis in a systematic review (Davis, Mengersen, Bennett, & Mazerolle, 2014).

1. Formulate and focused review question
2. Comprehensive search and Inclusion of studies
3. Quality assessment of studies and data extraction
4. Synthesis of study results
5. Interpretation of results and report writing

SEARCH STRATEGY & SELECTION PROCESS

The eligibility criteria for this systematic search have been displayed in Appendix 1. Once these were set up, it was established that the database of Aalborg University, AAU PRIMO EXLIBRIS will be used as a main search engine. This database has been chosen due to its

accessibility to many databases, journals and books shown in search through Aalborg University, for whom this thesis will be written, as well as its accessibility to different disciplines. The database encompasses studies from a broad variety of journals and has therefore been chosen over databases with limited search options, e.g. Google Scholar or limited search results, e.g. Web of Science.

To ensure and address the full scope of the research, Boolean search terms will be used to filter the literature on relevance of the topic. The initial scope of the research is on ethics and diversity in service design in the digital realm, however, the topics as shown in figure 2.2 have been included in the study to account for a difference of wording in the study subjects.

AND Title	AND Title	AND Title
Design	Diversity	Service
	Ethics	Digital

FIGURE 2.2, THE BOOLEAN SEARCH TERMS

At first, query searches have been continued to narrow down the topic, as well as to include relevance of the papers. As claimed by Davis et al. (Davis et al., 2014), it is necessary to redefine and iterate on the scope of the study, to ensure its relevance. In figure 2.3, the final search query is displayed. Here, it shows an iterative process of redefining the scope of research and excluding studies to ensure relevance of results.

Title contains Design AND Title contains divers* OR ethic* AND any field contains service AND any field contains digital	202
After excluding: Other languages Irrelevant subject areas Articles, conference proceedings, book chapters	136
After Title Selection	70
After Abstract selection	20

FIGURE 2.3, ITERATIONS ON THE SYSTEMATIC REVIEW SEARCH

DATA EXTRACTION & SYNTHESIS

After selection on topic through the Boolean search terms as can be seen in the previous section, a selection was based on relevance of the title. Here n=70 studies were selected for further consideration. After title selection, abstract selection followed. Here, the abstract was read to establish relevance in accordance with the eligibility criteria. From the abstract selection, n=20 papers were selected to be considered for a study of content.

First, the studies were reviewed individually. The guiding questions for review were:

- Are there specific tools/methods for diversity in the design process?
- How to approach diversity from an ethical standpoint?
- What are current standpoints on diversity and AI?
- What is needed by designers when designing for diversity?

KEY INSIGHTS

It was concluded from the initial literature review, that it is needed to educate designers on their ethical responsibility of diversity within their role as a designer. Therefore, within this systematic search, it was important to understand if there could be a recommendation to focus on a specific phase in the design process, and if there were possibilities to explore what could be included in the content of the intervention. The systematic review data was clustered into 6 categories, and can be seen in figure 2.4.

FORMAL ETHICS

When defining the scope of ethics, it can be concluded that the data found was very much focussed on ethical procedures through research. The studies of Race et al (2019) and van Zyl et al. (2017), covered this topic, and discussed formal ethical structures and power relations between researcher-participant, and how this could potentially be reflected in the outcome. It is also important to stay critical on 'formal' ethics and determine whether it is right to judge participants on 'active' engagement, classifying a user group as 'vulnerable' and determining how and if a participant could be included in the study (Kraff, 2018).

The paper of Lindley & Sharma (2016) stated that as a researcher, it is valuable to open 'the stage' for ethical discussions on such topics and think about how to turn this into potential future considerations. Here, they recommend exploring design fiction as a tool to make such an ethical discussion tangible. This follows the ideas of Gray & Boling

(2016), who discuss that ethics can be used as a method, and increase critical reflection, if ethics are being incorporated within the design process.

DESIGN TOOLS

Throughout the systematic review it showed that multiple papers covered design tools, which showed examples of tools contributing to the implementation of diversity ethics within the design process. These design tools were mostly, but not limited to, ideas on how to involve more diverse users and perspectives in co-creation sessions.

For example, the papers of Neate et al. (2019) and Fuglerud et al (2020), discussed how co-creation sessions on personas could enhance the diverse and inclusive representation of the personas, and display distinct features which otherwise could be missed out. Also, co-creation could contribute to more user empathy from the designer, and receive feedback on the user interpretation of the design (Begnum, 2020).

Yet, the results also showed more specific tools, such as stakeholder tokens, that contribute to a more diverse approach to stakeholder mapping (Yoo, 2018). Scenarios & design fiction that contributes to visualization of ethical considerations (Lindley & Sharma, 2016 ; Rinaldi, 2019 ; Fuglerud et al, 2020) and prototyping methods that contribute to setting a common ground with the users (Close & Harris, 2019 ; Jablow, 2019)



miro

FIGURE 2.4, THE FINAL CLUSTERS OF THE SYSTEMATIC RESEARCH

RESEARCH METHODS

Then, through analysis on the research methods, multiple papers discussed how to propose more diverse user research and to take on a more diverse perspective from the research phase. These insights showed that one should find a balance between taking an 'average' user and focussing too much on the differences. Rather, focus on every user possibly affected by the design (Literat & Brough, 2019). Hence, there should be an opportunity to include outliers and extremes in the research phase, and not rely too much on statistical data when forming conclusions (Fuglerud et al., 2020).

In addition, Rinaldi et al. (2019) proposed to set users as subject matter experts in the research. Thereby, focussing on what they say, do and make, and provide them with tools to express their thoughts in the design process. This can be useful to receive new inputs, and create a more inclusive design, as, stated by Li et al, (2020); Designers themselves can be too limited to create inclusive designs.

DESIGN PROCESS

The insights on the design process data aimed to take a focus on specific phases of the design process, where, and how, diversity ethics could be applied.

For a study specifically focussed on disabilities, it showed that there should be a general focus on 'the universal human experience', which helps to create a more inclusive design process (Powel & Pfahl, 2018). Another study showed that ethics should assist the designer besides

the design process, and not to be used at a specific stage or just one method of evaluation. Having ethics as a method in the design process, helps to stay critical, and can steer the design towards a more diverse outcome. (Gray & Boling, 2016).

When being critical on the structure of the design process, it can be argued that the current 'double diamond' model is too limited, given the narrow design principle in the middle of the diamond. Adjusting the model to have multiple principles in the middle of the diamond, allows for multiple outcomes, and thereby a more diversified final design (Li et al., 2020).

DESIGN OUTCOME

As stated in the paragraph above, adjusting the process, will therefore also diversify the design outcome. This could even lead to ending up with multiple designs, which can then be critically evaluated to pick the most suitable one (Li et al., 2020).

Lastly, the design outcome should be ethically discussed in its relation to cultural appropriation and interpretation in social settings (Literat & Brough, 2019). Considering and working actively on how different cultures could interpret a design, could ensure a more diverse final design (Gray & Boling, 2016).

DIGITAL PERSPECTIVE

The digital perspective touches closely upon the insights of the design outcome. Here, consideration for the social environment is especially relevant for technologically focussed services, in which the

social context could alter the interpretation of the technology, once deployed (Literat & Brough, 2019). It is therefore important to stay considerate of what could happen with the technology in the service once the final design is released. This is followed by the notion of Van Zyl et al (2017), who stated that there should be a careful consideration of how digital artefacts can be interpreted in different cultures, and if they are accepted.

As mentioned before, in the paper of Li et al. (2020), it is discussed how the model of the double diamond can be diversified. Here, they discuss how AI could be used to enable a more diverse perspective on the design process. In which it showed that if AI is taught to recognize certain user scenarios, it could generate diverse outcomes. Therefore, enabling AI to be used as an agent for diversity.

Thus, as can be concluded from these summarized insights, the systematic review provided multiple insights in an overview of smaller tools and directions to refer to ethics and diversity through the design process. However, the results did not show a concrete concept for an intervention, or a set of principles which can guide the designer in implementing diversity ethics. Therefore, it is first needed to have further research on the intervention, such as; which needs it should address, before it can be decided which (smaller) tools/methods as discussed above can be useful.

PHASES IN THE DESIGN PROCESS

To provide a further means of Pattern Recognition (Bjørner, 2015), it was decided to additionally, map the data from the systematic review against the design process of service designers. This could help to establish, through the view of current academia, where it is valuable to stage the intervention in the design process.

Therefore, the findings were mapped against the double diamond, a widely used design methodology for service designers (Stickdorn et al., 2018). From here, the insights (figure 2.5) showed that when focussing on diversity and ethics in the first phases of the design process, most of the data was related to research methods, decisions to include specific user groups in the research and inclusion of diverse stakeholders. These findings displayed how to make the right decisions for an ethics and diversity perspective when determining who to include in the research focus.

When analysing the findings in the last phases of the process, it could be seen that these were aimed at solutions for working with methods and tools, such as: proposing tools to work with diversity and cultures during participatory or co-create sessions and the diversity of the final design. Here, the focus was on consideration for diversity through user involvement.

Through the analysis of the data from the systematic review, it showed that both the first and last phases of the design process

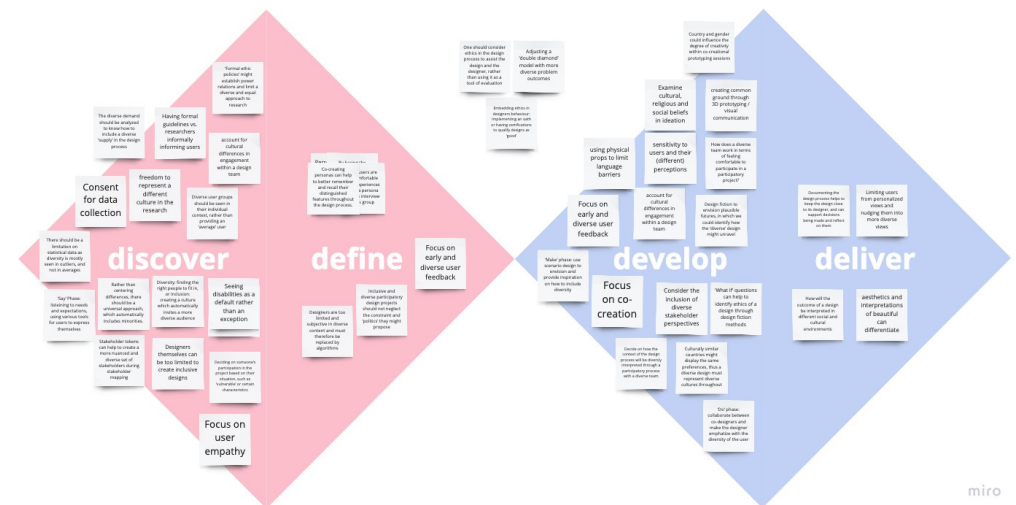


FIGURE 2.5, MAPPING THE FINDINGS AGAINST THE DOUBLE DIAMOND

have impactful moments which can be considered for staging the intervention on diversity and ethics. However, at this moment, it seems to be too soon to set a focus on one of each phase, and there is not enough support to determine whether the intervention should cover one phase or be spanned across the design process. The next sections will elaborate on this question, and determine, though the broader perspective of design experts, where the intervention could be staged.

designer interviews

Designer interviews were set up to get a broader view on the topics of ethics and diversity, and how these are being, or desired to be applied in the design process. In addition, the interviews provide insights to the obstacles designers have when working with diversity and aim to highlight the designers needs for being assisted in their ethical understanding of diversity.

INTERVIEW METHODOLOGY

The requirements for the experts/designers to be included for the interviews were set such that they should be actively engaged in a design discipline, in which they are, or have done previously, designed for, or with diversity. Yet, it could also be that the expert has had experiences with employers or clients addressing the topics of diversity throughout their design projects. The sampling of the participants, has, merely due to budget, time and COVID-19 constraints been guided through convenience sampling (Bjørner, 2015).

As a researcher working on diversity, I should be conscious and reflect on the diversity throughout my own research methods. Therefore, these expert interviews include designers from different sized companies/agencies, a broad range in seniority within the design discipline, and both males/females, preferably from/working in, different countries. Taking all requirements into consideration,

convenience sampling was executed, and interviewees were recruited through my own network, as well as suggested connections from peers.

Thereafter, the final interviews were conducted with: 7 participants aged 20-40, Currently habitant in European countries, Levels of seniority within the design discipline ranging from 1,5-15 years and working in the following industries: Corporate Transport/logistics; Consultancy; Innovation design; Strategic Design.

Here, a limitation which must be noted is that all interviewees were from European origin, and might, therefore, show a more one-sided perspective on this issue.

The interviews conducted, were, following guidelines of Bjørner (Bjørner, 2015), constructed as in-depth interviews. For a practical and thoughtful application of this type of interview, two important considerations are (1) what is desired to be known, and (2) where is the information of the expert interviews used for (Bjørner, 2015). These two considerations contribute to form a concrete framework for the interview, as well as to prepare for the data analysis and synthesis to be conducted after the interviews.

RESEACRH FOCUS

The first consideration: what is desired to be known, will for these interviews focus on the experience and opinion of the experts on including diversity in the design process. In the first part of the interview, the nature of the thesis research will be introduced, and questions to familiarize the interviewee with the topic will be asked. What does the interviewee think of when talking about diversity in (digital) design, have they come across diversity in design in their academic/job experience?

Following, the aim of the second part of the interviews is to find out how the experts are currently dealing with diversity in their own design processes; how is the approach towards diversity (from a company/client perspective), where is it applied in the design process and are there currently any tools/methods being used.

In addition to experience and current practices, the third part of the interview will focus on how the experts would idealize diversity in the design process. Due to the experienced nature of the experts, it can be valuable to observe how the intervention can contribute to an idealistic notion of applying diversity in design

Throughout the interview process, a semi-structured approach was handled, of which the lay-out can be found in Appendix 2, as well as the interview transcripts.

PURPOSE

The second consideration: where is the information being used for, aims at how the data from the interviews will be used in further research. Here, the aim is to consolidate data from the interviews, and to cluster them according to meaningful insights given.

The data will contribute to staging the intervention, and guiding designers towards implementation of ethical and diverse practices in the design process for services in the digital realm. Therefore, the data can contribute to defining a probable phase of the intervention in the design process, or lead to insights on tools for ethical and diversity guidance in design.

KEY INSIGHTS

From the interviews with designers, it was important to understand:

1. How do the experts experience diversity and ethics?
2. What do they view as obstacles for diversity and ethical practices?
3. How do they view diversity within a design team?
4. What could be possible solutions for them to be guided in ethics and diversity?

To find answers to the questions as stated above, the interview transcriptions were analyzed through five main clusters: Definitions of diversity, Obstacles, Design Teams, the Design Process and Methods/Tools for solutions. The notes on the interviewees were analyzed in accordance with the clusters as stated above and followed the Pattern Recognition principle as proposed by Bjørner (2015). This was done per individual interview, which resulted in a total of 7 interviews analyzed per the above-mentioned clusters.

The notes on the interviews can be seen in Appendix 2 and are used, together with the recording, as the basis for this data collection. The clustered insights can be seen in figure 2.6.

DEFINING DIVERSITY

When defining diversity, multiple interviewees mentioned that for them it meant representing the users they were designing for, thereby mapping the differences that cater this group, and reflecting all their needs in the final design. Thus, as a designer you should find ways to state differences in your audience, as well as finding a meaningful representation of your audience. In specific, one interviewee mentioned that diversity is not very explicit, and that sometimes as a designer, it can be hard to find representation, versus having biased data.

“Diversity is a hot topic in design and this is for very good reasons, it is an important topic, since no one size fits all.”

Here, it was also mentioned that diversity in design can be leveraged from different angles, from a company perspective, and a designer perspective. As a designer, you are not always consciously striving for ethical design, but this happens, just like bias, unconsciously. Multiple interviewees stated here that it is up for the designer to decide if you want to design with diversity in mind, and that this is mostly reflected in the physical outcome of the design.

“If you work with people with are similar to you, it is not really a stretch, and it requires less thinking where you end up doing the same thing.”

However, when approaching it from a company perspective, the

design Process

A lot of research, so be the diverse researchers and look for diverse research.	making sure that you consider the strong and the weak user	Make sure the information you get from the users is important and representative	how might we involve users. So really promote it through research. Stakeholder mapping and possible different user profiles. Try to look into different aspects.
The unintended consequences; start mapping 'what if'	Research and testing of prototypes. These touchpoints are the chance where we can be diverse	prioritizing who you are designing for, starting to break that down, and these are the users.	But as designers it is our responsibility, we should be the ones setting these requirements
it was needed to involve more diverse people in the design process to test	It is a considered contribution if you move diversity away from one phase	It is important to consider diversity at every phase of the design process	

design teams

If you work with people which are similar to you, it is not really a stretch, and it requires less thinking.	I think by having the team as diverse as possible, even if there is a good design critique culture	Bring in diversity at a high level, this translated down in the teams they work with
Potentially some friction from their side	sometimes you need stepping stones/ partners to communicate the right ideas	you have to make the friction; to what extent should you actively confront people of diversity within the design process
People do agree with my ideas, but sometimes it is more difficult to reach out to others	Some developers do not like to speak up, making sure that everyone gets a chance to speak up.	From the beginning of the project, setting this mindset. Communicating with the rest of the team.

defining diversity

Diversity would be actively working with people who have an equal amount of power.	It needs to reflect what we believe the end product will be addressing	Representative, or a bias?
diversity is related to cultures, all the differences that make up a society and that make a 'group'.	Does it cater to these different groups?	Mapping out the needs and differences and bringing that into your actual design.
diversity is about designing for many different types of people for the same time, mapping out and understanding the differences between the type of audiences	It is mainly about being able to create designs being used by everyone	to be mindful of as many perspectives as possible

obstacles

It is more the education of the decision-makers, and the mindset of the holistic view. Putting it all on designer's shoulders	when discussing this with partners and clients it becomes harder. Bridging the team connection there	we should design it with diversity in mind. How do we influence algorithms to be more diverse?	the personas they are not that diverse	sometimes it will require monetary benefit to convince the client for designing for diverse groups
If the model behind it is biased, how do you ensure that you have that diversity throughout	How do you make it accessible for the most confused user?	It hard to do at an individual design level, it should be reflected in values and mental changes	educating the designer is also easy to say, and would not necessarily create impact	this required long-trust-building exercises before the interviews, these exercises to get to know participants were not seen as a separate element, but as a part of the research process
sometimes we come in and the client has a really clear image of who their customer is, and sometimes you really have to progress this	An interesting one in terms of diversity is where you would do it face to face, which might take more effort	The systematic approach is actually what can cause limitations in diversity.	it was needed to involve more diverse people in the design process to test	

methods/Tools for solutions

develop a tool or method that should connect the people who want to introduce the discussion with the people who are well-intentioned but are unable to do it.	Make it tangible for the designer.	Probably what we need is practical guidelines in specific. How do you select the right type of sample, and how can this be reflected, and be made accessible?	Moving away from the persona view, but more towards an arch-type view.	navigating awareness and getting people from these backgrounds, in qualitative research	Because you design for the extremes, you automatically design for other groups	There needs to be a big push of people not being trained as designers into this process.
Co-decision gives away the power of the designers	diversity should be implemented more like a mindset	show outcomes what it can deliver and make it valuable; make the value of diversity tangible	try to include different stakeholders before you start sampling. Understanding the diversity of the stakeholders	Co-creation, user-centric,	Maybe even some metrics around it, how are certain users represented?	Will be interested in a checkbox to make a conscious decision. Make sure to have a hypothesis and test this.
in order to create a sensitive feeling in terms of diversity, one could use more considerations & consciousness	CO-creation and designing with clients to get out of the bubble.	how do you involve people that do not want to be involved? How to include them? It is here where structural diversity is lacking.	Make sure to implement quick wins,	when recruiting research participants, define what makes them vulnerable. Systematize diversity	if personas have been done right, they are based on customer interactions. Here you can see patterns that are based on real data	

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FIGURE 2.6, THE FINAL CLUSTERS FROM THE DESIGNER INTERVIEWS

interviewees stated that it is more focussed on the process; representation in the design team, bringing up the discussions and working following guidelines. Multiple interviewees stated that the discussion on diversity can be a point of friction, do you want to keep bringing the diversity topic up within the team if no one is actively pursuing change? Here, another interviewee stated that due to the regulations they are required to work from, it is a long stretch to make a difference in having diverse data and insights.

DESIGN PROCESS

When discussing the application of ethics and diversity in the design process, the interviewees felt that diversity and ethics should serve as a mindset and can be focussed on the touchpoints where users are involved. It was mentioned multiple times that by changing your mindset as a designer, it makes you feel more responsible of your design and process.

“It is a behavioral change, it is a change of mindset, and not a set of tools. What improvement are you measuring and how are you doing this?”

When asking the question on the preference for a specific phase, multiple interviewees mentioned that the intervention should not be staged in one phase of the process. Yet, it is valuable to start thinking about diversity in the research phase, and then continue to take this notion of diversity to the phases following. The interviewees mentioned that there are some specific moments when users are involved or when the design is delivered, where the ethics and diversity show that you have, and want to be more conscious.

However, in general it was recommended to observe diversity from a mindset, rather than an implementation in one stage of the design process.

OBSTACLES

As relevance to what the intervention should contribute, the interviewees were asked to define their obstacles when designing for diversity. Here, a variety of answers were given. Multiple interviewees mentioned that working together with the client and convincing them of the need to design for diversity can be hard, since most clients are only convinced by monetary benefits.

“The team discusses diversity a lot, however, when discussing this with partners and clients it becomes harder. It would be good to bridge the team connection there.”

Two interviewees also mentioned that when designing for diversity, there should be a focus on involving users even if they do not want to be involved, to prevent bias in selection stages. Therafter, multiple interviewees said that getting the right representation of the users, is a major obstacle for having an ethical and diverse design process, since there are many ways in which this can be hindered (data selection, corporate guidelines, users not willing to participate).

“This is where you can be conscious to test this split of people, even if you cannot involve them, you have to find other methods of validation.”

Lastly, an important message, mentioned by multiple interviewees is

that there should be a useful way to 'educate' the designer. This was mentioned specifically, as teaching them a one-day theoretical course on diversity is not enough and there is a high level of difficulty of bringing in diversity on your own. Thus, the intervention should be guiding along the design process.

"I would be interested in a checkbox to make a conscious decision"

DESIGN TEAMS

When discussing design teams, multiple interviewees covered the urgency of working on, or even being conscious of the impact of diverse design teams. However, since this might require systemic changes, this is unfortunately, something outside the scope of the intervention.

Another related topic mentioned multiple times, was the assistance in bringing up the discussion of diversity. Multiple interviewees mentioned that it could cause friction, if you are the designated person within your team having to start the discussion on diversity every time. However, it is not only about bringing up the discussion, also about distributing power such that everyone can have a say in the project.

"Diversity would be actively working with people who have an equal amount of power. Sometimes it's good if I'm forced to put my own assumptions at the side, this is also a process of a lot of friction."

Sometimes it can also be good to realize that the people you are designing for, are not reflected. As said by more interviewees; if we consider diversity within the teams, it would be fruitful to have an open conversation, and explore to push back a bit on our own designs. Ethical design, and diversity is the responsibility of the designer, but also from the whole team. It would be great if there would be some way in which you can communicate or discuss this with the team.

To conclude, the designer interviews provided useful insights to what the designers think is necessary to include in an intervention, and which obstacles they find most important to be addressed. Again, it has been confirmed that the designers require assistance in their ethical awareness, and it showed that this is especially needed when raising the topic of diversity in the professional setting.

practitioner view

To further broaden the scope amongst understanding the relation between AI and service design, this section will cover the method of research on AI, diversity, and design from a practitioner view. This view allows to understand how AI should be used and applied in a diverse design process, and which obstacles one could expect when trying to address diversity in AI development.

METHODOLOGY

The aim of the practitioner view is to create a broader understanding of practical applications of AI within service design or service innovation and understand how we can design ethically for diversity. By allowing a specific focus on AI and diversity in the design process, it shows the unique AI related take-aways for the further staging of the intervention, which have not been observed in the designer interviews and systematic research yet. Thereafter, the aim is to transform the design process of services in the digital realm, to a better approach towards diversity.

The articles for this research were selected by assessing their relevance to following topics: 'AI and its relation to design/diversity' and 'Diversity through the design process'. Thereafter, search results, through using Google Search, were optimized, and 10 articles were selected based on content and relevance to the so-mentioned topics. Here, it was a prerequisite that the article should have a primary focus

on a practitioner view on the topic, either through a published paper, interview, or solely written article. Concluding the research and observations on the practitioner view, the articles were summarized and clustered, showing the final clusters in figure 2.7.

KEY INSIGHTS

Within the analysis, the aspect of storytelling, as explained by Bjørner (Bjørner, 2015), contributed through summarizing the articles in a short and comprehensible manner. An example of the above-mentioned clustering of the data can be seen in figure 2.7.

DESIGN PROCESS

The insights with relation to the design process, showed that a careful consideration for AI in the design process is training and testing of the technology. It was mentioned that one should 'train' AI through the design process in diversity, as one would do for a human (Farley, 2019). Therefore, there should be a higher focus on the data that could be provided for training, and more attention for continuous testing and evaluation of the AI throughout the design process (Gao & Mantin, 2019 ; Chang, 2020).

In addition to continuous testing of AI, Chang from Harvard Business Review (2020) stated that if one desires to implement diversity in the technology and the final design, that there is a high need to change the structure of the process. Here, it was emphasized that it starts by including the right users in the process, and reflecting users through representation. This idea also came forth from project inkblot, although here, the focus was not specifically on AI, it did state that the design process should reflect equal engagement of the people you want to reach with your design (Gao & Mantin, 2019).

DIVERSITY IN DEVELOPMENT

When shifting focus to diversity in AI, multiple insights stated that the main path towards for diverse design of AI is created by having a diverse development team, which could help to 'redesign' diversity from the start (Daugherty, Wilson, & Chowdhury, 2018 ; Farley, 2019 ; Lindberg, 2020). This is explained that by having a diverse team of software developers, multiple perspectives can be reflected in the design.

The topic of diverse design teams has been introduced before, yet the problem occurring is that decisions on recruitment, and diversity in corporate teams pose a more systemic problem than this intervention could address. This is shown in the example of IBM, where they state that even the AI used for recruitment, is biased, since the data is mainly based on a 'white male' perspective, and therefore, automatically excludes women from the recruitment process (Zhang, Feinzig, Raisbeck, & McCombe, n.d.). Even though the desire would be to reduce systemic exclusion, and introduce diversity at all levels, it is important to stay focussed on an achievable goal of this intervention. Therefore, it is important to also shine light on what can be done to understand the consequences of having a one-sided perspective.

Hence, insights showed that one should broaden the view of a design team, as moral values are, even though implicitly, reflected in the design of the AI (Chao & Ibars, 2018 ; Farley, 2019). Thus, one should question themselves how the decisions of the design team

design process

the need of changing a design process in order to address more inclusive design.

the 'training data' being used to evaluate AI within products and services, serves major flaws when designing for diversity

3. Focus on diversity through processes and training.

One should evaluate the design of AI as if you would train a human

design teams

2. How do the the entities within the team influence the design decisions?

redesigning the diversity from the design team.

5. Build inclusive AI teams; the moral values of developers are reflected in the AI.

we cannot take-away bias from people, but rather broaden the view of the team

defining diversity

diversity is explained as ' the composition of different people being represented in what you make'

by actually implying to design for diversity, one acknowledges the 'differences' one is designing for

designers should feel a certain degree of responsibility over everyone which is potentially affected by their design.

methods/tools for solutions

1. Be aware of the context, for prevention and stimulation of bias.

2. Test and mitigate bias.

1. Involve excluded and diverse communities in the design process.

5. Embed diversity and inclusion at a systems level

broadening the audience for your design through thinking in capabilities

AI bots, it was said to reflect different voices to the bots to accommodate a more diverse public with the design

how do you measure the outcome? Find metrics; knowledge, awareness. How can the intervention progress?

. What is the worst-case scenario, and why?

1. Redefine Bias as a spectrum; focus on the small interactions where bias can occur

Show the 'edge' of use cases

one should always consider the full range of harm the design might cause

AI is both reliant on its data inputs, as well as its code as written by humans

3. Who might you be excluding?

one should have continuous testing to prevent this bias.

designers and companies should try to set values and control for what happens with their tech after being deployed

obstacles

AI learns from the data it is 'fed', thus if these show bias, it is shown through the AI as well

one should not underestimate the number of excluded individuals through design

AI is not capable to analyze the 'nuance of social context'.

the data provided should reflect diversity, such that the AI can learn from diverse data input

4. How will you engage the people you want to reach within your design process, equitably?

AI is based on human data, thus if the primary source is based on biased data, this will be reflected in the 'objective' outcome of the AI

the 'training data' being used to evaluate AI within products and services, serves major flaws when designing for diversity

miro

FIGURE 2.7, THE FINAL CLUSTERS OF THE PRACTITIONER VIEW

reflect both the user perspective, as well as the desired 'AI outcome'. Here, it is also important to understand that if the data, and the developer team is biased, how can this bias still be mitigated to the greatest extent, such that the AI or technology reflects diversity?

Following up the topic of diverse design teams, it was stated that it is a responsibility of designers to reflect and represent the people that you are designing for, as well as feeling responsibility from your design towards them (Chao & Ibars, 2018 ; ico-D, 2020). Therefore, especially when designing digital services including AI, one should consider how to reflect 'differences' from the data, in the design outcome.

OBSTACLES FOR DIVERSITY IN AI

When observing the papers on potential obstacles for implementing diversity in the design process, it showed that the lack of diversity is seen in the reflection on user inclusion, active involvement, and data being used for research. Both show that this is merely due to the design team not having the knowledge to understand that they are neglecting a certain user group.

At first, through the notion of active user involvement, it showed that designers should be aware of who might be excluded in their design process (Jenkins & Baker, n.d.). This means, that if you imply to have an ethical design addressing diversity, one should be considerate of everyone possibly affected by the design and try to have their voices

represented in the design process (invite them for co-creation, workshops on personas, test the final design with them, etc.) (ico-D, 2020). Here, an important notion is that designers must be aware of this and be sure to broaden their view to understand if their design is neglecting a certain user group (ico-D, 2020) (Chang, 2020).

Secondly, the data being used for research showed to be a major obstacle for diversity. Multiple papers addressed that the data being used shows a high tendency to be biased (Daugherty et al., 2018 ; Chao & Ibars, 2018 ; Farley, 2019 ; Lindberg, 2019 ; Silberg & Manyika, 2019 ; Zhang et al, n.d.). Here, an interesting take-away is that this is following the same reasoning as not including the right people in the process: The design teams are not diverse enough, and therefore designers and developers do not know they are neglecting a certain user representation.

To conclude, the practitioner view showed that bias plays a big role in addressing ethics and diversity in AI development and digital services. Here, bias can come from a systemic side, not representing diversity within the developer team, as well as research bias being reflected through the technology.

key findings

Whilst conducting the research, it showed how broad the topics of ethics and diversity, digital services and service design are. It is therefore important to understand what is currently being addressed in academia and design disciplines, to know what can be used to stage the intervention, what this intervention can bring to designers, and how AI as a non-human agent can be accounted for.

SYSTEMATIC REVIEW

The aim of the systematic review was to gain more insights into current academia on the topics of ethics and diversity, and service design in the digital realm. This thesis research aims at approaching diversity from an ethical standpoint; thus, applying diversity as an ethical practice in design. The systematic review confirmed this approach and showed that ethics and diversity can contribute to a design process in two ways. (1) Discussions on ethics were more related to power relations and ethics for research practices, in which one must decide how to collect data and gain consent. (2) Diversity was approached from a process and methods perspective, in which suggestions for different tools on how to incorporate diversity through the design practice were given.

What did show throughout the systematic review was that most papers written on the topics of diversity ethics within digital service design provided case studies, potential tools, and evaluations but did

not propose set principles, or an intervention, to be undertaken to implement diversity practices in the design process. This is an important notion, as it confirms the scope of this thesis research. The gap found in the primary literature review, is thus, confirmed through a systematic search, and does uphold the design challenge as phrased in Chapter 1 of this thesis research.

DESIGNER INTERVIEWS

The designer interviews were set to create a better understanding of the need for the intervention from the designer's perspective, and thereafter, to gain information on potential ideas and methods which could contribute to the design of the intervention. Where the first aim of the interviews was to create understanding on which phase the intervention should be staged within, throughout conducting the interviews it showed that this initial scope of staging an intervention in a certain phase of the design process, is not what was desired. Hence, it showed that designers were far more interested in the exploration of diversity ethics as a mindset, and therefore, also agreed with the fact that designers should be educated/guided, and not solely rely on their moral understanding of diversity.

Although the designers discarded the idea of focus on one phase, they did highlight the need for an intervention as an overarching view, reflection or checklist, to create more awareness for diversity

throughout user interactions within the design process.

Following, an interesting take was also the widespread request for more diversity in design teams and being assisted for raising the discussion on diversity within a project team.

Lastly, the scope on user research was also a profound topic, as was desired that there should be a solid focus on representation of all users affected by the design, where one could observe that representation is closely linked to diversity and bias.

PRACTITIONER VIEW

The practitioner view allowed to explore the AI perspective on diversity through an analysis of consultancy and agency experience on AI in design for diversity. Here, it showed through a recurring statement in all articles, the importance of data collection, team diversity and training of AI if one wants to implement AI as a diverse practice. One might argue that therefore, the discussion on the design of AI will be closely related to the responsibilities of the software developer and the designer.

The problem seems to be grounded in design/developer teams for AI not to be diverse. Although this is a systemic problem not to be solved by the intervention, it poses an opportunity for reflection by the intervention. To make designers and developers more aware of the fact that they are (1) neglecting involvement of users and (2) using unrepresented data for their process, there should be a platform for an ethical discussion.

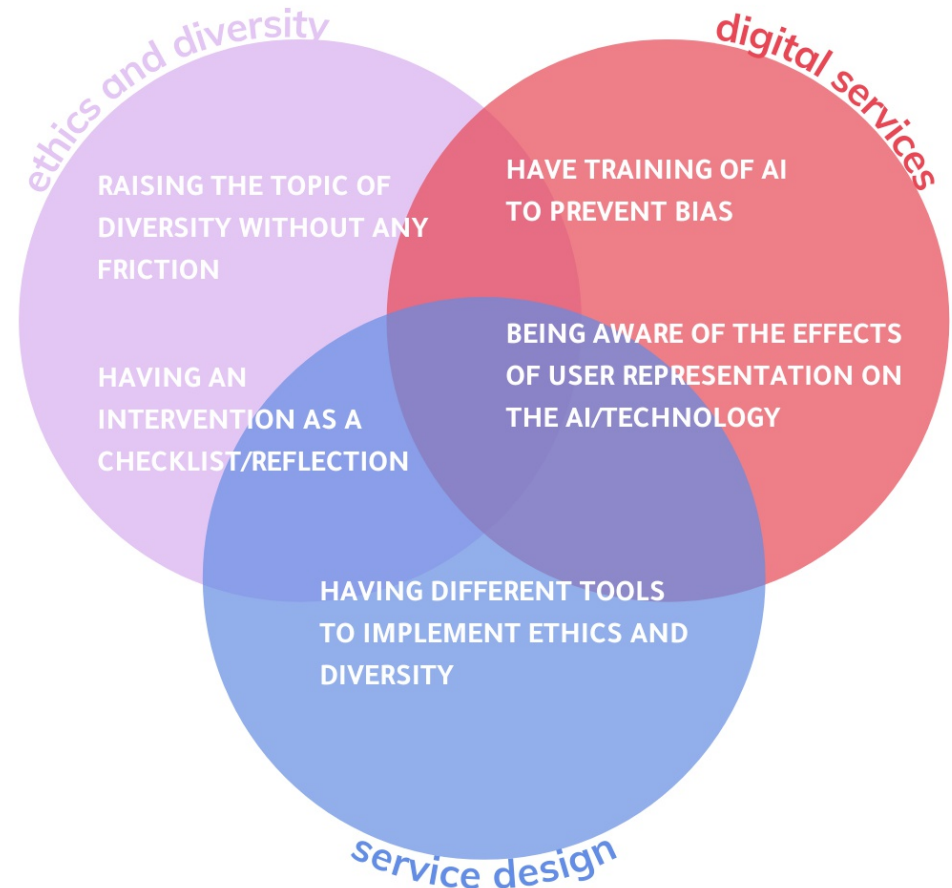


FIGURE 2.8, SUMMARIZING THE FINDINGS FROM THE DEEP DIVE

chapter three

defining the scope

IDEATION I

This chapter aims to display the final analysis on the insights retrieved from the research phase. This is done through mapping the insights into needs and obstacles, resulting in the creation of jobs to be done. The final product of this chapter is a defined scope on the design challenge, including specific inclusion criteria the intervention should address.

from data to intervention

As the previous chapter showed that the key insights on the topics of ethics and diversity, service design and digital services are still really broad, it was important to define a narrower scope on what the intervention would need to represent. Thus, this section will present further iterations on the research data, and more specifically focus on the needs of the designer: what do designers need from the intervention?

Important here is to analyse the insights out of the context in which it was gathered, thus, preventing confirmation bias (Babich, 2020). This was being done through combining the insights from the three research methods, thereby taking them out of their original context.

Since it was important to find ways in which I could stage the intervention to implement ethics and diversity, the following questions were asked:

1. How can this intervention be applied to educate the designer in ethics and diversity?
2. What are needs to address, and obstacles to overcome with this intervention?

Up until this point of analysis, the three research methods showed potential solutions that could be used to further stage and provide context of the intervention. However, these solutions were kept separate, to prevent a confirmation bias. Nevertheless, the following question was kept in mind:

3. What could serve as potential solutions?

Through the combined dataset of the three research methods, the preliminary insights were clustered and analysed as is visualized in figure 3.1. The two clusters defined the obstacles designers must overcome when implementing ethics and diversity, and the needs they desire to be solved.

Here, the guiding questions were: what does the designer need from the intervention, and which obstacles should the intervention reduce? Thereafter, the data was synthesized, and converted in Jobs to be done, as explained by Stickdorn et al. (2018): which help to contribute to discover ways in which one can contribute to needs.

How can this intervention be applied to educate the designer in diversity ethics?

DESIGNER NEEDS

What could serve as potential solutions?

OBSTACLES

What are obstacles to overcome with this intervention?



miro

FIGURE 3.1, MAPPING THE DESIGNER NEEDS AND OBSTACLES

DESIGNER NEEDS

From here, it showed that the insights regarding the designer needs showed a high relevance to three detailed sub-clusters: The behaviour of the designer, the design team, and the user they are designing for.

Behaviour: When analysing the designer needs with respect to the behaviour of designers, it showed that designers would prefer to have ethical assistance during the design process and observe diversity as a mindset. This could for example, help them to set requirements for diversity, or raise awareness for training practices. A designer could use the intervention to reflect a responsible behaviour throughout the design process. Eventually, this could lead to an ethical and diverse design outcome.

Team: The designer needs in relevance to the design team, showed a coherent thought that diversity in design, starts by having a diverse design team, representing different voices. Although this need is merely reflected in systemic changes of current society, one could focus on having equal power across the design team and having certain 'steppingstones' to communicate ideas on ethics and diversity.

The user: It showed that the needs of the designer were aimed at diversifying their perspective towards the users. This was represented through the need of a prioritization for users, such that a designer can address even the exceptions and/or, everyone affected by the design. Thereby, showing an exact representation of the users they are designing for, in their design.

when designing, I want a 'diversity' mindset,
so I can have an ethical responsibility
throughout the process.

when designing, I want tools to communicate
ideas and distribute power, so I can allow a
diverse design team to work.

when designing, I want to evaluate and
prioritize my users, so I can represent all
users, thus also the 'exception' in the
design.

OBSTACLES TO OVERCOME

Following the designer needs, the insights on Obstacles could also be divided into three sub-clusters: the user, the design team, and the obstacles of the digital design process.

The User: The obstacles designers mentioned when working with ethics and diversity towards users, cover the problem of bringing differences of interpretation, perception, and voices into the design. Thereby, the designer aims at limiting the scope on 'the average' user. In addition, it was stated that it is important to consider users who do not want to be involved and focus on balancing representation of the users affected vs. having biased data of the users.

The design team: The burden for designers to keep bringing up the diversity topics and starting the discussions with their team and their clients was mentioned as a significant obstacle. It showed that if there is no opportunity or initiative to open the discussion, it can limit designers in the ethics and diversity of their final design. There is a need, and willingness for discussions within the team, but the tools to limit the friction in this process are not there.

AI: Within obstacles for the process of digital and AI design, multiple insights stated the importance of having diversity represented in the developer team, as well as in the data being used to train the model. Yet, diversity in the developer team touches upon the same systemic problematization of society as the discussion of diverse design teams. Having the biased data being used to train, and develop the model, however, is an obstacle which should be diminished by the intervention.

when using the intervention, I want to observe the differences between users to have a representation of all users in my design, so I can limit bias and find out how to involve them

when using the intervention, I want to raise the discussion on diversity without any friction, so I can work together with my team on a diverse approach to the project.

when using the intervention, I want to diversify the data for my technology, so I can make sure my technology does not promote bias.

defining the scope: design challenge

Once having established the jobs to be done, they could be converted into concrete expectations of the the intervention: what should the intervention deliver, if willing to address these jobs to be done? Therefore, the problem statement, the design challenge and the inclusion criteria for the intervention will be presented.

(NEW) PROBLEM STATEMENT

As shown in the intitial research scope: in current design processes of services in the digital realm, there are no guidelines for designers to be assisted in their ethical responsibility for diversity.

However, it showed that an iteration on this problem statement shifts the current problem of this research towards the needs of the designer and obstacles to overcome. These should be addressed to be able to incorporate ethics and diversity in the design process of services in the digital realm. Examples are a focus on how to raise the discussion on diversity, how to communicate ideas, approach and use AI and technology in diverse practices, and getting a more 'diverse' mindset as a designer.

Thus, to ensure an intervention of ethics and diversity to be successful, one should carefully consider the inclusion criteria, and the design challenge of this intervention, as these adress the current direction of the research.

(NEW) DESIGN CHALLENGE

How can this intervention provide assistance to designers throughout the design process, and thereby, reduce obstacles to implement ethics and diversity in the design process for services in the digital realm?

INCLUSION CRITERIA:

This intervention should ...

- Provide assistance towards the designer in having a 'diversity' mindset
- Allow to communicate ideas and distribute power across a design team
- Help to visualize all users, including the 'exception'
- Overcome bias in the data, and have a clear representation of all users
- Limit the friction on raising the discussion on diversity
- Overcome bias to show if the technology is applied in a social context

RESEARCH SCOPE

Through the extensive research phase, a significant number of data was gathered and analyzed, which contributed to the previously mentioned iteration on the problem statement and the design challenge. Having established the new problem statement, the design challenge and inclusion criteria, I can continue to further stage, and brainstorm on the concept of the intervention. What does the intervention needs to consist of, to be able to assist and reduce the obstacles for the designers? The next chapter will aim at answering this question, through ideation on the concept of the intervention.

This phase will be concluded through providing an overview on how the the inclusion criteria as stated in the previous section, address the three initial sub-topics, as can be seen in figure 3.2.

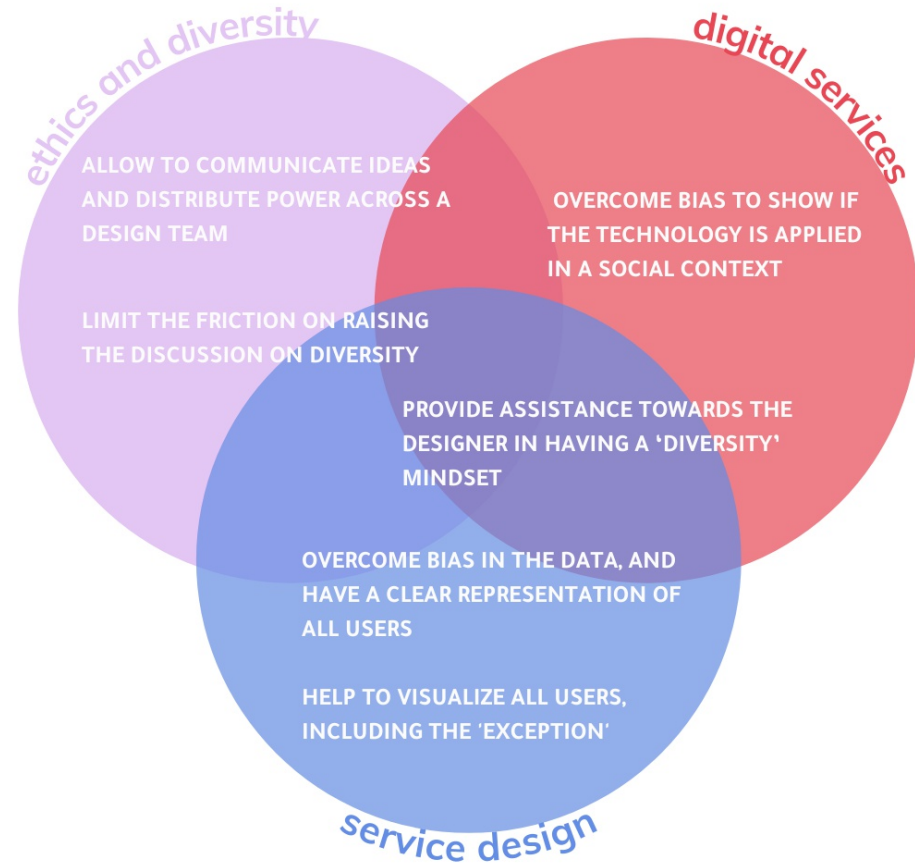


FIGURE 3.2, MAPPING THE INCLUSION CRITERIA AGAINST THE THREE SUB-TOPICS

chapter four

ideation

IDEATION I

This chapter aims to display the ideation sessions on the concept of the intervention. This is done by pursuing an idea generation workshop and revisiting the research data from the deep dive chapter. The final product of this chapter is a reiteration on the design challenge, which captures the definite need of the intervention.

idea generation

METHODOLOGY

To generate ideas on the content for the intervention, a workshop session was set-up to foster co-creational activities. For this session, it was important to stay close to the design brief. Therefore, the session was structured around the four criteria as stated below:

1. Having a diversity mindset throughout a process
2. Treat and teach AI/Technology as a human
3. Distributing power across a team
4. Raising the topic of diversity without any friction

The aim of the idea generation session is to foster co-creation, and come up with fruitful, out of the box ideas, which can lead to a useful concept for the intervention. This session should generate insights on the content of the intervention. How can the intervention be staged within the design process, and how can it address the inclusion criteria such that it can provide guidance to the designers for ethics and diversity in the design process?

It has been chosen to execute the idea generation session outside the scope of design and involve participants with diverse (non-design) backgrounds. As mentioned by Stickdorn et al. (Stickdorn et al., 2018), it can sometimes be fruitful to allow for random input and to 'not brief' participants too much on the desired research outcome. This then allows for more disruptive and inventive idea generation. At

first, it was ensured that the participants of the idea generation sessions were not fully familiarized with the research topic, neither with the design discipline. Then, the inclusion criteria were rephrased to ensure that the participants would be encouraged to think outside of the scope of the research topic of ethics and diversity.

The sessions were set up with 5 participants, and to foster a diverse perspective, it was ensured that all participants had different occupations / study directions. However, it is needed to be critical on the inclusion and diversity addressed within this co-creational session. Although all participants had different professions and showcased different nationalities, it is important to mention that they were all females within an age group of 18-30. This was mainly due to selection of participants within a convenience bias, due to time limit and meeting restrictions (COVID). Thereafter, the idea generation was held online, which could limit possible interactions and engagements, as if it would have been executed in person.

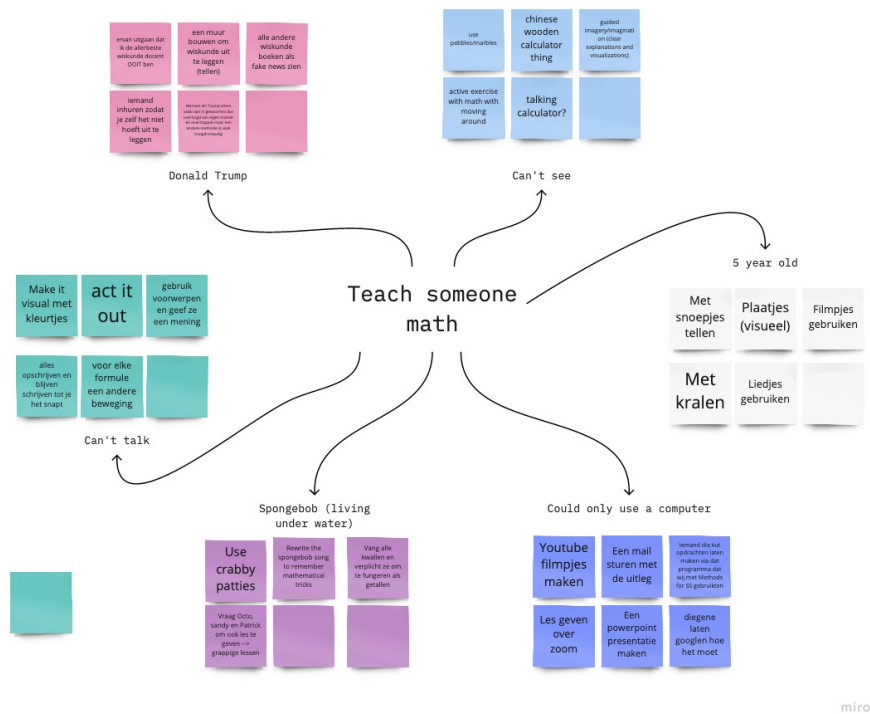


FIGURE 4.1, ONE DIAGRAM OF THE FIRST EXERCISE: BRAINSTORM

If you have 10 minutes to prepare for a meeting with a project team, in which you had to implement 'diversity awareness', which objects would you use?

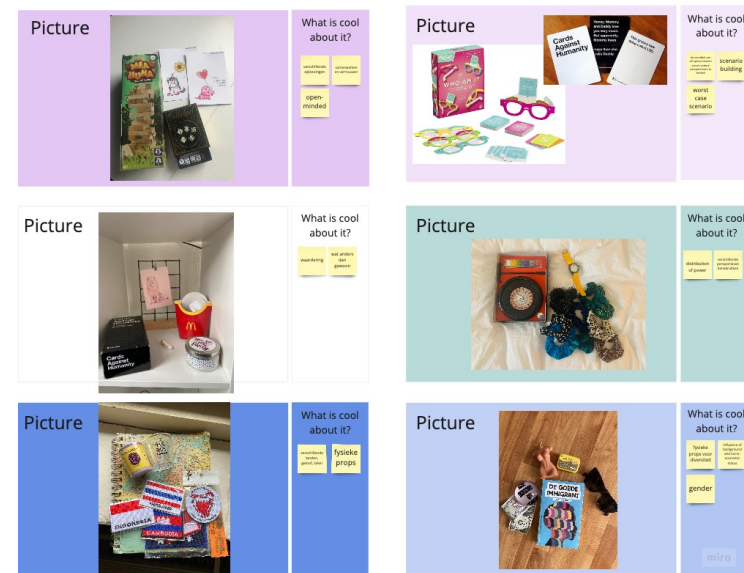


FIGURE 4.2, THE RESULTS OF THE SECOND EXERCISE

FIRST EXERCISE: BRAINSTORM

Through the first (mind-mapping) exercise, synonyms for four of the inclusion criteria were analyzed through different lenses and perspectives. Here, it showed that by taking the focus off diversity, the participants felt more freely to provide answers to the mind-mapping exercise and think 'outside the box'. By rephrasing the inclusion criteria, it was ensured that still, the same need and problem of the inclusion criteria of the intervention were addressed. The final brainstorm maps can be seen in Appendix 3, and one example in Figure 4.1.

When going over the separate inclusion criteria, it showed that for potential solutions of having a diversity mindset ('remembering something' in the exercise) there should be someone, or a device, reminding you to be responsible for this. Then, for the ideas generated for treating and teaching AI as a human ('teaching someone math' in the exercise) some ideas showed that bias or diversity, should be visibly explained when taught, or be given some form of image.

When distributing power across a team ('sharing a pizza' in the exercise) solutions proposed that there should be a focus on fair allocations and distributions. At last, for raising the topic of diversity without friction ('telling someone something bad' in the exercise) it showed that it is important to show a two-sided perspective and have aids to make talking about it more comfortable.

SECOND EXERCISE: TOOLBOX CREATION

Continuing, figure 4.2 shows the synthesized result from another exercise, in which the participants were asked: If you have 10 minutes to prepare for a meeting with a project team, in which you had to implement 'diversity awareness, which objects would you use? Here, the main results (figure 4.3) showed that due to the differentiated nature of professions and study directions of the participants, they all came up with different objects to be included.

After discussion, it showed that the differences in their objects were mainly due to them all having different experiences with their project teams, as they are all structured differently. For example, at first, a business focused participant showcased games, to propose different scenarios of diversity to a potential project team to be more open-minded and think in different scenarios. Secondly, someone having worked within humanitarian practices, emphasized that she would raise the topic of diversity to the project team in terms of nationality. Thirdly, a participant studying psychology, emphasized that her objects should help the team to gain trust and foster collaboration when raising on the topic of diversity.

CONCLUSION

Figure 4.3 shows the synthesized participants insights in connection to four of the inclusion criteria as phrased in the previous chapter.

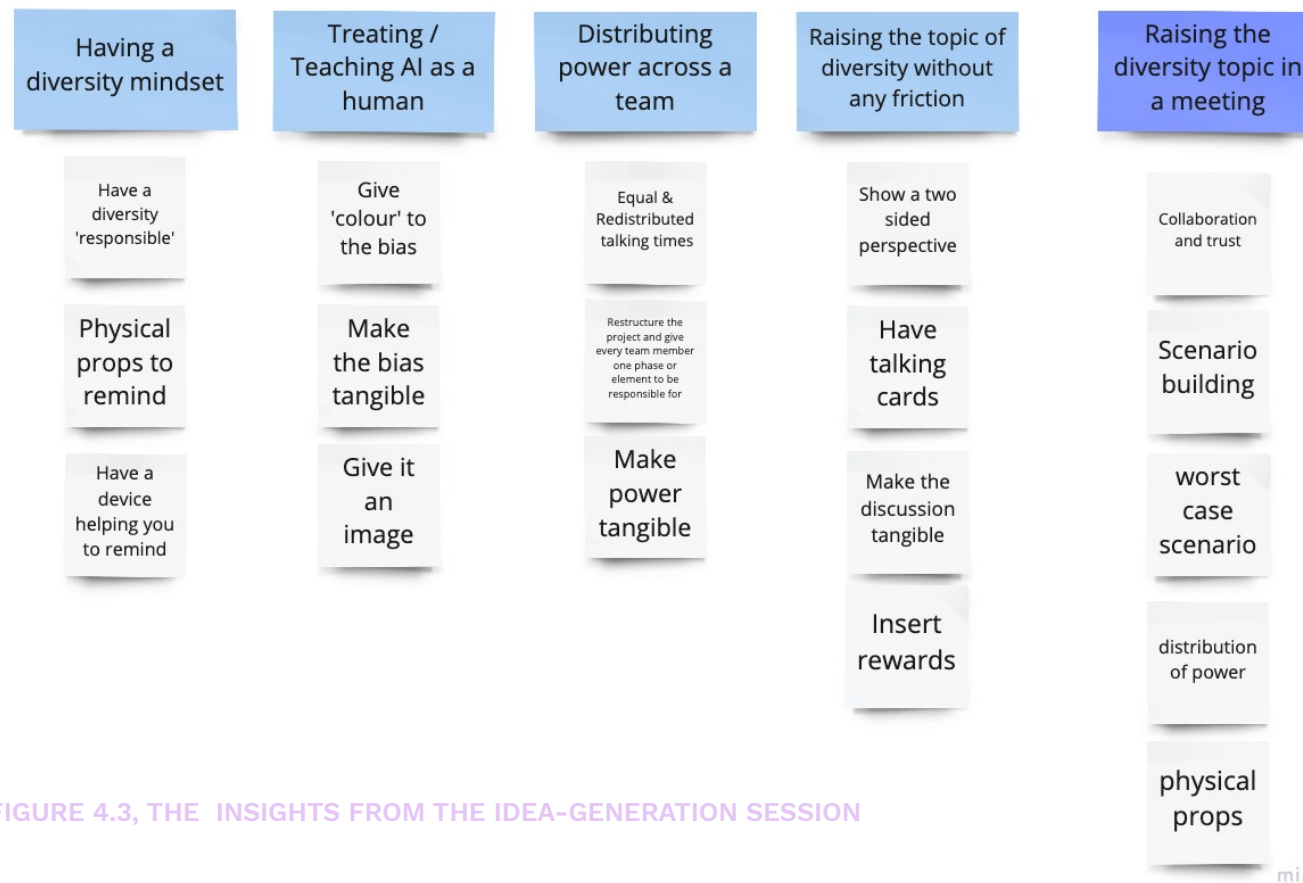


FIGURE 4.3, THE INSIGHTS FROM THE IDEA-GENERATION SESSION

To conclude, within the first exercise, many different and out of scope ideas were proposed, which address the possible content of the intervention. Although the exercise was staged around different discussion points, one recurring notion was that of tangibility. Here, the participants stated that to discuss the proposed problems, they should be tangible, and the outcome should be made visible.

The second exercise engaged the participants to think about how they would 'stage' the intervention, in which it showed that different perspectives on such a question, resulted in a variety of proposals. From this exercise, the take-away was that when working within an interdisciplinary team, the important aspects of working with ethical awareness on diversity are: distribution of power, collaboration and trust, and reflecting this through scenario exercises, or 'worst-case' scenarios.

insights on methods and tools

The data gathered in the three research methods (as shown in Chapter 2), also provided insights for plausible methods and tools for content of the intervention, as is visualized in figure 4.4.

When developing the content of the intervention, they can provide useful insights on how to provide assistance to designers to implement ethics and diversity in the design process. Therefore, this section will go back in time (to the data gathered in Chapter 2) and recall some solutions as proposed from the first three methods research, that now show relevance to the goal and inclusion criteria for the intervention.

SYSTEMATIC REVIEW

By the systematic review, multiple papers showed methods and/or tools that could be applied to the content of the intervention. The paper by Gray & Boling (2016) emphasized that when using a tool, or within this research; when using the intervention, it should provide assistance, and not only serve as means of evaluation. Thus, the intervention should provoke (positive) actions to be undertaken for ethics and diversity. In addition, designers need to be more critical on designs, as this can increase ethical awareness and if implemented during the design process, might lead to shifts towards a more ethical established design (Gray & Boling, 2016).

As addition to criticism towards the design, criticism should also be applied within the design process. An example are formal ethical

structures throughout the research phases, as happens by universities or research agencies. The formal structures (consent forms, ethical guidelines, and a strong focus on 'the participant') might establish power relationships between the participants and the design researchers and do not display equality (Van Zyl, Winschiers, & De la Harpe, 2017).

Then, when focusing on the digital and the relationship between AI/ services in the digital realm, and the ethics of their design process, one should be aware on how a technology will interact within a culture or social setting. Here, the interpretation and experience can differ due to context in social and cultural environments (Literat & Brough, 2019).

At last, design fiction and scenarios were mentioned. Here, it stated that design fiction could help to pose 'what if' questions and help to visualize directions in which the design could go. Thus, when analysing potential outcomes of applying ethics and diversity in the design process, the design team could make use of design fiction to analyse the plausible futures (Lindley & Sharma, 2016). The scenarios can help to envision and provide inspiration for a more inclusive approach through the design (process) (Rinaldi, Angelini, Abou Khaled, Mugellini, & Caon, 2019).

Thus, when increasing ethical awareness and diversity in the design process, the content of the intervention could focus on provoking

Methods/Tools for solutions



FIGURE 4.4, CLUSTERED INSIGHTS ON POTENTIAL METHODS AND SOLUTIONS

positive action, providing a place to open criticism, the reduction of power relations, visualizing the technology in a social context and making use of plausible futures through scenarios and design fiction.

EXPERT INTERVIEWS

In the expert interviews the designers were asked if they had recommendations for the content of the intervention. From there, some interviewees mentioned that their means of diversity are currently reflected through co-creation, thus, though reflecting the real needs of the persona, and the representation in the design process. However, it was also mentioned that they might require methods to create more diverse persona's, and recruit also more 'extremes' in these co-creation sessions. One interviewee mentioned the use of co-decision as a method/tool in his projects, which allowed to distribute power, and create more equality amongst the project team.

Thereafter, multiple interviewees mentioned that it can be useful to focus on the tangibility and outcomes of implementing this intervention. Thus, show what actively working with ethics and diversity, can bring. They mentioned that is important, both to show clients, and their project teams, the need for change, and to emphasize the impact it can have on the design process and final design.

PRACTITIONER VIEW

In addition, within the practitioner research, having a diverse design team working on the technology used for the service, was mentioned multiple times as contributing to implementing ethics and diversity (Daugherty, Wilson, & Chowdhury, 2018 ; Farley, 2019 ; Lindberg, 2020). However, as stated before, such a systemic change is hard to enforce with the intervention alone.

What can serve to mitigate bias; if the teams itself are not diverse yet, the intervention should force the current development and design teams to think outside their own perspective. Hereby, taking a more critical view to how their own morals are potentially integrated in the design and the technology, and helping them to view their process from the eyes of their users.

Another method showed that one could use scenario thinking to analyse the worst-case scenario, which can contribute to awareness for potential consequences of neglecting ethics and diversity (Gao & Mantin, 2019).

rethinking the design challenge

Original design challenge:

How can this intervention provide assistance to designers throughout the design process, and thereby, reduce obstacles to implement ethics and diversity in the design process for services in the digital realm?

By rephrasing the design challenge, I could further specify the need for the content of the intervention. From the idea generation session, it showed that an important factor for the discussed topics was the notion of tangibility. Here, it was said then when having to explain difficult topics, a 'tangible tool' supporting the conversation, could contribute to better expression. In addition, the tool could help to visualize and give the outcome 'an image'.

Thereafter, through analysis on the tools and methods from the deep dive, it again, showed that it is important for the designer to understand and visualize what value an intervention of diversity ethics can bring to the design process, the final design, and potentially, to the project team. Here, it was discussed that it is important to stay critical on the reflection of a designers' own morals and understanding in both the service, and the technology.

Thus, I am trying to make the designers advocates for actively working with ethics and diversity. Thereby, I should provide them with a tangible tool, which aims at addressing the inclusion criteria, and, leaving the designer with a visualization of what the intervention contributes to the process, the final design, and the technology.

Including the concept of actively working on ethics and diversity, tangibility, and visibility, the design challenge can be changed.

New design challenge:

How can this intervention make potential outcomes of working actively with ethics and diversity in the design process of services in the digital realm visible and tangible, thereby reducing obstacles for designers to implement ethics and diversity in the design process?

chapter five

the concept

IDEATION II

This chapter aims to display the process of developing the final concept and content of the intervention. This is done by pursuing additional research and ideation sessions to design the intervention. The final product of this chapter is the content of the intervention, as being designed through the last ideation.

existing interventions

To provide background in what other interventions are out there, what is done or still to be explored, additional desk research was conducted. The research covered two type of interventions: four interventions with a specific focus on ethics & diversity (Gao & Martin, 2019; IDEO, 2019; Micorsoft, n.d.; 33A, n.d.), and three interventions with a different research topic (IDEO 2003; Platform Design Toolkit n.d.; Spoon Agency, 2021). The research on existing interventions helped to analyze their values and methods, which could potentially be reflected in the intervention for this research.

Before continuing, it is fruitful to explore the meaning and definition on an 'intervention', as perceived in the design disciplines. An intervention is said to "provoke real world action, and intervene in human behaviour (Hill Smith, 2019)". When pursuing an intervention to change ethical behaviour, one can say that it is meant to take an approach to act in a more ethical way, thereby creating new patterns which aim to become default (Damien, 2019).

For the intervention to be designed for this research, it is thus important to intervene with current practices in the design process and provide opportunities for behavioural change by designers. Here, it could as mentioned by Halse & Boffi (2014); help to enable awareness and open the (ethical) dialogue on diversity, rather than to solve a conflict.

The reflection on the existing interventions below will be done by analysing how values from the existing toolkits can provide value to the design challenge of this research:

How can this intervention make potential outcomes of working actively with ethics and diversity in the design process of services in the digital realm visible and tangible, thereby reducing obstacles for designers to implement ethics and diversity in the design process?

ETHICS INTERVENTIONS

Inclusivity, diversity, and ethics are popular topics within the disciplines of interaction, experience, digital and service design. This results in multiple interventions as staged by designers, aimed at implementing ethics or diversity.

Project inkblot is an intervention that is also mentioned in the practitioner view. Project Inkblot fosters diversity through providing 5 critical questions on the inclusiveness of the design (Gao & Martin, 2019). Following on the notion of inclusiveness, Microsoft developed a toolkit specifically aimed at inclusivity. The toolkit is very extensive, and offers multiple handouts/booklets, aimed at creating an inclusive design (Microsoft, n.d.).

At last, two design agencies offer AI & Ethics cards: IDEO (2019) presents a booklet with four core principles and exercises, and 33A (n.d.) presents physical cards to discuss the ethical considerations of AI design.

Reflection

As shown above, there are multiple other design agencies and initiatives that proposed an intervention on diversity or ethics. Yet, no intervention specifically mentions a focus on the combination of the three topics of ethics, diversity, and services in the digital realm. The aim for this research is to find out how aspects of the above-mentioned interventions bring value into tangibility and visibility, which then could contribute to the design of the intervention of this research.

Project Inkblot, and the Microsoft toolkit (Microsoft, n.d.; Gao & Martin, 2019), have a strong focus on displaying the inclusivity of the design through critical questions, which seems to add a lot of value to reflection on the moral understanding of the designer.

Yet, the interventions from Microsoft and IDEO are very extensive and appear to have many steps and levels. As came forward in the expert interviews, some designers feel friction when raising the discussion, thus it feels like the way the intervention is presented within the design team, should be light and playful. Therefore, the intervention as staged in the cards as displayed by 33A (n.d.), provide a quick overview, and seem to allow for a quick discussion.

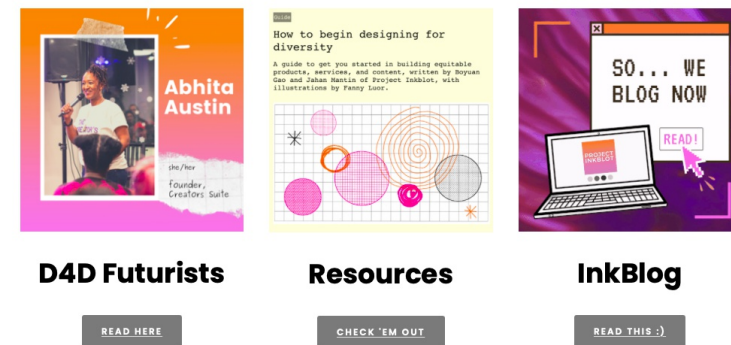


FIGURE 5.1, PROJECT INKBLOT (GAO & MARTIN, 2019)



FIGURE 5.2, IDEO ETHICS CARDS (IDEO, 2019)

OTHER INTERVENTIONS

In addition, interventions outside the topics of ethics and diversity were studied. The first one being the Method cards of IDEO, which show physical cards aimed at providing inspiration towards designers for a creative, people centred design process (IDEO, 2003). Then, the intervention by Platform Design Toolkit provides a strategic design user guide for service designers, for the development of platforms (Platform Design Toolkit, n.d.).

Lastly, Spoon Agency (2021) has a behavioural science workshop, which is guided through a deck of cards, created by Coglude (n.d.). The workshop combining the two, aims at theory, practice, and reflection. The physical props, the card deck, are called nuggets, and show 'behavioural research in bite size bits' (Coglude, n.d.).

Reflection

Following the preference for cards as a tangible tool as stated in the previous section, the cards of Coglude (n.d.), provided useful inspiration, as they specify why the principle stated on the card is relevant, as can be seen in Figure 5.4. As the aim of the corresponding workshop by Spoon Agency (2021) is to learn and reflect, knowing why a certain exercise is carried out can be of great relevance when assisting designers in implementing ethics and diversity.

Then, the Platform Design Toolkit presented a very large strategic design document, which followed the extensive intervention approach as Microsoft and IDEO. Yet, the Platform Design Toolkit did present

canvasses that could be used to complete the exercise. As the design challenge for this intervention states that it should be tangible and visible, the use of a canvas seems to be an inspiration on how to document the ethical discussions.

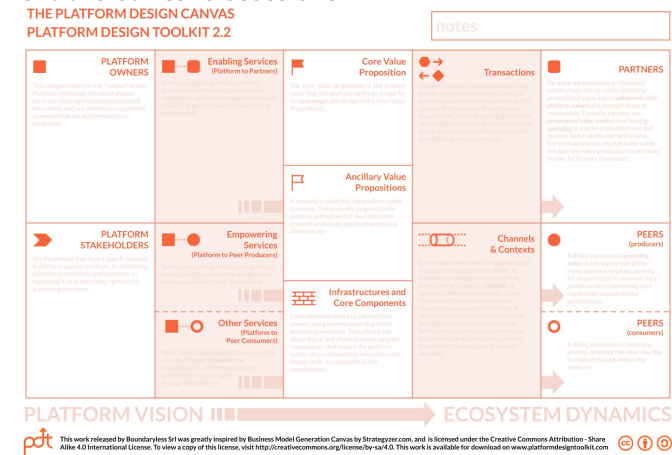


FIGURE 5.3, THE PLATFORM DESIGN TOOLKIT (2019)

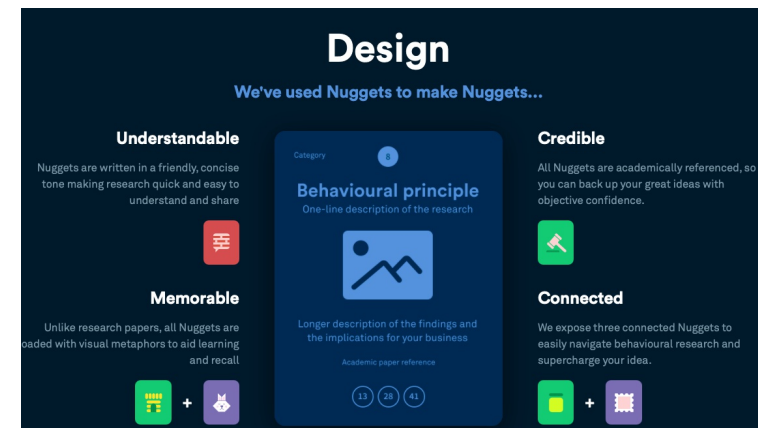


FIGURE 5.4, THE 'NUGGETS' (COGLUDE, N.D.)

the idea: scenario cards

INSPIRATION

By gathering inspiration from existing interventions and being inspired by ideas of the potential way 'to bring up diversity in a meeting' as received from the idea generation session in chapter 4, the initial idea for the concept of the intervention was developed.

THE CARDS

At first, it was decided that the intervention would be presented in the concept of a card 'exercise'. Hereby, the 'nuggets', as proposed by Coglude (n.d.), as well as the other card formats in the existing interventions (IDEO, 3002; 33A n.d.) provided a main source of inspiration. Staging the intervention by using cards aims at presenting a light and playful exercise to be working with. This should aim to limit the friction when bringing up the ethical discussion on diversity.

SCENARIOS

Ideating on further staging of the cards, scenarios were chosen as a method for the intervention. The method of scenarios came forth from the idea generation session and the data of the systematic

review & practitioner view (both chapter 4), where it stated that it could help for visualization and understanding.

In the intervention, the use of scenarios aims to assist the designer (and the team) in evaluating the ethics of their design, the technology, and the process, through discussing and visualizing possible outcomes. This, in addition, follows the idea of asking critical questions to enhance moral understanding, as shown in two of the interventions (Microsoft, n.d.; Gao & Martin, 2019).

THE IDEA

Therefore, as the concept for the intervention I have decided to pursue with the idea of developing '**scenario cards**' to be used by designers, that could be applied in a meeting, workshop, or individual setting.

The goal of the scenario cards is to facilitate assistance to start and continue the discussion on the ethical considerations of diversity within the design process. The initial sketch can be seen in figure 5.5.

The cards will present an ethical scenario towards the research data, the service outcome, the technology, or the team process. By discussing the scenarios, the team can be provided with insights on (1) if they are working actively to promote diversity in the design process, service and/or technology and (2) what action can be undertaken if there is a need to change current processes.

ADDRESSING THE DESIGN CHALLENGE

How can this intervention make potential outcomes of working actively with ethics and diversity in the design process of services in the digital realm visible and tangible, thereby reducing obstacles for designers to implement ethics and diversity in the design process?

The cards can be used as a tangible tool by designers to keep engaged with the ethics and diversity of their design. Through completing the scenario exercise, the designer finishes with a visualization (written/drawn) of their scenario, and can thereby actively engage with such a situation, and define if there is a need for change if desired to implement ethics and diversity in the design process.

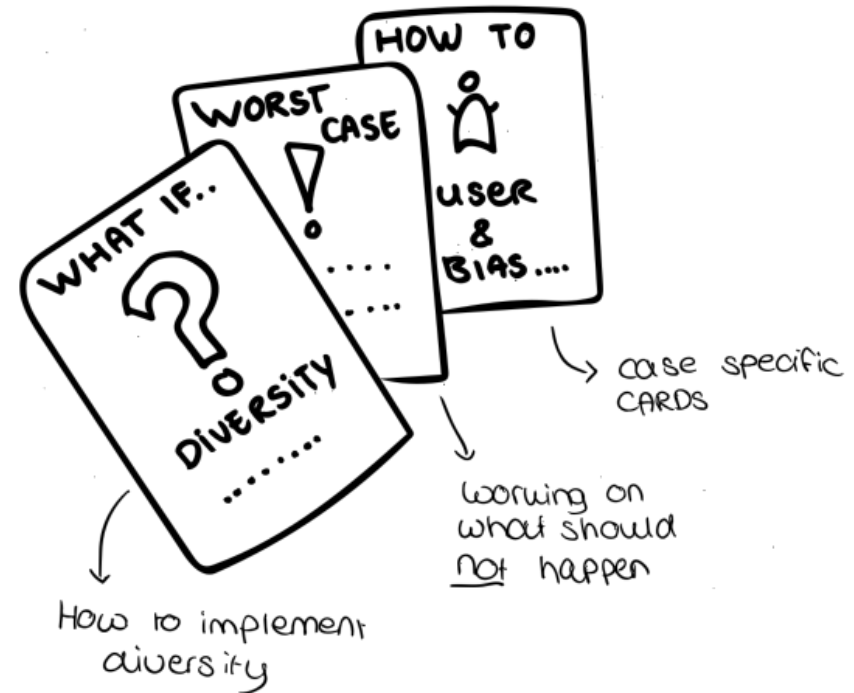


FIGURE 5.5, INITIAL SKETCH OF THE SCENARIO CARDS

scenarios and design fiction

Before further developing the idea of scenario cards, it is important to extend the research to literature on scenarios to understand how scenarios can be of value to the intervention. Therefore, this section will introduce scenarios and design thinking for services in the digital realm and its contribution to ethics and diversity.

SCENARIOS, DESIGN FICTION AND SERVICE DESIGN IN THE DIGITAL REALM

Scenarios and design fiction can be used for the conceptualization of the intervention and serve as potential tools to be of assistance to the designer. This can be seen by scenario's providing means of envisioning 'situations of use' (Carrol, 1999). Scenarios and design fiction can help the designer to envision how their service, technology or AI might unravel once being deployed and being in the hands of users.

An example in the context of this research study; when developing a chatbot, through the use of scenarios, the design team could analyse how potential users might use the chatbot, and how they would experience it. Here, it could be possible that the design team realizes that the requirements they set, completely neglect

the actions of a potential user group, and therefore, pose ethical complications towards the diversity of the design of the service and the technology.

Hence, scenarios are used to tell a story about how users experience the design, and how their activities can envision further situations of use (Carrol, 1999). Design fiction can contribute to scenarios through telling stories by making use of the designed objects and applying them in a 'grey zone' between realism and fiction. It is here where design fiction allows the designer to think in more speculative futures, in which the design would act as a 'diegetic prototype', and thus might not have to exist yet (Pasman, 2016).

For service designers in the digital realm, scenarios can be of great use when analysing system changes caused by the design. Here, scenarios can contribute to a potential visualization of how the relationships between users, technology and other actors are affected (Meroni & Sangiorgi, 2011). The intervention within this research study is aimed at designers for digital services, and by using scenarios as a tool, the intervention can contribute to the analysis between technology and actor.

This an important notion, as has been shown in the first literature chapter; the technological element in digital services has emergent properties, which could potentially be visualized using scenario building and design fiction (Peters et al., 2016). Therefore, as stated by Pasman (2016), a scenario and design fiction-based intervention, could help to establish appropriate action towards the potential (emergent) outcomes of a technology or a service.

SCENARIOS & DESIGN FICTION FOR DIVERSITY ETHICS

When applying scenarios in the context of ethics and diversity, it is important to consider whether the use of scenarios and design fiction can contribute to the ethical awareness that is aimed to be gained within application of this intervention.

The study from York & Conley (2020) researched the effects of using scenario thinking and design fiction for ethical reasoning in design projects. Their study showed that the use of scenarios enriched the students' perspective on stakeholders and helped to display the complexity and intertwined systems of technology and actors. In addition, it was mentioned that by applying design fiction, the students were engaged in ethical discussions and in turn, explored plausible futures in which the stakeholders could be involved and affected (York & Conley, 2020).

Hence the potential ethical understanding of diversity, could indeed, be fostered through the applications of scenarios and design fiction. This could therefore contribute to make designers aware of the 'unintended consequences' and 'the promise of a technology' (York & Conley, 2020). By applying a scenario and design fiction-based intervention in the design process, designers could be 'forced' to extend their scope and look beyond their initial imaginations on how their design could potentially develop after launching.

Through application of scenarios and design fiction, a designer could be assisted in critical reflection upon their ethical awareness of diversity within their design process and design. Scenarios can contribute to reflection of the design, and therefore provoke future situations, which need ethical consideration (Carrol, 1999).

ideation: the content

Through the research on scenarios and design fiction it showed that the intervention could be staged by applying scenarios as a method, and thereby supporting ethics and diversity. Thus, it confirmed that it is of value to have the intervention presented by cards displaying scenario exercises (that are addressing the inclusion criteria).

The scenario cards can be used throughout the design process, and are therefore not focussed on one specific phase, but rather provide assistance to the designer alongside the design process. The next section will elaborate on the ideation done for the content of the scenarios on the cards.

CONTENT OF THE CARDS

The content of the scenario cards was developed by taking the key insights from the three research methods (of chapter 2). This data, with a focus on ethics and diversity for service designers in the digital realm, thereby provided useful insights on moments of applying ethics and diversity in the design process.

Through synthesis, it showed that the data went into two directions, as is seen in the clusters of figure 5.6. One direction is problem oriented, and shows situations and obstacles in the process where ethics and diversity are lacking. The other direction is more solution

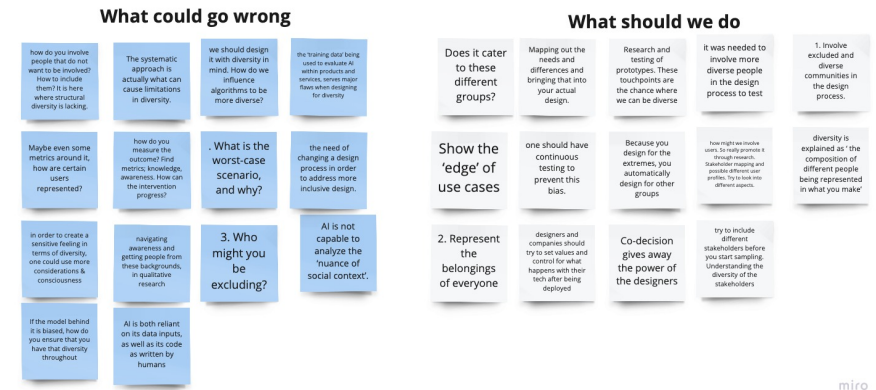


FIGURE 5.6, THE TWO CLUSTERS FOR THE CONTENT OF THE CARDS

oriented, and provides solutions for methods and tools to be used to actively work on implementing ethics and diversity.

The 'What could go wrong' data is problem oriented, and shows obstacles and situations in which ethics and diversity are neglected through the design process. By using this information for the content of the cards, designers can utilize these examples as a tool for reflection. Here, they could recognise situations sketched, and realize that there is a need for change. Therefore, the data showing what could go wrong, aims to provoke a discussion on the need for change.

The 'What should we do' data is solution oriented, and shows what can be done to implement ethics and diversity in the design process of the service and the technology developed, thereby aiming to produce a more diverse design outcome. By using this data for the content of the cards, the designers are assisted, and can find suggestions on what actions they could enforce, if willing to implement ethics and diversity.

Through analysis on the data as displayed in figure 5.6, it was decided that the card deck would build on the problem and solution perspective, and would therefore contain two type of cards, which are explained below:

DOOMSDAY CARDS

The doomsday cards are used to visualize ethical problems. The cards are based on actions that should be prevented when working with an ethical consciousness on diversity. The goal of the doomsday cards is to envision and provoke the 'doomsday scenario', of what would happen if the project team neglected ethics and diversity through the design process.

ACTION CARDS

The action cards are use to visualize solutions. The cards promote methods and tools based on actions that can be undertaken to implement ethics and diversity. The goal of the action cards is to provide inspiration for positive actions to be undertaken by the project team if they want to implement ethics and diversity in the design process of the service and the technology.

TEMPLATE

In addition to the cards, the design challenge stressed the need for tangibility and visibility. Inspired by a 'canvas' as seen from the reflection on the existing interventions; the Platform Design Toolkit (n.d.), this intervention will make use of templates to sketch the scenarios and reflect on the outcome.

In practical terms, a template provides a physical tool to be used by users of the intervention and creates common ground amongst all participants. It also provides opportunity for documentation, which is important when working with ethical discussions.

When having to justify design decisions, it is useful to have a well-documented process. By using the scenario cards, and thus the template throughout the design process, ethical decisions and discussions on the diversity of the team, the process, and the design can be proven.

As the scenario cards aim at providing both a tool to raise the friction, as well as reflecting on the friction, it is important that the intervention facilitates place for discussion and evaluation of the exercise. Therefore, the template will be supported by evaluation questions, which help to reflect on the drawn scenarios, and why this is important to consider in the design process.

[The next chapter will outline the content of the doomsday and action cards, through a prototype, and present the template outline and the evaluation questions.](#)

chapter six

evaluation

IMPLEMENTATION

This chapter aims to display how the intervention was initially presented and thereafter evaluated. Evaluating was done by presenting an initial prototype to four designers, and receiving their feedback through an interview. The product of this chapter is the final iteration on the intervention before presenting the final concept.

prototyping

After ideation on the structure of the content of the cards, the final deliverables of the doomsday and action scenarios were developed. The next section displays the first prototype of the scenario cards including the content displayed on each single card. The prototype was developed to be presented to designers to receive feedback on the concept and the content of the scenarios.

PROTOTYPING

The prototype is a tangible creation of the concept, in this study representing the scenario cards (Camburn et al., 2015). The method of prototyping is widely used by designers, as it allows to identify aspects of improvement of the service or product that can be improved through evaluation (Stickdorn et al., 2018).

For the design process of this intervention, prototyping contributes to share the situations of use of the design, as well as evaluating concerns of the content of the current prototype as presented (Camburn et al., 2015). By presenting the prototype, the designers in the interviews can reflect on how they would envision the cards to be used in a practical setting. Through evaluation of their answers, I can learn if the envisioned situations of use allow for improvement (Stickdorn et al., 2018).

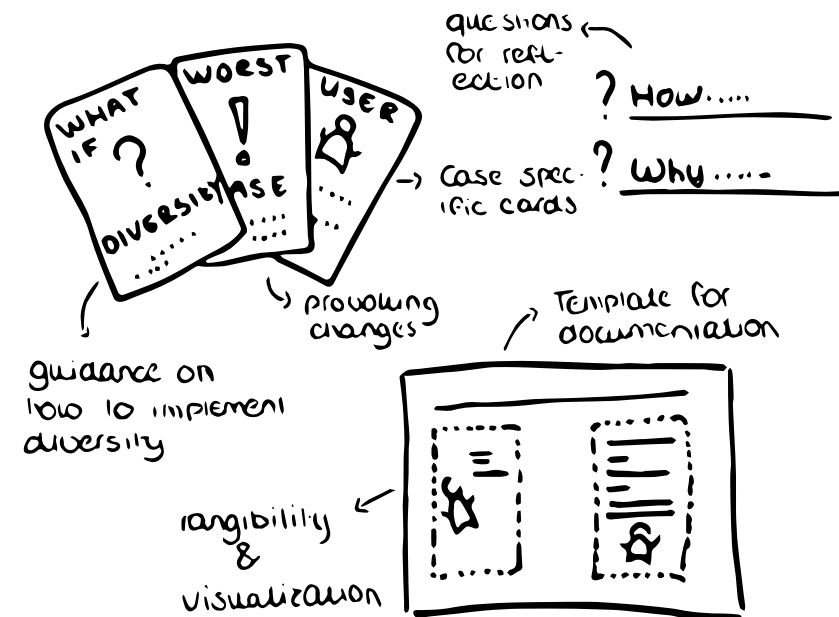


FIGURE 6.1, SECOND SKETCH OF THE SCENARIO CARDS

the final prototype

CONCEPT DESCRIPTION

The goal of the intervention, the 'scenario cards', is to provide assistance to the designer of services in the digital realm, to implement ethics and diversity in the design process. This is done by providing a scenario-based card exercise. By using the exercise, the designer, and the project team, are supported to start an ethical discussion on the diversity of the design of their service, technology and process.

The development of the scenario cards has been done by classifying diversity as:

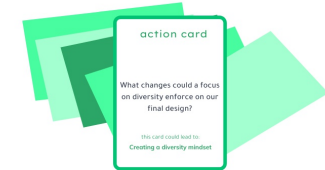
"One should consider all members of the community, including, but not limited to; sexual orientation, national origin, religion, socioeconomic status, color, etc, and would be inclusive towards all users possibly affected (nonetheless the degree to how much)".

The intervention is presented through two card decks and two templates. There are two types of cards: doomsday cards and action cards. Each single card in the two card decks proposes a certain scenario. The templates can be used to visualize one to three sketches of the scenario as stated on the card. The final set can be seen in figure 6.2.

8 doomsday scenario cards



8 action scenario cards



2 templates with evaluation questions



FIGURE 6.2, THE PROTOTYPED 'SET' OF THE SCENARIO CARDS

The scenario cards can be used as an intervention throughout a design project and can be seen as an additional tool to workshops, facilitation sessions, or critical discussions on the design. The scenario cards do not cohere to a certain phase in the design process and is therefore intended for circular use.

The scenario cards are developed for the design of services in the digital realm, as the elements of a digital service can make the design process even more difficult. This could happen by adding layers of complexity to reliance of research data, development of technology as an element of the service, and designing for the technology in the service interaction.

However, of the presented scenario cards, not all cards touch upon the technological aspects. Therefore, the scenario cards could be considered for the use within 'analogue' service design. However, it should be noted that this could defeat the purpose of visualizing the emergent properties of technological focused services within their system or social context.

The next pages present the prototypes of the scenario cards (figures 6.3 & 6.4), followed by the content of the doomsday and the action cards (figures 6.5 & 6.6).



FIGURE 6.3, THE PROTOTYPE OF A DOOMSDAY CARD

LAYOUT SCENARIO CARDS

The scenario's are displayed in the middle of the card, and are to be considered the main content of the cards. Following the idea of structuring 'informational cards' as discussed by Coglode (n.d.); the goal and outcome of the card is displayed below the scenario. This aims to visualize where the team is working towards.

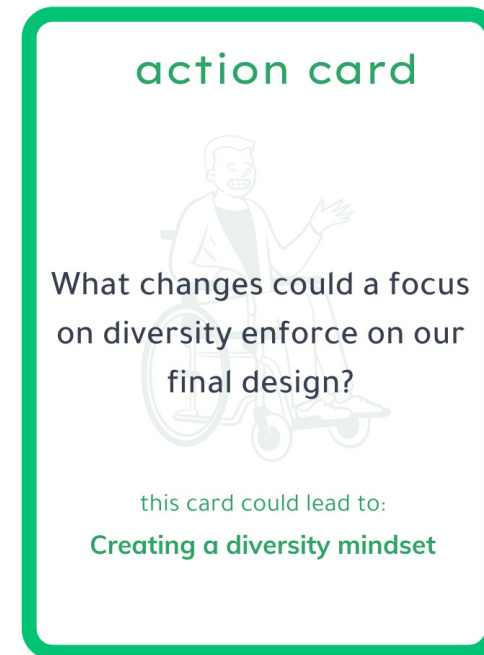


FIGURE 6.4, THE PROTOTYPE OF AN ACTION CARD

For the doomsday cards the extra information will show which potential action could be prevented (Neglecting a focus on diversity in the example), and for the action card it shows which action could be initiated (Creating a diversity mindset in the example).

ACTION TO BE PREVENTED	SCENARIO EXERCISE
Neglecting a focus on diversity	What could happen if no one within our project team would care about diversity?
Having a one-sided perspective within the project team	How could our user interpret the design if it would be designed by a team with only one perspective?
Working with biased data for technology-AI	Which directions could our design go if our data that feeds the AI/Technology is biased?
The design going out of its original scope because of emergent properties	What could happen with our technology after it is out of our hands and deployed?
Not including all user perspectives in the research	What could happen to our final design if our research was only based on the 'average user' of our user group?
Power dimensions within the project team*	How could our design process look like if only one person on the team could make decisions?
Friction once the topic of diversity is raised*	How would our design process look like if there was a fight whenever the topic of diversity was mentioned?
The project team not aligning on ethical issues*	How could you envision a design process in which there is only one person from our project team responsible for the topic of diversity?

FIGURE 6.5, THE FINAL CONTENT OF THE DOOMSDAY CARDS

CONTENT DOOMSDAY CARDS

The left column shows the action to be prevented by working on the scenario as stated on that card.

The right column displays the scenario exercise. Working on these scenarios will help to visualize the consequences of the action to be prevented.

* The actions indicated are related to group dynamics, and might therefore not to be solely 'prevented', but rather changed.

ACTION TO BE PROVOKED	SCENARIO EXERCISE
Setting a diversity mindset	What changes could a focus on diversity enforce on our final design?
Having a diversity ‘manager’	How could our design process change if we had a diversity responsible within every meeting?
Training our technology to prevent bias	In which ways could we ‘teach’ the technology in our service about diversity?
Continuous testing to eliminate (research) bias	How could continuous testing of the technology affect the diversity of our final design?
Implement co-decision	How could our design process change if we would implement co-decision?
Divide the power within the project team	In which ways could the dynamics of our team change if we would make ‘the power’ within the team visible?
Raising an ethical discussion on diversity	In which ways could a critical discussion on diversity be started within the meetings?
Equally distributing the responsibility for the ethical discussion on diversity	What changes would it enforce if everyone in our project team would have an equal responsibility for diversity within the design?

CONTENT ACTION CARDS

The left column shows the actions to be provoked by working on the scenario as stated on that card.

The right column displays the scenario exercise. Working on these scenarios will help to visualize the contribution of the action to be provoked.

FIGURE 6.6, THE FINAL CONTENT OF THE ACTION CARDS

TEMPLATE & EVALUATION QUESTIONS

Templates were created to document the work being done on the scenarios, such that there is a tangible artefact/proof of ethical discussions and decisions being made throughout the design process. This therefore contributes to the design challenge of providing visibility.

In addition, having a template to work with, provides the team with a physical tool to work with the scenario exercise, thereby also providing tangibility to the scenarios.

In figure 6.7 & 6.8, the templates are displayed. For both teams, the layout of the template is the same, yet the difference are the evaluation questions as stated on the bottom of the page. The evaluation questions are made to provide the team with a support for a discussion on the scenarios.

EVALUATION QUESTIONS DOOMSDAY CARDS

1. In which ways would this situation influence the service and/or technology you are designing for?
2. Which results from this situation did you expect to happen, and which results come as a surprise?
3. How could a situation like this be prevented?

EVALUATION QUESTIONS ACTION CARDS

1. In which ways would this situation influence the service and/or technology you are designing for?
2. Which results from this situation did you expect to happen, and which results come as a surprise?
3. What steps need to be undertaken to make this happen?

An example of the templates including the evaluation questions corresponding to both type of cards can be seen in figure 6.7 & 6.8.

scenario on the card: which direction could our design go if our technological data is biased?

sketch 1

since our data is mostly conducted within a male population of 20-40, it might neglect other users outside this group



sketch 2

maybe some people would not be addressed by our final design, and will not even try to use it.

Therefore, marginalizing the excluded and not allowing them access to the service.



sketch 3

doomsday card

What could happen if no one within our project team would care about diversity?

this card could prevent:

Neglecting a focus on diversity

In which ways would this situation influence the service and/or technology you are designing for?

Which results from this situation did you expect to happen, and which results come as a surprise?

How could a situation like this be prevented?

FIGURE 6.7, THE TEMPLATE FOR THE DOOMSDAY CARDS

scenario on the card: how could our design process change if we would implement co-decision?

sketch 1

our final design could be based on decisions that we would have never made, but that do reflect the true meaning of our users.



sketch 2

it could force us to create more moments in the design process where we have to involve users.

Therefore, we could plan different types of co-creation sessions, in which the final decision is made by the user



sketch 3

action card

What changes could a focus on diversity enforce on our final design?



this card could lead to:

Creating a diversity mindset

In which ways would this situation influence the service and/or technology you are designing for?

Which results from this situation did you expect to happen, and which results come as a surprise?

What steps need to be undertaken to make this happen?

FIGURE 6.8, THE TEMPLATE FOR THE ACTION CARDS

testing & evaluation

For testing the scenario cards as an intervention in the design process of services in the digital realm, four interviews were set up with experts working in the fields of digital/service design. The aim of the interviews was to envision how the concept could be related to one of the projects of the interviewees, and what they think about implementing ethics and diversity in the design process in the form of scenario cards.

METHODOLOGY

The interviewees had all worked within project teams of either service design or digital development. Their background varied from researching, agency experience and working for corporate clients. Due to the COVID-19 situation, all interviews were conducted remotely.

The interviewees were briefed on the research and the prototypes of the cards before the interview started, to ensure some primary knowledge on the topic and the presented concept. The interview started with a presentation on the research, and an explanation on how the intervention was developed. Then, the concept of the scenario cards was presented by showing the prototypes as presented in the previous section. The evaluation was done by providing guiding questions on the idea of the concept as can be seen in the interview notes of Appendix 4.

The interviews were semi-structured, following the guideline of Bjørner (2015). There were guiding questions and a structure as can be seen in Appendix 4, but the interviews followed the flow of the conversation. Through analysis of the interviews, the insights could be grouped into four categories of feedback: use within the team, situational use in projects, contribution to ethics & diversity, future recommendations.

KEY INSIGHTS

USE WITHIN THE TEAM

One of the topics discussed was the application of the scenario cards within the project/design team. Here, the first point of discussion was the introduction of the scenario cards to the team, which is linked to the inclusion criterion of 'limiting the friction on raising the discussion on diversity'. Here, one interviewee stated that if you frame the scenario cards as a game, some of the friction might be reduced. In addition, two other interviewees stated that it could be of addition to provide a script or situation on how the designer can bring up the idea (in a meeting or a workshop). This way, it becomes less awkward to introduce the idea of the scenario cards and could provide some inspiration on how to propose it to the rest of the team and the manager (this recommended by the interviewees working in/ with corporate businesses).

“There is a design opportunity in having a script on how to present the idea of using the scenario cards”

One other inclusion criterion displaying the use within the team is 'allowing to communicate ideas and distribute power across a design team'. Here, multiple interviewees stated that by allowing the scenario cards to be applied in a workshop setting, one can take more time for discussions, and discuss the scenarios within a group. Therefore, the tool would be applicable to discuss and communicate ideas.

“The game can be good for the participants of the workshop; it is a super good idea on how to make people engaged.”

On the contrary, in terms of power dimensions, it was stated that the problem might lie outside the exercise but arises when introducing the idea and making the time for the workshop/meeting in which the exercise can be applied. Thus, if the aim of the scenario cards is to limit power dimensions, it should be easier to introduce the idea and create or have time to work on the exercise (especially within larger corporates or organizations).

“You need the timeslot, and to see how to convince a manager”

SITUATIONAL USE IN PROJECTS

When discussing the situational use in projects, the interviewees were asked if they could recall a project or a situation where they have been or are currently working on, where the scenario cards could be of use. Here, one interviewee stated that whilst working on a project displaying AI transparency, the lack of diversity was not in the technology or design of the product, but mainly occurred within the project team. They stated that whilst most of the team understood the principle of lacking diversity, the cards could still be useful to spark the discussion on diversity within the team.

“What we struggle with is mainly the lack of diversity in the team itself. Everyone understands the principle, but in general it is interesting to bring it up.”

Another project example is relation to the inclusion criterion help to 'visualize all users, including the 'exception". Here, the interviewee stated that when working on a design, they team forgot to include testers from Chinese origin, who are not used to see their text displayed in the English language. Therefore, they might miss out on terms as API/KEY, which could have great impact on their user experience. By applying a concept as scenario cards here, it might provoke the discussion and visualize that these users are currently not being considered enough.

“You might then see that you are neglecting some users if you view it through a case study.”

One interviewee stated that when working on a project involving

health care data, the scenario cards could be useful for application within workshops with the client. Here, they could be part of a workshop, and it provides a nice balance between designing and a brain exercise, which is particularly useful when working with clients or non-designers.

The three other interviewees mentioned the same setting, in which a workshop could be a good place to use the exercise and collaborate with the team members and client in an active setting. However, the advice from the interviewees was to provide guidance on the setting of the exercise, when can you use the cards, and how would the situation of the exercise in which it is used, look like?

“Is there a difference in situations in which it can be used, and what is the difference in use between the cards then?”

From here, all interviewees concluded that they would prefer to see a more practical setting explained within the concept. It could be useful to sketch some scenarios in which the cards can be used or provide a user journey for the designer on how the cards can be integrated in their project. This would help to envision the set-up for the designer introducing it but could also help to create more visibility on what the scenario cards can bring for the rest of the project team.

CONTRIBUTION TO ETHICS & DIVERSITY

A primary topic to the relevance of this research was the opinion of the interviewees on the contribution to ethics and diversity within the design process. Here, one interviewee stated that the cards are in

general, a solid tool to show the importance of diversity. This was followed by a second interviewee, who stated that there is a need for the ethical discussions on diversity, but that it can be tricky to raise it as a big discussion point.

However, using the scenario cards, a designer can play as an advocate for diversity and help to change the mindset on diversity. Here, we can see that this therefore contributes to another inclusion criterion: Provide assistance towards the designer in having a ‘diversity’ mindset.

“How can it add value: in general, in raising awareness, the cards show the importance of diversity”

Some people can be uncomfortable when willing to talk about diversity, however, through proposing it as a game and in a playful setting, it takes some of the tension away from the ‘heavy’ ethical discussion. One interviewee mentioned that by raising the topic of ethics and diversity through a facilitation, you could easier convince the client to consider these topics, which might be harder if it is only one meeting. Therefore, the cards can be very useful, since it can sometimes be tricky to convince clients to spend more money on extra meetings for an ethical discussion alone.

“The client needs to consider diversity and ethics as well”

Another interviewee said that there is a big need for having ‘the talk’ for ethics and diversity, but on a more general base, rather than with very specific cards. Therefore, the current type of cards and questions help to think about how to approach ethics and diversity,

and eventually, pull in end users. This could then be reflected in the design outcome by thinking about something 'new'.

In another light however, one interviewee mentioned that an ethical discussion is quite situational, depending on what is stated on the cards. If you focus on specific project challenges, they might require more specific cards, tailored to the project scope. Therefore, the current cards are better useful in a more 'general' facilitation session rather than late in the process when the design is already defined.

“The questions themselves are framed quite openly for in the discussion.”

FUTURE RECOMMENDATIONS

At last, the experts in the interviews were asked if they were missing anything from the concept as it is now, and if they could provide future recommendations given their experience. One thing that stood out, as it was mentioned by all interviewees, is that they would recommend using the scenario cards as a playful activity within a facilitation or a workshop session.

Here, it could as mentioned in the previous section, provide an opportunity to talk about ethics and diversity with the client, but using it in this setting also allows for more time to work on the exercises. Convincing the client is crucial since they must be convinced of the need of spending more time and money to focus on ethics and diversity.

Two interviewees mentioned that they could see scenario cards

serving as an additional exercise in a facilitation or workshop, therefore bringing ethics and diversity as an addition to the project and the overall design, rather than specifically applying it within certain design phases.

A more critical approach to the workshop or facilitation setting in which the cards can be used was the fact that they aim to provoke a critical discussion. Therefore, it is important to start off with an energizer, and make sure the participants are in a comfortable space to start such a discussion. Secondly, some participants do not have that much experience with scenarios (think of clients), and therefore, might need a warm-up exercise as well.

“Doomsday cards can be really critical and provocative, so warm up people before you start talking about this. Draw up some scenarios, or warm up cards.”

The format of the exercise was also discussed, here, two interviewees said that it can be useful to also think about alternatives in a digital setting if the lockdown of COVID may pursue for a longer period. Therefore, creating a figma or miro board supporting the exercises, which also allows them to be done remotely.

At last, two interviewees recommended to focus on an extensive plan of use: visualize the user journey of the concept for the designer to show how they use it, and what it could bring to their project. Maybe here, it could also be recommended what the designer can do with the insights once the exercise is finished.

iteration

The discussion with the experts on how they view the concept of the scenario cards has enriched the evaluation process. Their input, on how they envision the cards to be applied within a team, in one of their projects and how to connect it to ethics and diversity of services in the digital realm, has contributed to a second iteration on the concept. The next section will provide insights to what will be changed/added to the current concept, to incorporate the feedback from the interviews.

SITUATIONS OF USE

The evaluation interviews showed that all interviewees mentioned the idea of providing a situation of use (as a script, or different scenarios) for the designer. This could provide support to propose the idea of using the cards on ethics and diversity to the team or management, and it could help to envision how the practical application of the cards would look like. In the situations of use, different settings (meeting vs. workshop) or environments (large corporate vs. small agency) could be envisioned.

To implement the situations of use within the concept, three 'situations of use' will be presented as scenarios in the final concept. This helps to give the designer suggestions on how to apply the cards in practice. In addition, a customer journey will be added, to visualize the process of using the cards from the designer perspective.

PRACTICALITIES: WARM-UP CARDS

It was mentioned by the interviewees that some practical aspects of the application of the cards within a team setting were lacking. One interviewee mentioned that it can be hard for some (especially non-designers) to know how to work with scenarios. Then, another interviewee provided some critics on starting with the doomsday cards right away, since they should require an environment where the participants feel comfortable.

Therefore, the scenario cards will also contain three warm-up cards, which are cards providing energizers in the form of scenario exercises, which both help to get to know the team you are doing the exercise with, as well as providing a small intro to scenario thinking

ADJUSTING TO COVID

Lastly, an importation notion as provided by two interviewees, was that currently, most meetings, workshops and evaluations are still held online due to the COVID-19 situation. Although prospects to return to the office look bright, it is important to adjust as working from home, is, at least up until the delivery deadline of this research, still the standard.

To account for the cards to be used to working from home, a Miro board will be provided. Here, the cards will be displayed, as well as the templates. Then, the team can work from a distance, and should not be limited by the physical presence.

HOW TO CONTINUE

The next chapter will present the final concept, using the above-mentioned feedback as an iteration on the prototype as presented to the four interviewees. The final concept, will, in addition to some structural changes, also have a new name. This was mentioned by two interviewees, as they stated that a more unique and characterized name, might enhance the potential for it to be accepted by the manager or other team members. Therefore, the next chapter will show insights to

CANVAS: your ethical cards for diversity

chapter seven

product report

CANVAS: YOUR ETHICAL CARDS FOR DIVERSITY

This chapter presents the product report of the intervention designed for this research study. The product report consists of the following subsections:

CANVAS: the concept

CANVAS: the content

CANVAS: in use

scenarios for use

customer journey

relevance to the design challenge

CANVAS: the concept

WHY

The concept for the intervention on ethics and diversity is 'CANVAS: your ethical cards for diversity'. CANVAS has been developed through research on designer experience and studies on the relation between AI/technology, service design and ethics and diversity.

Through the research, it has shown that designers face difficulty implementing ethics and diversity in the design process. The most extreme cases: cause a barrier to raise an ethical discussion on diversity, exclude user groups in the final design through bias in research, and call for critical discussions on the topic because of the systemic lack of diversity.

In addition, the elements of a digital service can make the design process even more difficult, by adding layers of complexity to reliance of research data, development of technology as an element of the service, and designing for the technology in the service interaction.

To address the problems as stated above, and the overall need for support in ethics and diversity, this intervention provides an opportunity for designers of services in the digital realm, to be supported in delivering diverse and ethical designs.

WHAT

The goal of CANVAS is to provide assistance to you, the designer of services in the digital realm, to implement ethics and diversity in your design process. This is done by providing a scenario-based card exercise. By using the exercise, you, and your project team are supported to start an ethical discussion on the diversity of your design and process.

The development of CANVAS has been done by classifying diversity as:

‘One should consider all members of the community, including, but not limited to; sexual orientation, national origin, religion, socioeconomic status, color, etc, and would be inclusive towards all users possibly affected (nonetheless the degree to how much)’.

Therefore, CANVAS will aim to include the diverse target user your design will address. At first, you will be assisted in discovering who will potentially be affected by your design and provide a space for evaluation to see if this was visible throughout the process, or if there is a need for change. Then, there will be an opportunity for solutions on how to change the design process, such that all users possibly affected, can be included, thereby designing an ethical and diverse design. By using CANVAS, you will provide insights into the ethics of your design process, and support to improve them.

CANVAS is to be used as an intervention throughout a design project and can be seen as an additional tool to workshops, facilitation sessions, or critical discussions on the design. CANVAS does not cohere to a certain phase in the design process and is therefore intended for circular use

CANVAS: the content

CANVAS is presented through 3 card decks and a MIRO board with 3 templates corresponding to the cards. There are three types of cards: warm up cards, doomsday cards, and action cards. Each single card in the three card decks proposes a certain scenario. The templates can be used to visualize one to three sketches of the scenario as stated on the card. The final set of CANVAS can be seen in figures 7.1 & 7.2.



FIGURE 7.1, THE CARD DECKS

WARM-UP SCENARIO: TEMPLATE

use this section to sketch the scenario as stated on the card

scenario on the card: type here the scenario as stated on your card

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

miro

ACTION SCENARIO: TEMPLATE

use this section to sketch the scenario as stated on the card

scenario on the card: type here the scenario as stated on your card

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

miro

DOOMSDAY SCENARIO: TEMPLATE

use this section to sketch the scenario as stated on the card

scenario on the card: type here the scenario as stated on your card

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

miro

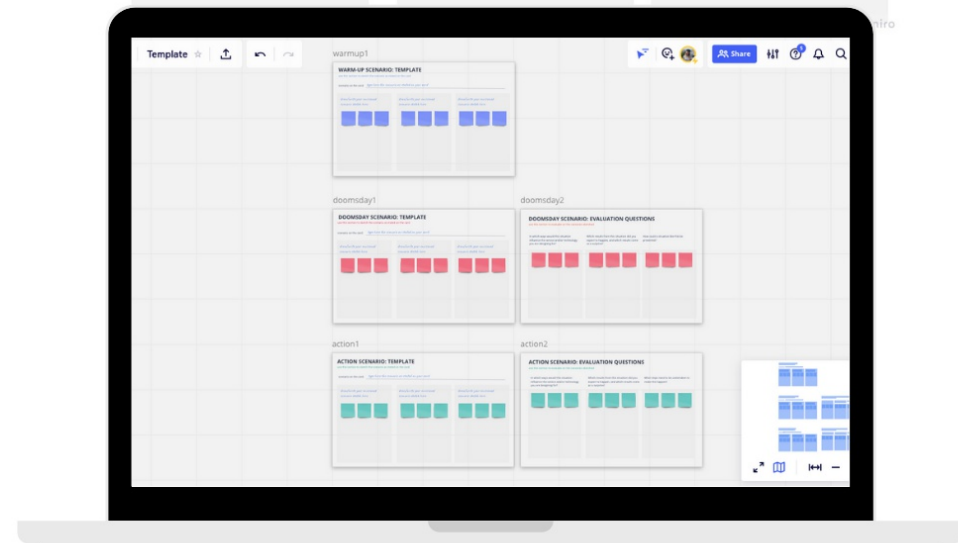


FIGURE 7.2, THE MIRO BOARD AND TEMPLATES

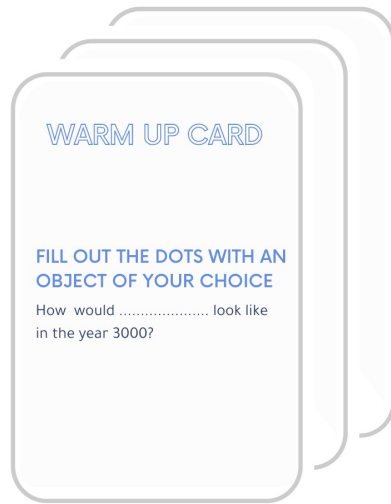


FIGURE 7.3, THE WARM-UP CARDS

WARM-UP CARDS

The warm-up cards are based on energizer exercises, which can be applied as a start to a meeting. The cards are provided as an additional tool to start the exercise. The goal of the warm-up cards is to create an environment in which the participants for the exercise feel comfortable to speak up and start an ethical discussion. The warm-up cards will be presented as scenarios, which allows the participants who have not been using scenarios before, to be familiarized with the concept.

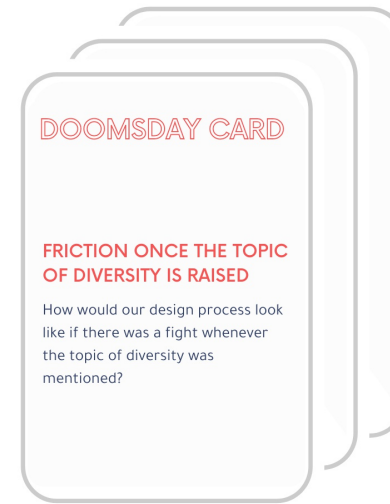


FIGURE 7.4, THE DOOMSDAY CARDS

DOOMSDAY CARDS

The doomsday cards are based on actions that should be prevented when working with an ethical consciousness on diversity. The goal of the doomsday cards is to envision and provoke the 'doomsday scenario', of what would happen if the project team neglected ethics and diversity through the design process.

By sketching the scenario as stated on the doomsday card, the negative effects of neglecting ethics and diversity in the design process are made tangible. Through visualizing the negative outcome in a sketch on the scenario, the goal is to prevent the project team from making the mistakes as mentioned on the doomsday cards.

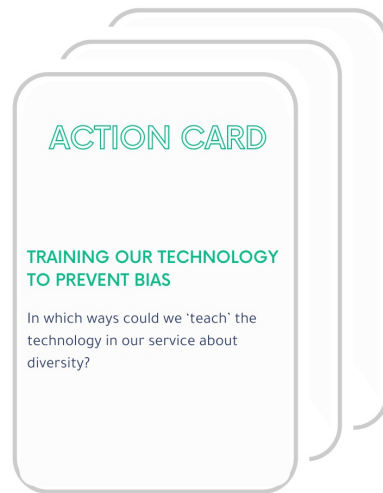


FIGURE 7.5, THE ACTION CARDS

ACTION CARDS

The action cards are based on actions that can be undertaken to foster ethical consciousness on diversity. The goal of the action cards is to provide inspiration for positive actions to be undertaken by the project team if they want to implement ethics and diversity.

By sketching the scenario as stated on the action card, the positive effects of implementing this action on ethics and diversity in the design process are made tangible. Through visualizing the positive outcome of the action cards, the goal is to inspire the project team to work with the actions as mentioned on the action cards.

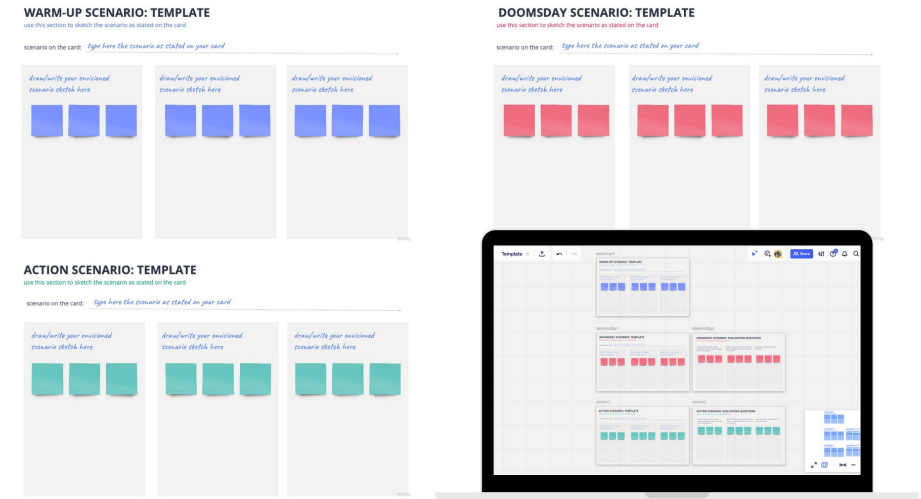


FIGURE 7.6, THE MIRO BOARD AND TEMPLATES

MIRO TEMPLATES

The MIRO board displays templates for the sketches of the scenarios as stated on the cards. There are three types of templates to sketch the scenarios corresponding to the three types of cards. The templates allow the project team to sketch one to three scenarios for the situation as stated on the card. In addition to the sketches, the template poses three evaluation questions to provide a critical evaluation on the proposed scenario.

For the doomsday cards, the evaluation questions will focus on how to prevent such a situation, and how action can be taken to change this situation if this is the current state of the process. For the action cards, the evaluation questions will focus on how to possibly implement such an action, if the outcome seems to provide a change in the current process.

*(If the situation allows for the exercise to be applied in a physical setting, the templates and cards can be printed and filled out with pen/post-its)

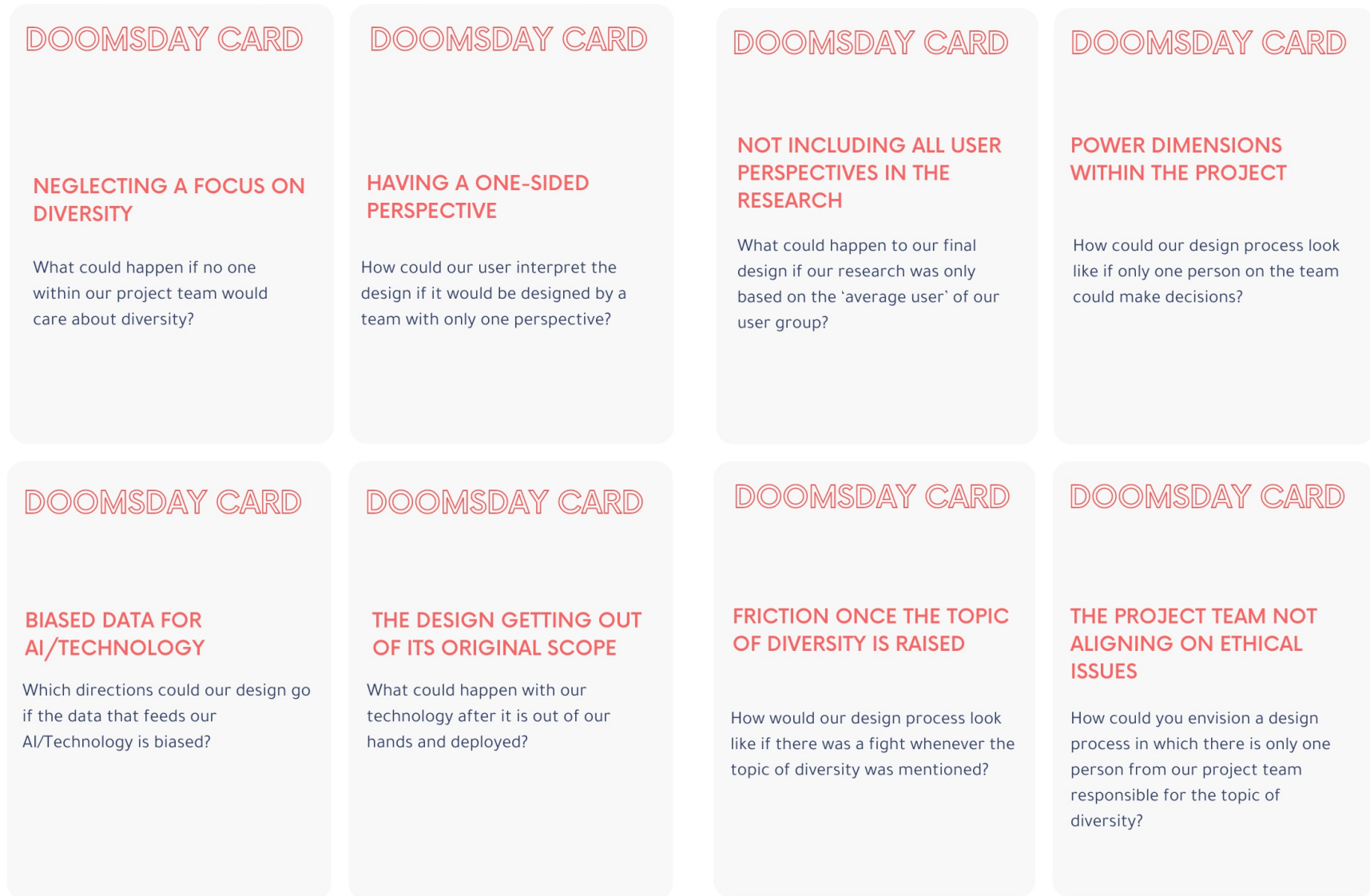


FIGURE 7.7, THE FULL DECK OF THE DOOMSDAY CARDS

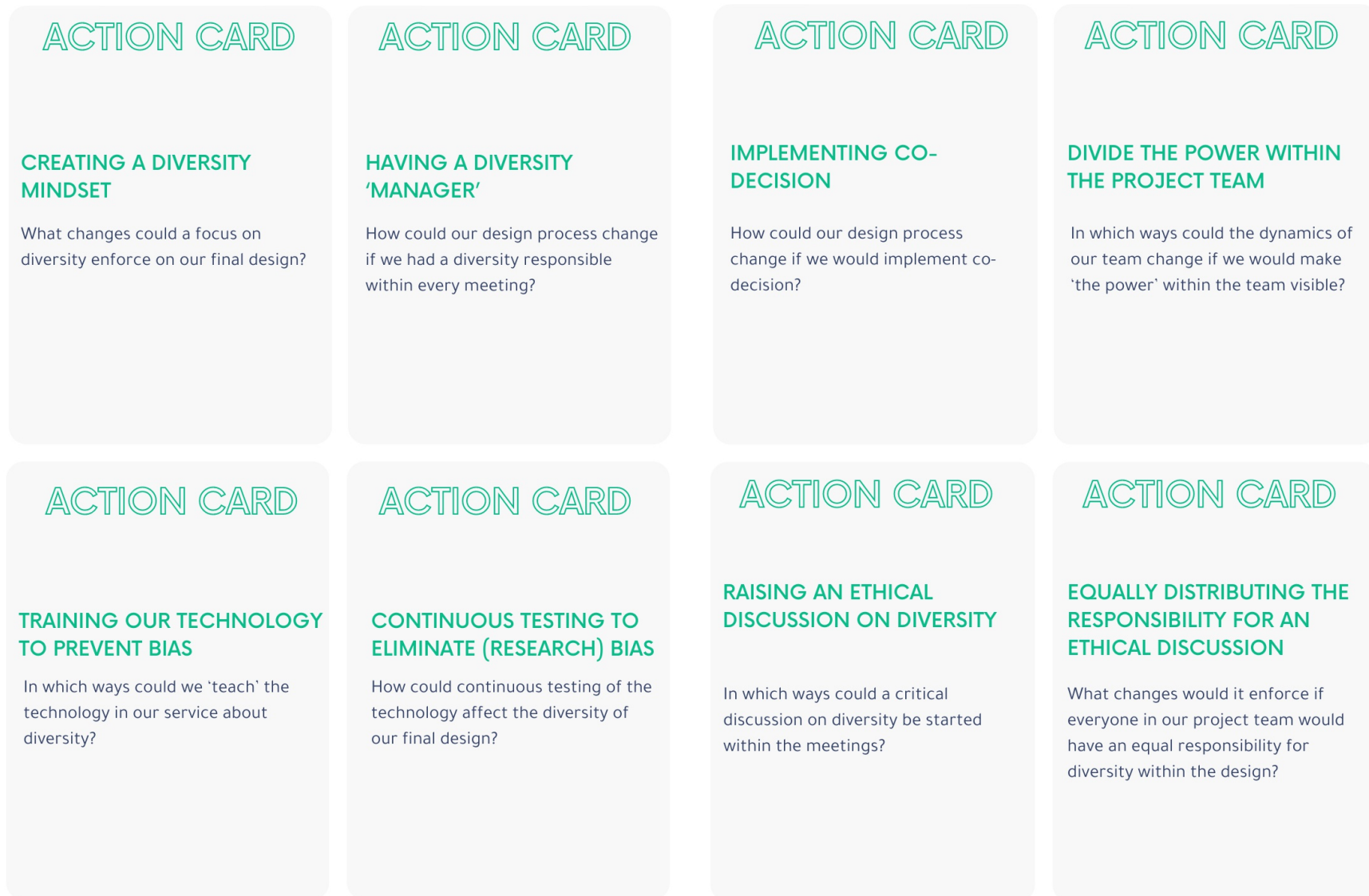


FIGURE 7.8, THE FULL DECK OF THE ACTION CARDS

WARM UP CARD

FILL OUT THE DOTS WITH AN OBJECT OF YOUR CHOICE

How would look like in the year 3000?

SKETCH ONE TO THREE SCENARIOS ON THE TEMPLATE

WARM UP CARD

How would your life look like in 10 years, if you could make a wish come true?

SKETCH ONE TO THREE SCENARIOS ON THE TEMPLATE

WARM UP CARD

What could the person next to you do, if they had a superpower?

SKETCH ONE TO THREE SCENARIOS ON THE TEMPLATE

WARM UP CARD

FILL OUT THE DOTS WITH AN OBJECT OF YOUR CHOICE

What would be your solution to ?

SKETCH ONE TO THREE SCENARIOS ON THE TEMPLATE



FIGURE 7.9, THE FULL DECK OF THE WARM-UP CARDS

WARM-UP SCENARIO: TEMPLATE

use this section to sketch the scenario as stated on the card

scenario on the card: *type here the scenario as stated on your card*

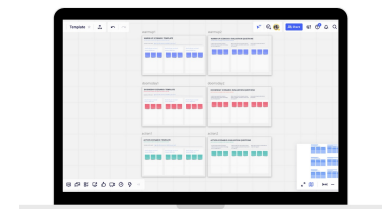
draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

draw/write your envisioned scenario sketch here

miro

FIGURE 7.10, THE WARM-UP TEMPLATE IN MIRO



DOOMSDAY SCENARIO: TEMPLATE

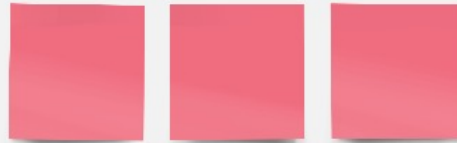
use this section to sketch the scenario as stated on the card

scenario on the card: *type here the scenario as stated on your card*

*draw/write your envisioned
scenario sketch here*



*draw/write your envisioned
scenario sketch here*



*draw/write your envisioned
scenario sketch here*

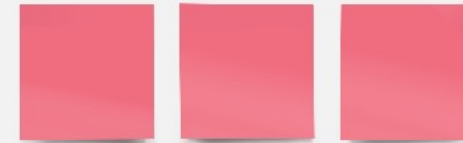
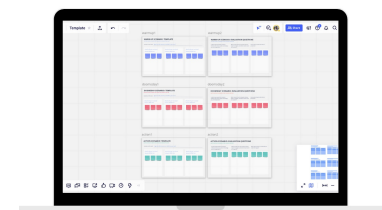



FIGURE 7.11, THE DOOMSDAY TEMPLATE FOR SKECTHES IN MIRO




DOOMSDAY SCENARIO: EVALUATION QUESTIONS

use this section to evaluate on the scenarios sketched


In which ways would this situation influence the service and/or technology you are designing for?



Which results from this situation did you expect to happen, and which results come as a surprise?



How could a situation like this be prevented?



miro

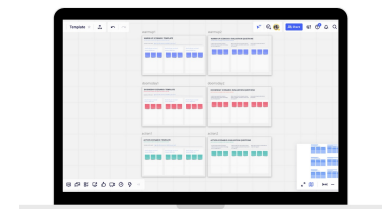


FIGURE 7.12, THE DOOMSDAY TEMPLATE FOR EVALUATION IN MIRO

ACTION SCENARIO: TEMPLATE

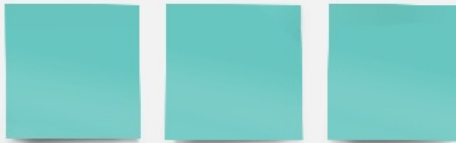
use this section to sketch the scenario as stated on the card

scenario on the card: *type here the scenario as stated on your card*

*draw/write your envisioned
scenario sketch here*



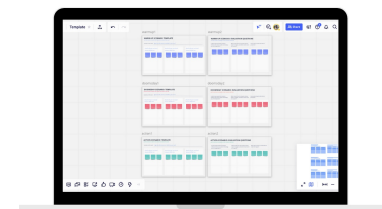
*draw/write your envisioned
scenario sketch here*



*draw/write your envisioned
scenario sketch here*




FIGURE 7.13, THE ACTION TEMPLATE FOR SKECTHES IN MIRO




ACTION SCENARIO: EVALUATION QUESTIONS

use this section to evaluate on the scenarios sketched

In which ways would this situation influence the service and/or technology you are designing for?

Three teal sticky notes are placed horizontally at the top of a light gray rectangular area, intended for notes regarding service and technology influences.

Which results from this situation did you expect to happen, and which results come as a surprise?

Three teal sticky notes are placed horizontally at the top of a light gray rectangular area, intended for notes regarding expected and surprising results.

What steps need to be undertaken to make this happen?


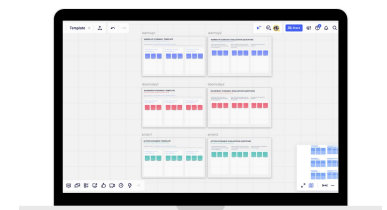
Three teal sticky notes are placed horizontally at the top of a light gray rectangular area, intended for notes regarding steps needed to make the scenario happen.

FIGURE 7.14, THE ACTION TEMPLATE FOR EVALUATION IN MIRO



CANVAS: in use

WARM-UP CARDS

The recommendation is to use the warm-up cards at first, before starting the real discussion, if there is a need to create a comfortable environment before the exercise can start (this can occur if not everyone in the team knows each other or if the situation seems too formal e.g.).

The warm-up cards can also be used to provide a brief example on how to work with the scenarios, and to show to the participants who are not familiar with the scenario concept yet, how such an exercise can look like.

Lastly, the warm-up cards can be applied as an icebreaker, in which the situation seems too formal to have an honest discussion, where the warm-up cards can be used to 'loosen' the interactions between the participants.

DOOMSDAY CARDS

The recommendation is to use the doomsday cards when there is urgency to display the need for ethical consideration on diversity. Using the doomsday cards will help to show that aspects of the design process as presented on the card need to be changed, if one ought to be considerate of ethics and diversity.

(This can be in a situation when one, or more of the project members feel like there should be more focus on ethics and diversity within the design process)

In addition, the doomsday cards can also be applied as an evaluation of the final design. Once the final design, or the design process is finished, the doomsday cards can be applied to evaluate on how 'far away' it would be from the doomsday scenario. From here, the project team can establish if there is a need for change for the final design, or if there were mistakes made during the design process.

ACTION CARDS

The recommendation for the action cards is to apply them after the doomsday cards have been used. Once there has been established a sense of urgency, the aim of the action cards is to sketch a situation to show the variety of actions that can be taken to implement ethics and diversity. The action cards can then be of inspiration on how to implement changes in the design process.

(This can be a situation in where it has shown that the design process needs to be changed to address ethics and diversity, but where the team members do not know what action to undertake)

STEPS FOR USE

The goal of the intervention: CANVAS is to make implementing ethical considerations on diversity in the design process more tangible. This is done through creating one to three sketches of the scenario on the template. Once finished the exercise, the project team has physical props (the template) of the discussion and has visualized the value it can add to actively work on ethics and diversity.

1.The first step is to open the corresponding MIRO board, and familiarize the participants with the lay-out of the board (here, one can find the cards & the templates)

2.Then, determine which card deck should be used. Please use the description of the card decks and read the recommendation on when to use a certain card deck

3.After a card deck has been chosen, one random card to be used by the whole team is drawn from the deck. (It is also possible to draw one card for each team member)

4.The card drawn states a scenario, that should be read out loud to the project team in the meeting/workshop/facilitation

5.Then, take the corresponding template (note: there is a template for the warm-up cards, doomsday cards, and one for the action

cards) and assign the template in the MIRO-board to the participants. Then, every team member can sketch or write one to three examples of the scenario as stated on the card

6.When every team member has finished their scenarios, feel free to present them to each other, and elaborate on motivation why this could happen when needed

7.Once every team member has presented their scenario(s), fill out the evaluation questions as stated on the bottom of the template

8.The final step is to start a group discussion on the evaluation questions. Here, the goal is to envision how a situation could be prevented if it is a doomsday card, and how a situation could be made happen, if it is an action card.

Although CANVAS is developed through a research focus on ethics and diversity of services in the digital realm, not all cards touch upon the technological aspects. Therefore, the scenario cards could be considered for the use within 'analogue' service design. However, it should be noted that this could defeat the purpose of visualizing the emergent properties of technological focused services within their system or social context.

scenarios for use

As a designer, you might feel that you need, or want to be an advocate for implementing diversity as an ethical practice in the design process. Therefore, CANVAS is developed, a scenario-based card exercise, which helps you, and your project team to visualize the impact of an ethical approach to diversity in your design process. However, how can you convince your project team, your client or even your management to work with this exercise?

The scenarios below are meant to provide you with inspiration on introducing the concept to be used in the project. Through research on experience of designers in their teams, it showed that convincing managers or clients can be challenging.

In addition, how do you continue with using CANVAS if your manager or client approved, which situation suits your project best? To be inspired, please follow the scenario of David, a service designer in a large multinational, who explains how he introduced CANVAS to his team.

STARTING THE DISCUSSION

David is a service designer in X, a large multinational. He is part of the design team which consists of developers, UI and UX designers, project managers and a platform lead. For the past few months, he has been bothered by the 'standard' ways in which his team operates, he feels that some designers are being steered too much by corporate guidelines, set-up personas being almost stereotyping, and neglect some crucial discussions.

For example, he noticed that the developers did not have enough time to incorporate a translation option in one of the designs, limiting non-English speakers in the use of this service. Also, some of the AI used within one of the designs, was based on data collected 2 years ago, representing only 1 of the 3 age groups using this design.

David came across CANVAS, and though it could be a good exercise to work on with the team. However, he was unsure how to bring it up, given that his platform lead is the only one with the seniority to approve, or implement such an idea. Therefore, David first observed the status of the team, and wrote down several points that could use improvement, and that could change by using CANVAS. Given that his platform lead receives many emails a day, he decided to bring up the idea in a meeting.

However, David was scared that without any support, his team might show resistance. Therefore, together with another colleague, David drew up a small presentation of 3 slides. In this presentation, he (1) explained CANVAS, the exercise, and what it could bring to the team.

Then, he (2) created a sense of urgency, by giving some examples of his own work which could be improved by using CANVAS. At last, (3) David proposed different ways to use CANVAS, in which he offered to facilitate the smaller exercises additional to meetings, or if there is the time, facilitate a half-day workshop.

After his presentation, his colleagues understood his point, and had a good idea of what he meant. They thought it was brave that he proposed improvements to his own designs, that also gave them a better idea on what changes CANVAS could enforce. His platform lead was also enthusiastic. She mentioned that she would try to have everyone in the team engage on a morning workshop session on ethics and diversity. Otherwise, if time does not allow this, she said that David could plan 20 minutes in every weekly meeting to discuss one scenario.

WORKSHOP

David got approval to facilitate a workshop on CANVAS. He received a three-hour timeframe, in which he can host the workshop for his team members. All his team members are still working remotely. He therefore decided to set up a facilitation session on Friday morning via a video call, where he invited everyone on the team; developers, designers, the project manager and the platform lead.

Whilst getting to know CANVAS, David carefully studied the cards and the templates as included on the MIRO board, this allows him to have full knowledge before the workshop starts. He divides the 9 people up in groups of 3, as he thinks it would be fruitful to work on one template with colleagues in different roles. He ensures that the MIRO board has enough templates for the 3 groups, corresponding to the number of cards to be used. For this session, David has chosen 4 cards from each deck, as this allows to work on the number of cards, including evaluation within the timeframe of the facilitation.

On Friday morning, he invites his colleagues into the video call and starts explaining the exercise. He ensures that everyone is familiar with the concept and divides the groups. After working on the warm-up cards, he sees that most of his colleagues feel comfortable talking to each other, and that the environment would allow for a critical discussion. When finishing the exercises after 3 hours, he encourages his colleagues to download the templates they have been working on, and use the ideas gathered for decisions on the next few steps in the design process.

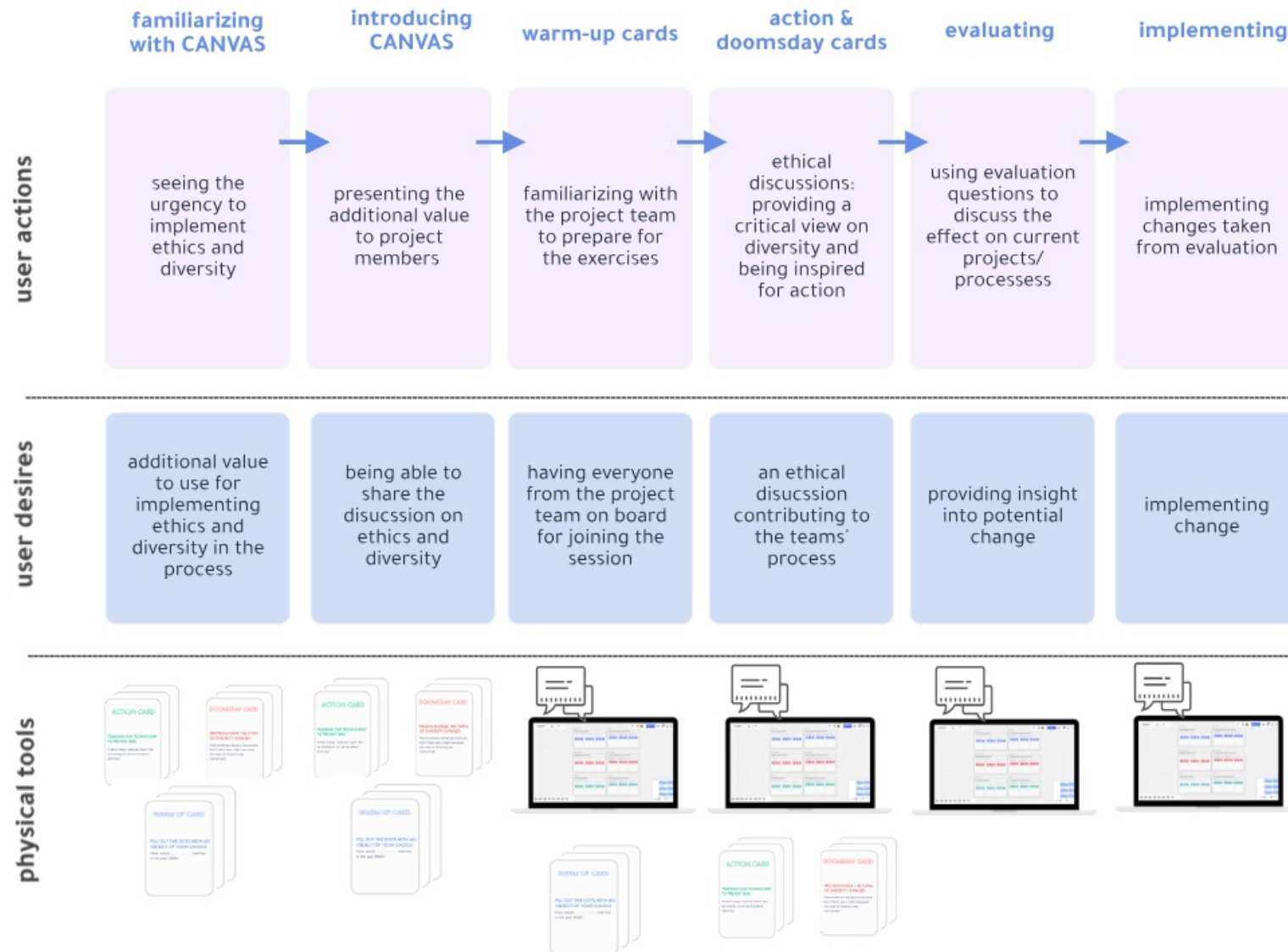
MEETING

Unfortunately, some members of David his team have recently received a new project, including a very tight deadline from one of the executives. Therefore, his platform lead could not provide approval for the workshop. However, she did approve David to have 20 minutes every week to use the scenario cards in the project meeting at the beginning of the week.

Whilst getting to know CANVAS, David carefully studied the cards and the templates as included on the MIRO board, this allows him to have full knowledge before the workshop starts. He has decided that every even week, he will use a doomsday card, and every odd week he will use an action card. As it is week 24, they will be brainstorming on a doomsday card this week.

After everyone has provided an update on their tasks for the week, it is David's turn to work on CANVAS in this meeting. He has his MIRO board open and shares the link with his colleagues. After he has introduced the exercise, he randomly picks one card from the doomsday cards, and shares it on his screen. He then opens the template in the MIRO board, and invites his other team members to join him, where they are working on one template together. After 10 minutes of brainstorming, he moves on to the evaluation questions, where he and the team spend 10 minutes on evaluating the impact of the scenarios. He finishes his session with supporting how everyone could try to take one note from the evaluation into their tasks for the upcoming week.

customer journey



relevance to the design challenge

Through the research on ethics and diversity, service design and services in the digital realm, the following design challenge has been formed:

How can this intervention make potential outcomes of working actively with ethics and diversity in the design process of services in the digital realm visible and tangible, thereby reducing obstacles for designers to implement ethics and diversity in the design process?

CANVAS: ethical cards for diversity, is to be used as a tool in the design process and can therefore take away the pressure/friction for one person to start the discussion on ethics and diversity. By using scenario cards as an intervention, the designers are assisted in visualizing the potential value of working with ethics and diversity.

The final template, which poses one to three scenarios corresponding to an action or doomsday card makes the outcome tangible and visualizes the added value of implementing action on ethics and diversity. The evaluation questions on the template can be used to start a critical discussion, and allow a discussion across the team, therefore distributing the power.

Within the project, diversity is defined as:

‘One should consider all members of the community, including, but not limited to; sexual orientation, national origin, religion, socioeconomic status, color, etc, and would be inclusive towards all users possibly affected (nonetheless the degree to how much)’.

Thereby, the outcome of using the intervention aims at ensuring that the design process and outcome reflects ethical decisions towards all users possibly affected by the design.

Although all scenario cards are developed through insights from the research on services in the digital realm, some cards specifically touch upon technological/digital practices. Here, the cards aim at displaying the effects on ethics and diversity through the emergent properties of a service in relation to its system and/or the social context (Hofemann et al., 2014 ; Peters et al., 2016 ; Literat & Brough, 2019).

chapter eight

discussion

IMPLEMENTATION

This chapter aims to discuss the overall process as presented in this research, with a special focus towards the intervention as presented in the previous chapter. The discussion is done through a change management and digital perspective. Thereafter, recommendations for future implementations of the study are suggested.

change management perspective

The primary goal of the intervention as introduced in the previous section, is to enforce a change in the design process. By staging a design intervention, the aim is to disrupt the current way of human behaviour, and to create new patterns (Damien, 2019; Hill Smith, 2019)

The way the intervention is structured, allows to explore at first, whether change is needed (through exploration of the doomsday cards), then, once analyzed what is needed to change, action can be undertaken (through exploration of the action cards) to implement ethics and diversity in the design process. Here, the intervention is not aiming to solve the 'diversity conflict', but to rather open for a discussion on possible improvements (Halse & Boffi, 2014).

As the intervention aims at enforcing new patterns, thus a change, this section will reflect on the intervention from a change management perspective, can it, following change management theories, be managed and enforce a positive transformation?

STRUCTURING THE CHANGE

Having the project team agree to use the intervention and engage in the scenario-based exercise is a crucial first step. Here, the importance of 'the people', as mentioned by Anderson & Anderson (2011), comes forth. The people must implement and act, and therefore, be the drivers of change.

When working with the intervention, a first crucial step, as also suggested as the first step in the 8-step model of Kotter (Kotter, 1995), is 'Establishing a sense of urgency'. This step, which is reflected through the doomsday cards, allows to set the stage for a critical ethical discussion on current practices. Through sketching scenarios for the worst cases, the project team could observe how far off they are, and if there is a need to actively implement ethics and diversity in their design process.

Once the team has established the urgency to change, they can work on 'the content' of change, as explained by Anderson & Anderson (Anderson, D. & Anderson, 2011). The content of change refers to 'what' needs to change, the team is supported to explore this through the evaluation questions in the scenario exercise. 'The content' aligns with the third step as mentioned by Kotter (1995): 'Creating a vision' emphasizes that it is important to visualize a future state, which can easily be communicated to others.

The action cards in the intervention, provide means of inspiration to the content of change, as the scenarios sketched with these cards, help to visualize what can be done to implement ethics and diversity. In addition, the action cards build up on the notion of step five as mentioned by Kotter (1995), 'Empowering others to act on the vision', this means removing obstacles for the change to happen, and

encouraging ideas, risks, and action to be taken. The action cards, and the corresponding evaluation questions can therefore help to envision how the project team could implement ethics and diversity.

The last step is to sustain and implement the actions coming forth from the scenarios of the action cards. The team could establish how the past evaluations & discussions could lead to concrete action on ethics and diversity in their project and process. This therefore brings together the third, and last critical focus area as mentioned by Anderson & Anderson (2011), 'the process'. By using the intervention, the change of the design process is planned, and includes 'the people', driving 'the content' of change.

RESISTANCE

Although the change process seems to be linear as described in the structure above, the real change process could contain more obstacles and hurdles before being able to implement ethics and diversity. Therefore, an important obstacle that could occur through this intervention, will be briefly discussed: Resistance.

When trying to implement ethics and diversity in the design process, it is important to consider that when moving to a desired future state, resistance can occur (Maurer, 2009). This resistance can, in the case of this intervention, be reflected through team members who are not willing to engage. Although it seems likely that when providing a thorough explanation, people would be willing to participate, it is not this easy (Maurer, 2009). It is therefore important to understand what, in the case of the intervention, can cause resistance, and how this can be translated to support.

When trying to engage the project team to participate in the scenario-based exercise, team members can become resistant if they do not understand the underlying cause of why it is needed. Here, it could be that they are missing crucial information to understand the exercise and what it can bring, which makes them confused (Maurer, 2009). It is therefore important to explain what the intervention can bring to the design process of services in the digital realm in terms of ethics and diversity, and why this is valuable.

Another form of resistance could be reflected in team members understanding the exercise, but just not liking it. Within the intervention, this could be likely for senior managers or clients, who interpret the exercise at the first glance as time consuming and worth hours of paid work. This type of resistance is emotional and does not have to do with their understanding of the intervention, but merely their attitude and role within the situation (Maurer, 2009). Here, it is important to emphasize what is in it for them, for example, what are the benefits for the client if they start to work actively with ethics and diversity, or what can your manager get out of spending more time on a workshop?

WORKING WITH CHANGE

Lastly, it is important to understand how a designer could be an advocate for the change towards ethics and diversity in the design process. When working within a project team, it is therefore important to understand how change might unfold, and what happens when you start confronting the team members with the ethics and diversity of their design?

The intervention is designed to provoke an ethical discussion and can thereby lead to unexpected insights on the current situation. This moment is described by Emery (1998) as 'the foreign element', with insights coming from outside your own expectations. As visualized in figure 8.1, after the foreign element is introduced, it is likely that the project team will experience chaos, where unusual feelings can arise.

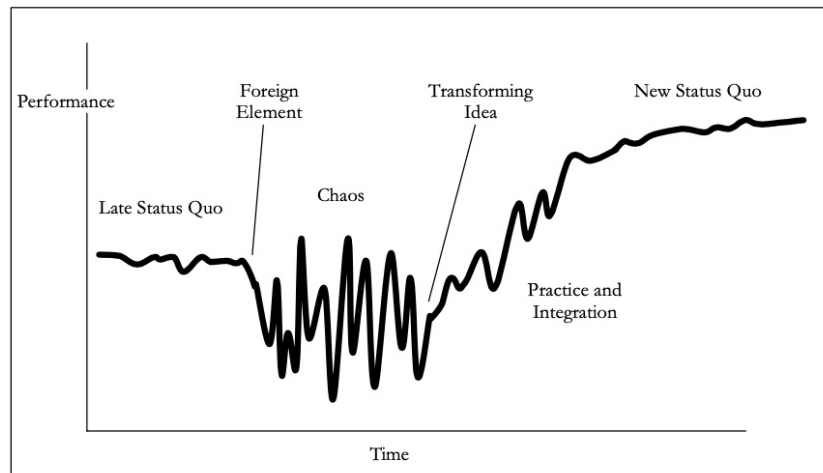


FIGURE 8.1, THE SATIR CHANGE MODEL (EMERY, 1998)

The scenarios can provoke insights to ethics and diversity that were not expected, yet cause need for change. Because of the tendency to be taken out of the comfort zone, the state of chaos is characterized by its desire for creativity (Emery, 1998). This urge for creativity could contribute to creative approaches towards the sketches of the scenarios, and the evaluation questions.

Then, through the chaos, the evaluation questions can guide the project team to reflect on the scenarios towards a transforming idea. This idea gives the project team an understanding of action on how to implement ethics and diversity (Emery, 1998). Lastly, after the project team has established action to be taken, they can put the action into practice, and integrate it within the design process, leading towards the new status quo, as is shown in figure 8.2.

the digital perspective

This research has a specific focus on the design of an intervention on ethics and diversity for service designers in the digital realm. However, it is needed to provide a critical reflection on how these digital aspects have been reflected through the research, the design process, and the final intervention.

RESEARCH: WHY?

Through the primary literature study, it showed that if one desires to study the ethics of the design outcome, there should be differentiated between services in the digital realm. This claim was supported through different studies, in which it showed that the use of an IT artefact, can change the service interaction (Lindgren et al., 2019).

Hence, the automation of human actions puts all reliability on the IT artefact, therefore defining the technology as 'an actor', but can also show emergent properties to the system in which the service operates (Lindgren et al., 2019 ; Pakkala 2019). Using the IT artefact in the service then causes that the control by the service provider is diminished (Peters et al., 2016).

It is therefore important to consider how this Artefact/AI can develop, and how it will change or alter the service outcome/final design. Therefore, it should be carefully considered on how the AI is developed through the design.

Since this research focusses on the ethical and diversity principles of service design, it is important to consider that when designing for services in the digital realm, the AI should be seen as a non-human actor and observed in the system as a separate entity (Jylkäs et al., 2018). Therefore, this research highlighted AI as a specific research subject.

As a critical consideration: Within this research, the terms Technology, IT artefact and AI are applied interchangeably. The three subjects have different meanings and definitions, but provide for the purpose of this research study, the same objective. An AI, IT artefact or Technology, pose in service design the purpose of automating human action, and integrating a more efficient and advanced way of thinking within the service system.

As AI is a sub-class under 'technology' or 'IT artefact', it has been chosen since it provides a more concrete example. In addition, AI is a well-known component, desired to be applied in many different settings in relation to service design (such as, but not limited to: automation of human actions; customer service, application technology, automation of analogue components). Thus, within this research study, and particularly within the three research methods, AI has been used as a representation of the IT artefact.

THE DESIGN PROCESS: HOW?

Within the research methods, as can be seen in chapter 2, there were two methods which specifically studied AI in relation to service design. The first method was the systematic literature review, in which the search term on 'digital design' showcased several papers covering AI within design. Here, a critical notion is that the search could have been extended to include 'AI' as a subject. However, through iterations on the different Boolean search terms, 'AI' as a search term resulted in too many technically focussed papers and took the scope off the service design discipline.

The reason for this can be found in the service design discipline being newer, and therefore not having numerous papers in the subject areas of ethics, AI and service design; making the search results automatically shift towards more AI specific papers. Therefore, the decision to change the Boolean term to 'digital' was made to balance the focus on the service design discipline.

Although the systematic literature review provided insights on the relation between ethics, diversity, and AI in service design, it did not provide many new insights in comparison to the primary literature review. Most insights related to technology or AI, confirmed what had been discussed before, such as stronger reliance on the IT artefact, or changes to the service interaction.

To further provide insights on the practical application of AI within the design process, the practitioner view was carried out. Contrary to the systematic literature review, the practitioner view balanced out AI related insights over service design insights. Therefore, the practitioner view provided a thorough analysis on AI development, and its connection to ethical and diverse design processes.

However, an important notion towards the insights as analysed in the practitioner view, is that the insights showed the need for more diversity at systemic levels, thus from an organisational perspective, and representation across the AI development teams. Although this is a great issue with a need to be tackled, it is unfortunately out of the scope of the design of this intervention.

Since the one-sided perspective in AI development will still be an obstacle, it has been chosen to set the focus on making developers 'aware' of potential lack of diversity. Therefore, if the teams itself cannot be changed by the intervention, hopefully the developer's mindset and awareness can be.

Besides the need for a more diverse mindset through AI development, bias and lack of diversity through user involvement showed to be an obstacle potentially to be addressed by the intervention. Here, it showed that since AI is solely dependent on the data being 'fed', biased research will reflect the bias in the final AI (that is then being used in the service).

Thus, when being critical on the previously executed research, the methods have showed minor flaws regarding the focus on AI and technology. There has been a deliberate decision to not include 'AI' in the Boolean search terms for the systematic review, that could have potentially influenced data retrieved. This decision caused a clash between having to choose for service design, or AI focussed papers, due to the limited research overlapping both subjects.

The practitioner view on the other side, actively engaged within

more AI development focussed papers, and has therefore provided insights to be used for the design of the intervention.

The designer interviews have not been discussed yet, since they have specifically been chosen to focus on service design experience and the perception of designers towards ethics and diversity. However, when providing a critical reflection: a consideration could have been to extend the conversation to AI, and the experience of the designer specifically towards services in the digital realm. Although the questions on this topic were set up to be discussed, only 2 out of the 7 conversations allowed this to be discussed naturally following the flow of the conversation. Therefore, since AI as a research subject was not the priority for the designer interviews, this topic was not forced upon the interviewees.

THE INTERVENTION: WHEN?

The next paragraphs will explain how the insights from the digital perspective, as taken from the research are reflected through the final concept for the intervention; CANVAS.

At first, the scenario structure: As shown by the research, it was needed to support designers (and their team) in their mindset towards ethical reflection on diversity. This notion is something that has been addressed from the data of the practitioner view, where it showed that the development team could be having a one-sided perspective. A one-sided development perspective could be leading to biased data used for AI development, which is then reflected in a service using a biased technology, thereby not addressing all users possibly affected.

Using scenarios and visualizing the outcome and the direction of a design, this one-sided perspective could be countered. Thus, the use of scenarios contributes to awareness on the perspective caused by systemic exclusion within design and development teams.

Secondly, the scenarios contribute to visualization of the emergent properties of the technology. As has come forth from both literature searches, it is important to analyse how the technology will evolve through the service interaction. By applying design fiction and speculative thinking, designers are triggered to think outside their own scope, and think of possibilities on how the technology could emerge through the service interaction.

Lastly, it is valuable to discuss the content of the cards. Some of the cards state specific technology /AI related scenarios, and are therefore, clearly applicable to service designers in the digital realm. However, there are also cards which do not show content directly addressing AI/technology. Therefore, it is crucial to understand that the content of the cards is developed to address the inclusion criteria, the jobs to be done and the obstacles which had to be overcome to implement ethics and diversity in the design process.

The previous mentioned indicators are all developed through a focus on service designers in the digital realm, and therefore, provide guidance to the overall design process. Hence, the focus of this research is not specifically AI or technology, it is about ethically designing for diversity, in the digital realm. Therefore, this means the intervention has a focus on: Ethical reflection, the team, the process,

the research, the users and thereafter; the technology. Hence, some of the cards can also be used by service designers not operating in the digital realm, since they discuss ethics of the process, the connections with the team, or eliminating research bias.

To conclude, the concept CANVAS, is based on research that has a specific focus on service designers in the digital realm. The final concept encompasses many ethical aspects of the design discipline, varying from raising an ethical discussion within a team, or eliminating research bias beign reflected in the technology. All the components as mentioned on the cards are crucial for a complete, ethical and diverse design process, and therefore bring designers one step closer, to be assisted in changing their design process for the good.

proposal for future implementations

When evaluating the process, it showed that the current presentation of the concept and the design process, still allow for reflection and a proposal for future iterations. The next paragraphs will be dedicated to the future implementations that could be considered when further developing this study.

CONCEPT DEVELOPMENT AND CHOICE

The first consideration that came upon reflection is the choice for the developed concept. As the process shows, only one concept has been proposed in the design stage and allowed for further consideration. Thereby, deciding to develop this concept, the scenario cards, as the final concept for the intervention.

As this research study is design based, it should be discussed that it could have been fruitful to set the stage for multiple concepts, and thereby, through testing phases, determine the final concept that was mostly preferred by the designers.

However, for this research study, only one concept was created, and thereby tested. The reasoning behind this is that the iterations on the design challenge narrowed down the scope of the research in such a beneficial way, that it became very clear what was needed from the intervention. The final iteration, together with the inclusion criteria, clearly stated how the intervention could

contribute to the implementation of ethics and diversity in the design process. Thereafter, through the idea generation, the insights on solutions, and by taking inspiration from the existing interventions, the sketch of the scenario cards developed quite quickly. It therefore felt that at that moment in the process, the scenario cards ticked all the boxes of what the intervention should entail and addressed all inclusion criteria.

However, since the concept was developed out of only one idea, the iteration on the concept through testing and evaluation was considered of high importance. Therefore, the designers that have evaluated the concept, were clearly briefed on the details of the intervention, and were presented to the prototype before the evaluation meeting, such that time allowed to carefully observe the concept. Thereafter, the feedback of the designers was carefully analysed to allow for another iteration before presenting the final concept.

RESEARCH ON THE CONTENT OF THE CARDS

As a second recommendation for future implementations, the focus will be on the research and development on the content of the scenario cards. The current scenario cards are built on the three research methods done for this study, thus mainly insights from

current academic practices, seven designer interviews and the practitioner research. As can be seen in chapter 5, the insights from these research methods were used to develop the content of the scenario cards. Thereby, the insights showing two directions: a problem and solution-oriented approach. The insights retrieved were fruitful and showed considerable problems to be represented on the doomsday cards, and actions to be reflected by the action cards.

However, here it can be argued that the insights displayed on the cards are very much dependent on the context of this research. This research has been studied in the context of three topics: services in the digital realm, ethics and diversity and service design. Through the literature and the interviews, subtopics on these three subjects came forward, such as insights on group dynamics, bias in AI and systemic problematization of diversity. Since the content of the cards is based on these insights, the cards display suggestions on how to change group dynamics, and what could be done if there are systemic neglections of diversity and how to prevent bias in AI.

However, here it should be noted that these are 'general' observations that came forward through interviews and literature. Thus, there has not been a specific research focus on how to change group dynamics to integrate a better approach to ethics and diversity, neither has there been a focus on the exact approaches to what can be done to overcome systemic exclusion.

Nevertheless, the content of the card still contributes to implementation of ethics and diversity within the design process, yet



FIGURE 8.2, THE CURRENT SLECTION ON THE CONTENT

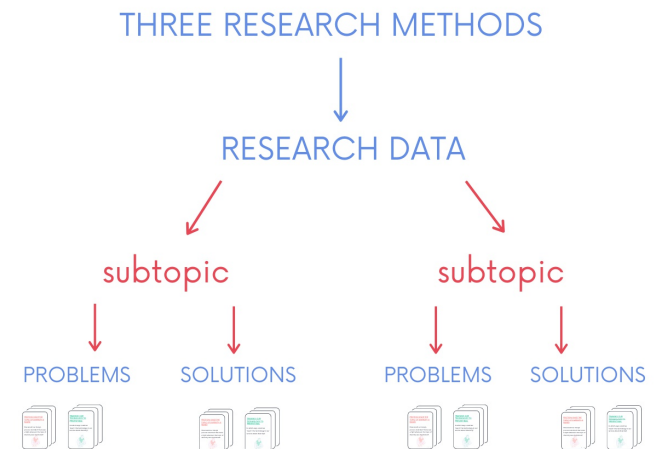


FIGURE 8.3, THE POTENTIAL SELECTION ON THE CONTENT

the topics on the cards have not been researched individually. Thereby meaning that if three cards cover changes in group dynamics, this content has not been chosen as the best three from an extra research section on group dynamics. The cards have been selected, as these three insights on group dynamics highlighted a potential problem, or solution, from the 'general' research within the context of the three research subjects, as displayed in figure 8.2.

Therefore, a future consideration could be to improve the content of the cards by providing more specific sub-topics out of the insights that were retrieved from the general research data. This would then provide an extra layer, or filter, on the research data before being added to the scenario cards. This layer is displayed in figure 8.3. Thus, further research on the specific topics on the content of the cards could be done to ensure the best practices represented.

TESTING WITHIN PROJECT SETTING

A second consideration for future implementations is the testing and evaluation done within this research study. The initial idea of the concept was shown through a prototype, as can be seen in chapter 6. This prototype was presented to four designers, that were thereafter interviewed on their perspective on the topic and the concept. The interviews provided valuable insights and were the foundation of a second iteration on the concept before finalizing the concept of the intervention.

However, what was currently not included in the testing phase was

the connection to a real project team. Therefore, for another round of testing, I would propose to evaluate how the cards are being used within the context of the design process of a 'real' project. This could be done by inviting a project team currently working on the design of a service in the digital realm to a facilitation/workshop session. The team could possibly be consisting of designers, developers, and managers.

By setting up a testing session, it would be possible to observe if using the intervention, could indeed help to implement ethics and diversity in the design process, and if the designers would feel assisted by having the possibility to use the intervention. In addition, engaging with a real-world interaction allows to observe how the project team would interact with the physical tools of the intervention, and if there need to be any changes to how the intervention is staged.

SPECIFIC CONTENT CARDS

Following the recommendation to test the intervention with a 'real' project team, comes the suggestion to test whether the use of project specific cards could enhance the intervention experience. Currently, as discussed in the first paragraphs of this section, the cards are based on the general research being done within the context of this research study. However, through the evaluation interviews, it also showed that designers were curious if they could apply the cards in a more personalized setting. The main motive for this is that designers always want to adapt their tools to their own

preference. Thus, if the cards could be adjusted to a project related context, the final impact could be increased.

Hereby I mean to suggest that for future implementations, the content of the cards can be adjusted to more specific research being done in relation to the type of projects the intervention will be used for. Thus, a project within a public digital service, shows different cards than a project being executed by a large design and development team in a multinational organization.

If we observe the notion of diversity as approached in this study:

‘One should consider all members of the community, including, but not limited to sexual orientation, national origin, religion, socioeconomic status, color, etc, and would be inclusive towards all users possibly affected (nonetheless the degree to how much) within the research.’

It then shows that when deciding to adjust the intervention/scenario cards to the type of institution where they will be used, this could mean that for a public institution, the cards will be focused on a municipal community, whereas personalization for a multinational could span multiple continents. Thus, developing the content adjusting to the project could imply that the ethical discussions coming forth from the intervention, could be more project related, rather than being based on general observations.

STAKEHOLDER ANALYSIS

Within this research study, no specific section has been devoted to stakeholder analysis or mapping the influence of stakeholders. The strong focus on designing the intervention to be used by designers, took away the need for stakeholder analysis in the beginning of the research. However, through further phases, such as the designer interviews, it showed that it can be fruitful to analyze who would be involved when using the intervention.

Here, an example came forth from the interviews, where it was discussed that the perspective of the client, and the senior levels, can have great influence to whether it would be possible for designers to apply the intervention.

Therefore, the suggestion would be for further development of the concept, to map the stakeholders involved, and possibly (through for example a motivation matrix), map their interest, influence and what they can get out of using the intervention. This could thereby also contribute to further recommendations on how to introduce the intervention to a project team, as the stakeholder analysis visualizes who is associated with the intervention.

SYSTEMIC APPROACHES

This last section will provide a brief recommendation on including the systemic perspective on diversity within the design of the intervention. As this thesis focusses on the ethical approach towards

diversity, different discussions on integrating diversity within the design process have been held with designers. From these discussions, and from the practitioner research, insights showed that current societal structures are not yet fully developed for the multicultural society that has emerged. Therefore, systematic racism, exclusion and sexism is still a common practice.

From the interviews and research, it therefore showed that an integral aspect of addressing diversity through the design process, is starting from systemic changes, thereby engaging more diverse designers within a team and company structure. Although at junior levels the changes are starting to become visible, higher management positions are still lacking in diversity.

The design of this intervention has a focus on setting a stage for ethical discussions on diversity, thereby assisting the designer in their ethical behaviour throughout the design process. Including the systemic, and more organizational approach to tackling diversity is therefore, unfortunately, out of scope for this specific research.

However, as a service systems designer it is of high importance to consider the systemic environment the service operates within, and thereby trying to enforce changes within this environment. Currently, the intervention is designed such that the lack of systemic diversity is addressed through providing the tools for having an ethical discussion and creating insight to what is lacking. This does

therefore not mean that directly after using the intervention, a more diverse project team will be recruited, but it is a small step towards realization of what can be changed.

I would therefore like to suggest that for future implementations of this study, a separate chapter can be devoted to the impact of systemic diversity, thus, diversity within organizations of the designs created. Thereby, providing a comparative study on how the current design of the intervention/scenario cards is perceived from different types of project groups (one group with multiple nationalities and background, and one group from a 'white male' perspective), and if there are differences in ethical decisions made after using this intervention within two systemically different groups.

chapter nine

conclusion

The process as displayed in this research provided insights into the design of an intervention to be used by service designers. The displayed research and design process came forth from the initial design challenge:

How can one stage an intervention in the design process of service designers in the digital realm, to implement ethics and diversity?

CONTRIBUTION TO THE SERVICE DESIGN DISCIPLINE

Exploration on the underlying problem of this research was done through a literature study on the topics of ethics and diversity by design, and services in the digital realm. Thereby, the definition of diversity for this research being:

‘One should consider all members of the community, including, but not limited to sexual orientation, national origin, religion, socioeconomic status, color, etc, and would therefore be inclusive towards all users possibly affected (nonetheless the degree to how much) within the research.’

It showed that the responsibility of ethical designs, lies within the responsibility of the designer. To judge the ethical outcome, and support the designer, it is important that one should not rely on the moral judgement and values of the designer but assist them in their ethical approaches. Thereby, providing them with principles on how to judge if a design is ‘good or bad’. In addition, service designers

within the digital realm face an extra layer of complexity, where the digital nature of the services can change the service interaction and can show emergent properties, making an ethical judgement even more complicated.

It is here where the underlying problem of this research showed: currently, there are no specific guidelines or principles to be used by service designers in the digital realm, in which they can ethically design for diversity. Therefore, this research established the need on an intervention to be used by service designers in the digital realm, to increase the feasibility of implementing ethics and diversity in the design process.

DEVELOPING THE DESIGN CHALLENGE

As shown in the research, the initial design challenge was phrased:

How can one stage an intervention in the design process of service designers in the digital realm, to implement ethics and diversity?

However, through research on the topics of ethics and diversity, services in the digital realm, and service design it showed that the three topics are broad, and each pose their own challenges.

Therefore, it was decided that there should be a focus on the challenges of the designers; what do they need from the intervention, and what current obstacles are there that limit

implementation of ethics and diversity in their design process? Therefore, based on the research data, jobs to be done were established, capturing the exact needs of the designers from this intervention.

Through establishing the needs of the designers, a reiteration was made on the design challenge. Here, the underlying problem shifted from 'the designer does not have established guidelines', to 'the designer is not able to overcome certain obstacles to implement ethics and diversity'.

Therefore, the new design challenge was stated:

How can this intervention provide assistance to designers throughout the design process, and thereby, reduce obstacles to implement ethics and diversity in the design process for services in the digital realm?

To ensure that the most crucial obstacles to overcome were addressed by the design challenge, inclusion criteria, addressing the most relevant, and mostly mentioned needs and obstacles were established.

Having the new design challenge in mind, the next step was to establish the content of the intervention. Here, it was important to understand what the intervention needs to consist of, to be able to assist and reduce the obstacles for the designers. Therefore, an idea generation session was established, to think outside the perspective of ethics and diversity, but to still be able to address the design challenge. In addition, solutions as proposed in the research data

were studied, now used to provide solutions specific to the last iteration on the design challenge.

From the idea generation and insights on solutions, it came forward that tangibility and visibility are important factors to address the inclusion criteria by the intervention. Hence, by making the topic of ethics and diversity tangible, the conversation on the ethics of the design could be started more easily. In addition, providing visibility could help to display what actively working on ethics and diversity can bring to the designers' process.

Thereafter, the final design challenge was developed, stating:

How can this intervention make potential outcomes of working actively with ethics and diversity in the design process of services in the digital realm visible and tangible, thereby reducing obstacles for designers to implement ethics and diversity in the design process?

FROM CHALLENGE TO CONCEPT

With the final design challenge in mind, additional research was executed on existing interventions. From here it showed that through staging the intervention as cards, the topic of ethics and diversity could be presented as a light and playful exercise. In addition, to assist the designer in understanding the ethics of a design, scenarios could be applied as a method within the intervention.

Therefore, the two ideas lead to the design of the concept of CANVAS: 'ethical cards for diversity'. The intervention is thereby

staged through cards, that will display ethical scenarios of working with diversity for service designers in the digital realm.

The cards are a tangible tool to be used by designers. By completing the exercise on the scenario, the designer finishes with a visualization (written/ drawn) of their scenario. The content of the scenario cards is based on the inclusion criteria, thereby addressing the needs and obstacles designers face when trying to implement ethics and diversity in the design process. The concept of the scenario cards, therefore, addresses the final design challenge, and assists the designer in implementing ethics and diversity in the design process of services in the digital realm.

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appendix 1: the eligibility criteria

This section will provide the eligibility criteria for in- or exclusion of literature in the systematic research process. The below mentioned criteria provide means of selection to filter the relevant literature for the study. All literature will be limited to the English language. The literature will be filtered by the last 5 years, due to the inclusion of technological relevance.

INCLUSION:

1. Empirical research
2. Literature research
3. The literature is desired to be developed for the service design discipline but can be extended to information technologies or other digital design disciplines. This criterion aims at including a focus on the design process, rather than evaluation of existing technologies. Studies analysing cases of specific technologies or products can be included, if an ethical diversity analysis of its design process is provided.
4. Emphasis of the literature on the analysis or evaluation of the application of ethics and diversity within digital and service design processes.
5. English language

EXCLUSION CRITERIA:

1. Papers not related to design disciplines, such as, but not limited to: a strong focus on business views of innovation, ethics of innovation within healthcare (see criterion 4), technology evaluation rather than design, etc.
2. Papers not reviewing ethical and diversity applications, principles or analyses embedded in the design process.
3. Methods not suitable for providing an analysis of the ethics and diversity within design processes.
4. Papers including the ethics within health care. The papers can only be included if it complies to inclusion criteria 3, and if the technology described is used in health care as a case study but has a strong emphasis on the ethics and diversity of design processes of the service or technology. This criterion is added due to the high nature of healthcare reviews within the field of ethics and technology.

appendix 2: designer interviews

INTERVIEW QUESTIONS

Can you tell me something about yourself, and your position?

What type of services and do you design for the digital?

What are your first thoughts when I combine the phrases diversity and design?

What is a definition of diversity for you?

Where do/did you come across diversity in your job/projects?

How do you see 'diversity' within the context of your design projects?

Could you provide an example of how you design with diversity in mind?

Where in the design process do you aim to incorporate diversity? (Research, Define, Ideation, Implementation)

Are there specific methods or tools you are using to incorporate diversity in the design process?

Could you give examples?

Do you have experience with designing for AI services or products? (customer service with AI agent)

Could you provide specific examples?

Would you say designing with AI as an agent has certain pros or cons in terms of designing for diversity?

In an ideal world, how would you envision that designers engage with diversity?

What do you think this can add in comparison to current practices?

What considerations does the 'perfect' diverse design process entail for you?

Do you think this could also be applied to designing for AI?

Where do you think the focus of the diversity in the design process should be? (Research, Define, Ideation, Implementation)

Do you think there are any specific tools or methods needed?

What do you see as obstacles when designing for diversity?

Are there current methods which can use improvement?

X (INDICATED TO BE ANONYMOUS)

Participant X works in product design and retail design, and it currently working at a design consultancy.

X has done a lot of research, and is currently mainly working on researching and making it into insights. X has no focus on specific services. The services are mainly in the public sector and are not specifically focussed on the digital

Diversity is a hot topic in design and this is for very good reasons, it is an important topic, since no one size fits all. Diversity is about meeting the users's needs, especially in public services.

The topics of inclusion and diversity are overlapping, it is mainly about being able to create designs being used by everyone. Inclusion is important in urban spaces.

It is also about preventing co-descending design just 'to pretend to be diverse', it is not about designing for the people than rather with them, but merely the other way around.

A diverse team will lead to diverse perspectives, when people are all the same the design becomes plain. There are a lot of good intentions, and in some cases it is hard to be diverse. The main problem is are you actually able to implement diversity?

Most consultancies are conscious about diversity, they aim at implementing users that represent the user groups.

In M project there were cases where they were not representing the user groups. X had experience with including users such as high educated people, but it is also about how do you involve people that do not want to be involved? How to include them? It is here where a structural diversity is lacking.

In M project: there was the logic of the public sector, which is another way of viewing. You are working with non-danes, and here the project was especially aimed at at risks and youths. From these users, the family structure is different, and as a researcher you have to understand it, and sometimes you need a translator. This all caused sensitive situations.

In A MIDDLE EASTERN COUNTRY, you are designing for a different cultural understanding, especially when designing for shops. Thus it is about how do you make a place where they can shop comfortably, this requires more cultural understanding.

Here diversity is about cultural differences. This causes that personally for X, it was hard to design for a culture where you do not agree with. This raised ethical questions from X as a designer for cultural needs and understanding. However even though you see it differently, you have to keep a professional view.

Here, the main aspect which helped to design for diversity was many years and internal knowledge and conversations with the client.

G Project: Here, interviews with at risk students were conducted. X also needed another female student to conduct these interviews. They worked with a youth club, and this required long trust building exercises before the interviews. these exercises to get to know participants were not seen as a separate element, but as a part of the research process. Thus, in order to create a sensitive feeling in terms of diversity, one could use more considerations & consciousness.

Here, it was important to convince the design team to create awareness before the design process, to actually spend more time with the youth. Since, at risk groups require a lot of trust building and this takes time and social and personal intelligence to navigate this.

These aspects might be hard to educate people, since it should be embedded in your values. It is about navigating awareness, and to get people from these backgrounds, in qualitative research. Teach them these soft skills; Teach them awareness.

The main responsibility of the designer is working for a client who has an agenda. Here, you are responsible to do the best you can, but sometimes it will require monetary benefit for designing for diverse groups. To convince clients for this time, you have to back up your arguments with research.

It is important to acknowledge that designers like to choose people similar to themselves, this is embedded in the behaviour of the designers. However, it is to navigate in the structural system. As a designer you cannot change this structure. The systematic approach is actually what can cause limitations in diversity.

As an obstacle, the research part and how to recruit diverse user groups is hard for a designer.

It also showed problems with user testing, and here it was needed to involve more diverse people in the design process to test. You aim at presenting it to a group of real users.

Tools to overcome and implement diversity are: Co-creation, user centric, specifically targeted for diversity

ESBEN

Esben worked 2.5 years as a service designer, in the UX team in a Japanese design agency.

He is currently a Japanese subsidiary of a Danish company: public intelligence. Although, through integration, he will never be Japanese. As a danish person in japan, you see that there is a lot to change, the big opportunity.

Take UX, digital and danish design, and pour it over Japan.

The first thing that comes into mind when talking about diversity in design is all the talks about female engagement and underrepresented minorities. However, it is more than that. Esben does not feel it is directly related to him.

Diversity in Japan is mostly about women. However, technically Esben is a minority in Japan since there are not that many foreigners.

The definition of diversity on how Esben sees it; to be mindful of as many perspectives as possible.

In Japan, you cannot come from the outside and say 'we need to do it like this', it needs to be based on trust and relationships. Therefore, sometimes you need stepping stones/ partners to communicate the right ideas.

It can be hard to be the outsider and to adjust the way they want to make it work between two cultures and to be there to remind people of another way of doing it. Here, make the outsider perspective valuable. In Japan particular, you could say a lot about Japanese banks not using English interfaces. However, it is about the meaningful application of diverse perspective.

Make decisions about who you are designing for. Hint: it can be done in another way. Some poeple are not conscious about being the diversity card. It is important in Esbens' work to broadening the danish perspective in the team. When you want to bring in the other perspective, it can take courage since you have to make the friction; to what extent should you actively confront people of diversity within the design process. If you ignore that for the smoothness of the conversation, you can also miss crucial discussions.

It is important to consider diversity at every phase of the design process. Here, you can view the team as an organization but diversity should be

implemented more like a mindset, but you can use tools for it. Also, use the notion of diversity to reiterate during the design process

In user research, it is important to do your own research, who are you talking to, and which questions are you asking. Esben is not particularly using methods and tools.

The main aspects of approaching diversity in the design process are to mitigating the bias and being the person who mitigates the friction.

Every project is limited by resources. People already know about diversity, it is not about revisiting morals, so people knowing it, but it is about not making it tangible. What is missing for people making a good argument, is more of an argument ladder, because it enhances creativity. It is needed to show outcomes what it can deliver and make it valuable; make the value tangible.

It is the same as explaining climate change to non-believers, it is not about hugging polar bears, but more about translating the problem such that it speaks to the other side. You have a subset of people who do not like diversity. They lack the talk, and it is simply not 'in your face enough'.

In Denmark they do not have the 'race' discussion, the discussion takes different forms within the culture is used within.

A suggestion for your thesis would be to develop a tool or method that should connect the people who want to introduce the discussion with the people who are well-intentioned but are unable to do it.

An example for 'The good design process', can for me be seen in a project in Odense in Svendborg municipality. They were working on citizens to work together with the city hall, bottom-up. In that project, it is easy to recruit the people who want to be recruited. They took the city and said using the danish CPR data, they could see how to best represent the population of the city, these three streets are quite diverse and well represented. They also called on the door and asked to participate.

It starts with service development from the research phase which could potentially then further limit to the development of the service. It is important who you recruit, and giving them a voice. Maintaining that engagement within the process. An example is the living labs, which encourage participatory design, and user involvement continuously.

Odense is building a light trail in the city. Here, they focussed on the involvement participation of different disability organizations. Codecision gives away the power of the designers. Instead of interviewing they made a council of the different organizations and gave them a VETO vote. This is

a good example of reliving

Design thinking is merely about using the user as a research object, interviewing them, and then referring back to testing.

One way to do it is to create an angle to focus on. It is a considered contribution if you move diversity away from one phase.

You can think about how to encourage participation and keeping your eyes on the ball. It is nice to have, but how do you deal with pressure. And also, how do you incorporate it without taking over. It should not be necessary to talk about ideals.

Esben mentioned an example about the Twitter account who went into the gender paygap, how does that gap even start.

Diversity is about the responsibility of the designer, however, educating them is also easy to say, and would not necessarily create impact.

When you are in an 'ethical diversity' workshop, it becomes more like a textbook. However, what is really needed is to talk about it, and make some bold steps. In terms of educating designers, you can politely disagree with the academics in this case.

The example mentioned by Esben: Interesting to look at the analogous research objects on manufacturing companies on how they incorporate sustainable practices. Same practice, how has the discourse changed. Sending them on a sustainability course will not change the way they manufacture things.

Once you start doing something right and believe in the positive impact, it takes a sight, and one good idea changes the other.

KEVIN

We have done some work in the design community about accessibility. They are often interchanged. Diversity as gender equality, sexuality, race and broadening it to race and disabilities. It is interesting to see where the focus is. From a design point of view, the gender aspect is kind of underestimated. In Maersk, it is not really a focus point. When designers start designing they should understand and design for impact. We want a diverse customer base and user base. But it is not so much, very unconscious. There is no one specifically saying that

Truck drivers in the US: no women, representative, or a bias? Women truck

driver in Europe. Many of the cases of products driving in Maersk, not an angle to take gender-wise. Nationality wise there are a lot of differences in culture. In Bangalore it is a lot different. Understand them differently.

Diversity is not very explicit, do we have some unconscious bias, are we open-minded in general. Who are we designing for? The fact that you are going in with an open mind and what are the pain points and how to address this? Open to different inputs, becomes a part of the way you work.

Ethical responsibility of the designer to implement diversity in the design process, it is not that upfront, you are unconsciously designing for one. You are using diversity as a sales point. We are b2b, so this might be different. Ethically, as a design capability, we are looking beyond wireframes and software. What impact does this have on people? What effect will the AI have on this? Arguments, how explicitly is it expressed. Are we openly talking about it when we are doing design, or is it an assumption?

Educating the designer, useful. It is like unconscious bias, and it would be more an HR thing to reduce bias. From design to have diversity more explicitly in the design process and being able to converse around it, what does diversity mean for design? Maybe even some metrics around it, how are certain users represented? Be conscious of the limitations It might propose. Be sure to evaluate this if no other cultures are included.

Currently, we try to push design thinking as the standard approach to everything. When we do that again, the empathy phase is very suitable for diversity, but I do not see the discussion on diversity being started. It will be interesting to see if anyone is consciously addressed. Accessibility is much more of a topic, for example color blindness. We can see it on the internal working, the design community when hiring designers trying to look at the requirements, and reducing the gender-biased language in jo postings. Tools for this that are be used.

The underlying reason it seems to be not an issue. We look at customer segments, rather than the diversity across these segments. It would be interesting to see how diversity is across the global segmentation. Different sales techniques could be useful to have global feedback on designing these products. Have that data to back up the diversity, we do not have this information to back up the diversity issues. It will never be diversity data, however if we have this, this could help to improve the flow on the Maersk platform for example. Here, this would allow to look at patterns. It could help to analyses structural differences.

Tools/Methods: if personas have been done right, they are based on customer interactions. Here you can see patterns that are based on real

data. This can make a difference, usually what we focus on within Maersk is what is their business need, we do not have the structure in place to identify the specific reason behind this. To they have specific information at hand, does this differ across global an regions. Down to the roles and who they are and try to distinguish here. Should we depersonalize the persona's to make them a bit more role based?

In Nokia, they had very specific models for customers, they have persona's build around this. Very personal and regional, it is here where the diversity would make it much more sense. Sometimes this would cause weird conversations, this allows to zoom into very specific focus areas. As a designer, this actually reflected the diversity problems in people's heads. However, one should balance if it should not become stereotypical.

Using AI to enhance diversity. For chatbots, it can be interesting to see how does it over time build up enough interaction. Is there a difference between the tonality of people chatting with the chatbot. With AI it is all reliant on the data, what nationality/age is determined for this. Is the chatbot very robotic, maybe makes people feel comfortable with either personal or not. See patterns emerging from the chatbot, maybe some people prefer a bit more 'chatty', and this can be based on assumptions on what people want.

If using AI well, it should be almost invisible, it should look like magic happening. Switch to adjust the start of the conversation, adjust and personalize the chatbot. What I had before more about the ethics, how is the AI being used, what is the impact for the people who used it before? A place for development.

Up for the designer to decide, designing it with diversity in mind, it needs to be thought and layered, it will learn according to the parameters. Adjust to the data it is fed, we should design it with diversity in mind. How do we influence algorithms to be more diverse? It might be an advantage that we can talk to people with unconscious bias. Within machine learning, you can teach it to be more conscious. In the right hands, AI can be very powerful and appreciate.

There are certain touchpoints within design thinking, which can be relevant. Research and testing of prototypes. These touchpoints are the chance where we can be diverse. Here, we could include metrics, and get an evaluation in. Does it represent the user? Have metrics here to underly the decision, data to back it up is needed, therefore we would like to It needs to reflect what we believe the end product will be addressing. Maybe there are advantages to skewing this a little bit. Do we want it to be very well adapted to the Asian market, but we should look at the Metaplan. Are there elements there that should just be generic?

In Nokia, there were phones for people who were not very literate. If you design for these, they automatically apply to other people. They also address elderly people. Because you design for the extremes, you automatically design for other groups. What decisions are made for a certain group, and how does this include others?

In Maersk we do not have that laser-focused, we do not necessarily design for a specific diversity.

Design teams reflect the diversity in the design. We have a very global team, located differently, may nationalities. Good gender balance, a broad range of sexualities. I think by having the team as diverse as possible, even if there is a good design critique culture. Being critical is not from a personal view, but more of what customers want. The interactions with people make you think every time. We interact with people from all over the world. There is a cultural aspect that is grained in the company culture at Maersk. Diversity in the organization will definitely impact the diversity in the design.

Any customer touchpoints especially. Co-creation will defiantly enhance this. The research phase, the concept validation phase. This is where you can be conscious to test on this split of people, even if you cannot involve them, you have to find other methods of validation. Set hypotheses and test these to reflect on the diversity. Those customer touchpoints and user touchpoints. Will be interested in a checkbox to make a conscious decision. Make sure to have a hypothesis and test this.

X (INDICATED TO BE ANONYMOUS)

I work at consultancy, not necessary a design company. Through a design process, helping with overall corporate strategy. Often things like how to build up a better purpose for our company. Here, they ask as to come in and we do a big qualitative study. More on a strategy corporate side. A manager to go through to all the projects. Different strategies. Only designer here, very few people have a business background, a lot of people from the social sciences. Made up of all the different.

Diversity in design; personally and a company, a lot of different angles. Bringing diversity in the design process, more like different leverage. Bringing it into the process in the recommendations. A lot of research, so be the diverse researchers and look for diverse research.

We got professional help for including diversity in the project. In the US they were more advanced. We thought it was a very white company, so we got a professional consultant for better recruitment.

Diversity would be actively working with people who have an equal amount of power. Being forced to put my own assumptions at the side, is a process of a lot of friction.

Power is tricky is coming late in the process, especially danish people might take a while to actually cover this and realize how to implement it. We study 'diverse' people so we also need diverse researchers. Because it has only been in the company in a few years, where a lot of the partners and years.

Friction bringing up the conversation of diversity. If you work with people with are similar to you, it is not really a stretch, and it requires less thinking. End up doing the same thing. Where people with a different background, then suddenly it takes a lot of effort to find the common ground.

In the different areas of our practice, we have more and less advanced systems. Medium advanced is recruiting the people form the study. So, it is often an inverse relationship, since it is a small sample and really expensive. The important thing is isolating the things who are relevant for the study. Those elements to include in the study. Isolating diversity as a variable. Process to bring it up.

Least advanced is the actual design process, no specific area to see the design being reflected and see diversity in the design. Even if you don't recruit it, you see it reflected.

Sustainability causes a bit of a similar discussion, linked to diversity through social sustainability.

Americans bring in the diversity discussions, very left-winged groups. They come in with this American view of inclusion and diversity, most of the younger people have come through the social sciences. It's getting tricky when moving into the company structure. The team discusses it a lot, however, when discussing this with partners and clients it becomes harder. Bridging the team connection there.

Responsibility from the designer, as is designing sustainably. It is easy to give them this responsibility, but there should be more levels on why to implement it.

Educating the designers, it is hard since 21:25 It is more the education of the decision-makers, and the mindset of the holistic view. Putting it all on designer's shoulders.

Design process: super important in the research phase, and it is reflected in the final development and solution building process. However, a diverse team is also contributing to this. Will this design actually improve people's

life.

One thing we do is we have this set of respondents, we use for the research phase. In the design phase, we check back with them. It is not a systematic process but it is a way to ensure this.

When working with tech companies, find better ways of feeding the AI's engine's data. We have done one recently working with video data of a social network. Pull out elements of video's which looks at people's tasks and identifying feeling. The food of the data is more important.

Pros they are powerful, it will have a great impact and a lot of reach.

Cons no one I super comfortable with it, and designing for it, when we did our study there was an effort for diverse people. AI: It is still hard to measure the recommendations, will these have negative repercussions down the road.

It is really important to have members of the community in the design, diversifying the design team. You need people who you are designing for in the team. This can be hard, but it is needed. We send a lot of people out to different countries and when they are familiar, and they get a lot of details. When you go to a different culture that it takes a lot of time to get to know.

There needs to be a big push of people not being trained as designers into this process. Indigenous designers around the world. These are currently excluded. On what to do tomorrow, there is something about codesign processes. In practice, it is often a thing you do once or twice in the design process, leverage co-design more, do some training, and implement them more. Engage them more deeply throughout the process. Think more outside the scope of designers only.

Missing some tools: when recruiting research participants, define what makes them vulnerable. Systematize diversity 31:00

Some way of identifying the most valuable elements for diversity. The systematic lens of diversity, assessing the negative outcomes and evaluate.

Lack of people to be trained as designers limits the scope. A better way of recruiting people into the field. Diversity is often being put on the side in businesses and put into the corner of the business, rather than actually implementing this. Almost a legal requirement, so show the benefits. From CSR to core business.

Mentioning it for business outcomes, one of the things we find is that it was all men in the grocery store, and then it becomes easy to make the

case to show the outcome. This can lead to these monetary benefits. That is the job as a consultant, to tell them and to tell them as monetary benefits. Creative incentives to implement it, it is just the current system

KATE

Working at EGGS, design consultancy. Outside of the UK, Industrial design background. Worked mostly in digital and user experience from small startups to multinationals. Norwegian company. Mainly engaging with digital services.

Mostly focussed on Gender in design, ethnic diversity. Definition of diversity is related to cultures, all the differences that make up a society and that make a 'group'. Very aware of it as an organization. A lot of designers are considerate of diversity.

Applying diversity through Illustrations, creating a diverse range of diversity. Reinforce the use of different users.

Mostly use scenarios rather than personas. Scenarios are less fixed than personas. Making sure that you have more than one kind of example, how are they feeling.

Another part: making sure that you consider the strong and the weak user, public sector importance. How would the weak user use this product, or the more vulnerable? You can do this with your persona as well. What would this mean if the situation changes?

The unintended consequences; start mapping 'what if', unintended consequences. Uber: there has been a certain amount of violence against passengers, was this an unintended consequence. How do you design against that? Pushing the boundaries, thinking a few steps ahead. Think of scenarios that could display this.

Process examples:

Mapping out and research part. Make sure the information you get from the users is important and representative. What other stakeholders might be involved. Thinking from the ecosystem perspective.

Making use of that when you continue with identifying requirements.

When working for a start-up working for public transport, sourcing data and who is producing it.

Evaluate the process and see it from the start.

Some of the main things for diversity in digital projects are accessibility guidelines, color contrast, heuristic evaluation. It should be inclusive for everyone.

Inclusivity and diversity; if you are including the areas of users who are potentially more vulnerable. You are representing a broader group right away. Example of the door handle. For all these different scenarios as well. It was not specifically designed. And it is not reducing functionality. Designing such that extremes are included.

Designing for diversity: trying to make sure that everyone is included.

Physical design: a lot of documentation for ergonomics. Very reliant on the data, which can sometimes limit the inclusivity and diversity.

Digital: sometimes which comes from standards. Understanding language, how to communicate with people through the digital. An example for Denmark: Everything is online, some users are now forced to use this. The documents you receive are very difficult to understand. Often linking to websites and tools which are excluded for some generations. If you were making it easier for them, then you would automatically

How do you make it accessible for the most confused user? 25:00. Knowledge gap and how do you cater for that? Focus on the vaccine rollout, how do you do it then? They would miss things.

Organizational vs human perspective.

Obstacles from a systemic and organizational perspective: EGGS is very flat and transparent, very interested in designing for diversity through culture and provoke clients. Challenge clients as well. Sensitive to different cultures, challenge our own biases.

Obstacles within the design team; I think we do try and consider diversity within the teams, however it is nice to have to open conversations and push back a bit more.

Designing with AI: It enhances both efficiency and reliance, solves the user need and helps to reach out to users faster. If the model behind it is biased, how do you ensure that you have that diversity throughout? How to implement this within the model.

Diverse teams are very important. Challenge different ideas and perspectives. One of the strengths within EGGS and very collaborative teams. CO-creation and designing with clients to get out of the bubble.

Design with the experts. We will challenge them and we will also be benefited through their knowledge.

An obstacle is more the deliverable stage. Here, is it matching what we expected from the start especially from testing and not validating it from the bias.

Responsibility from the designer: development and from the whole team. From sustainability and inclusion, it will help all areas of the design team, encouraged to think about it.

BEGUM

A year at Maersk, under technology working for a more technical team working for API, understanding user and products. SCM before, vendor to delivery shipping process. Product design strategists. Innovation community trying to do some experiments on hacks on how to implement bottom up.

Research on internal research and testing, when I think about diversity, I think about user sampling. Working together with customer insights team. We approach the customers with the details of the product owners. Mostly in the US, but trying to involve more diverse users. Ranging customers in terms of gender, culture, locations age. Geography makes a lot of difference in the experiences since Maersk operates globally.

A diverse set of customers discuss with the customer insights team where some companies are more familiar with this list. Trying to reach out of this list. How I try to work with it, I am mainly responsible for this, that I'm trying to reach out to other customers. If I would not do anything for this.

Now more focussed on the product, since it is a bit more focussed. Customer insights provide more generic insights. Customers are currently developers. So there are a lot of different people involved.

I also made some development personas with different components so you could get a sense of feeling of the roles. Clustering them across the type of organizations. Sometimes there is a bit of difference between Asian and western cultures, how do they approach within the conversation.

Before within the SCM team, we conducted a study for the internal employees. Here, sampling a resources, you were the one that was pushing to the diversity of roles, geographies, and hearing different voices. Different levels of job functions to be included.

People do agree with my ideas, but sometimes it is more difficult to reach out to others, since it is B2B business and if trying to reach out to them. A lot of layers you have to go through. If the product owner has a contact that it is much more easier. Also to reach out, this also changes the conversation, if there is a previous conversation they are more likely to reach out to.

Methods and tools: for the personas they are not that diverse. Mostly the engineers are Indian, so this creates a stereotype. But it is most important to convey what you heard. What do they do, how they feel, what are their pain points?

There are some roles some users do not consider they are users. It is not always easy to use persona's, and some people in the organization do not know what personas are, and refer to. A tool for representation for what you want to convey.

Stakeholder mapping, try to include different stakeholders before you start sampling. Understanding the diversity of the stakeholders. This helps to prioritize and who to reach out first, who are the target user.

My product where I work is hard to co-create together, you need to reach out to customers and mostly their meetings should also bring value for them. Co-creation is mostly done internally, and we test and co-create it with them. So we need to visualize the data which they need to collect. Involve everyone from different teams. Some developers do not like to speak up, making sure that everyone gets a chance to speak up. Sometimes when you question; may I cluster this, ask who wrote it. Then they speak up. This is a way for the more introverted to speak up.

First I created a Miro board, and giving them a task, and make sure that everyone writes a thought, otherwise they wait for a manager to speak up. Differences between co-creation sessions in terms of culture. Colleagues in the US and Portugal are louder during co-creation sessions. There are cultural differences, but it is not hurting. Also is determined by their level of expertise.

Within the design team, a lot of back-end developers. Within the design community of practice, we have many different nationalities. Diversity is welcomed within the teams. Trying to hire more female developers, but it is not within the design.

The design community of practice responsibility. Accessibility training etc. What does it mean as a designer? But as designers it is our responsibility, we should be the ones setting these requirements.

There is a possibility to educate designers, within Maersk there are training

possibilities. It is not a topic that is discussed that much.

From the beginning of the project, setting this mindset. Communicating with the rest of the team. And then you can work with user involvement, how might we involve users. So really promote it through research. Stakeholder mapping and possible different user profiles. Try to look into different aspects.

Overall process. Depending on what your tasks are. This makes you feel more responsible as a designer. Within the process, I sometimes feel responsible for it as well. Is feel highlighting this is important.

JONAS

Currently working as a senior service designer at X, moved back to Denmark. Working as a senior sd, mainly as a consultant and project manager, mainly on innovation and start up environment, mix time between time on startups and financial corporates. Usually either the team lead or looking after a bigger team. Scoping out the approach.

Within the team, core team: permanent and associates. Within permanent UX product, service, on the other side user researchers, psychology, business analysts. Associates more specialized background.

Mainly digital services, a main sector is anything financial, asset management. Also, start-up, healthcare. Mainly digital, 90%. Sometimes physical experience and products. Some things in a servicing context. Curious about AI and see it coming but no clients.

First impression: discussions in X as well. Hot topic in design in the UK. More traction of why including diversity and researching. Always has been a consideration, also how you look at diversity. The big questions are more race and gender. All the work done over the past 6 years, from research perspective, always included some sorts of diversity. Always use a professional recruiter to find people, we have to indicate who we are looking for, what is the mix we want to look for? Shape this in relation with the client. Adds some diversity in the user research side.

Currently at the stage, where we are the ones pushing forward to our clients, we have seen it once with a big banking group. Sometimes you see it pushed by a client, in a nearer future we could see a push from the recruiters. Also think it is much bigger in the public sector than in the private sector. Private sector exclusively, so maybe know less about it. There is a lot of bigger clients growing research teams and capabilities, how to carry this out.

Whole movement on researchops, how to run it structured. This might push it as well.

Potentially some friction from their side, always try to see if it meaningful to push for. Making sure that we are not leaving some users out. No one is pushing it away, but often a push on timelines, it might sometimes make it harder.

Interesting one in terms of diversity is where you would do it face to face. Where you do it in your own areas, and only places where people are willing to travel to. Where people are based and parts f2f and remotely and spread it across regions.

It is bringing in diversity is about designing for many different types of people for the same time, mapping out and understanding the differences between the type of audiences. Mapping out the needs and differences and bringing that into your actual design. Working with banks in desigin their fiscal branch. Instead of b2c to b2b and see how to reach out to businesses. Businesses are really diverse, a lot of types and sizes. You cannot design for one type of business.

With such a big group, for which you could normally not customize. Then prioritizing who you are designing for, starting to break that down, and these are the users. Making a choice of the diversity in that sense. More complex space.

Then you bring it into the design phase, and come up with ideas and concepts etc. Then, make your decisions based on that. Then trying to implement this throughout.

Methods/tools: sometimes we come in and the client has a really clear image of who their customer is, and sometimes you really have to progress this. And you have to guess it out who are customers. Some way of capturing and mapping the different audiences. Moving away from the persona view, but more towards a arch type view. It is a description of a group. Mainly based on behaviour, rather than their preferences.

Approaching it from what are their needs, and who is going to the gym, and building the segmentation on a need based. Very much about establishing a design frame to which you can measure your decisions throughout. Does it cater for these different groups. SUMmarise an end outcome, what does it mean for the groups as an outcome.

It is the responsibility of the designer to design something usefull. As a designer what I am designing, who is your audience. And how will they start using the service in terms. It is not an add-on, you have to build it into the design process.

Currently working with an insurance market place. They insure all around the world. When you need to design some of that, not only designing in the UK, but globally. How do this change in interpretations. A simple thing is to how to structure dates, how they structure names. When you go to a detailed level, a lot from the UX perspective. All they way through, and the responsibility of the design team as a whole.

Within a consulting tech context, in client teams, it is not always a design team, agile team. Different worlds that you are interacting with. It really differs a lot depending on what type of client and team. Hard to answer the question. The culture of the organization and how they have embedded diversity. On everyone's agenda. Regulating and getting up to the standards.

It varies a lot on how diverse the team are. 10 white men in their 50's to teams that have thought about diversity. Rarely a pure diverse team. Organization are more aware of this, and could potentially create better outcomes.

Good example is one of our big client, X, wanted to do a big shake up. Bring in diversity at a high level, this translated down in the teams they work with. Smaller teams have no idea on how to actually reflect it.

Probably what we need is practical guidelines in specific. How do you select the right type of sample, and how can this be reflected, and be made accessible? Who's responsibility is this; the clients or the design agency? It hard to do at an individual design level, it should be reflected in values and mental changes. You need to embed mindset and toolkit for the designer individually.

How do they include diversity in the design work; 2 things, raising the general awareness and understanding, and articulate it to others. Why does it make sense? How can you bring this. Also 2. How do you apply that to the work they are doing?

Moving from non-user centered to user centered design. In some cases I have helped UX teams to be more user centered, rather than only the focus on wireframes on screens. Here it is important to understand why you would be user centered. Build in to your mental model. Of course, you want to implement it, this is the mindset, but making it practicable and accessible to the designer to action on it.

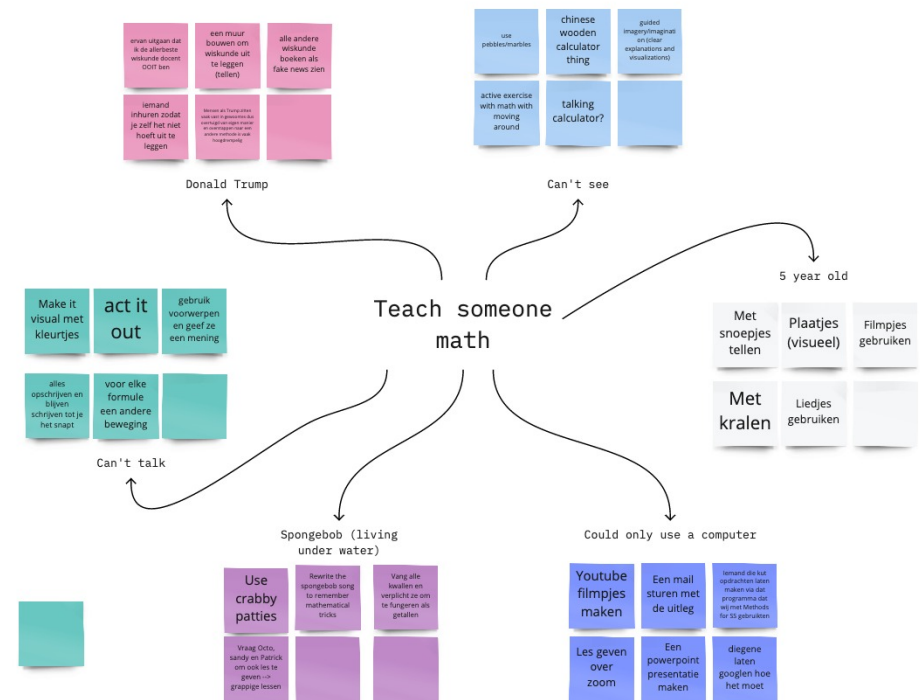
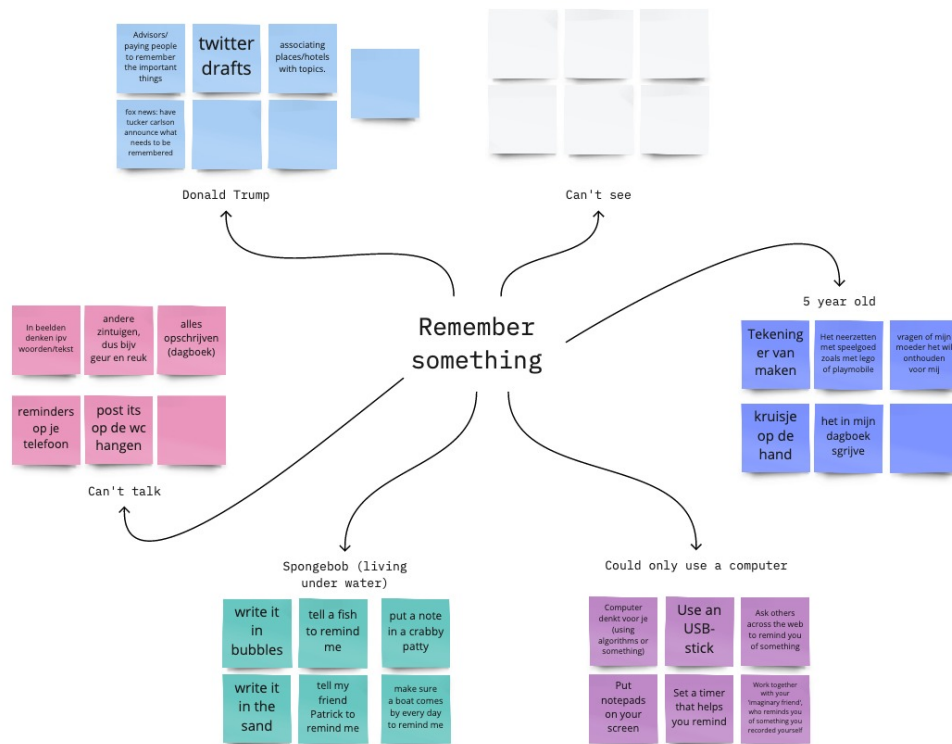
The first thing is for designers is that if they are designing something, they will be worried on what it brings. The importance of diversity, and why it is important for design in research. Why should this be on your radar. How do you want to build it in, is it grassroots, and why are you convincing. Starting with the question with have you been thinking about different

users, and is it a broad enough spectrum. What are the day to day tools that I as a developer have to use. If they are building an IT system, potentially based on user stories, pointing on a persona type. That is where this diversity aspect come in. Then it is about building a movement, and change people's mind about it. Knowledge levels, and awareness. And understand how important they think it is in their current role. What will the intervention, how do you measure the outcome? Find metrics; knowledge, awareness. How can the intervention progress.

Interesting and parallel to design teams, in coaching them to become more user centered. Behaviour change, it is a change of mindset, and not a set of tools. What improvement are you measuring and how are you doing this? Capture the stories

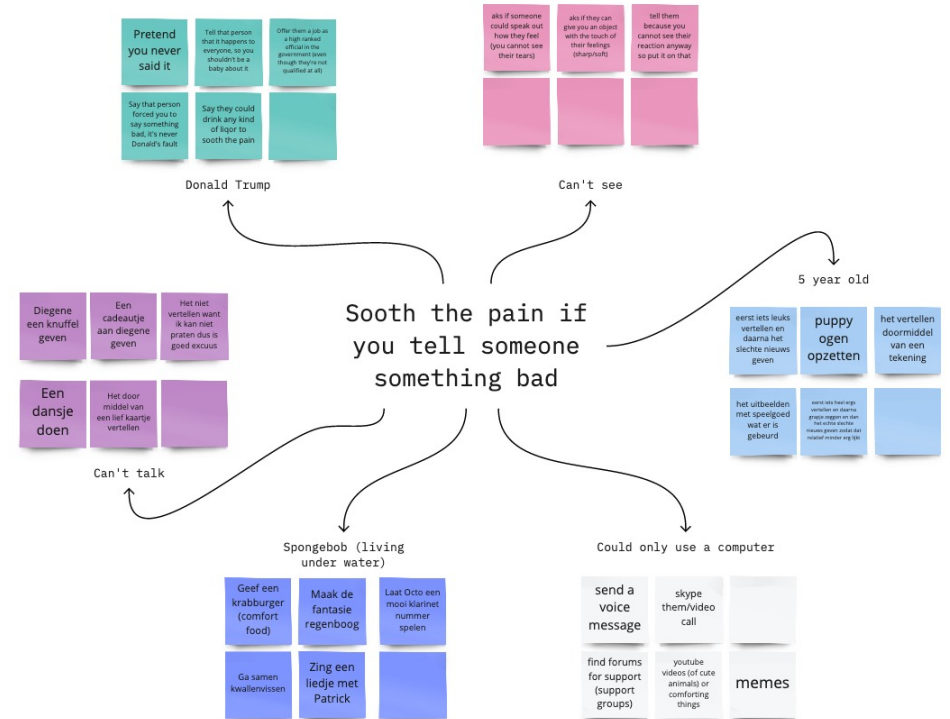
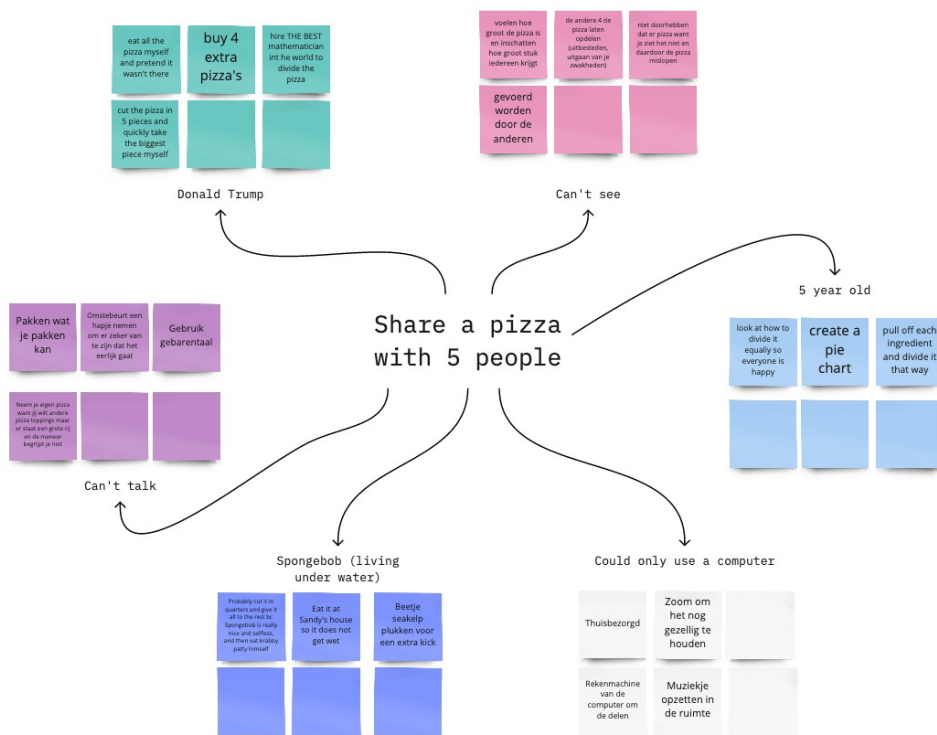
Building tools which they can use, what are the templates they use to bake in diversity Make it tangible for the designer. Make intervention; based on their current way of working. What change am I aimed to make, can this change happen. Make sure to implement quick wins, and not a massive interventions, and split it up.

appendix 3: insights idea generation session



miro

miro



miro

miro

appendix 4: evaluation & testing interviews

CONCEPT

Is the idea of the concept clear?

What are your first thoughts?

PROJECT

Could you think of a project you work/worked on, to which this concept could be relevant?

Do you think that this concept could change your design process?

Do you think that this concept could change your design outcome?

EXERCISE IN THE PROJECT TEAM

How would people react to this exercise?

Have you experienced discussions on ethical awareness of diversity in a project meeting?

Do you think this exercise could bring value to the design process, or the outcome of the design?

PRACTICALS

How 'busy' is the meeting agenda typically? How much time could you devote to this kind of exercise?

Is there a specific person always preparing the agenda or do you take turns?

Do you see any critical points in this exercise for you to use it?

KARS

Ethics researcher

The idea of the concept is clear, first thoughts are it will be questioned how it will look like in practice. Specifically, the cards itself, the framework is simple, but a lot is dependent on the cards. Here, friction is unavoidable, it can be good as well. However, it should not be too uncomfortable.

As an AI ethics researcher: I have a critical review. This is an extreme example of friction. The places where the difference can be made, in some situations there can be friction. If you frame it as a game, and step out of the 'project scope', that you can reduce a part of the friction. However, in the end the friction should not be taken away.

It can lead to some awkwardness, someone still has to raise the idea for the scenario cards. There is a design opportunity in having a script on how to present the idea of using the scenario cards. Also, give it a more catchy name.

Especially think of projects from the past, current project in Amsterdam, charging stations for the interface in electric vehicles. Research is about how we can make that AI transparent, but what is good and necessary to give people insight. What we struggle with is mainly the lack of diversity in the team itself. Everyone understands it in principle, but in general it is interesting to bring it up.

Projects in the service corner, which is interesting, you have a target that is potentially everyone in the Netherlands. And there it is very important to think carefully about the impact that your choices can have. In general, you would like to visualize something there. Even as a designer interested in integrated activities.

Workshop, or facility sessions, and let's use the game in a workshop setting. What are the typology of situations in which you could use these cards. Is there a difference in situations, and what is the difference in use

between the cards. Which phases of the process, explain the context, and that's how I see it.

Designers always want to adjust it to their preferences. How can you adjust to the adaptation?

How do you think your people would react if you suggested this? There is also a hunger for support in this area. I feel that this is more aimed at thinking about the theme of diversity in general.

Education, that it can also be interesting for students in education.

How can it add value: in general, in raising awareness, can make clear the importance of diversity. I think it depends a lot on what's on the cards. Specific services do have their own challenges, which might require more specific situations.

Here after: are well able, how could you help them further, resources that elaborate on specific maps.

GIJS

Signify, innovation lead. Responsible for some projects, ecommerce, digital experience, building websites and apps. End user, consumer will be engaging with it.

Digital innovation management, design courses at CBS. Working both in management consulting, design thinking, and help them use design thinking. Larger scale IT projects. First at B&N, setting up the customer experience team. Being the man with the ideas.

Diverse profile, seeing how it works for end to end.

Totally get the concept, and it would be great to include in any design process, it depends on the project you are talking about. It would not be relevant for every meeting. However, when you are engaging with a broader population it can be useful. If you are discussing it with a broader group 19:00

Smaller, ecommerce projects. I don't think it would be prioritized, there is not so much ethical discussion to web design.

When I was in management consulting, it is very applicable to the public sector. Especially in health care & data, we did some design sprints, where we included some healthcare professionals. In these sessions we did some

2-day workshops. Interesting way to spark discussion. Combination between designing and. Brain exercise, or energizer. Engage in some discussion, to spark provocative conversations.

It really makes a lot of sense in the early stage, how to think about it. You could day in it in a specific project meeting.

In general it can be useful to use it at early stages, and work of inclusive and co-design, and talk about it at the beginning. From my experience it works in an early stage.

If you have these types of questions about the project it could definitely be fruitful for the process, automatically get to a point where we can pull in end users. Also reflected in the design outcome, involving users and shows something new, and thinking about it something new.

Provoke some new discussions.

In the health care session, we involved the people who worked with the health care. It could facilitate a discussion with different people discussing it. Everyone has different realities,

How do you think people will react? Important to set the scene. Because they are very standard, some people will be a bit resistant. In a full day workshop, you will need to align it with everyone. You need to trust, and to engage. Show the importance

Ethics and diversity: It was not that big of a discussion point in my previous experience. It has to come from the person responsible for the project. But you could suggest to talk about this. The client needs to consider diversity and ethics as well. I think as long as you kind of facilitate it as well, phrase it more clearly. If you just invite them for a meeting that is harder.

Makes people a bit uncomfortable. Put it up as a playful thing, take some of the tension of the discussion. Being a bit, asking that the questions themselves are framed quite openly. In the discussion.

Might be something in the flow of the questions. Easier to relate to the action cards, rather than the doomsday cards. More relatable to talk about. Open up with more easy ones. Doomsday cards can be really critical and provocative, so warm up people before you start about this. Draw up some scenarios, or warm up cards. The rest you can pick whatever you want.

It requires that you engage in at least a half day workshop, also in projects of a bigger size that might require longer meetings. Quite a big setting, smaller groups working on it. Makes sense most of it to work there. Matter

of priorities.

Depends on the purpose of the project: society or commercial? Strategic level, and project.

The designers we have a more tangible about the actual project, so more product focused. For the types of project focused on the digital outcome, hard type getting in there. Type of project where it starts with a problem. Kind of your starting point, maybe in bigger strategy sessions.

More strategically focused.

Now we are in a lot of digital meetings & workshops. In these types of exercises, you might want to start a discussion in which you do not know each other. Create a safe space for people to start a discussion, and make sure they feel comfortable to talk about it. I don't think it would work in a large discussion with 15 people.

Whether your project actually has the time for it, and whether the client wants it. Needs to be important part of the project.

EDGARAS

Overall, the idea is super relevant now, this would have been more complicated 10 years ago. The idea is clear overall. But raises some questions. Why is it targeted towards designers?

Is there some guidance that could support, not only the concept, but what is next, who should I talk to, how should I go about planning and using it? How should I talk it and how to use it. Give some tools, practical tools and guidance and examples of the email. Maybe a script to make others interested, and how to show this relevance.

The game can be good for the participants of the workshop, super good idea on how to make people engaged. Convince and allow the leader to implement this. It must be project related.

Why should we trust these morals, how can we reference this, and include some references, and show some credibility to the cards. Would maybe help to convince.

How long this workshop would take? This could take this much time, and sketch more about a situation. Cool idea, draw more cards, and choose which one would be best, take ownership of this cards and solve this problem.

Physical or digital version? Which tools can you use more like figma or miro.

Project, worked in a medium sized company, definitely some problems of the ethics of the product which could have been raised (harder to relate in this situation 8 years ago). These days it would be easier to convince people.

Small company: issues if we are ethical. As a designer you feel as an advocate, you need some support. Everyone could find half an hour and talk about these issues and help to shape the product or service better. For the outcome: it will directly affect, they will be actively thinking after such a workshop, and will spark something in your mind.

Situation of the problem: focus on the solution. This will spark something.

Sync and Async. Sync: schedule some meeting, convince managers, take half an hour, invite relevant people and then physically or digitally using some tools. For some really big companies: async ways, people doing it individually through email. Maybe sending questions, and sum up all answers.

Some people would be positive, these days there is more relevance. Not all people, some will say this is not the place to discuss it today, this depends on your boss and leader, and if they are aware of the leadership.

You can try to spark this, maybe propose a situation. The next step is not organizing the workshop yet, but maybe help of a situation first. Maybe on how to take it to your

Combining it with a workshop or meeting could be another way, and use it as a plug in, and use it to give a different angle.

All about imagining real-time scenarios. Map out a user journey of how would this be in a real size situation. Maybe sketch scenarios of use in different sized companies. How to continue after, and reach out to other people, and see how could this become a real thing, from A-Z, also what would happen afterwards, what would they do after, and be inspired, how to apply this new perspective in practice? Some circularity to the information.

Good data source: from designers and companies; how did it work, did you notice some other issues?

BEGUM

Nice to have something tangible, considering having a workshop first. When you are working on scenarios, it can be very hard to imagine such a scenario, half a day workshop with some examples, could. Help to sketch out the scenarios. Could be hard to imagine. Giving these tangible things in a workshop.

Case study, and some key take-aways, you might consider other things, which elements for diversity do you want to consider, why does it matter? From the case study, they have some key take-aways. That would help to think about diversity, where are you not aware of, what is the bias exactly?

How do we use these cards, which kind of set-up, with whom? The designer, if solely himself or herself uses it alone, or with the product team. Maybe you create a Miro- board with it. Good to have tangibility, and use it with colleagues.

Project: we also need to involve more people in China, to analyse their ways of handling things. Team is mostly western nationalities, no Asian nationalities, there are now some issues where we cannot see or read the things, some did not understand API/key, and they would like to see it written in their language, and we currently do not consider this, we need to be inclusive to test more with different countries, how might be customize, or create a better experience here.

PPO was ignoring this, creating a workshop around it, if you talk about an example, it might become even more tangible. You might then see that you are neglecting some users if you view it through a case study. It then sticks more into your mind.

I don't think it will change my process, because I have to follow my corporate rules, but it is important to consider this in your brain and be conscious of it as a designer.

It depends on the team how they would react, you need to prove that why to do it, for the manager. How will you approach it, and you need to time and consideration? You need the timeslot, and to see how to convince in a manager. Propose on how the team setting would look like, who should need to be involved.

Maybe right now we don't really discuss it, we have some issues and try to create a password with Chinese characters, we have smaller issues, ut not larger discussions pn diversity. Maersk already has a lot of different nationalities, they are covered, so that might diminish the discussion a bit.

It would make sense to develop it in a workshop format, and maybe take a specific case, maybe three hours max. The company have a diversity and inclusion workshop,

I think you might not even need a card, it triggers the idea, maybe include some more details.