The value of Futures thinking in designing for societal challenges

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MSc. Strategic Product Design
Graduation Thesis
October 2017
Industrial Design Engineering

Oak & Morrow

TU Delft

Master Thesis | Graduation Project

Oak & Morrow B.V., The Netherlands
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March, 2017 – October, 2017

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Acknowledgements

This graduation project is the closing to the amazing experience that has been for me the Master in Strategic Product Design at TU Delft. As an international student, I think both the experience of the Master and of living abroad have shaped me in many ways. I am especially grateful for all the opportunities that TU Delft and my faculty have offered me to develop myself academically, professionally and personally. Being far from home, the journey has sometimes been tough but always so valuable.

A lot of different people have contributed to the realisation of this project in one way or another. The process of the graduation project has not always been easy, so I would like to express my gratitude for all the help they have offered me.

Big thanks to the members of my supervisory team. As a student, it is challenging to put together a project with a company from scratch, and your good advice from the very first moment made it possible. Thanks to my mentor Katrina Heijne and my chair Ingrid Mulder for your guidance and your "reality checks" every time I got lost in the immensity of the topic or the report. Your kind advice has helped me is many different aspects of this project. Thanks as well to Han van der Meer, for stepping in as my mentor on short notice and having a practical and positive attitude.

Thanks to Oak & Morrow, for giving me the opportunity of doing this project and offering a place to work where I feel at home. Special mention to the great colleagues I had at the studio that always checked on me even though I was inside my "graduation bubble". Thanks so much to Jeroen van Geel and my mentor at Oak & Morrow Sophia Altekamp, for setting up the project and always making time for it in your busy schedules. Especially, thanks for participating in each of our sessions with such an enthusiasm and willingness!

Because I was not often working on the graduation project at the university, I did miss having fellow graduate students around, to discuss doubts with and do some healthy "graduation sparring". Therefore I want to thank Sophia and Ingrid, for acting as my sparring partners during the meetings we had together. I learned so much from every meeting, and each one made the outcome of this project better.

Thanks a lot to Cheron, Gijs, Jimena, Oda, Paulina, Sakinnah and Jens for participating in the testing session and spending an entire evening inside the library while the sun was shining outside. You helped a lot.

Lastly, special thanks as well to my two families. Thanks to my family at the Netherlands; Jens, Ana, Heleen, my "armada latina" and other friends from IDE that are a very important part of my life here and have been as well during my graduation. Thank you, Jens, for always taking my mind off the graduation project, while also helping me with it in everything you could. Special thanks to the best housemates one can have; Ana, thank you for being so loving and always knowing when I needed a cheer-me-up, and Heleen, thanks for all the positivity, support and good advice with the project. Gracias a mi familia en España; obviamente no habría tenido esta oportunidad ni habría vivido todas estas experiencias increíbles sin vuestro apoyo y empuje. Gracias por el gran esfuerzo que hacéis cada día y por todo el cariño que me enviais desde allí. Mi única pena es que no os haya podido involucrar más en el proyecto; vosotros sois los mejores consejeros que tengo.

Executive summary

A new context where designers and other professionals from different fields are becoming increasingly more involved in tackling the daily challenges that we are facing as societies has emerged. Oak & Morrow, a strategic design studio based in Rotterdam, wants to position themselves among this context, by acquiring new knowledge on how their expertise on strategic design could be used to tackle projects on societal challenges. Driven by the curiosity of the studio on projects that aim at solving social problems, this graduation project was set up as a collaboration of Oak & Morrow with TU Delft. The research of the project provides insights on the value that the discipline of Futures thinking can add to Strategic design when designing for projects related to societal challenges. Moreover, it argues that the combination of both disciplines can be used as a knowledge base to develop solutions for societal challenges that have a positive effect on the systemic level.

The project has dealt with both a research and a design part. The research part has explored three different areas, being 1. Futures thinking and Strategic design, 2. internal analysis of Oak & Morrow and 3. societal challenges and social innovation. Different types of qualitative methodology has been employed to tackle these three areas, with research methods including literature and generative research, among others. As part of the research activities, different sessions such as a Contextmapping session with Oak & Morrow, or a testing session with design students have been conducted.

Based on all the findings of the research of the project, a toolkit has been designed for Oak & Morrow to use Futures thinking and Strategic design to design for societal challenges. As part of the information reviewed to collect insights for the design of the tool, existing tools and methodologies of the disciplines of Strategic design and Futures thinking were analysed during the research phase. These served as inspiration for the ideation of the toolkit for Oak & Morrow. Moreover, the main conclusions of the research that inspired the design of the toolkit have been compressed in different sets of criteria. These criteria defined the characteristics and purposes of the toolkit.

The toolkit designed for Oak & Morrow includes activities of Futures thinking and business innovation and contemplates guidelines of social innovation. The toolkit has been structured in three phases: 1. Preparations phase, 2. Uncovering value opportunities and 3. Towards systemic change. Each of the three phases includes different tools focused on a different step of the Futures thinking, business innovation or social innovation process.

Overall, the project's outcomes uncover the value of combining Futures thinking and Strategic design for designing for projects related to societal challenges with a systemic impact. Moreover, the toolkit gives Oak & Morrow the opportunity of exploring a new line of expertise and making stronger their current strategic toolkit. However, to fully measure the value of the toolkit, this should be evaluated in actual design projects with a real case, client demands and the common time constraints of a professional project.

Contents

*“Design can be **reactionary**, responding only to current conditions, or it can be **visionary**, by presenting solutions to **problems yet undefined**.”*

Vanessa Miemis

CHAPTER

1

Introduction to the project

Content

In the first chapter of the report, the background and overall topic of the project is presented, as well as the company involved in it that shapes its context.

In section ‘1.1. Background’, the different motivations that lead to setting up the project are described. In section ‘1.1.1. Company of the project’, the design studio Oak & Morrow, client and user in the project and principal component of its context, is presented. Section 1.2. introduces the initial assignment of the project, on what the initial research and design activities are based. To conclude the chapter, the structure that the design process of the project follows and its link with each of the following chapters of the report are explained and visualised in section 1.3.

1.1. Background

Context of the project

The technology breakthroughs of the last decade have lead to rethinking the way we build cities. The initial focus was on implementing ICTs within cities and developing smart city systems using the latest technologies. Currently, the debate about how to approach the future development of our cities has shifted from a "smart city" perspective, towards a more human-, or citizen-, centered perspective. For the advocates of the latter, a city could be called "smart" only "when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory government" (Caragliu, Del Bo, & Nijkamp, 2011). Within this human-centered perspective on cities, the attention is now on researching new ways of tackling urban decision-making and its relation with solving current social problems in urban areas. Increasingly, professionals from different backgrounds come together to combine expertise and work on urban challenges. The purpose of these collaborations is to research and develop new ways of empowering urban communities in the process of city development, all that with the ultimate goal of creating value for the society.

Designers are a large part of these professionals that strive to add value to society through the application of their expertise to the urban context. Design disciplines such as Interaction Design have been applied to projects related to urban technologies, urban development or social innovation in the past, with outcomes that evidence the potential that the design expertise has when aimed at these areas. An example of Interaction Design applied to the urban context, is the European project UrbanIxD, that aimed at "building a research network around the domain of data-rich urban environments, focusing on human activities, experiences and behaviours" ("UrbanIxD: The Project", 2013). The emerging field of Urban Interaction Design aims as well at evolving city management, by proposing citizen-centered processes of urban decision-making (Brynskov et al., 2014). This type of processes of city development that include, next to traditional top-down urban development, different forms of bottom-up decision making and citizen engagement, have been labeled "city making". An example of bottom-up, city making initiatives is the project Open4Citizens, that involves citizens to use open data to co-design with different experts, interest groups new and companies services to improve the quality of their urban life (Open4Citizens, 2017).

Another area of the design expertise that has not been as thoroughly researched, in its possibilities when applied to the city making process, is Strategic design. Strategic design focuses not only on the user needs but also on understanding the context of the problem and tackling as well the needs of all the other parties involved. It has proved to add value to the product development process (Junginger, 2008), therefore its application to city making activities is an interesting field to further explore.

Setting up the collaboration with Oak & Morrow

Oak & Morrow is a strategic design studio interested in expanding their expertise to projects related to tackling the needs of urban communities. Moreover they consider that projects that are part of the development of cities and smaller urban areas offer a lot of opportunities for designers to add value through design activities. To be able to act as design partner in projects related with urban development, the studio wants to have a personal design methodology, tool or similar conceptual product that would give them a competitive knowledge on the matter. With that as expected result, a graduation project is set up as a collaboration between TU Delft and Oak & Morrow, with the research aim of exploring the application of Strategic design to the city making process.

Eventually, the research aim has been broadened to include the intention of gaining a better understanding of the possible value of Futures thinking for city making. Futures thinking is a discipline that practises structured thinking about the future by exploring different possible scenarios to generate knowledge that would ultimately help in the understanding of current challenges and what paths to follow or avoid in dealing with them (Cascio, 2009). Applied to city making, a Futures thinking approach could facilitate projects that contemplate how the city will change and would tackle future as well as present needs.

1.1.1. Company of the project: Oak & Morrow

Oak & Morrow is the client of the graduation project. Their motivation for collaborating with TU Delft in this project has been explained in the previous section. In the following paragraphs additional information about the design studio is explained, due to its relevance in shaping the context of the project. This section presents a brief profile of Oak & Morrow, with a focus on who they are as design studio and what their personal approach to design is. Most of the information described was collected through the experiences and observations of a 6-month internship at the studio, prior to the start of this project. The complete text on the observations made during the internship months can be found in the 'Internship report' in Appendix A.

Who are Oak & Morrow and what is their purpose?

Oak & Morrow, strategic design studio, was founded in 2013 in Breda by Marten de Jongh and Jeroen van Geel. Four years and multiple projects later, the studio is located in the city of Rotterdam and specialises in designing meaningful brands and experiences. With an inclination towards interaction design and dreaming about the future, the studio's ultimate mission is to "bring back a bit of wonder into this world" (Oak & Morrow, 2017c).

With two partners, a flat organisational structure and a current team of ten people (containing of visual, interaction and strategic designers, interns and a business developer, project manager and office manager, plus freelancers), it is still easy for the studio to maintain a strong internal culture based on their beliefs and personal take on design.

What is their expertise?

The expertise of the studio and the different design services they offer can be divided in two main sections, the "strategic studio" and the "design studio". These illustrate the breadth of Oak & Morrow's design capabilities, going from business innovation to the design of interactive spaces. Among their design services, it has to be highlighted the expertise on those related with branding, both strategic and visual.

Oak & Morrow's design services:
'Business and product innovation', 'Brand strategy', 'Omnichannel strategy', 'Service design', 'Customer insights', 'User testing', 'Corporate identity', 'Smart products', 'Print & packaging design', 'Routing & signage', 'Websites & online presence', 'Interactives', 'Interactive spaces', 'Apps'. (Oak & Morrow, 2017b)

What are their values or beliefs?

Oak & Morrow express their beliefs as design studio in the manifesto they present at their website:

Manifesto:

"

Be honest and open: *Say what you believe in. No bullshit bingo.*
Build for a better world: *Add meaning and value to everything you do*
Don't wait. Act!: *Don't wait for others to make your dreams come true, but go for it yourself.*
Keep dreaming: *Dare to dream up a bright new world with endless possibilities.*
Life is a playground: *So go out there and play!*
Live passionately: *Put your heart into everything you do. Every project should shine as bright as a star.*
Seek collaboration: *The best results are made together. So let's work as a team.*
Smile every single day: *Don't waste your days. Smile.*
Stay curious: *Every day is a chance to learn something new and refreshing!*

"

(Oak & Morrow, 2017c)

How do they approach design?

The studio tackles every kind of topic from a human- or user-centered perspective. Among other topics, they are very interested in working in design projects that aim at tackling everyday problems or needs of different communities. This interest, next to others, is collected in their "themes" of design, under the title of 'Design for social good'. These "design themes" are all the areas that the studio finds interesting for conducting related research or design projects.

Oak & Morrow's design themes:

"

Touching the senses: *"We experience the world around us via our five senses, every time in a different combination. And it's this multi-sensory impression that helps us make sense of things. Imagine the endless possibilities there are in designing such multi-sensory experiences."*

Smart life: *"We've been hearing about the internet of things for years now. But smart technology in itself is worth nothing if it doesn't add value to my life. And that's exactly what we strive for: a smart life. Where the world of products and services adds meaning and value."*

Design for social good: *"We like to have a positive impact on the planet, even if it's just a tiny dent. Design can do this. From social networks for urban Africa to interactive documentaries to teach people the importance of health care."*

Playful learning: *"Monologue teaching and pushing facts in your head are not the most effective way of learning. The best way to learn is by doing, or even better: by playing. Explore the world around you and become smarter and more curious in the process."*

Brand personality: *"Every strong brand can in its core be seen as a person, with its own beliefs, characteristics and mission in life. The way he or she behaves, the things he or she would or wouldn't do are derived from this personality. And it brings focus to every move the brand makes."*

Experience shopping: *"The world of retail is continuously evolving. It's balancing between the world of bricks and clicks and at the same time new technologies are available to enhance the entire shopping experience. We love exploring this bright new world."*

"

(Oak & Morrow, 2017a)

Client projects and "dream" projects:
Regarding the studio's approach to design, it has to be mentioned their distribution of working hours between client projects and, what they call, "dream projects". The latter are "projects that start from the team's curiosity on a topic, or from a personal idea or dream of seeing something realised"(Calderón, 2017), that can become as well a commercial opportunity for the studio.

1.2. Initial assignment

There is an opportunity of further research on how Strategic design and Futures thinking methodologies can add value when applied to the city making process. Oak & Morrow, as strategic design studio, is interested in the exploration of further applications of design to the city making process and in the professional opportunities that gathering that knowledge could bring to the studio. Therefore, the assignment of the graduation project is to **research how Strategic design and Futures thinking can add value to the city making process.** The aim of the research is to ultimately **develop a branded design methodology or tool for Oak & Morrow**, that facilitates the designers at the studio to conduct projects for clients involved in city making.

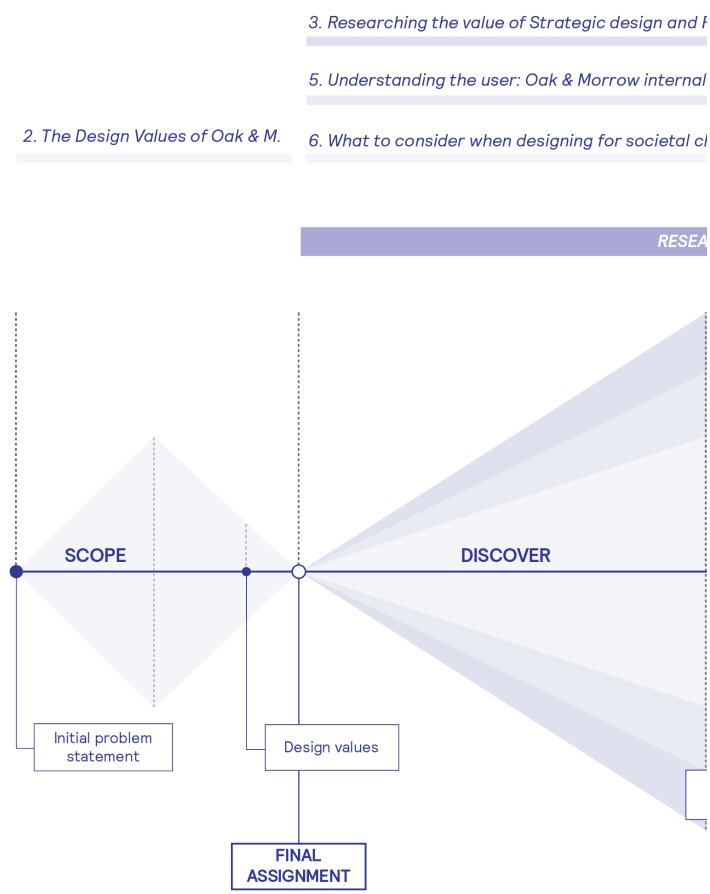
With this assignment in mind, the graduation project has been started following the structure explained in the next section.

1.3. Project approach

To give structure to the design process of the project, the 'Double Diamond' model developed by the British Design Council (2006) is followed. The Double Diamond model divides the design process into the four phases of Discover, Define, Design and Deliver, and visualises the moments of divergent and convergent thinking in the creative process. The phases Discover and Define focus on the research that has to be done prior to designing. The assignment of the project entails carrying out both design and extensive research activities, therefore the Double Diamond, with two phases dedicated to researching, adapts to the needs of the assignment.

The visual in Figure 1 illustrates the divergent and convergent directions taken in the design process of this project in each phase of the Double Diamond, and to what phase(s) each chapter of the report corresponds to. The separation in the project between the part of Research, and the part of Design, can be seen as well in the visual.

The main outcomes of the research and design activities in the project, that will be milestones in the design process contributing to the final concept, are as well visualised in the phase where they will be obtained. The approach to each phase of the Double Diamond and the related chapters is explained in detail in the following paragraphs of this section:



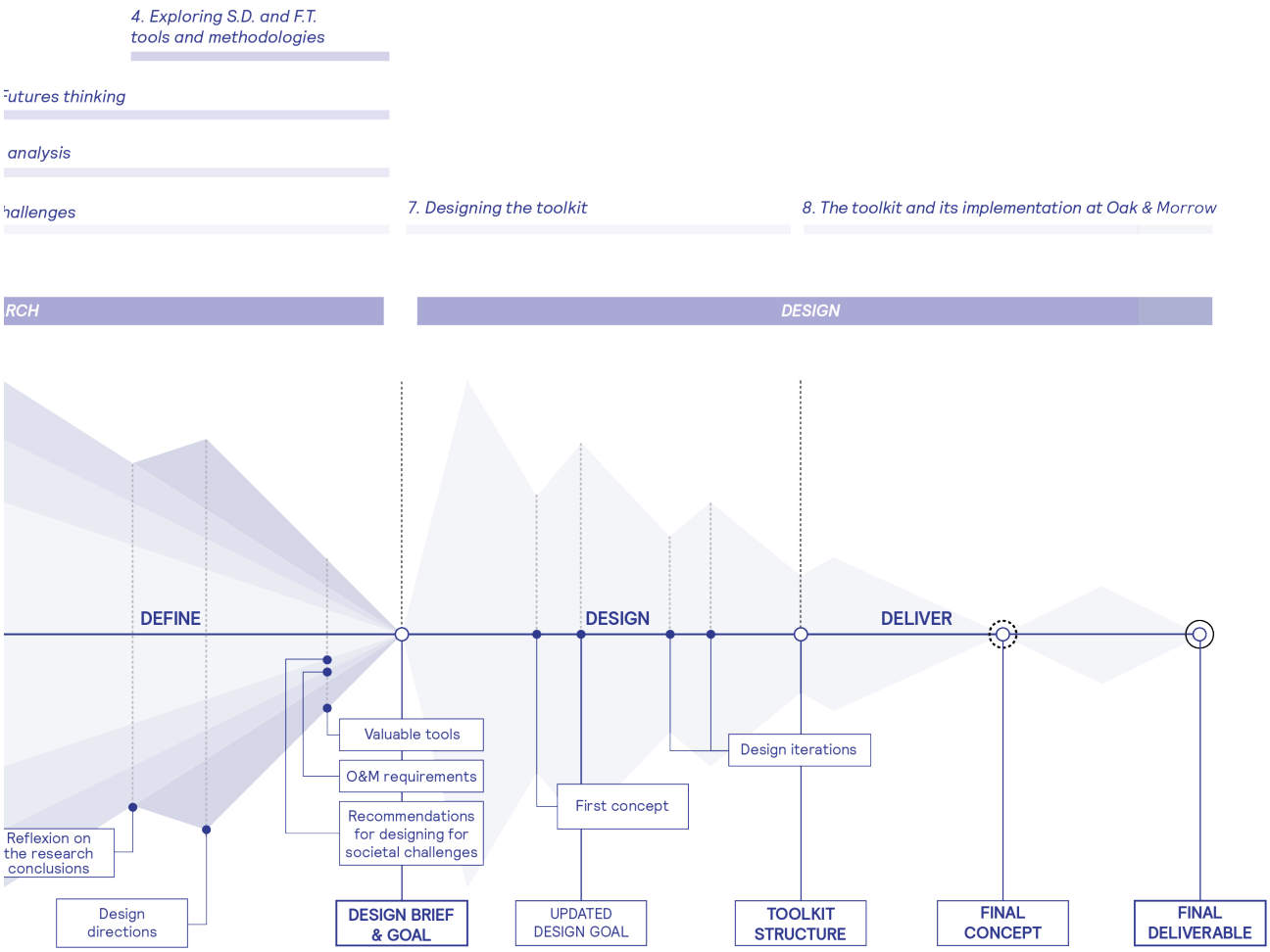


Figure 1. Visual of the project structure, following the Double Diamond model by the British Council.

Scope: Chapter 2. Oak & Morrow design values

The pre-phase added to the phases proposed by the Double Diamond includes the Generative research that is to be done with Oak & Morrow to revise and scope the assignment up to its final formulation and framework. Once the final assignment is defined, the design process of the project starts and follows the four phases of the Double Diamond.

Research

Discover and Define:

In the project, three areas of research are explored; 1. the concepts of Strategic design and Futures thinking, 2. Oak & Morrow as a company, and 3. what to take into account when designing for societal challenges. The project structure will follow the phases of Discover and Define for each of these three areas separately, therefore in three different occasions. This is shown in the visual as three overlapping diamonds, that illustrate the divergent thinking that is followed in the Discover phase and the convergent activities that take place in the Define phase and lead to the Design brief and Design goal of the project.

In the report, the activities for each of these three areas of research can be found grouped in separate chapters:

Chapter 3. Researching the value of Strategic design and Futures thinking

This chapter introduces and explores the conceptual framework of the assignment: the “disciplines” of Futures thinking and Strategic design. The literature research on these and the value that they could add to designing for societal challenges, and the outcomes of this research is explained in the chapter.

Chapter 4. Exploring Strategic design and Futures thinking tools and methodologies

In this chapter, the exploration of tools and methodologies of both Futures thinking and Strategic design is explained. This review of tools and methodologies is meant to generate insights on valuable tools to use for reference and inspiration in the ideation phase.

The exploration of tools and methodologies happens after the literature research of Strategic design and Futures thinking detailed in chapter 3, therefore, information collected in that research is used, and it is briefly expanded to later on converge into the conclusions on valuable tools.

Chapter 5. Understanding the user: Oak & Morrow analysis

This chapter discusses the internal analysis of the company and user of the project, Oak & Morrow. The different research activities that help gain an understanding of their design process, toolkit and internal procedures are explained. These include two discussion sessions with designers of the studio and an analysis of their current toolkit.

Chapter 6. What to consider when designing for societal challenges

The ‘design values’ of Oak & Morrow, presented in the second chapter of the report, are brought back in this chapter to explain the literature research to be conducted to make these actionable and easily translated into guidelines for the tool. The aim of this chapter is as well to dive deeper in the topic of ‘societal challenges’, to ultimately understand

better what has to be taken into account when designing for it with a systemic impact.

Design

Design:

Chapter 7. Designing the toolkit

This chapter collects all the design activities that fall under the phase of 'Design' of the Double Diamond. These activities are those to be followed to create the outcome of the project. They include the reflection on all the conclusions of the research phase, that together form the design brief and design goal of the project. Moreover, the design of multiple prototypes, a testing session with students, a co-creation session with the designers at Oak & Morrow and different iterations to improve and refine the concept are explained.

Deliver:

Chapter 8. The toolkit and its implementation at Oak & Morrow

The chapter that concludes the report explains the detailing and finalising of the concept and the last recommendations for implementing it at Oak & Morrow. The final reflections on the project and limitations of the research are included as well in the chapter.

1.4. Conclusions of the chapter

The first chapter of the report has introduced the initial assignment of the project and shed some light on the context of it (human-"smart cities", city making, design applied to urban development).

The main insights to be remembered for the next chapters of the report are the following: regarding the context of the project, there may be a research gap in applying Strategic design to the city making process, what motivates the research aim of the project of exploring the possible value of Strategic design and Futures thinking applied to city making. Regarding the company of the project, Oak & Morrow, a key takeaway is their motivation for the project, that is to expand their expertise towards areas related with urban and social issues.

Overall, the main conclusion of the chapter is the initial assignment, that is to research how Strategic design and Futures thinking methodologies can add value when applied to the city making process.

The next steps

The city making process is a broad concept with different phases, therefore one of the next steps in the project is to understand better the specific interests of Oak & Morrow regarding this topic, to ultimately choose an approach to it.

CHAPTER

2

The Design Values of Oak & Morrow

Content

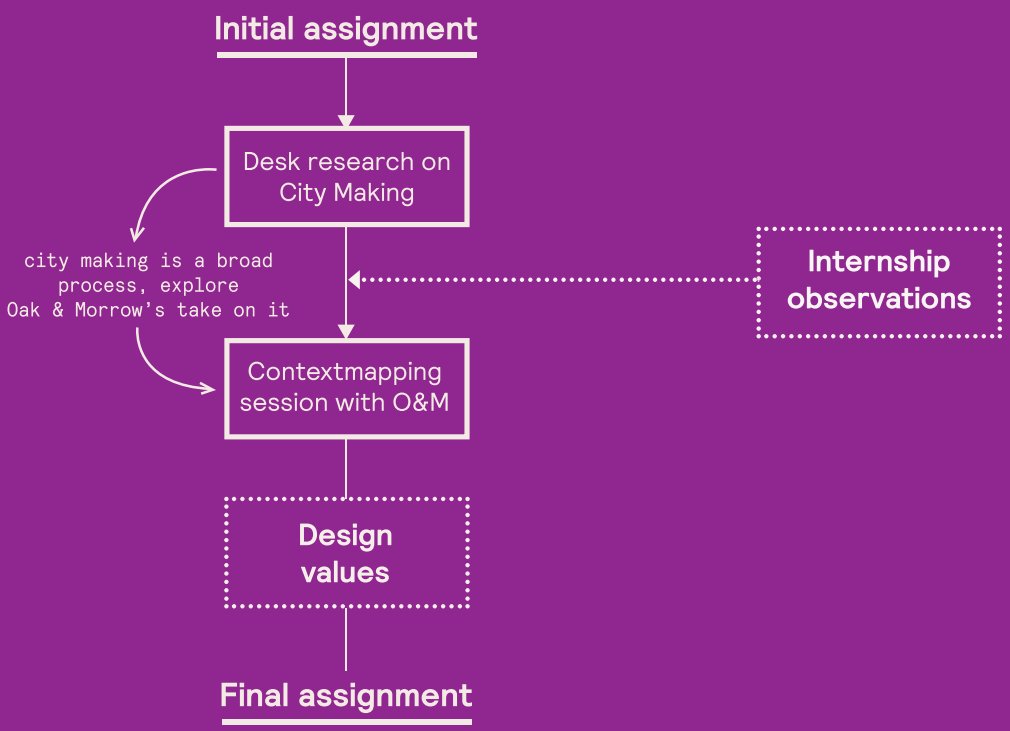


Figure 2. Research steps taken and outcomes obtained to go from the initial to the final assignment

In the previous chapter, the motivation, initial assignment for the project and existing knowledge on Oak & Morrow have been explained. The initial assignment, which is to research how Strategic design and Futures thinking methodologies can add value when applied to the city making process, presents different possibilities on how to approach the concept of the city making process.

The second chapter of the report details the research and design activities to be conducted to gain a scope on the topic of city making. This research, in which Oak & Morrow is involved, leads to an iteration on the initial assignment that motivates the formulation of the final assignment, on what the rest of the project is based. The process and the results of it are explained in the section '2.2. Understanding Oak & Morrow's take on city making'. In section 2.3., the new scope of the assignment is presented. The last two sections of the chapter explain the conceptual structure of the refined assignment (2.4.), and how this assignment will be approached in the next phases with different research and design methodologies (2.5.). The complete research set-up of this chapter can be seen in Figure 2.

2.1. Tackling the initial assignment

The focus point of the initial assignment is to find out how to implement knowledge from Futures thinking and Strategic design in the city making process. This is based on the belief that it could add value, as the discipline of Interaction Design has shown to add. With this objective in mind, the practise of city making is researched further with desk research. The early insights of this research is that city making is a recent approach to city development. Although there are multiple projects and research currently being conducted, the documentation on city making is still at an initial stage. Therefore, an in-depth literature research on the topic is not possible. Because of Oak & Morrow being the company of the project and their designers the users of the resulting concept, it is considered choosing a scope on city making based on their specific interest on the process and approach to the topic, instead of on literature research.

2.2. Understanding Oak & Morrow's take on city making

In order to understand the specific interest of Oak & Morrow on the city making process, a Contextmapping session has been set up with the designers of the studio. While defining the initial assignment, they expressed their interest in working on topics related with urban and social issues, such as city making. However, their personal understanding and take on the concept of city making has not been established yet. The designers of Oak & Morrow are not experts on the matter of city making, therefore to conduct an interview where they are encouraged to define the concept and the part of the process they want to tackle would not generate the type of insights sought for; their tacit, unspoken, root interest on city making and the context of projects related with urban and social issues. Taking into account that it is implicit knowledge of the designers of the studio what has to be collected, generative research is chosen as the methodology. Generative research proposes hands-on, creative techniques that allow participants to express their thoughts and feelings and therefore collect tacit and latent knowledge (Sanders & Stappers, 2012).

2.2.1. Contextmapping session with Oak & Morrow

The main objective of the Contextmapping session is to uncover the root interest of Oak & Morrow on city making, and their understanding of the concept. To define and map the process of city making with the designers of the studio and make them choose a part of the process based on their interest, may have generated results about their understanding of the topic, but not about the background of their curiosity about it. Therefore, the Contextmapping session instead is focused on finding out what type of projects related with city making are most interesting for Oak & Morrow. With this objective, the designers of the studio are shown projects with different characteristics, and are encouraged to discuss and express Oak & Morrow's preferences when undertaking a project, regarding the aspects of 'scope', 'scale', 'topics', and 'values' of a project. With the insights on what matters for the studio in the different aspects of a project related with urban and social issues, the reasons behind their interest on city making and its context can be identified.

The theory of generative research on Contextmapping, as detailed in the book 'Convivial Toolbox' (Sanders et al., 2012), is followed to set up and facilitate a Contextmapping session with Oak & Morrow. The complete explanation of the set-up of the session, the material used, outcomes of the session, and the process followed to analyse the collected content can be found in Appendix B.

The specific goals of the Contexmapping session are the following: 1. define the type of projects that Oak & Morrow is interested in related with city making, as well as urban and social problems in general, and 2. set requirements for projects to be significant for Oak & Morrow.

To prepare for the session, the participants, designers Jeroen van Geel and Sophia Altekamp, are given a set of questions and affirmations to be read and filled in before the meeting, that act as sensitizing material. During the session, they are asked to discuss their thoughts on different examples of projects, reply to proposed questions by creating artifacts (collages of pictures, words and drawings), and set requirements that a project dealing with city making has to fulfill to be undertaken by Oak & Morrow.

Analysing the Contextmapping session

The book 'Convivial Toolbox' (Sanders & Stappers, 2012) is again followed to structure the analysis of the content generated in the session. This content includes the sensitizing material, artifacts, notes taken by the researcher, the transcripts of the session and the requirements listed by the designers as conclusion.

'Statement cards' that included the most important quotes from the transcripts and the interpretation that the researcher has made of them, are used in the analysis of the data. Other important information from the participant's artifacts, from the posters with the projects examples, and from the requirements sheet, is represented as well in 'statement cards'.

The information contained in the 'statement cards' is summarised in a few words on post-it notes. All these sticky notes with important information are then clustered by common topic under 'themes'.

The clusters of information named 'themes', the requirements, and the new insights collected, have generated certain conclusions. These indicate what are the aspects and values that define what is important for Oak & Morrow when considering undertaking a project, and what type of projects are the most interesting for them.


What type of projects does Oak & Morrow want to do in relation with City Making?
What are the Requirements for a project to be significant?
values
scope
scale
topic
requirements

2.2.2. Outcomes of the Contextmapping session: the Design Values of Oak & Morrow

Once the Contextmapping session has been held and the data collected analysed and transformed into insights, the main conclusions on Oak & Morrow's root interest on city making and their take on the topic are reached. In this section, the main insights of the session and these conclusions are explained.

Main insights of the session

The main insights of the session are 1. the aspects that matter the most for the studio when deciding if a project is interesting or not, and 2. a set of Design Values that a project has to be able to convey to be undertaken by Oak & Morrow.

The aspects of a project relevant for Oak & Morrow:

The question is the matter:
Oak & Morrow does not think that the topic of the project is the most relevant aspect when deciding if it is interesting for the studio or not; any topic can be interesting depending on the question proposed, the expected outcome, the role of the studio within the project (designers or/and strategists), and the values of the client and the project. These are the important aspects for the studio.

The insight that the topic of a project is not a relevant aspect for Oak & Morrow to choose to undertake it, means that they are not solely interested in city making, and leaves a vast array of possible projects to tackle. Therefore, the group of projects that could be interesting for Oak & Morrow is reduced in the following conclusions.

Reducing the area of possible projects:
While the topic of the project is not important, it is crucial that it deals with human problems and interests, and the creation of positive impact.

Technical questions, such as the technical optimisation of an infrastructure, would not be something the studio is interested in.

Regarding the question, it is preferred by the designers at the studio to deal with challenges that aim at solving a somewhat wicked or systemic problem.

Oak & Morrow's Design Values

The clusters generated in the analysis of the Contextmapping session that collected all the information obtained, have created 'themes' that visualise what is important for Oak & Morrow regarding designing for projects related with city making. These 'themes' are somewhat interconnected and can be grouped under

common topics. The exercise of organising these 'themes', is what leads to the generation of Oak & Morrow's Design Values for projects related with urban and social problems.

The Design Values are the following:

Positive Social Impact

Positive Social Impact is the creation of benefits for the society and a silent effect of good, human-centred design.

– The designers at Oak & Morrow find interesting projects that bring the question of 'how can we help people' and enable or empower people.

– They want to have as well a positive impact on their clients.

– Eliciting and communicating positive values as a studio is also important.

"Oak & Morrow is most interested in working with positive and constructive clients that really want to have a positive impact on people's lives."
Jeroen van Geel

Aim for a deep change

A project's result should have a deep impact and elicit a social change by, for example, generating new conversations and partnerships.

Tackle the big picture

The objective is to undertake projects that aim at solving a somehow wicked, systemic problem. The "deep roots" of a problem should be tackled.

– Experimental or only aesthetic solutions would not make the cut for the projects that the studio wants to undertake.

Sustainable in the long term

Projects related with societal challenges should aim at offering a solution that is socially, environmentally, financially sustainable in the long term and delivers value through time.

"Is it a terminal solution? Yes, then we are not interested/ No, then we do it".
Text from Sophia's artifact

Collaborative process

Projects are more interesting if they enable the studio to have a close collaboration with experts from other areas in the analysis of the context or the development of the solution.

Just make it work

Real solutions are the ones that simplify design and focus on functionality. They just work, without the user even noticing. They are simultaneously scalable; they can work for one user or for multiple.

The Design Values are the priorities of Oak & Morrow when deciding if a project is interesting or not for the studio. The content of these values discloses what is the background of the curiosity of the studio on the topic, and related topics, of city making. The next paragraph elaborates on this in detail.

Conclusions on Oak & Morrow's take on city making

The insights of the session unveil the core reasons for Oak & Morrow's interest on city making, while indicating that their interest is not exclusively on city making as a topic. As explained in the paragraph of 'The aspects of a project relevant for Oak & Morrow', the studio is interested in engaging in projects that tackle human problems, that are somewhat wicked or of systemic origin, and with a focus on creating positive impact.
In their Design values, these same points are mentioned; to have a positive impact on people's lives, elicit social change, or tackle the deep roots of a problem among others. This shows an interest of the studio on working with projects related with social innovation in general, which includes city making, with a specific concern about the depth of the impact of the solutions achieved with a project. Therefore, their focus is on reaching a systemic impact with their designs, not on working on city making projects alone.

2.2.3. Effect of the conclusions of the Contextmapping session on the assignment

The initial assignment is focused on tackling city making. However, the Contextmapping session conducted with Oak & Morrow to reveal their specific interest and take on the topic, has disclosed that the focus of the studio is on tackling projects related with human problems with a systemic impact. This conclusion creates the need of revising the focus point of the initial assignment, due to city making being too specific compared to Oak & Morrow's interests. To define the type of projects the design studio is most interested in tackling, these can be better referred to as societal challenges, because of their nature as deep-rooted or systemic problems.

At the same time, the generative research reassures that Futures thinking is an interesting field of knowledge to be researched as part of the assignment; Oak & Morrow expressed their focus on lasting impact, and Futures thinking tries to assist with that. Futures thinking seeks to study the present to uncover the possible future and use those insights to take actions now that would shape it into a preferable one. This intention is based on the belief that as societies, we can have a long term effect with current actions, what makes it a discipline that suits Oak & Morrow's Design values.

2.3. Refined assignment

The revised and final assignment, with the focus now being on societal challenges, is the following:

"Research the value of Futures thinking for the strategic design studio Oak & Morrow in designing for societal challenges and develop a branded tool that conveys this value"

2.4. Conceptual structure of the assignment

The assignment explained in the previous section is the focus point of the project. However, it is framed by different conceptual layers due to the context of the project. These layers are taken into consideration as well in the subsequent research and design activities to be explained in the report. The context is that of a design research project about design methodology that takes place within a design studio; this circumstance creates a rich conceptual structure.

To understand better the context within which the assignment is situated, the main conceptual layers and terms that compose it are explained in this section.

The context of the assignment is mainly constituted by Oak & Morrow and their human-centred approach to design (and within that, their design theme 'Design for Social Good' and their 'Design Values', outcome of the Contextmapping session with the designers of the studio). These three layers act as the broader frames of the project. In Figure 14, they have been visualised as outer circles next to the complete conceptual structure of the assignment. Within these outer layers, three concepts are the focus points of the assignment: Strategic design, Futures thinking, and societal challenges. Strategic design is an important part of the conceptual structure because of Oak & Morrow being a strategic design studio, therefore practising this discipline to tackle design projects. Futures thinking is the expertise, mindset or line of thought proposed to explore, in its possible value reinforcing the existing knowledge and methodology of Strategic design. Lastly, societal challenges are the issue to tackle with the outcome of the project.

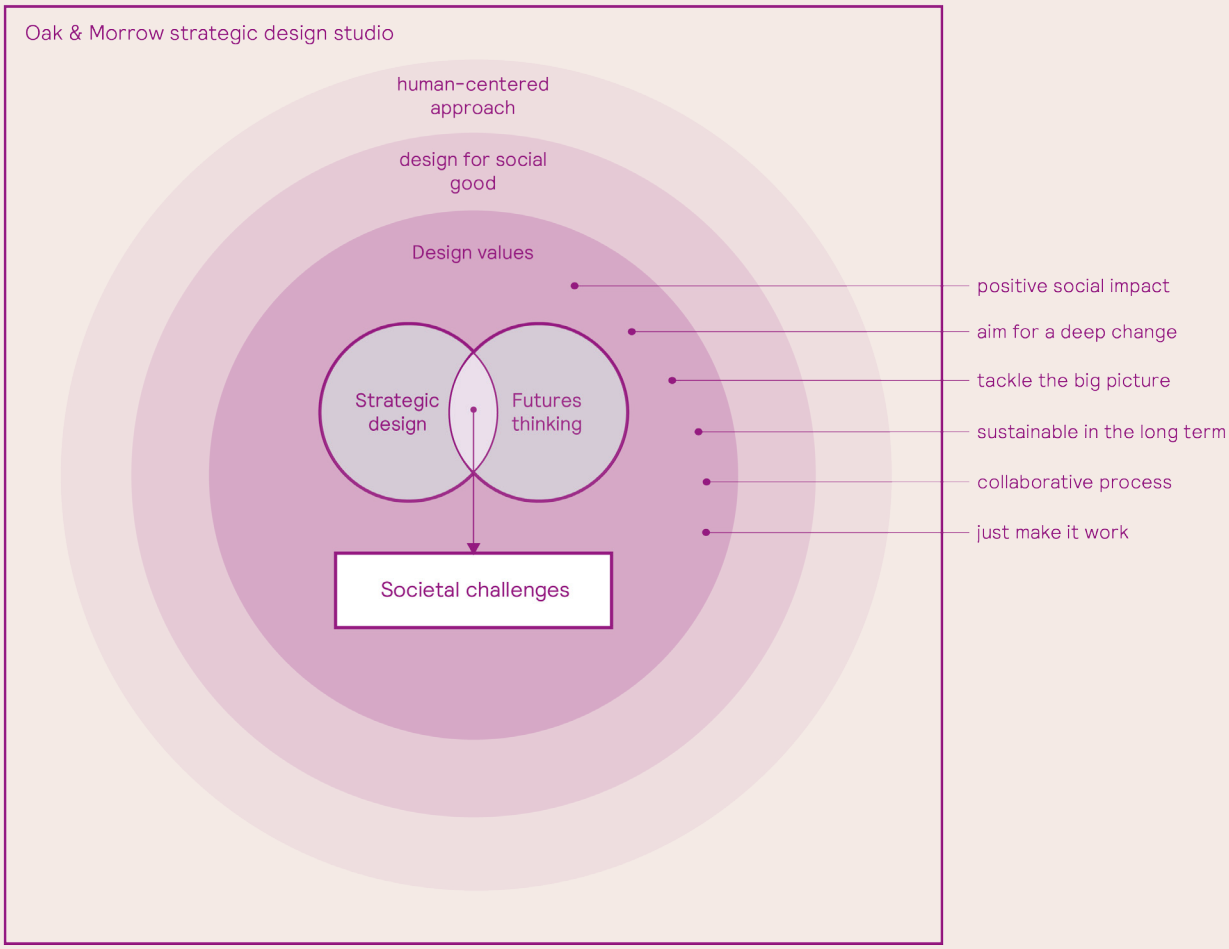


Figure 14. Conceptual structure of the assignment.

In the following paragraphs, the main concepts dealt with in the project and that are part of the conceptual structure of the assignment are introduced:

Human-centred design

Human-centeredness is the premise that products, services, etc. are what their users perceive of them, how they can imagine interfacing with them, how they use them and how they talk about them with others (Giacomin, 2014). Human centred design "is based on the use of techniques which communicate, interact, empathise and stimulate the people involved, obtaining an understanding of their needs, desires and experiences which often transcends what which the people themselves actually realised" (Giacomin, 2014). Inspiration in human centred design comes from the user for whom the design is intended rather than the own creativity of the designer or the material and technology of the product (Giacomin, 2014).

Design for Social Good

The name of a design theme of Oak & Morrow. The design themes of Oak & Morrow and the exact meaning of 'Design for Social Good' have been explained in chapter 1, section 1.1.1. 'Company of the project'.

Design Values

Oak & Morrow's Design Values for projects related with urban and social problems are the result of clustering the insights collected in the Contextmapping session with the studio.

Strategic design

Strategic design is the discipline (or branch of design knowledge) that, among other aspects, tackles the Fuzzy Front End, that are the customer needs, the competitive product offering and the technological risks and opportunities of a project (Bacon et al., 1994). Strategic design, as it is discussed in this report, is not exercised with the only objective of increasing revenues or competitive advantage for the organisation, but it has instead the aim of creating as well value for the user with solutions that have been developed after understanding better the context.

The similarities and differences of the terms Strategic design and Design thinking, and its applicability to the project, will be discussed and clarified in chapter 3, when explaining the literature research on Strategic design.

Futures thinking

Futures thinking is a discipline that practises structured thinking about the future by exploring different possible scenarios to generate knowledge that would ultimately help in the understanding of current challenges and what paths to follow or avoid in dealing with them (Cascio, 2009). Futures thinking could be described and well as the application of the expertise of 'futures studies'; this is as well how most literature research refers to it. Research and activities under futures studies aim at creating a better understanding of the processes of change, so that the industry and the society in general is more knowledgeable and capable of creating preferred futures (Inayatullah, 2008).

Societal challenges

This concept refers to the numerous challenges that today's society face, such as climate change, economic crisis, ageing population, migration flows, etc. (Wittmayer et al, 2014). The problems considered under the term of societal challenges are those of systemic nature and with deep roots on the nature of the current society. These challenges, although they usually have a global scale effect, can be better identified and explored at their local scale, in cities, neighborhoods or communities (Wittmayer et al, 2014).

2.5. Methodology

Different types of research methodology are followed in the project for the research and design activities. These methodologies are chosen depending on the goal of the research and the type of research questions. All these, next to the specific approach chosen for each methodology, and the outcomes of it, is explained in this section.

Three main areas of research

The **main research question**, that motivates the set-up of the research to be conducted in the project, is the following:

*"How can **Futures thinking** be introduced in a **strategic design studio** as a **tool** for designing for projects that tackle **societal challenges**? (with the aim of having an impact on the systemic level)"*

In this research question, different aspects that have to be researched separately can be recognized; these are Futures thinking, Oak & Morrow, and societal challenges. Because of the objective of introducing Futures thinking in Oak & Morrow, Strategic design, their expertise as design studio with what Futures thinking would possibly combine, has to be researched as well. Therefore, the following research in the project is structured keeping in mind that there are three main areas that have to be tackled: 1. Strategic design and Futures thinking, 2. Oak & Morrow, and 3. Societal challenges. How these three areas shape the research set-up can be noted in Figure 15.

The objective of the main research question of the project is to develop a tool for Oak & Morrow, therefore the research of these three areas is with the ultimate purpose of generating insights that will help in designing this tool.

Research set-up

Chapter 3. Researching the value of value of Strategic design and Futures thinking

Goal:
- Gain an understanding of the discipline of Futures thinking.
- Explain the characteristics and value of Strategic design.
- Explore the possibilities of combining Futures thinking and Strategic design.
- Understand the possible value of applying Futures thinking and Strategic design to societal challenges.

Research questions:
1. What is the value of Strategic design?
2. What is the value of Futures thinking?
3. What is the value of Strategic design applied to societal challenges?4. What is the value of Futures thinking applied to societal challenges?
5. What are the commonalities between Strategic design and Futures thinking? What are the differences?
6. What are the criteria for selecting the interesting Futures thinking and Strategic design tools for the project?

Methodology:
Literature research.

- Approach (research activities): Literature research on Strategic design, design methodology, Design thinking, Future studies and Futures thinking, their purposes, characteristics and activities. This method is chosen because of offering the most accurate and efficient way of learning the state of the art of the academic knowledge on these disciplines.

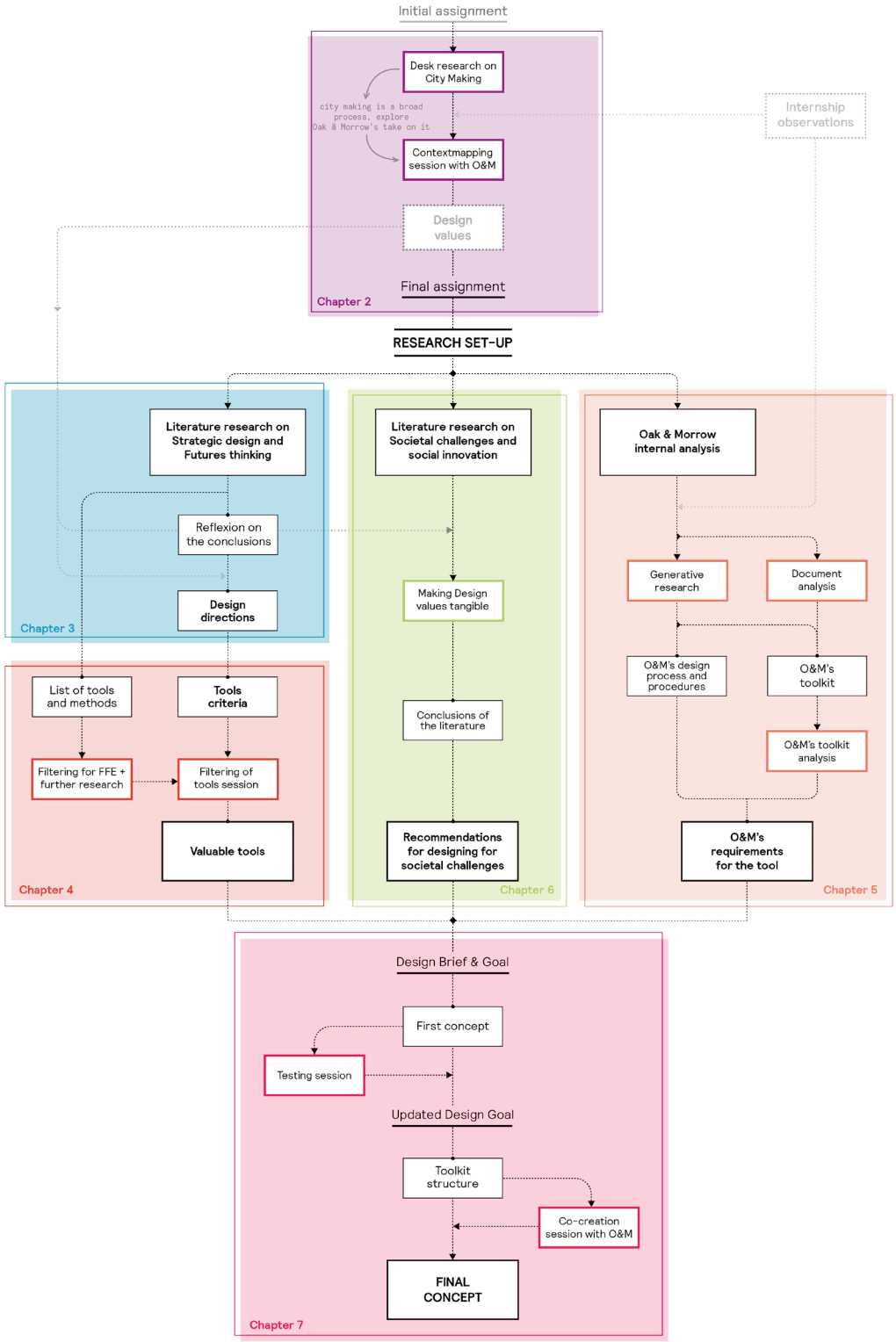


Figure 15. Visual of the Research set-up of the project that illustrates each step taken and outcome obtained

Outcome:
- Understanding of value of design methodology.
- Understanding of differences between designerly ways of thinking, Design thinking and Strategic design.
- Understanding of Strategic design purposes, characteristics and value.
- Identification of the value of Strategic design applied to societal challenges.
- Overview of Futures studies purpose and different applications.
- Understanding of Futures thinking purposes, characteristics and value.
- Understanding of the main steps of the process of applying Futures thinking.
- Identification of the value of Futures thinking applied to societal challenges.
- Proposal of possible value of the combination of Strategic design and Futures thinking.
- Reflection on the research conclusions.
- Design directions.

Chapter 4. Exploring Strategic design and Futures thinking tools and methodologies

Goal:
To gain further knowledge on the existing tools and methods of Futures thinking and Strategic design, that would be useful as inspiration in designing the tool.

Research questions:
1. What are the Futures thinking tools (or aspects of them) interesting for the project?
2. What are the Strategic design tools (or aspects of them) interesting for the project?

Methodology:
Desk and literature research.

- Approach (Research activities): Desk and literature research on Strategic design and Futures thinking tools and methodologies. Many useful information about tools and methodologies is found already during the literature research on Strategic design and Futures thinking of Chapter 3.
- (Design activities): Tools filtering session

Outcome:
- Understanding of main tools and methods used in Futures thinking.
- List of tools and methods.
- Tools criteria.
- Valuable tools for inspiration for designing the tool.

Chapter 5. Understanding the user: Oak & Morrow analysis

Goal:
To increase the understanding of Oak & Morrow as design studio and their way of working, and uncover information only known by the designers at the studio, such as their design process and the use of their toolkit.

Research questions:
1. What is Oak & Morrow's internal culture?
2. What are Oak & Morrow's routines?
3. What is the studio's design process?
4. What are the tools used by the studio?
5. What are the studio's criteria for using these tools?
6. What are the gaps in the studio's toolkit?

Methodology:
Generative research

- Approach (design activities): Two consecutive 'discussion sessions' will be organised with two designers at Oak & Morrow as main participants. The sessions are set up adapting exercises of generative research and include a discussion that follows an open interview style. To answer the research questions about Oak & Morrow, tacit knowledge from the designers that is not present in the studio's internal documentation has to be collected. Generative research exercises allow the participants of a session to express and document deep, tacit knowledge, therefore it has been chosen as methodology for this area of research.

Outcome:
- Understanding of Oak & Morrow's design process and procedures.
- Identification of tools used by Oak & Morrow.
- Understanding of the requirements that the tool has to fulfil to adapt to Oak & Morrow's way of working.

Chapter 6. What to consider when designing for societal challenges

Goal:
To learn more about the challenges and characteristics of designing for societal challenges, and to explore how the design values of Oak & Morrow such as 'Aim for a deep change' and 'Sustainable in the long term' can be defined in an actionable way to be included further on in the design of the tool.

Research questions:
1. What has to be taken into account when designing for societal challenges?
2. How to make Oak & Morrow's design values for societal challenges tangible?

Methodology:
Literature research

- Approach (research activities): Literature research on societal challenges and social innovation. Social innovation has an ample representation in academic literature, therefore a literature review on the matter and its relation with societal challenges will allow to gain a deeper understanding of the peculiarities of designing for societal challenges.

Outcome:
- Understanding of how each Design Value from Oak & Morrow can be made actionable.
- Overview of what aspects the tool should tackle to assist in designing for societal challenges with a systemic impact.

Chapter 7. Designing the toolkit

Goal:
To design a concept of tool or toolkit that conveys the insights found in the research of the project on the value of Strategic design and Futures thinking applied to societal challenges.

Methodology:
Idea generation, Prototyping, Generative research, User testing, Co-creation.

- Approach (design activities):
Different concepts of a tool are created, to choose from them a first prototype. This prototype, is tested with design students and graduates in a session where they are encouraged to use the prototype and produce an outcome with it, and later on express and document their thoughts about the experience. This session combines exercises from generative research and user testing. The designers at Oak & Morrow are expert users to whom the final concept should be adapter, therefore a co-creation session with them is organised, to generate different ideas for the final concept.

Outcome:
- Prototypes
- Evaluation of a prototype by the design students and graduates
- Concept
- Evaluation of the concept by Oak & Morrow

Chapter 8. The toolkit and its implementation at Oak & Morrow

Goal:
Explain the final concept for the toolkit, its implementation at the studio and its possibilities for Oak & Morrow for approaching clients.

Research questions:
1. How to implement the toolkit at Oak & Morrow?
2. What are the opportunities for Oak & Morrow in implementing the toolkit?
3. What are the challenges for Oak & Morrow in implementing the toolkit?
4. How can be the toolkit used to approach organisations involved in projects related with societal challenges?

Methodology:
- Approach (research and design activities): Review the knowledge and information collected on Oak & Morrow to assess challenges and opportunities in implementing the toolkit. Develop a set of implementation guidelines for Oak & Morrow. Research organisations that are involved in projects related with societal challenges. Develop a 'sales pitch' for approaching organisations with the toolkit.

Outcome:
- Final concept
- Guidelines for implementation at Oak & Morrow
- Recommendations for marketing the toolkit
- Recommendations for further research

2.6. Conclusions of the chapter

The second chapter of the report has explained the initial desk research on city making that has lead to realising the need for scoping the assignment based on Oak & Morrow's take on the topic. The Contextmapping session held with the designers of the studio to uncover their specific interests on the process of city making has been explained as well, next to the results of it in the format of Design Values, that have motivated to reformulate the initial assignment.

The key takeaways for the next chapters of the report are the Design Values of Oak & Morrow and the final assignment, that is to research the value of Futures thinking for the strategic design studio Oak & Morrow in designing for societal challenges and develop a branded tool, for projects related, that conveys this value.

The next steps

An important insight of the chapter as well is that the assignment will be tackled in the next phase of the project by focusing on three areas of research (Strategic design and Futures thinking, societal challenges, and Oak & Morrow), starting with a literature research on Strategic design and Futures thinking. The next chapter explains this literature research and the results of it.

CHAPTER

3

Researching the value of Strategic design and Futures thinking

Content

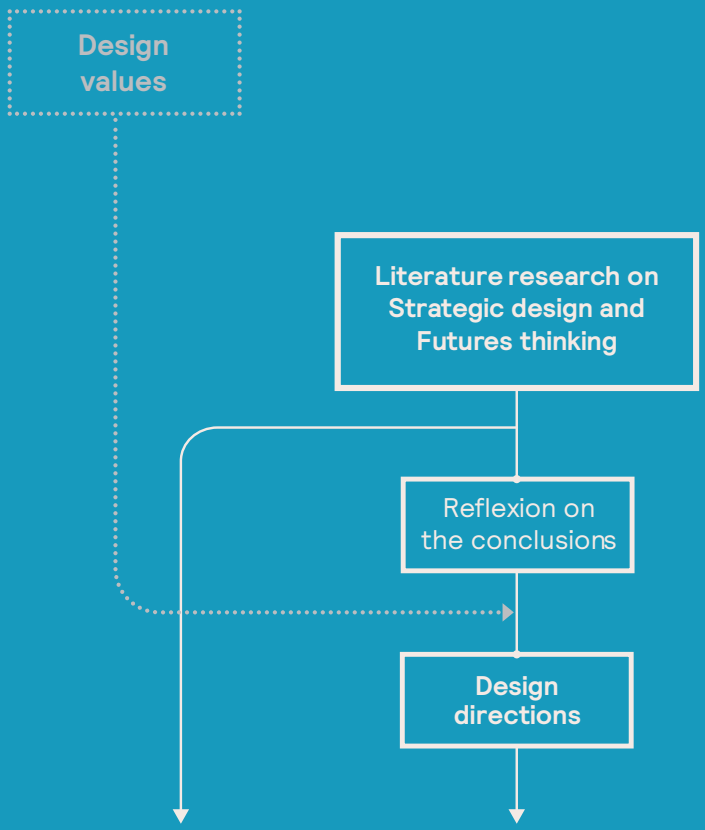


Figure 16. Steps from the research set-up explained in Chapter 3.

The previous chapter presents the final assignment and the research set-up, among other information. In this research set-up three areas of research have been defined, from which the insights to tackle the assignment will be collected. This chapter covers the first of the three areas of research; the literature research on Strategic design and Futures thinking. In Figure 16, the steps and outcomes within this area of research are visualised, as well as the information that will be used in this research, that has been generated beforehand, and the next steps.

The objective of this research is to understand the value of the disciplines of Strategic design and Futures thinking, and specifically, to uncover if their respective knowledge or skills could be valuable as a tool to tackle projects related with societal challenges.

The chapter is structured in three main parts, the research on Strategic design and its value, the research on Futures thinking and its value, and to finalise, the discussion of the research (section 3.7.) and the conclusions taken from the insights (3.8).

The final assignment of the project is to *"research the value of Futures thinking for the strategic design studio Oak & Morrow in designing for societal challenges and develop a branded tool, for projects related, that conveys this value"*. To tackle this assignment, first the questions of *"what is the value of Futures thinking?"* and *"what is the value of Futures thinking applied to societal challenges?"* will be explored. With these questions in mind, a literature research on the discipline of Futures thinking, and its background research field called Futures Studies is set up.

Furthermore, an objective within the assignment is to introduce Futures thinking at Oak & Morrow by developing a tailored tool, to be used by the designers of the studio in projects that tackle societal challenges. This objective can be phrased as a research question;

"How can Futures thinking be introduced in a strategic design studio as a tool for tackling projects that deal with societal challenges?".

To answer this research question, the characteristics and value of Strategic design as a discipline within the field of design will be explored, because of being the expertise of Oak & Morrow. The hypothesis of this line of research is that, collecting comparable types of information from both disciplines will assist in understanding how they could combine and the value of that combination for tackling societal challenges. Moreover, the literature research aims at collecting insights that ultimately lead to conclusions that structure the ideation of the final concept of the project.

With this hypothesis in mind, the research questions of *"what is the value of Strategic design?"* and *"what is the value of Strategic design applied to societal challenges?"* have been proposed to structure the research on the discipline of Strategic design.

Defining Strategic design and its value

In this first part of the chapter, the insights gathered from the literature review on the characteristics and purposes of Strategic design are explained.

3.1. Introduction to Strategic design

Design adds value to organisations and communities by planning and constructing the artificial world with a focus on the creation of meaning and a concern for practicality, ingenuity, empathy and "appropriateness" (García, 2002). Design is concerned as well with interpreting the "subjective meanings that people give to products" (Battistella, Biotto & De Toni, 2012), and aims at producing solutions instead of forever analysing problems (García, 2002). This focus of the discipline on the creation of meaning and appropriate solutions has inspired many firms to adopt design as the main source of value creation for their customers and for competitiveness. In that professional setting, designers have become for companies the builders of knowledge (Borja de Mozota, 2003), influencing not anymore only the physical properties of products, but the symbolic ones as well (McCracken, 1986, in Battistella et al., 2012).

The discipline of design has evolved through the years alongside the needs of the markets and users. In the recent years, the focus on good product design has shown to be no longer enough for ensuring competitiveness for companies. The organizations that remain focused in the exploitation of current knowledge are becoming stagnant (Martin, 2009). Furthermore, the product, that was originally the only offering of a company, has had to evolve into a product-system (Zurlo, 1999, in García, 2012) in the fight against market stagnation. This system, often built around a product, has become the representative of the company towards its customers and society (García, 2012).

It could be said that Strategic design is "born" in this new scenario of companies in need of designers that understand their products or offerings as part of a broader system.

3.2. Strategic design purpose and characteristics

Strategic design main purpose is to evolve the activity of design from the focus on delivering products, to developing design actions that are aligned with a business strategy (Zurlo 1999, Sato 2009, Dunne & Martin 2006 in García, 2012). It shifts the innovation focus from product or service design to an integrated product-service design strategy (Meroni, 2008). The objective of this is, on the one hand, creating a better offering for the customer or user, by keeping the focus on delivering certain values, and on the other hand, increasing the firm's competitiveness in the market, by providing the company with a defined identity, different from its competitors (Meroni, 2008).

To accomplish this purpose, the field of Strategic design includes different activities that depict as well its characteristics. Some of the most notable activities are: exploring the context to be aware of existing barriers and discover opportunities for creating new value (Boyer et al., 2011); developing and implementing a general design vision; long-term planning of brand and product development; taking decisions leading to the physical or functional attributes of a new product or new line of products (new product development); creating new business models with a focus on the value proposition; aligning mindsets in the organisation, etc.

This broad set of activities may seem somewhat unconnected; that is because Strategic design activities can be divided in explorative and exploitative activities. García (2012), defines 'design exploitation' as the activities related with new product development, design engineering or design management, while 'design used for exploration' is that related with creativity techniques, trend hunting, design futures. Stevens and Moultrie (2011) also make a distinction in the activities of Strategic design; they divide between 'design strategy' and 'strategic design', argumenting that the latter is the "successful exploitation of design throughout the firm". Aguiar (2016) adds to these definitions another explanation for Strategic design for exploitative purposes; "the designer's skill and way of thinking as potential enablers to address managerial and strategic problems in a more creative way". In summary, Strategic design activities are both those used for exploration purposes, such as exploring the context of a problem or project, and for exploitative purposes, those that apply design methodology to industrial and managerial activities.

- ***Explorative activities***

The literature discusses that the continuous exploration of new business opportunities and new consumer behaviours should not be forgotten as an important task of Strategic design, and it should be continuously implemented along with Strategic design for exploitative purposes (such as new product development or design management) (García, 2012). For the research of this project, these type of activities of Strategic design are more interesting that the exploitative ones. Because of aiming at using Strategic design in combination with Futures thinking in designing for societal challenges, the explorative activities are of more relevance due to their focus on the context.

The exploration of the context is the core to the explorative activities of Strategic design. The exploration of the context or the Fuzzy Front End is the main source of information and insights for strategic designers, when making sense of new "socio-cultural dynamics", creating new customer value propositions or capturing any new potential for value creation (Battistella et al., 2012).

Exploring the context is not a one-time activity for an organisation that has implemented Strategic design within their practises. Strategic design helps, as well, with dealing with the external environment on a daily basis, by conferring the organisation with a "system of rules, beliefs, values and tools" (Meroni, 2008). These allow the organisation to not only survive, but to evolve and develop its identity as well, influencing and changing its environment in this process. In summary, the expertise of Strategic design offers to the organisation the knowledge and tools needed to explore and interact successfully with its context. As Meroni (2008) puts it, "any strategic decision is the consequence of an interaction with the environment, its actors, constraints and opportunities".

Because of its quality of introducing in the organisation new practises or strategic mindset that helps it deal with the changing context, the literature on Strategic design arguments that it acts as a change agent, introducing this strategic dialogue and making it part of the organisation. Of course this is not an overnight trick of the discipline; strategic designers need to coach the organisation to implement a capacity-building mindset. This capacity-building mindset, as described by Calabretta et al. (2016), "strives to encourage organizations to innovatively draw upon their 'creative, organizational capabilities and entrepreneurship, and therefore [be] capable of figuring out, enhancing and managing new solutions' (Manzini and Rizzo 2011, p . 201)".

The explorative activities of Strategic design aim at developing outcomes that have an impact in the long term; an example of these practises or activities is "vision setting". Strategic designers assist companies in developing and implementing a vision for their firm, product, etc. that guides every following action. The approach of Strategic design to this is defining actions step by step, once an orientation has been established "through a set of scenarios" (Meroni, 2008). The practise of building scenarios, or visualising visions in a format that can be shared, understood and debated by the entire organisation, is how Strategic design approaches making visions tangible (Meroni, 2008).

- ***The importance of value creation in Strategic design processes***

Ultimately, the purpose of the explorative activities of Strategic design is to generate insights that will allow the strategic design to create new value. The focus of this discipline regarding creating business models is not as much on the cost-revenue formula as it is on the strength of the value proposition.

The focus on value creation is not only in the business proposition; only when the values are translated across each aspect of the product-

service-system, these are made tangible (Burns as cited in Meroni, 2008). This means that the creation of value, for strategic designer, "lies as much, or maybe even more, in the process and experience as in the final outcome; in the story rather than in its performance and meaning" (Meroni, 2008). Additionally, by developing business models focused on values, it is easier to align everyone in the organization "around the kind of value the company wants to create" (Fraser, 2007; Magretta, 2002). Others authors refer to this focus of Strategic design on values as "meaning strategy"; "a strategy that shapes the business model with the aim to convey a precise meaning" (Battistella et al, 2012).

These two activities of Strategic design, explore the context to collect information, and create tangible value with those insights, are interesting when designing for societal challenges.

- ***Focus on creating value for both the customer and the organisation***

The specific way in which the discipline of Strategic design proposes to create value is by considering the desirability, the viability and the feasibility of the product. Strategic design can be for firms a way of creating sustainable competitive advantage, having a viable and feasible business proposition (Olson et al., 1998). Strategic designers, therefore, not only consider what is valued by the user or customer, but as well what is the business system configurations and the profitability of an idea (Battistella et al., 2012). In other words, they aim at creating both value for the customer and the company, with a proposition that is financially sustainable in the long term.

- ***Exploitative activities***

Regarding the exploitative activities of Strategic design, this could be understood as applying "designerly" ways of doing and thinking across the organisation. These have not been the main focus of the research on Strategic design activities for this project. However, it is interesting for its application to societal challenges, to discuss the human-centered take on managing strategy that the exploitative activities of Strategic design have. Designerly ways of doing and thinking have been applied successfully to different sectors because of tapping into "team intelligence, creativity and the ambition to make a meaningful impact in the customer's life, both functionally and emotionally." (Fraser, 2007).

These designerly ways or exploitative activities, have been marketed in the last decade under the name of Design thinking. This term has been part of the design research collective consciousness for decades (Dorst, 2011), used to discuss the study of the way designers approach problems. Nowadays, the term Design thinking is generally associated to the design practices that global design consultancies such as IDEO (Brown, 2009) have popularized among different areas of the industry, especially management. The problem of the popularity of the term, is that in the intention of making sense of the design practice to people without a scholarly background in design, the designerly thinking has been oversimplified into a set of steps or methods (Johansson-Sköldberg et al, 2013). When researching the

disciplines of Strategic design and Futures thinking, online publications that discussed the combination of Design thinking and Futures thinking have been found. Some insights from this publications have been taken into account in the research, translating the relevant ones to the comparison of Strategic design and Futures thinking. Therefore, it is important to explain what is the understanding of the term Design thinking. For this project, Design thinking as it is being communicated to the mass public, is a combination of designerly ways of thinking or design tools, and strategic intent. It is therefore really similar to Strategic design, however as mentioned earlier, its richness or complexity has been simplified.

What both Design thinking and Strategic design definitely share is the human-centered perspective on tackling activities that were not natural to design and product design. Strategic design presents a human-centered take on managing strategy by proposing strategic innovation driven by design. This means to start with the innovation process by studying the needs, aspirations and behavioural changes of the user. Designerly ways of collecting user insights from bottom-up processes, such as generative research or co-creation (Meroni, 2008), are used in Strategic design to uncover the value that will lead the innovation process. This approach to projects is interesting when dealing with societal challenges.

"Contributing to change (in a collectivity,a community, an enterprise) the understanding of a problem, to work out a new perception and vision, to build capacity to implement it, creating a platform of tools and knowledge, enabling and empowering people to do things and deal with a changing context, is the real and profound meaning of any strategic design project."
(Meroni, 2008)

3.3. The value of Strategic design for societal challenges

The research on Strategic design has shown the popularity, especially among the online publications, of the term Design thinking, which can be understood as a symptom of the need for strategic intent and human-centered practices in different fields outside design (Boyer et al, 2011). Moreover, the Strategic design approach is needed in any situation or organisation that has to deal with design decisions in an uncertain context (Meroni, 2008). Based on the argument that Strategic design would as well be valuable when applied to tackling societal challenges, the conclusions on what exact values it could bring are explained in the following paragraphs:

Strategic design tackles the context

Strategic design deals with the external environment or Fuzzy Front End, that is the context compound by all the information related to the customer needs, the competitive product offering and the technological risks and opportunities (Bacon et al., 1994). The consideration of the context is needed for projects that tackle projects as context-dependent as societal challenges.

Human-centeredness

In Strategic design, the user is observed to collect insights about their current behaviours. The objective is to use those insights to create concepts that, not only offer the organisation a competitive advantage but are as well meaningful for their customers. Not only users are observed, there is a shift in Strategic design towards observing the community to understand social behaviours and needs, and collaborating with communities in conceiving solutions (Ogilvy, 2002). This focus on people in the collection of insights, prior to the design activity, could be very valuable when designing for projects that deal with societal challenges.

Long lasting impact, by making visions tangible

Strategic design decisions include those that have a long-term impact for the organisation, such as the formulation of an innovation vision or the identification of business opportunities related to the innovation vision, involving several stakeholders and requiring a real commitment of the parties involved (Calabretta et al., 2016). When taking strategic decisions, the objective of Strategic design is to have a positive change effect on the organisation, by developing long-term visions that will generate a meaningful impact in the future of the organisation. This long-term approach would be valuable when designing for societal challenges if a lasting change is intended.

Sparking strategic dialogue and capacity-building mindset

Strategic designers act as facilitators of the strategic dialogue, introducing it in every aspect and stakeholder of the project and making it part of the organisation. They, therefore, can act as change agents, coaching the organisation to implement a capacity-building mindset. The capacity-building mindset, as described by Calabretta et al., (2016) in their book 'Strategic Design', "strives to encourage organizations to innovatively draw upon their 'creative, organizational capabilities and entrepreneurship, and therefore [be] capable of figuring out, enhancing and managing new solutions' (Manzini and Rizzo 2011, p . 201)". This type of mindset

could be valuable for companies aiming at finding the solution for a societal challenge.

Making value tangible and sustainable

Strategic designers focus on creating solutions that tackle user needs and wishes (desirability), are sustainable and fulfil the economic objectives agreed on (viability), and are achievable with the assets and resources of the organisation (feasibility) (Calabretta et al., 2016). These means that they create tangible value for the user and the organisation, by creating concrete concepts that are tested, finalised and brought to market (Roumiantseva, 2016). For projects related to societal challenges, is needed to generate a tangible outcome to avoid staying on the level of theoretical suggestions or concepts for future inspiration.

Systems thinking

Strategic designers develop the "capacity for switching between multiple perspectives and the ability to understand the world and our relationship to it, and within it" (Miemis, 2010). In other words, they are trained to consider multiple aspects at the same level of importance and to research the interconnections among these. This capability is needed when designing for societal challenges. These have to be tackled from the thinking that there is no isolated area or challenge; they are connected to other challenges in one way or another, and whatever change is intended should be considered from multiple perspectives.

Defining Futures thinking and its value

Once the value of Strategic design and its activities has been understood, in the second part of the chapter the discipline of Futures thinking will be explored with the same objective; to uncover what value it could add to Oak & Morrow's design practises and to designing for societal challenges.

3.4. Introduction to Futures thinking

"The future is a symbol through which we order the present and give meaning to the past", said John McHale (Masini, 2006). For Futures Studies, the "transdiscipline" that practices Futures thinking, the future is not predetermined and it is in our present actions, thinking and objectives (Kuosa, 2011). In Futures thinking, the future is not inevitable or already existing; "the future is open". (Bell, 2002)

With this understanding of the future in mind, Futures Studies makes a structured exploration of the future by looking into it at various levels, trying to gain a deeper understanding of "the changing interrelations between man, society and the environment" (Masini, 2006). Futurists, the academics and practitioners of Futures Studies, explore the future by acknowledging the existence of different futures, "some better than others". These can be divided into preferable futures, possible and probable futures (Bell, 2002). Ultimately, the objective of Futures Studies is uncovering images of these different futures in order to understand the processes of change (Inayatullah, 2007), so that individuals and organisations can use the knowledge on what is to come to make considerate decisions in the present, that would lead to the preferred futures (Bell, 1997).

Futures thinking is referred to in academic circles with different terms; 'futures research' is used for the quantitative, objective type of research of the future; 'Futures Studies' is used when talking about the qualitative and often more academic than applied research of the future (Dator, 2011). In this project, Futures thinking is treated as a qualitative activity, therefore, when talking about the academic background of Futures thinking, it is referred to as Futures Studies. This research field has been studied in this project to understand the value of Futures thinking. The learnings taken on the characteristics of this field have set the academic base for further research on the value of Futures thinking. The following paragraphs explain the main conclusions taken on Futures Studies:

Futures Studies

Futures Studies (FS) is said to be a transdisciplinary and multi-sectorial, purpose-driven field, with roots in sociology and application in diverse fields (Gidley, 2016; Kuosa, 2011; Bell, 1996). Futures Studies is said to be transdisciplinary because, as the renowned sociologist and futurist Wendell Bell (1997) arguments, "nearly every discipline and field of study can include, if it doesn't already, a future and future conditional tense. Each one can be cast in a prospective or future-oriented framework". In the industry, practices based on the knowledge developed by Futures Studies often appear under the term 'forecast' (e.g. 'technological forecast') and some have evolved to become their own field (e.g. 'environmental futures studies') (Kuosa, 2011).

To understand FS, its take on the future as a concept, clearly defined in the "multi-field", has to be understood. Futurists discuss that there is no such thing as knowledge or facts of the future; "there are past facts, present options, and future possibilities"(Bell, 2002). The future is not here yet, therefore FS does not intend to predict the future; FS defends that the future is "constantly forming in many complicated interactions" (Kuosa, 2010). That is also why futurists talk instead about the forecasting "possible futures"

that can be provoked with actions in the present (Kuosa, 2010). To learn about the possibilities for the future, though, explicit assumptions that should be examined for their plausibility are made, based on knowledge gathered from the evidence of the past (Bell, 1996; Bell, 2002).

History of Futures Studies

Regarding its origins, Futures studies emerge in the academic scene in the decades of the 1960s and 1970s, with highly influential books such as Alvin Toffler's Future Shock (1970), or Daniel Bell's The Coming of Post-industrial Society: a venture in social forecasting (1973).

Another path through what knowledge related to FS started developing was through national planning. The World War I brought the national mobilizations in the United States of America, that continued with the Great Depression of the 1930s. During the World War II, these expanded to military and economic mobilizations, that after the war, spread to Eastern Europe and third-world countries. Institutions that were related to the military during those times of war developed different techniques now common in Futures thinking, such as scenarios or technology forecasting. (Bell, 2002)

In the industry, Shell led the list of big corporates that would implement the knowledge and methodologies of Futures Studies to improve their competitiveness. However, in the decade of the 1980s the popularity of the most applied Futures Studies methodologies, such a scenario planning, decreased. It is believed that the cause

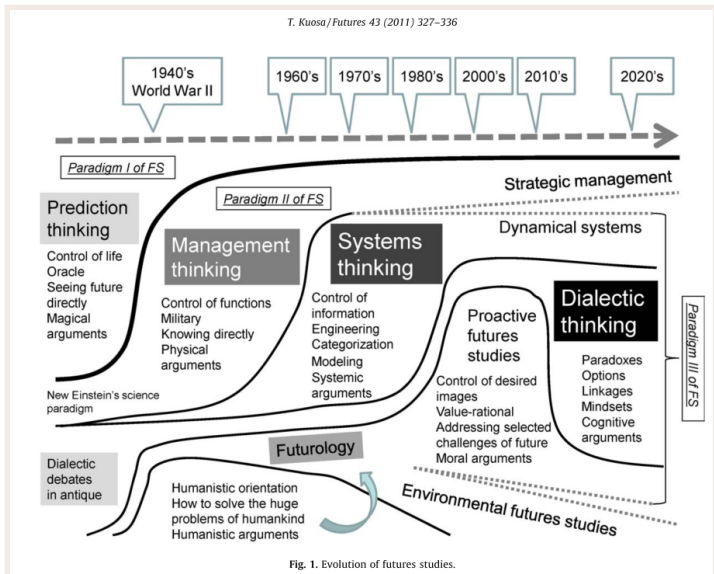


Figure 17. Evolution of futures studies (Figure 1; Kuosa, 2011)

of this was the lack of proper understanding of the process and purpose of future scenarios and an over-simplified application of these methods (van Wieringen et al, 2003).

Later on, Futures Studies has continued to be present in different areas. In the decade of the 1990s, many governments had implemented programs or actions that used knowledge of Futures Studies. An example to highlight is the government of Finland, that in October 1993 appointed temporarily a 'Committee for the Future' as an advisory of the parliament when evaluating Government's proposals on long-term issues. The 'Committee for the Future' was granted permanent status by the Finnish parliament in 1999 (Dator, 2011).

The different industries or areas where Futures Studies has played a role throughout its history shows how broad and multidisciplinary this academic field is. Figure 17, published in Kuosa (2011) as Figure 1, gives an overview of the evolution of the field and its different subcategories through the decades.

The research area of focus within Futures Studies in this project

In an academic field such as FS, where professionals from different backgrounds have gotten involved in research, the approaches to the field are multiple.

For this project, they will not be all reviewed, as the focus has been put early on the literature research on the positivist approach to "Multiple Futures" and within that, the 'critical-postmodern tradition' (Gidley, 2016). The Critical futures research, as it is as well referred to in the literature (Slaughter 2002)(Hideg 2002; Kuosa, 2010), tries to balance the overly empiricist approach to Futures Studies of subcategories of the field that focus on data and understanding how to react to fast change, such as the type of Futures thinking applied in at the United Stated during the World War I and II. Critical futures research is more interested in the 'preferred scenario' than in the 'probable' alone. It seeks to understand and make explicit the values dimensions of the views of the future (Gidley, 2016). Ultimately, it understands FS as "an attempt to re-think, re-feel, and re-vision the foundations of social life so that they may be reconstituted on a more secure, more sustainable and more highly developed basis." (Slaughter, 2002). Because of its focus on values and understanding the social phenomena (Slaughter, 2002) it has been chosen as the perspective to FS that was more applicable to societal challenges.

3.5. Futures thinking purpose and characteristics

Futures thinking is the systematic study of the future; it is about studying what actions to take in the present to create a future that will be as desirable as possible, given certain circumstances (Bell, 2002). Therefore, it can be said that the main purpose of Futures thinking is to increase the control over the future by studying the present (e.g. people's present behaviour) and collecting information that allows creating different images of the future: "visionary explorations of the possible, systematic investigations of the probable, and moral evaluations of the preferable" (Toffler, 1978:x as cited in Bell, 2002), to ultimately take present action. This is referred to by futurists as prospective thinking; through prospective thinking, Futures thinking aims to contribute to the well-being of both future generations and the current society, by giving to the latter more power of knowledge to make wiser decisions in the present (Bell, 1997). That is why Dator (2011) discusses that Futures thinking "should precede and inform planning and policy making, which then guides decision-makers in their day-to-day activities" (p. X).

With the previously explained in mind, it can be said that Futures thinking involves the following tasks: observe the past and the present, clarify goals and values of individuals and the society, analyse the dominant societal images of the future, describe trends, explain conditions, formulate alternative images of the future and evaluate them based on the values established (Bell, 2002). Some experts of Futures thinking mainly acts as analysts, focusing on collecting information, while others act mainly as activists, trying to shape the future (Bell, 2002).

No matter their focus of practice, ultimately futurists aim at understanding what causes change. They work on developing theories that explain change and help people understand it. Additionally, they seek to understand what is under the control of human actions; what trends or phenomena can and cannot be changed by an individual or societal action (Bell, 1997). To understand change, futurists study the macro-context, observing changes in all kind of aspects, from technological developments to political, economic, social and cultural ones. (Bell, 2002)

The following paragraphs detail the main insights of the research on the characteristics of Futures thinking that are interesting for this project:

- ***Exploring possible futures by analysing images of the future***

To study possible futures, the application of Futures thinking means to explore the present with unconventional perspectives, and to think about present problems and opportunities. To study the possible futures, experimental images of the future are created, to interpret the world in new ways. Concepts, such as a sustainable society, a just society, an experimenting society, etc. can be explored by creating images of the future (Bell, 1997). But what is most interesting, is observing these images of the future to understand what are their causes and consequences (Bell, 1997). Futurists believe that the causes of the images of the future and the future itself are among people's present behaviour, "as people either try to adapt to what they see coming or try to act in ways that create the future they want" (Bell, 1997).

In summary, to explore the different possible futures, futurists create "images of the future" by observing the present and people's present behaviour from many different perspectives.

- ***Develop visions***

Dator (2007) explains that "the purpose of any futures exercise is to create a guiding vision, not a "final solution" or a limiting blueprint". This affirmation details the approach to Futures thinking used for this research; a Futures thinking that focuses on defining what are the values and the desirables futures (Masini, 2006). Visions, in Futures thinking, are strongly related to the previous point of exploring the future through images of the future; visions are created from recognizing the "seeds of change" in the past and the present, and capture changes latent in the present to extrapolate them into future realities (Masini, 2006). Again, Futures thinking capability of developing visions comes from observing and researching closely what already exists, the present (Masini, 2006). Futurists often refer in the literature to these "seeds of change" and define them as the "aspects of society that are in the process of developing and that require new models of understanding that go beyond the rational and work at the levels of intuition and emotion" (Masini, 2006).

Ultimately, visions are not utopias, since they evolve the present, part of the process of history and a broader context. These have to be aligned with a bigger picture and link to day-to-day realities (Inayatullah, 2007).

- ***Play an orientating role***

Because of developing images of the future and visions, therefore studying the past and present and mapping a desirable future, Futures thinking has an orientating function. By comparing the past, our beliefs about the present and our expectations about the future (Bell, 1997), people can gain perspective on where they have been, where they want to go, and at what point they are in the transition to that future (Bell, 2002).

- ***Examine goals and values***

Values are part of what drives the actions of individuals and societies as they advance towards the future (Bell, 2002). A decisive aspect of Futures thinking is its obligation to express and justify the values served by its exercises. Futures thinking is focused on values and comes with a moral evaluation of the preferable; unlike normal sciences, futures research is value-rational. Because of exploring different alternatives and describing the desirable future, Futures thinking has to make explicit the values it is serving in this exercise. Kuosa (2010) claims that "values can be rationally discussed and studied", and other experts in the field discuss that methods by which to assess these values used and justify them to other people are needed in Futures thinking (Bell, 2002).

To assess the desirability of an alternative future, Futures thinking studies and evaluates the goals and values people have, from individuals or leaders to societies as a whole (Bell, 1997). Futurists reflect on what is the nature of a "good society" and what are their personal standards

of judgment and evaluation with what they are leading their research of the future (Bell, 1997). Therefore, in Futures thinking exercises, the values that are being served by the proposals of action have to be explained, tested and justified "in public debate and critical discourse" (Bell, 1997). Common values of study among futurists are "the quantity and quality of human life, life satisfaction, and happiness on the individual level; social harmony and peace, sustainability, effectiveness, efficiency, and equity on the level of group or societal functioning; and the life-sustaining capacities of the earth itself on the level of the biosphere." (Bell, 2002)

- ***Develop anticipative thinking***

With its practices of studying the future by observing the past and the latent changes in the present, Futures thinking promotes anticipative thinking (Ruff, 2006). Researching the present macro-context for 'weak signals' of change has been adopted by the management sciences and the corporate world, due to the value of developing a long-term versus a short-term thinking (Ruff, 2006). However, our current societies, driven by the Western influence, are mainly still short-term focused, transforming the world without considering the long-term consequences (Slaughter, 2002).

- ***Observe the world as an integrated system***

In his article about his personal view of the current reality of Futures studies as an academic and professional field, Marien (2002) explains his six categories of Futures thinking. These are based on the collection of commonly used terms in the research of Futures studies over the years, and his contention that this expertise can be divided into "six purposive categories: Probable futures, Possible futures, Preferable futures, Present changes, Panoramic views, and Questioning". Most of these categories have direct similarities with the ideas on Futures thinking previously explained; the one that needs further clarification is "Panoramic views". To illustrate this category, Marien explains that "the very best futurists have a broad, integrative view". Moreover, he argues that this panoramic-integration quality of Futures Studies is what gives academic value to Futures studies and makes it distinctive and specialised (Marien, 2002). It is indeed a characteristic of Futures thinking to perceive the world as a whole, where every specific topic is interrelated with the society and the global system (Masini, 2006).

3.6. The value of Futures thinking for societal challenges

Futurists, such as Slaughter (2002), argue that "all people have interest in self-understanding, self-constitution and self-realization" and that therefore Futures thinking should be applied broadly and consistently in the public interest. Plenty of the activities of Futures thinking are related to understanding how the world works and what causes society to change, trying to develop "a theory of social stability and change" (Dator, 2011). Futures studies is a field interested in ultimately providing well-being to society with its actions, it is therefore quite applicable to projects related to societal challenges.

From the insights of the literature reviewed related with FS and Futures thinking, some specific aspects of the discipline that could make it valuable for designing for societal challenges have been uncovered. These aspects of Futures thinking should be considered when designing the final concept to assist Oak & Morrow in tackling societal challenges.

Studies the macro-context

To understand change, in Futures thinking many different areas are observed to detect 'weak signals' of change or disruptors. Not only social, cultural or political trends are analysed; futurists study data related to all kinds of topics in search for the possible interdependencies, or complex systems, that could offer insights on how the future would resolve. This practice could be beneficial for the field of Strategic design, which defines the area of study to a closed context, maybe missing data that Future thinking would consider as an indicator of change.

Visionary

Futures thinking proposes to develop visionary thinking; studying the signs of change in the present can allow us to anticipate to the possible futures and develop a vision that goes in line with these. Is not only creating visions but also facilitating as well action instead of pure reactive decisions. The value for the organisation of establishing visions, once the signs of change in the present and the possible futures have been studied is, therefore, in keeping them competitive through the knowledge of future trends and the expected changes in society and technology. Additionally, because of mapping the past, present and possible futures, and the vision that the society or organisation wants to achieve, Futures thinking exercises set people in context, having an orientating role.

Value-focused

Futures thinking has to study those values and goals of the society (Bell, 1997) with the objective of understanding present behaviours and future aspirations. Masini (2006) discusses as well that Futures thinking is linked to social responsibility and that the ethical values have to be "clearly expressed and defined". Not only that, projects of Futures thinking should reflect diversity in its values (Masini, 2006). Studying the present actions of society and formulating the desirable futures, making us reflect on what values are of most importance, and on the collective moral responsibility of our actions. This focus on values and taking responsibility on which ones are being pursued with the project or activity at hand, makes Futures thinking applicable to designing for societal challenges.

Interdisciplinary

The application of Futures thinking to different disciplines (business, strategic planning and decision making, sustainability, education, etc.) has been constantly explored. Because of Futures studies being a multidisciplinary "collection of methods, theories, and findings" (Miller, 2003, p.7) that include a future tense to the framework where it is applied, nearly every discipline can benefit from its introduction (Bell, 1997). That Futures thinking has been introduced in multiple other fields shows the capacity of adaptation of its theories and methods, an important aspect when thinking about including it in the discipline of Strategic design, within the design of a tool.

Systems thinking

Because of studying the macro-context, futurists can observe the world as a connected system, where changes in one area have a certain effect on others. There are no isolated topics of study in Futures thinking; to understand change, and how the present situation would develop into the future, futurists have to acknowledge the interrelations of the society with the global system (Masini, 2006). This is an interesting perspective to include in the practice of Strategic design to tackle societal challenges, due to the latter having at times a more reduced, simplistic view of the context.

Questions the long-term effect

When designing for social challenges, it is important to ask the questions on a different time scale to include the observation of the solution's not only immediate impact but also its longer-term sustainability. Next to thinking about the relevance of the solution through time, it is important to think if it would generate behaviour changes in the long term (Miemis 2010). This can be used intentionally, to aim at changing a situation through time; no matter the intention, for societal challenges it is as important to study the long-term outcome and scenario of a proposed solution.

Immune system for our civilisation

By studying alternative futures; the possible, probable and preferable, society is reminded that although future cannot be predicted, by focusing on the alternatives "we can better prepare for uncertainty" (Inayatullah, 2007). By observing the present in search for signals of change, we can be as well more prepared for the challenges to come, by starting to take actions and test different possible outcomes (Cascio, 2009).

"By mapping the past, present and future; by anticipating future issues and their consequences; by being sensitive to the grand patterns of change; by deepening our analysis to include worldviews and myths and metaphors; by creating alternative futures; and by choosing a preferred and backcasting ways to realize the preferred, we can create the world we wish to live in."
(Inayatullah, 2007)

Discussion and conclusion

With the value of both disciplines having been recognised and understood, the third part of the chapter moves on to compare them and discuss that their combination would be valuable to assist the activity of designing for societal challenges.

The objective of this comparison is to understand exactly in what aspects introducing expertise from Futures thinking would add value to the practise of Strategic design, Oak & Morrow's skill, when tackling projects for societal challenges. Additionally, in this discussion the main common values of both disciplines that should be core to the proposition of the final concept of the project, are explored.

3.7. Discussion: the value of combining Strategic design and Futures thinking

The discipline of Strategic design is, in itself, a combination of knowledge from fields such as Design, Marketing, Economics, Strategic planning or Innovation management. The discipline of Futures thinking, known as Strategic foresight within the field of Management, is deeply embedded in disciplines related to that field. The disciplines of Design, Future thinking and Management seem to have intersected with each other in the past to generate new knowledge for strategic thinking. Design looked to the fields of Marketing, Strategic management and development when adopting methods and tools that would embed strategic thinking in the design process, the same way that existing design methods such as the ViP Method (Hekkert and Van Dijk, 2011) include an adaptation of tools common of Futures thinking in its core proposition.

Strategic design and Futures thinking have been widely adopted separately within Management circles as answers to the problems of firms with stagnation in innovation and competitive advantage. There is, therefore, an obvious value in combining these two disciplines. What is discussed in the following paragraphs is exactly in what aspects the combination of Futures thinking and Strategic design would be valuable for designing for societal challenges.

If we compare Strategic design and Futures thinking, there are certain differences between them that point at a value in their combination to tackle societal challenges:

Divergent versus convergent processes:
Strategic design starts with the study of the context, to generate insights that are ultimately made tangible in a vision, positioning, service, product, etc., developing when needed a roadmap with the steps towards its realisation (Meroni, 2008). This is a convergent process whose value ultimately relies on creating a final concrete, tangible outcome. In comparison, Futures Thinking collects insights with the objective of diverging into a series of scenarios that "illustrate multiple options without defining an exact result" (Roumiantseva, 2016). The divergent process of Futures thinking could be the first step of a 'new' Strategic design process that would start from the insights of the future collected, converging into a concept that would be future-proof. When designing for societal challenges, it would be valuable to consider the events to come and the expected evolution of the context of the challenge to create long-lasting solutions.

The timeline:
Strategic design usually deals with short-term for inspiration purposes while Futures thinking is long-term, investigating a long-term past and aiming to discover the far-fetched future (Roumiantseva, 2016). Societal challenges are issues that rarely have a short-term effect; the focus of Futures thinking on considering the long-term effect could be a valuable aspect when designing for societal challenges.

Reactionary versus visionary:
Futures thinking is a visionary activity that uses specific tools to foresee changes in the future, while Strategic design is a reactionary

activity; reacting to user and business needs or the market and technology opportunities. The practice of Strategic design could be strengthened by incorporating visionary tools from Futures thinking that would aid in sorting the Fuzzy Front End and support the development of competitive advantage.

"Futures thinking is essential for human action. 'Reaction' might be possible without futures thinking, but not action. For to act requires anticipation. Thus, images of the future (goals, objectives, intentions, hopes, fears, aspirations) are part of the causes of present action."
(Bell, 2002)

When comparing Strategic design and Futures thinking, certain aspects are shared by these disciplines that are valuable when tackling problems such as societal challenges:

Analysing the context:
Both Strategic design and Future thinking study the context in one way or another. Strategic design considers the context (People, Business, Technology) that surrounds the organisation (Calabretta et al, 2016). Future thinking, on the other hand, turns to the macro-context for inspiration, analysing all kinds of areas no matter their apparent relation to the initial question. Societal challenges are in their essence context-dependent issues, therefore this aspect is an obvious activity that has to be conducted when designing for societal challenges. The interesting point of this commonality if that Futures thinking goes a step further than Strategic design, proposing to study the macro-context. This aspect makes the combination of both disciplines more interesting for tackling societal challenges that Strategic design alone.

Thinking on a systemic level:
Strategic design analysis the relationships and interdependencies among the three factors directly related to the organization we are designing for: people needs and wants, technology constraints and possibilities and business needs. Futures thinking takes the systems thinking a step further by studying, next to the three factors previously mentioned, the interrelations in, e.g., social, economical, political and environmental factors that shape the future macro context. It, therefore, analysis the context on a complex-systems level. Societal challenges could be defined in most cases as wicked problems, that not only do not present an obvious solution but additionally, have roots that trace interconnections with many different aspects. To tackle this type of problems, a holistic perspective of the interdependence of the world such as Futures thinking is needed (Bell, 2002). Futurists would argue that these challenges should not be observed as isolated units, but as open systems instead (Bell, 2002).

3.8. Conclusions of the literature research

Reflection on the conclusions

The main conclusion of the insights that the literature research on the value of Futures thinking and Strategic design uncovered has been conveyed in the following reflection:

"To combine the human-centeredness of Strategic design with the consideration of the macro-context and the complex system thinking of Futures thinking in the initial phase of projects, or FFE, would add value to designing for societal challenges."

The importance of this reflection is that it indicates that in the design phase of the project, the most valuable activities from Futures thinking for designing for societal challenges should be combined with those of Strategic design, under the format of a tool or similar concept.

3.8.1. Design directions

The conclusions of the literature research point at what activities from Futures thinking and Strategic design have to be implemented in the tool. These activities are the ones that convey the value of both disciplines for designing, and especially for designing for societal challenges.

Parallely, the "Design values of Oak & Morrow" collect information about what is valuable for the design studio and to what they aim when undertaking a project. Therefore, taking them into account when designing the tool, next to the other insights gathered in the Contextmapping session with the design studio, would make the concept tailored to their objectives and needs as designers.

To consider both the activities that add value to the design process from the disciplines of Futures thinking and Strategic design, and what is important for the design studio when designing for societal challenges, the conclusions of this literature research have been combined with the Design Values of Oak & Morrow to generate design directions.

The design directions are:

- ***The tool is used in the initial phase of the project or FFE.***
- ***The tool has to be applicable to any kind of topic within societal challenges.***
- ***The tool has to focus on users'/people's needs, problems and/or interests.***
- ***The tool has to enable collaboration among***

professionals with different expertise.

- ***The tool has to promote scanning the macro-context for inspiration and the collection of information from areas apparently unrelated to the topic of the project.***
- ***The tool has to facilitate the analysis of the different signals collected, in order to understand the possible interrelations and the implications of future changes in those areas for the domain at hand.***
- ***The tool has to encourage the reflection on how past drivers and trends affected users' past behaviour in order to understand how the evolution of these drivers and trends would affect users' future behaviour (and generate solutions that deliver ongoing value and are socially sustainable).***
- ***The tool has to facilitate the design of practical, functioning solutions that are scalable (and could be invisible for the user).***

The design directions will be used as a guide for ideation. Additionally, further research on the tools and methodologies of Futures thinking and Strategic design will be conducted, with a focus on researching tools and methodologies from both disciplines. The need for this further research has been recognized when analysing the conclusions of the literature research to create the design directions. These are not specific enough to be directly used as inspiration on the ideation of the tool or final concept. Specific examples of how the valuable activities of Futures thinking and Strategic design are facilitated by tools and methodologies will be helpful for the ideation process. The role of the design directions in this research on tools and methodologies will be that of indicating what type of tools and methodologies are interesting or applicable to review for the project. The methodology behind this will be explained in the next chapter.

3.9. Conclusions of the chapter

The third chapter of the report has explained the literature research conducted on the disciplines of Strategic design and Futures thinking to uncover their value and applicability to societal challenges and the conclusions extracted from this research.

The first part of the chapter deals with the in-depth research about Strategic design, its purpose and activities and why these offer value for the companies that adopt them in their design practices. The second part covers the research on Futures thinking, its purpose and activities. Additionally, it presents the history of the research of Futures Studies, the background discipline of Futures thinking, and the value that the latter could add to the discipline of design and to designing for societal challenges. In the third and last part of the chapter, it has been discussed and concluded as main "reflection" of the research that the combination of both disciplines would be valuable for the design process when designing for societal challenges.

Next to the conclusions on the value of the two disciplines and its combination, the main takeaway of the chapter is the Design directions. The Design directions combine the insights of the literature research explained in this chapter with the "design values" of Oak & Morrow, the result of the generative research conducted with the designers of the studio to get a better grasp of their priorities towards the project and that redefined the assignment.

The next steps

The next step in the project is to continue the research on Strategic design and Futures thinking with a focus on exploring the different tools and methodologies that these two disciplines offer. The process and the results of this research are explained in the following chapter.

CHAPTER

4

Exploring Strategic design and Futures thinking tools and methodologies

Content

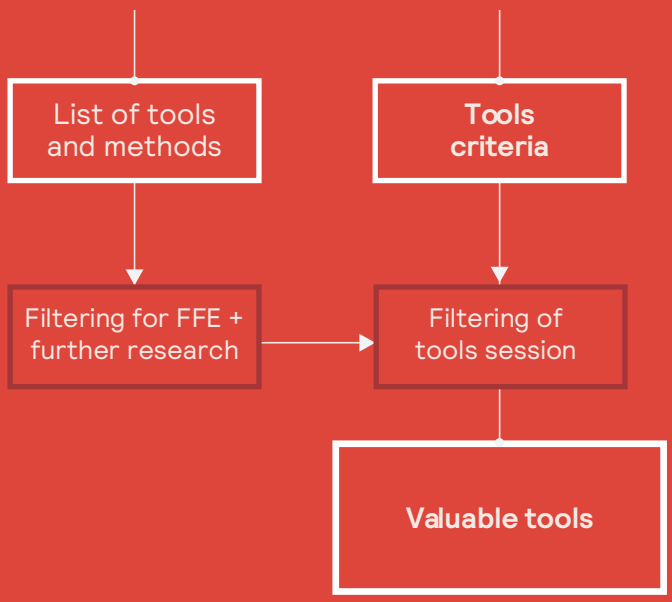


Figure 18. Steps from the research set-up explained in Chapter 4.

The research on the disciplines of Strategic design and Futures thinking is continued in this chapter, with a focus on the tools and methodologies available for both disciplines. The objective of this further research is to understand the specific ways in which the activities of these disciplines can be facilitated, to deliver the value uncovered in the research explained in the previous chapter. Ultimately, the purpose is to gather a set of tools and methodologies that can be used as a source of inspiration in the process of ideating the tool or final concept of the project.

The newly created Design directions, explained in the previous chapter, will be used as a guide in this research on tools and methodologies. The set-up of the research explained in this chapter has been visualised in Figure 18.

4.1. Initial collection of tools

When reviewing literature as part of the research on the disciplines of Strategic design and Futures thinking, as part of the content, different tools and methodologies of both fields were uncovered. These tools and methodologies were not intentionally collected, therefore they did not follow any specific selection criteria.

Once it has been decided to continue the research in these disciplines with a focus on tools and methodologies, those that had been already uncovered during the previous research have to be revised for its applicability to the project. Additionally, more examples of tools and methodology are to be collected, to have a more extensive set that covers better the breadth of both disciplines.

With the objective of defining what tools and methodologies of all those available in the literature are applicable to the project, selection criteria are chosen. These selection criteria are not only used to identify what tools of the already found ones are relevant for the project but as well to guide the further research done on tools and methodologies.

4.1.1. Selection criteria

The purpose of the research conducted on Strategic design and Futures thinking is to generate insights on the knowledge from these disciplines that the tool to be designed has to convey. At the same time, the purpose of the tool to be designed is to assist the designers at Oak & Morrow on projects related to societal challenges. Therefore, the tools and methodologies collected to serve as inspiration for the final concept, have to be fitting to designing for societal challenges. Societal challenges are problems or questions that are highly dependant on their specific context. Taking the characteristics of societal challenges into account, the chosen selection criteria is the following:

"Tools and methodologies that help to cope with the uncertainty of the Fuzzy Front End by allowing an exploration and better understanding of the context of the project and/or facilitate the transformation of long-term strategies or vision to actionable propositions."

In short, the tools and methodologies that are applicable for the project are those that help with dealing with the Fuzzy Front End. The Fuzzy Front End refers to the fuzziness, or lack of knowledge, associated with the strategic, conceptual, objective setting, and planning activities part of the early stages of New Product Development (NPD) (Zhang and Doll, 2001), including the pre-phase zero (idea generation), phase zero (assessment of market, technology and competition) and phase one (product definition, project justification and action plan)

(Cooper, 1994; Khurana and Rosenthal, 1998). Uncertainties related to the environment of a NPD are what is known as "front-end fuzziness" (Zhang and Doll, 2001). This environment is compound by all the information related to the user needs, the competitive product offering and the technological risks and opportunities (Bacon et al., 1994), often unknown by the NPD team and management.

4.1.2. Selected tools and methodologies

Once the selection criteria have been established, further research on tools and methodologies of Strategic design and Futures thinking has been carried out. This desk and literature research has been lead by the following research questions: "What are the Futures thinking tools (or aspects of them) that are interesting for the project?", and "What are the Strategic design tools (or aspects of them) that are interesting for the project?". Both questions are made taking into account that any tool or methodology collected has to be applicable to the Fuzzy Front End, or the initial phases of product/service development that deal with the context of the problem.

To answer the first research question, literature that explained methodology developed in the field of Futures Studies, or specific tools of Futures thinking, for example, has been consulted. To answer the second research question, literature that discusses methodology from Strategic design, Design, Design thinking, Strategic management or Innovation and strategy has been reviewed.

The complete list of tools and methodologies that have been collected, outcome of this research is the following:

Tools and methodologies of Strategic design

- ***Value mapping tool*** *(Bocken, Short, Rana & Evans, 2013)*
- ***Business model canvas*** *(Osterwalder & Pigneur, 2010)*
- ***Value proposition*** *(Osterwalder et al., 2014)*
- ***Roadmap***
- ***Stakeholders analysis*** *("Stakeholder Analysis: Winning Support for Your Projects", 2015)*
- ***Innovation Flowchart*** *("Innovation flowchart | Nesta", 2013)*
- ***Partnerships map*** *(The partnering toolbook, 2003)*
- ***SWOT Analysis*** *("SWOT Analysis: Discover New Opportunities, Manage and Eliminate Threats", 1996)*
- ***SOAR Analysis*** *(Stavros & Hinrichs, 2011)*
- ***PEST/ PESTLIED/ STEEPLED analysis***
- ***4Cs – 5Cs***

Tools and methodologies of Futures thinking

- ***Scenarios*** *(Future risks and opportunities toolkit, 2016)*
- ***Backcasting method*** *(Future risks and opportunities toolkit, 2016)*
- ***Vision***
- ***Maps*** *("IFTF: Foresight Tools", 2017)*
- ***Visual frameworks*** *("IFTF: Foresight Tools", 2017)*
- ***Artifacts for the Future*** *("IFTF: Foresight Tools", 2017)*
- ***Signals*** *("IFTF: Foresight Tools", 2017)*
- ***Roadmaps*** *(Future risks and opportunities toolkit, 2016)*
- ***Environmental Scanning – 'STEEP'****(Social, Technological, Environmental, Economic, and Political).* *(Miemis, 2010)*
- ***Forecasting***

4.2. Valuable tools: final tools selection with the criteria

To be able to capture as many insights from the tools and methodologies selected, these have been analysed regarding their content. This has been done by exploring which ones or what aspects of them are most applicable to the demands of the final concept to be designed. Therefore most interesting to be used as inspiration in the ideation process. For this purpose, the Design directions have been brought back to be used as the guiding needs of the final concept in the exercise of "filtering" and classifying the tools and methodologies collected.

4.2.1. Filtering the tools and methodologies with the Design directions

The Design directions are one of the main conclusions of the research conducted in the project up to this point. They combine the insights of the research on Strategic design and Futures thinking explained in chapter 3, and the Design Values of Oak & Morrow, the outcome of the Contextmapping session with the design studio, explained in chapter 2. They describe the aspects that have to be taken into account when designing the tool or final concept of the project. Therefore, if one of the tools and methodologies collected deals with one or more of the aspects that the Design directions describe, it should be considered for inspiration in the ideation process. Based on this assumption, the design directions are rephrased and broken down as a set of criteria, to be used in a filtering process where each one of the collected tools and methodologies is analysed for their applicability to the criteria. The set of criteria is the following:

- ***Initial phase of the project FFE.***
- ***Design for all type of societal challenges.***
- ***Focus on users' needs, problems and interests.***
- ***Facilitate collaboration among professionals with different expertise.***
- ***Scan the macro-context for inspiration and collect information.***
- ***Collect signals.***

- ***Analyse signals collected.***
- ***Understand the possible interrelations and the implications of future changes for the domain at hand.***
- ***Reflect on how past drivers and trends affected users' past behaviour.***
- ***Understand the effect of the evolution of these drivers on users' behaviour.***
- ***Design practical, functioning solutions that are scalable (and could be invisible for the user).***

Filtering process

For the purpose of filtering or clustering the tools and methodologies in a visual manner, each criteria has been printed in a separate sheet of paper and pasted on a wall, as shown in Figure 17. To be able to check easily the content and characteristics of each tool and methodology when analysing their applicability to one of the criteria, these have been printed and placed in the wall, next to the posters with each criteria (Figure 19). Post-its with the name of the tool or methodology have been used as their representation when distributing them in the criteria posters. The filtering process has entailed to check each tool or methodology for their fit in any of the criteria, resulting in a final selection of tools and methodologies clustered per criteria in the different posters, as seen in Figure 20. This structure is meant to make easier to revisit the tools and methodologies selected, and spot their specific value, in the ideation phase.

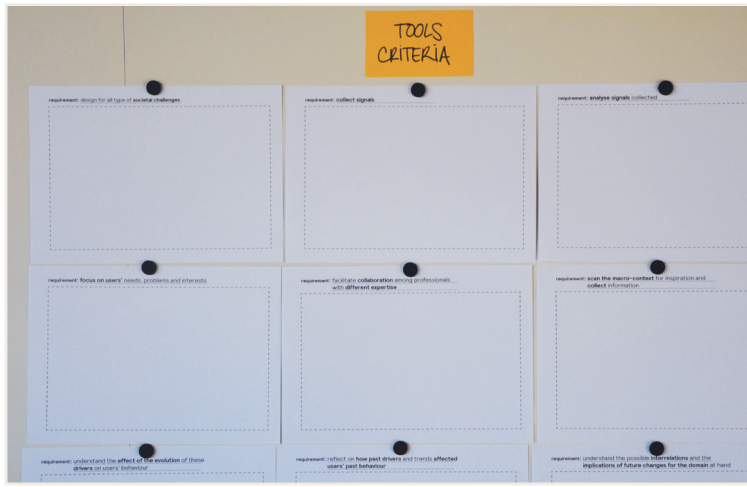


Figure 19. Picture of the empty posters with the criteria for filtering.

Figure 20. Picture of the printed information or visuals of tools and methodologies.

4.2.2. Valuable tools

As result of the filtering process of the selected tools and methodologies, the final set of valuable tools is determined. When designing the final concept, the list of valuable tools per criteria will be revised to learn how each tool tackles each of the aspects that the final concept has to include.

Figure 21. Picture of the posters with the criteria for filtering, and post-its with the correspondent tools and methodologies per criteria.

Initial phase of the project FFE

- ***This is an overall requirement that all methodology researched complies with.***

Design for all type of societal challenges

- ***People and connections map*** *("People & Connections Map", n.d.)*
- ***Value framework for meaningful innovations*** *(de Bont, den Ouden, Schifferstein, Smulders & Van Der Voort, 2013)*
- ***Value flow model*** *(de Bont, den Ouden, Schifferstein, Smulders & Van Der Voort, 2013)*

Focus on users' needs, problems and interests

- ***Behavior cards*** *("Get Mental Notes", n.d.)*
- ***Value proposition canvas*** *(user part) (Osterwalder et al., 2014)*
- ***Scenario based design*** *(de Bont, den Ouden, Schifferstein, Smulders & Van Der Voort, 2013)*
- ***Triple layered Business Model Canvas*** *(3rd layer: Social) (Joyce & Paquin, 2016)*

Facilitate collaboration among professionals with different expertise

- ***7 questions*** *(to conduct collaboration) (Future risks and opportunities toolkit, 2016)*
- ***Partnerships map*** *(to generate collaborations) (The partnering toolbook, 2003)*

Scan the macro-context for inspiration and collect information

- ***SWOT Analysis*** *("SWOT Analysis: Discover New Opportunities, Manage and Eliminate Threats", 1996)*
- ***SOAR Analysis*** *(Stavros & Hinrichs, 2011)*

- ***PEST/ PESTLIED/ STEEPLED analysis***
- ***STEEP Environmental scanning*** *(Dator, 2011)*
- ***Horizon Scanning*** *(Future risks and opportunities toolkit, 2016)*
- ***Reverse engineering*** *(Future risks and opportunities toolkit, 2016)*
- ***Futures landscape*** *(Inayatullah, 2008)*
- ***5 C's analysis***

Collect signals

- ***Trend cards*** *[e.g. ("MethodKit with Trends – MethodKit", n.d.), ("drivers of change | Arup Foresight", n.d.)]*
- ***Folksonomies*** *(e.g. signals from Twitter)(Future risks and opportunities toolkit, 2016)*
- ***Horizon Scanning*** *(Future risks and opportunities toolkit, 2016)*
- ***Trend analysis*** *(Dator, 2009)(Dator, 2011)(Future risks and opportunities toolkit, 2016)*

Analyse signals collected

- ***Futures triangle*** *(Inayatullah, 2008)*
- ***Artifacts for the future*** *(Institute for the Future)*
- ***Emerging issues analysis*** *(Inayatullah, 2008) (Dator, 2009)*
- ***System maps*** *(Future risks and opportunities toolkit, 2016)*

Understand the possible interrelations and the implications of future changes for the domain at hand

- ***Cross Impact analysis*** *(Iversen, 2005)*
- ***System maps*** *(Future risks and opportunities toolkit, 2016)*
- ***Futures wheel*** *(Inayatullah, 2008)(Dator, 2011)*
- ***Causal layered analysis*** *(Inayatullah, 2008)(Dator, 2011)*
- ***Prioritisation matrix*** *(Iversen, 2005)*
- ***Roadmaps*** *(Future risks and opportunities toolkit, 2016)*
- ***Maps*** *(e.g. 'Technology Horizon Map') ("IFTF: Foresight Tools", 2017)*
- ***Scenarios*** *(e.g. Explorative scenarios) (Future risks and opportunities toolkit, 2016)*

Reflect on how past drivers and trends affected users' past behaviour

- ***Four quadrant mapping*** *(Inayatullah, 2008)*
- ***Roadmaps*** *(Future risks and opportunities toolkit, 2016)*

Understand the effect of the evolution of these drivers on users' behaviour

- ***Scenarios*** *(Exploratory scenarios) + Use scenarios (Future risks and opportunities toolkit, 2016)*
- ***Roadmaps*** *(Future risks and opportunities toolkit, 2016)*

Design practical, functioning solutions that are scalable

- ***Backcasting method*** *(as it could be used as "Back-scaling") (Inayatullah, 2008) (Future risks and opportunities toolkit, 2016)*
- ***Value mapping tool*** *(for sustainable solutions) (Bocken, Short, Rana & Evans, 2013)*

4.3. Conclusions of the chapter

The fourth chapter of the report has dealt with the additional desk and literature research on the disciplines of Strategic design and Futures thinking, this time with a focus on the available tools and methodologies of both disciplines. This research has been conducted with the purpose of ultimately selecting the tools and methodologies applicable to the project, to use them as inspiration further on, when designing the tool or final concept. To make the selection of tools, the design directions developed in chapter 3 have been rephrased as a set of tools criteria that indicate an aspect that a tool has to fulfil to be interesting for the project.

The key takeaway of this research is, therefore, the list of valuable tools; a set of tools and methodologies from Strategic design or Futures thinking that tackle one or more of the proposed criteria. The tools in this list will be used as inspiration during the ideation process.

The research on tools and methodologies concludes the first area of research of the project; the disciplines of Strategic design and Futures thinking.

The next steps

The next step is to continue the research phase in the second area: Oak & Morrow, the "user" and client of the project, with the objective of learning how the final concept has to adapt to the design studio and its designers.

CHAPTER

5

Understanding the user: Oak & Morrow internal analysis

Content

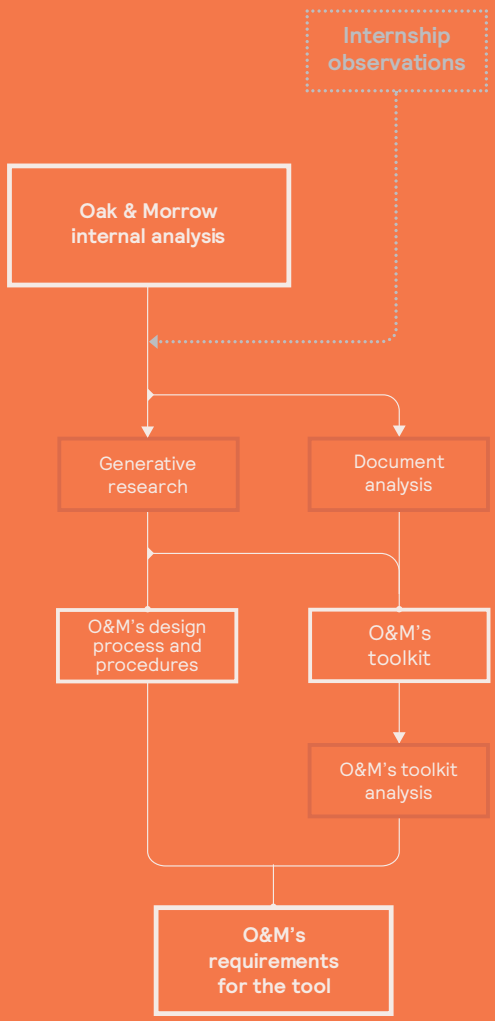


Figure 22. Set-up of the design and research activities explained in Chapter 5.

This chapter dives into the second area of research of the project, the internal analysis of the design studio Oak & Morrow. The set-up of this research has been visualised in Figure 22. This framework illustrates that the selection of the research activities to be explained in this chapter has been influenced by pre-existing knowledge on Oak & Morrow. This knowledge was collected through personal observations during an internship at the company, prior to the start of this project.

The internal analysis will be approached mainly by conducting "discussion sessions" with Oak & Morrow, the set-up of which is explained in section 5.1. The objective of this research is to collect insights about Oak & Morrow's design practices, such as their design process and their current toolkit.

Ultimately, the tool or final concept to be designed has to attend the studio's needs and fit within their design practices. Therefore, the insights from this company's internal analysis will combine, among others, with the main insights from the first area of research (the disciplines of Strategic design and Futures thinking), explained in chapters 3 and 4.

5.1. Discussion session with Oak & Morrow

An essential part of the project's research is understanding Oak & Morrow as an organisation in order to develop a tailored conceptual product that would fit the studio's needs and characteristics. The project has been started with a pre-existing knowledge of the internal culture of the studio, experienced during the internship period, as explained in chapter 1. However, decisive aspects of the organisation's activities, such as their design process, are not possible to map with the information obtained before the graduation project. Further research on these aspects of Oak & Morrow is needed.

To structure the internal analysis of the company, the PARC model for scanning an organisation has been followed (Roberts, as cited in Packet, 2007). As explained by Packet (2007), this model proposes to scan an organisation as *"a mix of* **people** *(stakeholders of all sorts with their skills, talents, and responsibilities),* **architecture** *(relationships of all sorts defined by the organization charts and the like),* **routines** *(process, policies and procedures), and* **culture** *(shared values, beliefs, language, norms and mindsets)".* Within these four parts of an organisation, people, architecture, routines and culture, the focus of the analysis of Oak & Morrow was set on routines, because of the existing knowledge being better accountable to the areas of people, architecture and culture. Within routines, the aspects of the organisation that require most attention are their design process, their internal procedures related to design activities and their toolkit.

To discuss Oak & Morrow's internal procedures and map their design process and toolkit, two generative sessions have been held with part of the team of Oak & Morrow. Internal documents have been analysed as well to prepare for these sessions and collect additional information. In the sessions, the participants, designers Jeroen van Geel and Sophia Altekamp, have been asked to explain Oak & Morrow's design process, the different tools they use and the different process per design service by drawing mindmaps and presenting them to each other to discuss its content. The details on the set-up and methodology of the session can be seen in Appendix C.


customer
context
competition
process
tools
Concept creation
Presentation

5.2. Results of the discussion sessions

The main conclusions taken from the insights collected in the discussion session are explained in the following paragraphs. These bring substantial information on the procedures, design process and toolkit of the design studio. Quotes of the designers from the session help illustrate the main insights.

5.2.1. Procedures

Lots of tacit knowledge

Because of the studio's young life and high level of activity, not enough time has been spent on documenting the studio's design practices. These stay up to this day as part of the studio's tacit knowledge. A lot of practical content that reflects their design practices has been created to be applied to different projects, but it is often not translated into branded documentation for internal use. This lack of formalised and documented processes is one of the main topics of concern for the designers at the studio.

"'what is the problem it solves?' and 'what if the opportunity that it creates?', (...) they are in our mind, they are in the studio DNA, (...) but it's not explicit!"
Jeroen van Geel

"Is the course of knowledge! If you became very experience about what you do, you don't think about explaining it anymore to people... that's our biggest problem"
Jeroen van Geel

The main problem this causes for the studio, in the designers' opinion, is its negative effect on the communication with the client. This is not always as clear as it could be regarding the type of design services the studio can offer, the process they follow to deliver these and the value of the processes and design tools used.

"...we had a few times this moment when we say, damn, we can do that, we could do this too (regarding a step or exercise of the design process, e.g. use testing), we already do these things why don't we sell them, and that is also because you forget"
Sophia Altekamp

"I really think we could communicate it better to the clients (talking about the process), many times they are lost, (...) the nice thing is if you have a process a bit more clear you can actually give it out of hand, you don't need Jeroen van Geel calling the client and explaining it necessarily all the time... right? That is the goal!"
Sophia Altekamp

"Oftentimes we say, we start with a 'Brand Key', that's the process we do and clients are like, 'ok...', but we don't tell them, 'well, we actually do this because we really need to get this very clear'... so... tell it more!"
Sophia Altekamp

The designers also think they lack systems of visualising and communicating properly the results of their design exercises, such as a Customer Journey analysis, as although they deliver results this is not made as explicitly as it could be.

"...you know what we miss? One of the comments we get is that people think that the

brand key is an end result, because of that we also created the brand story document but actually that also doesn't really communicate... We don't celebrate the results, so summarising things in posters, (...) The tools are tools and they need to get an end result, what you are going to deliver. We need to think about presentation"
Jeroen van Geel

Growing towards more "Business innovation"

The aim of the studio is to keep on growing in their role as strategic partner and do more projects that deal with business innovation. They agree that currently, they are more experienced in product innovation, and this is a field in what they feel comfortable, but at the same time they think they have a lot to add when working on the business level.

"'Business and product innovation' is the newest one for us, and this ('Product innovation') is actually where we are strong, 'Business innovation' is scarier for us"
Jeroen van Geel

"we are moving to an area where I think we are creative enough but where we also need to know the 'cost structure', 'revenue streams' and all that stuff...there we are an amateur level, there we need to connect people to us or grow, but at least we know where to grow"
Jeroen van Geel

5.2.1. Design process

There is an overall design process that is deeply embedded in the studio's design activities and that both Sophia and Jeroen think it properly fits Oak & Morrow. This one is described by the three steps of 'explore', 'dream' and 'create'. These three steps represent the phases of research, ideation and development and its formulation goes in line with the values and internal culture of the studio (curiosity, etc.). As defined by Jeroen van Geel, these phases may formulate a pretty "standard" design process, but it is the Oak & Morrow's tools that are used throughout it what makes the process tailored to the studio's personal approach to design.

"...the design process is really standard, except for our words... the tools create the flow within the steps or over the steps, so for me the toolkit is actually a visualisation of our design process, in the details"
Jeroen van Geel

"If I look at the customer grid, the brand story part and also the customer journey and the core idea sheet, those are really Oak & Morrow, they are a 100% the way we do that and they fit."
Sophia Altekamp

The process starts with an input and ends with an output or result. The input can come from an idea the studio has, or from a question that a client brings to Oak & Morrow. Not always though, the three phases are strictly followed; depending on the type of project, some phases become more relevant or do not happen. Therefore, the design

process of the studio has to be taken as three phases that are naturally followed in every design project, but that do not act as a mandatory step by step guide. The expertise and experience of the designers are what ultimately leads the process of the project.

"...I had Service Design, and there the interesting thing is that you don't have an explore, dream, create, cause the process is completely different, 'cause you don't make a concept of a service blueprint, you just create a service blueprint. So there I had explore, define and not explore, dream, create."
Jeroen van Geel

The importance of starting from 'why'

The structure of 'why, how, what' somehow interferes with the three phases of 'explore, dream, create' when discussing what is the studio's design process. Although it is clear for the designers that both structures are not comparable and does not necessarily begin and end at the same time, Sophia especially emphasized the importance of starting from 'why' for Oak & Morrow when tackling a project.

"'explore', 'dream', 'create' was one of our first processes that we described, I still like it, cause it has the right connotation in it. Some other things are... 'what is the goal', so that is 'why?', 'why do you want to do this?'"
Jeroen van Geel

"Even when we get a question like, 'we wanna do an app', we always take it really fast to zoom in on the 'why?'"
Sophia Altekamp

Clients often approach the studio from a 'what' kind of question, in other words, with the idea that they need a certain new product to be designed (a website, app, product, etc.). This is when the designers of the studio question the need for that new product to find out if there are reasons for its creations or the client has other problems that should be tackled differently.

"Almost all the questions we get from a client for a first contact come from the 'what' level; 'we need a website', 'can you help us with the logo', 'can you help us with the brochure'..."
Jeroen van Geel

"'we think we need an app', we say, 'well you maybe don't need an app, maybe you first need a vision and the product that will come out is not necessarily an app'."
Sophia Altekamp

"we always say, we cannot do anything if we cannot zoom in in this kind of 'why-core-thing (...) from there we go further like in exploration, we develop ideas, we dream, there comes all the 'how do we do it'"
Sophia Altekamp

It is also an objective of the studio to attract more clients that would already come with a strategic question, instead of a briefing that starts on the 'what level', and grow their reputation as strategic design studio by choosing projects focused on that area of design.

"...I think we want more people that come with the question 'we think we are ready for the next step as a company, how should we do this?'"
Sophia Altekamp

"I think that a lot of the questions (we do) on this ('what') level are because we are individuals and we like to do it, but I think in the studio level this ('why') are the type of questions we should do if we want to have an unique position."
Jeroen van Geel

The 'create' phase is not the end of the project It has to be highlighted as well about Oak & Morrow's process, that although it is defined as the three phases of 'explore, dream, create', the last phase is not the end of most of their projects. Because of Oak & Morrow not being a full-service studio, other companies they partner with intervene in the 'create' phase to finalise the product (e.g. a company of developers in the case of a website design project). Additionally, many of the studio's projects are part of a "bigger context" and go through different iteration phases, that can happen after the 'create' stage, what can make them ongoing projects once Oak & Morrow's intervention has finished.

"we have projects, and they are within a bigger context that is within a bigger context, and this should be of our design process as well...all the stuff that we do is part of a bigger whole."
Jeroen van Geel

"so a book is explore, dream, create, finished, a website is explore, dream, create, improve, improve, improve, improve, or go back to explore. So you have small iterations and a bigger one."
Jeroen van Geel

The design process adapts to the type of project Although there may be a basic design process that the designers fall back on, depending on the type of project this design process is adapted to best fit its needs. For each type of 'design service', the designers adopt a different design process that uses the structure of 'explore, dream, create' as a starting point. During the session, the designers have mapped some of these different design processes that can be seen in Appendix C.

5.2.1. Oak & Morrow's toolkit

"...for me the toolkit is actually a visualisation of our design process, in the details"
Jeroen van Geel

Tools as "building blocks"

Design tools are for Oak & Morrow a sort of "big container words" that represent their way of working towards generating an outcome and should be able to be manipulated depending on the characteristics of the project and client. Ideally, their tools should work as "building blocks" that connect as pieces of the different puzzle that is each project.

"'Brand strategy' is the 'Brand Key', 'Service design' first you got the 'Brand strategy' then

you go to the 'customer journey' and blueprints, 'Customer insights' is research so sensitizing and interviews, and 'User testing', so in all this products we know the process"
Jeroen van Geel

Regarding selling their design services, tools should allow the studio to package a session or workshop where the tool is used, the input information is collected from the client and an output or result for them is generated. Parallelly, some tools are the product itself that the studio creates for a client. In this case, they are filled in with the client or independently by the Oak & Morrow designers, and they are the outcome of the studio's service.

"when we started saying 'our process is with the 'Brand key' and the 'Archetypes' and then a 'Customer journey'', those things really help; and we have an attached price tag to it and an attached hours and hourly rate, we know we can do this on that. That makes it as kind of like building blocks and it makes it much easier to sell, and much easier to get a grip on from the client part."
Sophia Altekamp

"(talking about the newly introduced BA model) this needs to sell us a product: a one-week business innovation week, and in that week we are gonna start with understanding what your organisation is, what you want to achieve, what your culture is, day two, we come up with a lot of 'core idea sheets', twenty of them, we pick two and with this we are going to the Business Model Canvas"
Jeroen van Geel

"the customer journey is a product in itself and then the service blueprint is a product (...) so you could stop here and already have something you could use in your organisation, (...). Whereas in the Brand Strategy, it's all together, we have this session and then it comes out this thing... although what comes out of it is clear: vision, mission and the brand story"
Sophia Altekamp

In this aspect is where the designers at the studio think they still have work to do. Although some tools and workshops are clear for the studio and are in general used for every project, some other methodology and design expertise the studio makes use of, to tackle current projects, remains "unpackaged", or in other words, lost in the studio's tacit knowledge.

"I think if we package it good, like for ourselves, if we structure it better then is also another block we can also sell easier and it makes it easier for everybody in the team to say ok, these are the blocks and that is what we work with, and we chose this package now and there is a clear argument behind each one on why would we do this."
Sophia Altekamp

Mapping the current and aspirational situation

During both of the sessions held with the studio, the designers have discussed the importance of mapping more explicitly the current situation of the client's business to, not only making it

easier for everybody at Oak & Morrow's team to understand the client, but as well to highlight to the client which changes the company has to go through to implement the newly proposed, aspirational situation. They already do this with tools such as the Customer Journey and the Service Blueprint, but they propose to do it as well with other tools they use, especially in branding projects, to develop the aspirational situation with the client without mapping the current one.

"We also create customer journeys of the current situation and then the wishes for the next... I think with the Service Blueprint is the same, you need to have current and future, so yeah in Service Design we do this"
Sophia Altekamp

"on the service and product level, because there we see more clearly where they are now and what are the challenges in changing the structure to actually get there, that is very clear, if it is a service based structure or a product innovation, and you really know: 'well, you have to change all these gears and then you can do this'"
Sophia Altekamp

"With the BA model, I can imagine that you also wanna fill that in for the current situation... it could help to think where are we now, what are the values, etc."
Sophia Altekamp

The designers also discussed how adopting new tools that map further the current situation of a brand, would be beneficial for their process. A tool such as Brand Heritage would map clearly where the brand and the company comes from and would avoid the loss of knowledge among the studio's team and communication problems with the client.

"we say 'you didn't have one, (referring to a corporate identity) so we give you this! And it is awesome and this is what it should be', and we through all this really cool things their way, which is the brand identity and stuff, but then often there begins a little struggle..."
Sophia Altekamp

"I think there we do lose a bit because we don't map clearly where they are now, even if this current situation is messy and there is not really a brand... maybe for some people it feels like there is a current brand, and they really feel they do it in a certain way... yeah, and we just assumed we presented the golden way"
Sophia Altekamp

Sometimes the case is that, although the information about the previous and current situation of the company has been collected by the designers, there is no actual time to reflect properly on it due to deadline pressures, what ultimately affects the end result of the project.

"'oh, the designers only have three nights to finish it, so move forward, no time to look where it comes from, no time to stand still and reflect, just (Jeroen makes sound of speed)', and then we have the luck that we have good designers so we kick ass, but that is where a lot of the value is lost in building it up, to be honest."
Jeroen van Geel

A clear process of turning input into output

In their experience with clients, it is important that the tools they use facilitate the easy understanding of how certain collected information has been transformed into a next step in the process of the tool. In other words, it is important that the tool has a “clear flow”.

“with this (tools) when you go through it (the different steps) and there is like a hick up, and then they (the clients) like don’t see it for themselves, I mean, they can fill it in if we tell them exactly what we need from them but then the kind of solving part is not with them and then it is harder to follow, and then it is also less their own.”
Sophia Altekamp

“The best situations with the ‘Brand Key’ and the ‘Archetypes’ was when they have this click moment and they really see it themselves, and they understand how we got there, if we miss that then it is always problematic”
Sophia Altekamp

5.3. Conclusions of the internal analysis

The results or insights collected with the Discussion session with Oak & Morrow about their design process, internal procedures and toolkit were further analysed in search of main conclusions or decisive knowledge that had to be taken into account when designing the tool.

This reflection or analysis of the collected knowledge, led to two main outcomes of the company analysis. These are, **first, the type of projects** within the studio's design services that the tool has to assist with, and **secondly, a list of 'requirements for the tool'**, that represent the characteristics the tool has to fulfil to fit Oak & Morrow's needs and practices.

5.3.1. Types of projects

As strategic design studio, Oak & Morrow offers different design services. Firstly, as explained previously when introducing the company in chapter 1, their expertise is both as visual design studio and strategic design studio. Secondly, within the area of strategic design, they provide design services such as 'Business and product innovation', 'Brand strategy' or 'Service design', among others.

During the Discussion sessions, the designers expressed the intention of the studio to evolve further into the role of strategic partner in design projects. More specifically, the designers expressed their interest in doing more projects that could be categorised under the design service of 'Business innovation'. By 'Business innovation', Oak & Morrow refers to projects that both start with an idea, a product or service that needs the creation of a business structure, or with an existing business that is need of reinforcement or an innovative update.

This insight from the discussion session facilitate a further scope of the assignment of the project. The expressed interest of the studio on this type of projects offers a focus point for the design of the tool. In other words, the **type of projects** that the tool should assist with should be those that fit the category of **'Business innovation'.**

5.3.2. Oak & Morrow requirements for the tool

The conclusions of the insights collected with the analysis of the studio are summarised in a set of 'requirements for the tool'. These are meant to add to the other criteria previously collected to structure the ideation process of the tool, and ensure that the final concept conveys all the important information that makes it valuable for Oak & Morrow's design activities.

Oak & Morrow's requirements for the tool

- *Packageable: fits in a Session/ Workshop setting or the tool is the end product*
- *Fits the design process of explore, dream, create*
- *"Building blocks" structure: is a piece that fits in different puzzles*
- *Formalises tacit knowledge*
- *Assists Oak & Morrow in Business and Product innovation projects*
- *Maps the current situation of the client as well as the aspirational one*
- *Has a "clear flow" of turning input into output*
- *Results are clearly communicated or visualised*
- *Fits in a process that starts with 'why?'*

5.4. Conclusions of the chapter

The fifth chapter of the report has explained the set-up and results of the research conducted in the project to collect insights about the internal design practices of Oak & Morrow. The research activities performed with this objective have been two “discussion sessions”. The focus areas of these sessions have been the design studio’s procedures, design process, and toolkit.

The insights of the discussion sessions are the most important information of the chapter. These are insights on Oak & Morrow’s procedures, their exact design process, the tools within their toolkit and the specific type of project on which the tool or final concept should focus (Business innovation). Although, overall, the main takeaway of this chapter is the “Oak & Morrow’s requirements for the tool”. These set of requirements collect the conclusions taken from the insights of the internal analysis on the company.

This chapter has dealt with the second area of research of the project. That area is concluded with the “Oak & Morrow’s requirements for the tool”. These offer a better understanding of what aspects the final concept has to fulfil to be tailored to the needs and existing design procedures of the design studio.

The next steps

The next chapter will explore the third and last area of research of the project, the subject of societal challenges, and how to have a systemic impact in projects related with them.

CHAPTER

6

What to consider when designing for societal challenges

Content

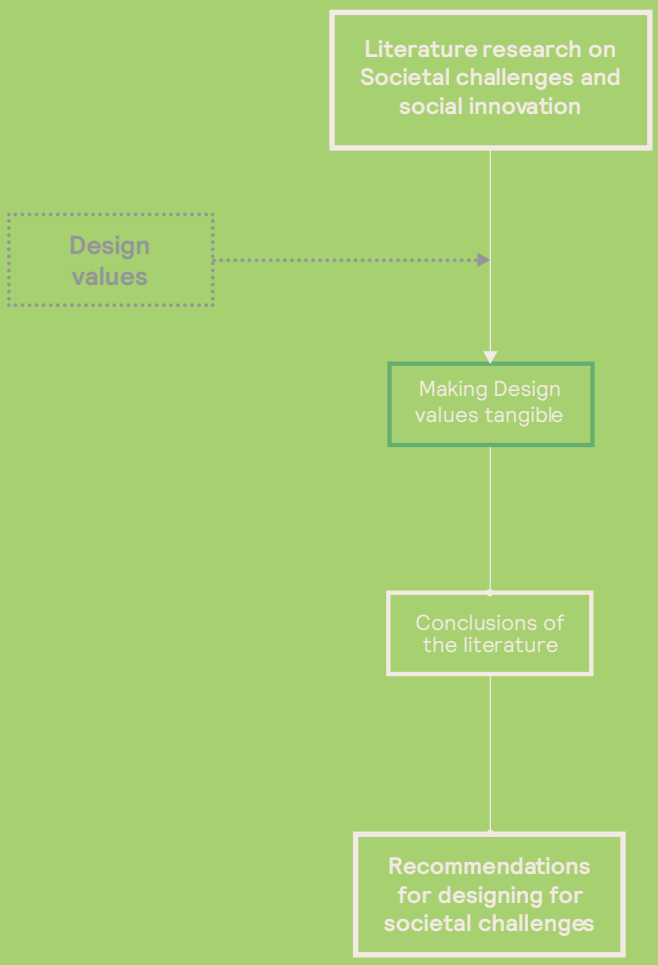


Figure 23. Steps from the research set-up explained in chapter 6.

In previous chapters, two of the three areas that the research of the project deals with have been presented. This chapter elaborates on the last area of research, that is the topic of Societal challenges. The set-up of this research has been visualised in Figure 23.

"Societal challenges" is the topic around which the assignment was reframed in the beginning of the project (as explained in chapter 2). Moreover, the final concept has to help the designers at Oak & Morrow design for this type of problems or questions. Therefore, the objective of the research on societal challenges is to gain a better understanding of what has to be taken into account when designing for societal challenges; what Oak & Morrow wants to strive for.

With this purpose in mind, the Design Values of Oak & Morrow will be revisited to guide the research on societal challenges. The reasons for bringing back the Design values, the approach to the research and the results of it are all explained in the following sections of the chapter.

6.1. Making Oak & Morrow's Design Values tangible

Oak & Morrow is interested in undertaking projects that deal with societal challenges, to develop solutions that have a positive, long-term, systemic effect on society. The tool or final concept of the project has to assist the designers in that endeavour. Therefore, research on what has to be taken into account when designing for societal challenges is needed to design a tool that is valuable for Oak & Morrow.

The field of social innovation studies how to develop solutions for societal challenges or social needs with a positive social effect, up to the level of systemic impact. This field has generated a vast amount of research on the matter; hence, a further structure on how to approach the research on societal challenges is needed.

The research on societal challenges and social innovation will, therefore, be tackled from the specific priorities that Oak & Morrow has when working on projects related to societal challenges. These priorities were portrayed in the Contextmapping session that was conducted at the beginning of the project and gave form to the final assignment, under the name of "Design Values of Oak & Morrow" (Design Values: 'Positive social impact', 'Aim for a deep change', 'Tackle the big picture', 'Sustainable in the long term', 'Collaborative process', 'Just make it work').

However, the Design Values of Oak & Morrow are still abstract in their formulation. In their current state, they are not sufficiently defined to be useful information, on their own, during the ideation process. On the other hand, they are a crucial aspect in this area of research of the project, as they express the perspective of the design studio on the topic of societal challenges.

To conduct a research on societal challenges from the perspective of Oak & Morrow, the Design values of the studio will be used as starting point. The topic that each value deals with will be explored further with literature on social innovation, ultimately making the Design Values tangible and explaining what they mean for the practice of designing for societal challenges.

6.1.1. Design Values

In this section, questions that aim at specifying the content of the Design Values have been formulated for each value. These questions have then been answered with the insights collected in the literature research on social innovation.

1. Positive social impact

Positive social impact is for Oak & Morrow the creation of benefits for the society and a silent effect of good, human-centred design.

Questions:

- ***What is the meaning of positive social impact?*** *To reply to the question of What is the meaning of positive social impact?, another question is proposed;* ***What is social impact?***
- ***How to create positive impact in society?/ How to create value for people/society?***

What is social impact?
Social impact is defined by Vanclay (2003) as:

"changes to one or more of the following:

- *people's way of life – that is, how they live, work, play and interact with one another on a day-to-day basis;*
- *their culture – that is, their shared beliefs, customs, values and language or dialect;*
- *their community – its cohesion, stability, character, services and facilities;*
- *their political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose;*
- *their environment – the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources;*
- *their health and well-being – health is a state of complete physical, mental, social and spiritual well-being and not merely the absence of disease or infirmity;*
- *their personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties;*
- *their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children."*

Therefore, if changes are generated in the previously defined areas, that deliver value to people, a positive social impact is created. To make the term "positive social impact" more tangible and be able to translate it into recommendations for the tool to be developed, it could be rephrased as "to generate value for people in the different areas that affect their everyday lives".

With this definition in mind, the next question is:
How to create value for people/society?
Human-centered design and social innovation focus deeply on delivering value to the user of a

project. To create value for the users, it first has to be researched what is valuable for them, to then focus on delivering that value with the solution created.

What the Design Value of 'positive social impact' means for the development of the tool is that, when designing for societal challenges, a focus on **uncovering what is valuable for the user and the community in the different areas* that affect their everyday lives, and deliver that with the solution** is needed (*the different areas explained by Vanclay, 2003).

2. Aim for a deep change

A project's result should have a deep impact and elicit a social change by, for example, generating new conversations and partnerships.

Question:

- ***How to design solutions that elicit a deep impact or social change?***

How to design solutions that elicit a deep impact or social change?

Those solutions that act as positive changing agent in society can be referred to as 'transformative social innovation'. That is what Oak & Morrow considers the projects that tackle societal challenges should aim for; although most design interventions in this field result in experiments that do not evolve to the transformative level (Mulder & Kun, 2017). Therefore, to avoid the creation of only interventions or experiments, it can be said that **the solutions the tool has to facilitate to design, are those that could be placed in last three stages of social innovation; starting from the 'Sustaining' stage, to be later evolved throughout 'Scaling' and 'Systemic change'** (Murray et al., 2010).

Prototyping for social change

Designerly approaches such as prototyping may be more successful at triggering transformative processes than, for example, policy visions. Prototyping can be used as "a way of communicating between different parties" and can generate insights on the different perspectives of the stakeholders involved and allow iterating towards a shared view. (Mulder & Kun, 2017). As Mulder and Kun explain, "the powerful aspect of iterative development is to keep the tangible solutions close to its users, and continuously adapt the feedback in the following prototypes". Therefore, a recommendation when 'aiming for a deep change' with the solutions developed is to **facilitate the creation of prototypes as a way of collecting insights from the different stakeholders (including users).**

Sustaining

To be sustainable in the long term the solution needs to have an innovative business model (Mulder & Kun, 2017). 'Old economy' business models that focus on the generation of revenues only for the company do not address the common good or the real need of the community. Instead, **innovative business models that create "shared value" with their business proposition** have to be developed (Kramer & Porter, 2011).

Scaling
Social innovation has "political, organizational and cultural implications" (Mulder & Kun, 2017), therefore, to scale a project or solution related with a societal challenge to the next level towards systemic change, **interdisciplinary relevant stakeholders have to be involved** (Mulder & Kun, 2017). **Scaling is a collaborative process.**

Systemic change
To cause a "deep" or systemic change with a solution is the end goal of making it sustainable and scalable. Depending on the breadth of its impact, an innovation that tries to tackle the needs of a community and addresses a societal challenge, will contribute or not to ultimately reshape society (Mulder & Kun, 2017). The Young Foundation, defines the innovations that succeed at this as those "that radically transform some of the fundamental systems on which we depend - how food is provided, healthcare, housing, learning, etc. - according to fundamentally different principles" (Murray et al., 2010). **The solutions that aim at having a deep change, have to create a change of mindset in all the sectors of business, government, civil society and the household and have to take all these sectors into account in its conception**. Systemic change is caused by the cumulative of changes in behaviours, habits, business models, policies, professional practises, laws, etc. (Murray et al., 2010).

3. Tackle the big picture

The objective is to undertake projects that aim at solving a somehow wicked, systemic problem. The "deep roots" of a problem should be grasped.

Question:

- ***How to develop solutions that tackle the deep roots of a problem?***

How to develop solutions that tackle the deep roots of a problem?
To tackle the deep roots of the problem, the solutions designed have to evolve through the last three stages of social innovation of the Young Foundation's spiral until the 'Systemic change' (Murray et al., 2010). Therefore, this question can be answered with the information collected to answer the question of the previous Design value. The meaning of the Design value of "Tackle the big picture" is embedded the value of "Aim for a deep change".

4. Sustainable in the long term

Projects related to urban and social problems should aim at offering a solution that is socially, environmentally, economically sustainable in the long term and delivers value through time.

Questions:

- ***How to create sustainable solutions?***
- ***How to deliver value through time?***

Hand in hand with designing for societal challenges goes the aim of creating solutions that are socially, environmentally and economically sustainable and that deliver value for the community through time. This is a complex endeavour, although there are guidelines that have been created by experts of each field that, if followed in the project development, could ensure that the solution is in the direction of being sustainable on the three fronts. Therefore, **it has to be considered in the development of the tool, to attach a set of guidelines for social, environmental and economic sustainability and the step of considering these three aspects in the ideation of the solution.**

Environmental and economic sustainability are fields more susceptive to formalisation than social sustainability. As explained by Woodcraft et al. in Young Foundation's 'Design for Social sustainability' (2011) social sustainability "cannot be prescribed in the same way that the standards for green building or environmental sustainability can." The Young Foundation defines social sustainability as: "A process for creating sustainable, successful places that promote well-being, by understanding what people need from the places they live and work. Social sustainability combines the design of the physical realm with the design of the social world – infrastructure to support social and cultural life, social amenities, systems for citizen engagement and space for people and places to evolve." Taking this definition into account, it has to be highlighted as a requirement of the tool **to ensure the creation of social sustainability, the focus on studying the needs and values of the community the project is tackling.** Although this seems an obvious step in any human-centered design process, it is important for the creation of the tool to point at it as a core step of the design process it has to facilitate. Additionally, because the aim of sustainable solutions in the long term is to deliver ongoing value, **practices from the discipline of Futures thinking that could allow the designers to foresee what the community would consider valuable in 5 to 10 years time have to be included in the tool.**

The perfect solution for this design value, would be that one that aims at being socially, environmentally and economically sustainable while evolving its value proposition hand in hand with the evolution of the community.

Example of guidelines for Social sustainability:

- *Young Foundations's Framework for designing social sustainability (Amenities and social infrastructure; Social and cultural life; Voice and influence; Space to grow) (Woodcraft et al., 2011, p. 22-23)(Figure 24)*

5. Collaborative process

Projects are more interesting if they enable the studio to have a close collaboration with experts from other areas in the analysis of the context or the development of the solution.

Questions:

- ***How to facilitate a collaborative process?***
- ***How to connect with experts for exchanging***

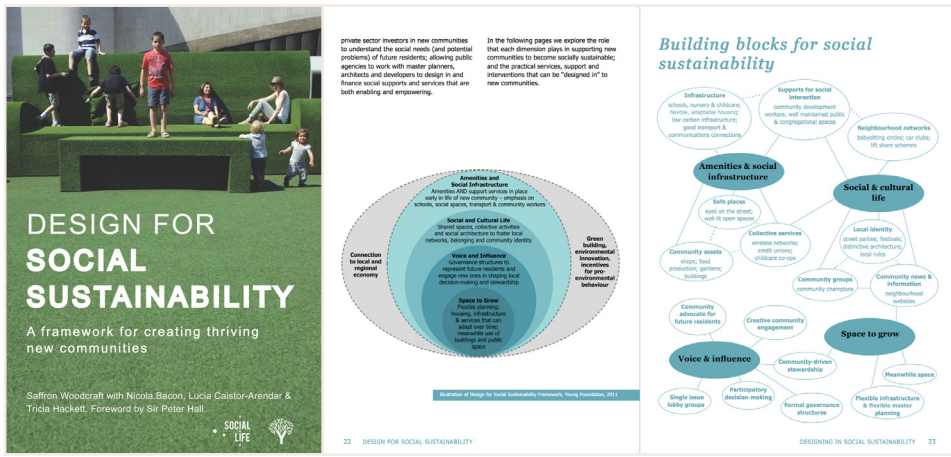


Figure 24. Cover and pages 22 - 23 of the publication of the Young Foundation on Design for Social Sustainability.

knowledge/ a co-creation process in a project?

This is a design value that is very much on spot with what is needed for having a systemic impact with projects related with societal challenges. As explained before when discussing the requirements for the Design Value 'Aim for a deep change', in order to scale a project towards systemic change, it is needed to have a collaborative approach. **How can the connections with experts and the collaborative process be facilitated?** This is something that has to be further explored by consulting tools and methods that facilitate connecting with experts and create a collaborative process.

6. Just make it work

Real solutions are the ones that simplify design and focus on functionality. They just work, without the user even noticing. They are simultaneously scalable; they can work for one user or for multiple.

Question:

- ***How to design working solutions for different users/use cases?***

This Design value is quite concrete regarding the values that it holds. It advocates for the need of working solutions in which the design decisions have been simplified to the essential, and that are inclusive to users of all ages, cultural background and capabilities. The discipline of Universal design is concerned with this type of solutions.

Through research and publications, the discipline of Universal design, represented by different associations and university departments around the world, offers guidelines and recommendations to designers, policy makers and other professionals on how to achieve these type of solutions. In 1997, a working group of architects, product designers, engineers and environmental design researchers developed the 7 Principles of Universal Design, in the North Carolina State University (Authority & Design, 2017). These principles are still the main guidelines among the field and aim at guiding professionals at designing universal solutions (Figure 25).

This example is one of the available resources that can be consulted when aiming at finding advice for designing working solutions for different types of users. When designing for societal challenges, the designers at Oak & Morrow can consult the example given or find their respective sources on the matter. The takeaway of this Design value, is that **guidelines for Universal or Inclusive design should be considered when designing working solutions for societal challenges that include different types of users.**

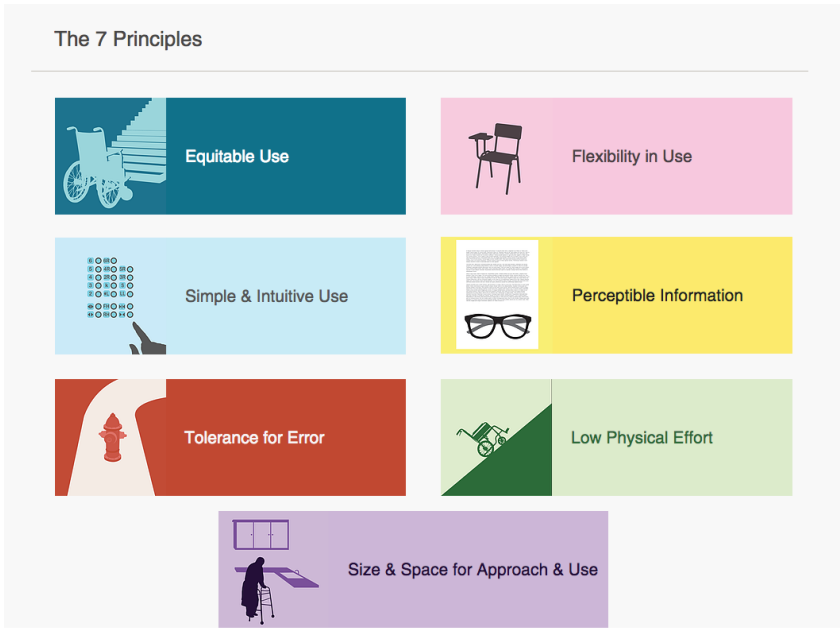


Figure 25. Impression of a website where the 7 Principles of Universal design have been visualised.

6.1.2. Conclusions of the literature research on societal challenges

The process of reviewing literature on social innovation to answer the questions that specified each Design value, has generated divers insights on designing for societal challenges. These insights have been processed in the format of recommendations or guidelines for designing for societal challenges. With this structure, the objectives that each Design Value of Oak & Morrow conveyed, in addition to further insights of the research, can be easily taken into account in the design of the final concept.

Recommendations for designing for societal challenges:

- ***Focus on uncovering what is valuable for the user and the community the project is tackling and deliver that with the solution.***
- ***Facilitate the creation of prototypes as a way of collecting insights from the different stakeholders (including users).***
- ***Develop innovative business models that create "shared value" with their business proposition.***
- ***Involve interdisciplinary relevant stakeholders. Scaling is a collaborative process.***
- ***Take into account the interrelations with the sectors of business, government, civil society and the household in the conception of the solution. Aim at creating a change of mindset in the long term in all sectors.***
- ***Attach a set of guidelines for social, environmental and economical sustainability and the step of considering these three aspects in the ideation of the solution.***
- ***Facilitate designers to foresee what would add value for the community in 5 to 10 years time.***
- ***Create ways for connecting with experts and facilitating a collaborative process.***

6.3. Conclusions of the chapter

The sixth chapter of the report has discussed the third area of research of the project, that is the topic of societal challenges. The purpose of researching this topic has been to gain a better understanding of what has to be taken into account when designing for societal challenges. Therefore, the research has been approached by reviewing literature and online articles on societal challenges and social innovation. An objective included in this research has been to make the Design Values of Oak & Morrow tangible, or actionable, so that the ideas they conveyed could be included in the ideation process of the final concept. This, making the Design values tangible, has been achieved by creating research questions that explored further the meaning of each Design value. The questions have defined the starting points and a focus of the literature research on social innovation and societal challenges.

The main takeaway of this research is the set of "Recommendations for designing for societal challenges", that are the conclusions deduced from processing the insights of the literature research.

The next steps

In the next chapter, these recommendations will be used next to the conclusions of the other two areas of research, to shape the ideation process of the final concept.

CHAPTER

7

Designing the toolkit

Content

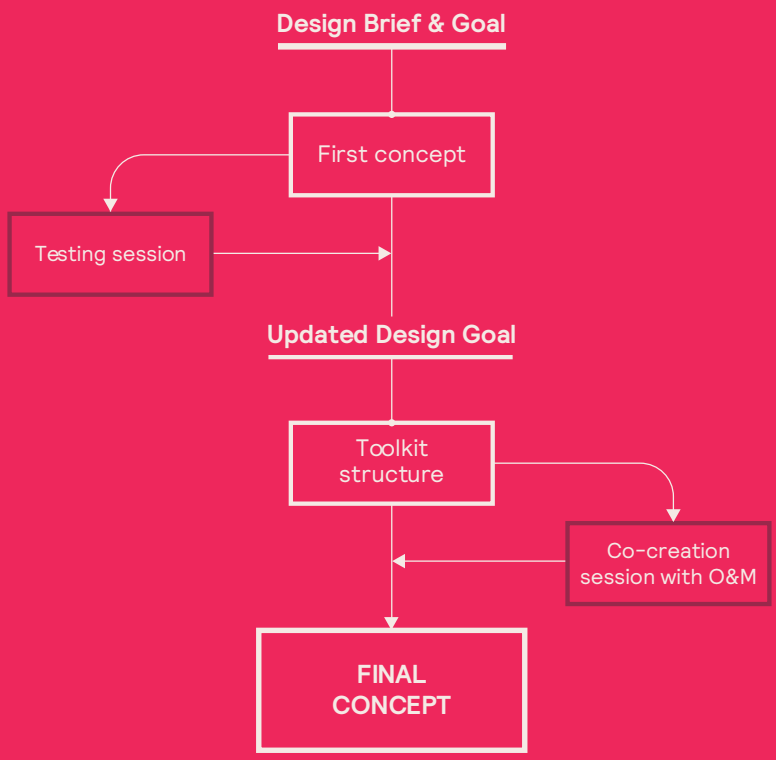


Figure 26. Steps of the ideation process.

The previous chapter concluded the research phase of the project. The next phase is designing; this chapter explains the ideation process of the project. The purpose of the ideation is to design a tool or final concept that assist Oak & Morrow when designing for projects that tackle societal challenges.

The conclusions of the different areas of research combine into an overview of requirements for the final concept that will guide the ideation phase. In total, three sets of different criteria, have been generated with the insights of the literature and generative research. These are the "Tools criteria" that lead to the list of "Valuable tools", the "Oak & Morrow's requirements for the tool", and lastly the "Recommendations for designing for societal challenges", developed in the previous chapter. With these different criterias a design goal will be formulated.

The ideation process includes different iteration and evolutions of an initial concept, as result of a testing session with design students and graduates and a co-creation session with Oak & Morrow. All these steps of the process, visualised in Figure 26, help define the final concept of the project.

7.1. Review of the criteria for designing the tool

Based on the conclusions of the three research areas, different sets of requirements have been created. These requirements have been gathered in a design brief that will guide the ideation phase (Figure X).

The ideation phase of the project has the objective of developing a tool or set of tools for Oak & Morrow, that would assist the designers of the studio in projects that tackle societal challenges. This final concept, has to fulfil the set of requirements included in the design brief.

Design goal

"To design a tool or set of tools for Oak & Morrow to tackle business innovation projects related with societal challenges. The tool has to fulfil the "Oak & Morrow requirements", follow the "recommendations for designing for societal challenges", and have a structure and content inspired in the Futures thinking and Strategic design tools collected with the "tools criteria" that are applicable to the project."

Design Brief

TOOLS CRITERIA

Reflexion from the research:
"Combine the human-centeredness of Strategic design with the consideration of the macro-context and the complex system thinking of Futures thinking in the initial phase of projects"

Type of projects:
Business Innovation

- *Initial phase of the project FFE*
- *Design for all type of societal challenges*
- *Focus on users' needs, problems and interests*
- *Facilitate collaboration among professionals with different expertise*
- *Scan the macro-context for inspiration and collect information*
- *Collect signals*
- *Analyse signals collected*
- *Understand the possible interrelations and the implications of future changes for the domain at hand*
- *Reflect on how past drivers and trends affected users' past behaviour*
- *Understand the effect of the evolution of these drivers on users' behaviour*
- *Design practical, functioning solutions that are scalable (and could be invisible for the user)*

OAK & MORROW'S REQUIREMENTS FOR THE TOOL

- ☐ *Packageable: fits in a Session/ Workshop setting or the tool is the end product*
- ☐ *Fits the design process of explore, dream, create*
- ☐ *"Building blocks" structure: is a piece that fits in different puzzles*
- ☐ *Formalises tacit knowledge*
- ☐ *Assists Oak & Morrow in Business and Product innovation projects*
- ☐ *Maps the current situation of the client as well as the aspirational one*
- ☐ *Has a "clear flow" of turning input into output*
- ☐ *Results are clearly communicated or visualised*
- ☐ *Fits in a process that starts with 'why?'*

RECOMMENDATIONS FOR DESIGNING FOR SOCIETAL CHALLENGES

- ☐ *Focus on uncovering what is valuable for the user and the community and deliver that with the solution.*
- ☐ *Facilitate the creation of prototypes as a way of collecting insights from the different stakeholders.*
- ☐ *Develop innovative business models that create "shared value"*
- ☐ *Involve interdisciplinary relevant stakeholders. Scaling is a collaborative process.*
- ☐ *Take into account in the conception of the solution the interrelations with the sectors of business, government, civil society and the household. Aim at creating a change of mindset in the long term in all the sectors.*
- ☐ *Attach a set of guidelines for social, environmental and economical sustainability and the step of considering these three aspects.*
- ☐ *Facilitate designers to foresee what would add value for the community in 5 to 10 years time.*
- ☐ *Create ways for connecting with experts in a collaborative process.*

7.2. Ideation process

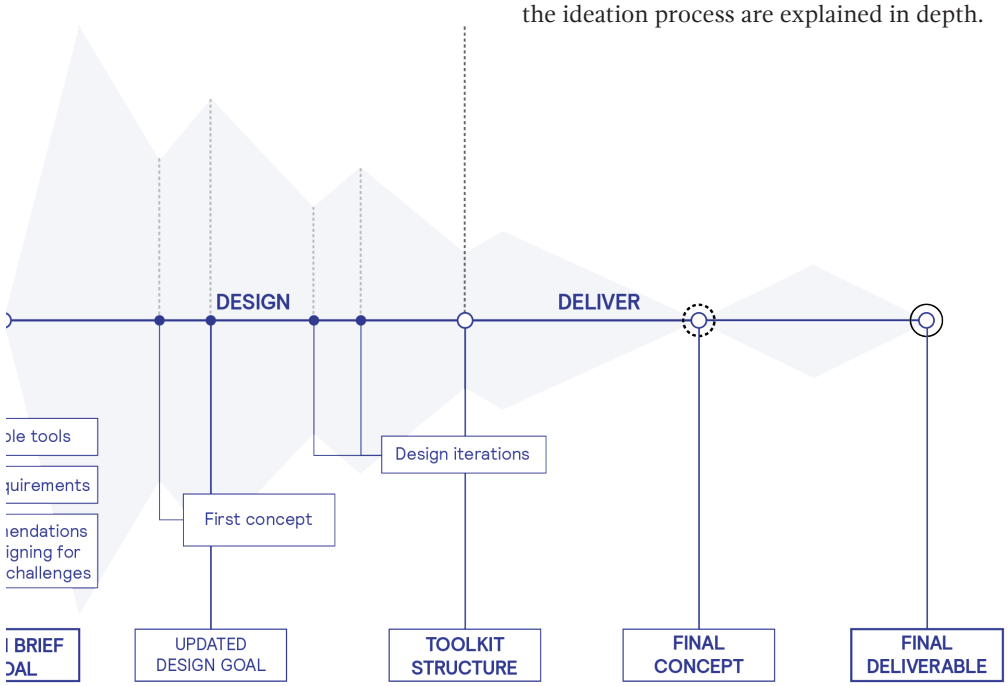
7.2.1. Approach to the design of the tool

To approach the ideation of the tool, the content of the design brief is analysed and some focus points or priorities are selected to simplify the start of the ideation process. These selected requirements, help in initially defining the aspects of the structure of the tool, the process, and the outcome.

With these basic aspects defined, a first concept of the tool is designed. The purpose of this initial prototype is to test it with design practitioners, in this case design students, to observe how they would approach the different processes that the tool has to facilitate and validate the concept with them. A testing session is set up, and the insights collected from observing the students use the tool and reviewing their opinions about it are used to continue with the ideation process.

A new concept that expands the reach of the first prototype and aims at including all the requirements of the design brief is created. This concept, in a rough state, is presented to the designers at Oak & Morrow in a co-creation session. In this session the designers of the studio discuss their opinions and preferences regarding the concept and propose different additions and modifications of it. With these insights in mind, the final concept is designed.

In the following sections, each of these steps of the ideation process are explained in depth.



7.2.2. Designing and testing the first concept of the tool

The first prototype of the tool has a simple structure, where the details have been intentionally kept to a rough level. This way, when testing it with designers, it could be observed how they interpret and choose to proceed in the different steps of the tool. The conclusions of this observations could give guidance on how the concept should be evolved.

The first concept

The prototype (Figure 27), has been designed to convey an initial set of criteria from the Design brief that are considered priorities in the ideation process. These requirements have helped define the structure, process and outcome that the tool should have:

Tool to be used in the initial phase of a project (FFE) to design for societal challenges:

Structure

The tool/toolkit has to be used in a workshop-session setting.
- If the concept is a toolkit, the different tools have to be both used separately and together as a whole (puzzle pieces)

Process

The tool/toolkit should consider the macro-context as source of inspiration.
- The tool/toolkit should map current knowledge for both the client and the team of designers.
- The tool/toolkit has to focus on uncovering and deliver current and future value for the user/community.
- Within the stages of social innovation, the outcome of the tool/toolkit should would be ready for the stage 'Sustaining' to, further on, work on the concept towards the stages of 'Scaling' and 'Systemic change'.
- "Designerly" approaches such as prototyping could be used to collect insights from the community of study.
- The tool/toolkit should facilitate at some point of the process the collaboration or co-creation between different experts and relevant stakeholders (or users). This relationships generated should be maintained and reinforced in the next stages of the project towards 'Scaling' and 'Systemic change'.

Outcome

- The tool/toolkit's has to facilitate as result uncovering value opportunities that are shaped into innovative business models that create "shared value" for the organisation and the community.

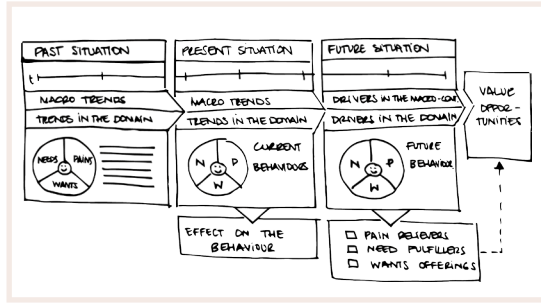


Figure 27. Visual of the first prototype of the tool

Testing session with SPD students and graduates

Goal of the session: Concept evaluation

The purpose of the first concept and the testing session is to gather insights on how designers would approach the use of the tool. Moreover, the first concept has been designed to focus on facilitating certain specific activities. How designers experience these, has as well to be tested, to explore if, and how, they could be included in the final concept. These activities, or characteristics of the first concept, are the following:

- ***Mapping the past, current and future situation.*** *This could be valuable to understand the natural evolution of the context explored.*

- ***Collecting signals.*** *No structure at all was given to the participants for this to see what are the natural ways of doing this by a small group of people with reduced time and no special expertise in the domain of the project. (This would be the situation if this exercise would be done by the designers at Oak & Morrow).*

- ***The value of including macro trends as well as those in the domain of the problem.*** *Does it help to uncover interrelationships? How? Can users translate from past and present trends to future drivers?*

- *An overall* ***focus on the user's behaviour and how this one evolves.*** *To create value for the user we have to anticipate what will be their future behaviour, or needs, pains and wants. The intention here for the testing session is twofold; first, test if mapping past and present behaviours next to trends helps in foreseeing what would be future behaviour, second, if a strong focus on the user in the tool facilitates to think in value opportunities. It is also interesting to observe how participants collect all this information needed with reduced time and no direct access to users.*

- ***Effect on the behaviour.*** *This is the main idea of the tool and one of the main objectives for testing. To foresee the future behaviour of the user, we first would reflect on how trends will affect their behaviour. Does it add value to the process to think in how macro-trends and trends in the domain will change user's current behaviour? What is the level of difficulty of this exercise with the information of the tool? What is the mental process of the participants in this exercise? In what other ways could this be done?*

- ***Value opportunities as outcome****. One of the options considered for the tool is that it would focus on uncovering what is the value for the user and formulate value opportunities as an outcome. The process of the tool could become too extensive if the translation from value opportunities to tangible idea has to be included as well. Once a good value opportunity has been pointed out, another tools such as the Business Model Canvas could be use to make this value opportunity tangible into a business proposition. The designers at Oak & Morrow are experienced in translating abstract information into a tangible concept, therefore this is considered as an option.*

With the prototype designed and the aspects to

test defined, the testing session is set up with six master students of the faculty of Industrial Design Engineering of TU Delft. The students have been presented with a case and asked to use the tool in tackling that case. After using the tool for the case, the students have answered a qualitative questionnaire on the experience of using the tool. The details on the set-up and methodology of the session can be seen in Appendix D.

Testing and evaluation insights

From the observations made during the testing session and the opinions expressed by the participants in the qualitative questionnaire, different insights have been collected.

In the qualitative questionnaire, the participants were asked to elaborate on whether the tool fulfilled in their experience the requirements that had been initially set when designing it (the requirements prioritised from the design brief to define the structure, process and outcome of the

first concept). The complete qualitative questionnaire and the participants answers to it can be seen at Appendix D.

The reflections from the results of the session are the following:

Regarding its applicability for being used during the FFE:

- *The tool helped map the existing scenario and define the problem better through the needs, wants and pains of the user, but these latter ones should be explored more in depth. Before using the tool you need to collect a lot of information on trends, and have defined your user in depth as well. The exercise of reflecting on the information of the past to help in the solution should be better facilitated.*

Regarding assisting in designing for societal challenges:

- *The tool helped in guiding the group process, and thinking about the context of the problem over time, the trends, and developing a future view, but it lacked focus on solving a societal challenge.*

Regarding its applicability for being used in a workshop-setting:

- *The desk research to collect information about the past situation and the trends should be done individually beforehand. The workshop setting is good for discussing the interrelations between trends and behaviours, and share knowledge about trends. The past and present situation could already be framed beforehand. The steps of the "Effect on the behaviour" and the future situation would be the ones conducted as a workshop.*

Regarding allowing to map the current situation of the context of the project:

- *The tool gives an overview of what factors play a role, especially regarding the user, with the "needs, pains and wants" and "effect on behaviour". Not the entire context was mapped. The stakeholders involved, apart from the user, should be mapped in any way. Using a timeline would be more helpful than dividing it into the past-present-future phases.*

Regarding clearly turning input (collected information with the tool) into output (generated information, conclusions, etc.):

- *The problem definition needs to be more prominent. The user "needs, pains and wants" and the "effect on the behaviour" section helps with coming up with the "value opportunities". Last step (Future situation) was confusing (what is the need for drivers?). "Value opportunities" could be a horizontal item along the tool that you could use as a "brain pool" because you can come up with ideas both in the present and future situation. Clarify how a trend flows to the next step. "Effect on behaviour" and "future situation" should have more guidance.*

Regarding generating solutions with a focus on delivering ongoing value:

- *The trends mapped were very general and all those elements were not on the participants' minds. They focused more on solving the needs and the problem of the case. They missed a guiding path towards socially, environmentally, economically sustainable solutions.*

Regarding facilitating the design of concrete, practical and tangible outcomes:

- *Value opportunities were useful for next idea generation: tangible solutions were designed but not especially concrete or practical.*

7.2.3. Iteration on the first concept: Toolkit structure

The reflections on the insights from the testing session have lead to an iteration on the concept of the tool and the realisation of the need of updating the initial design goal. The concept to be designed has to be a toolkit, due to the different phases needed to conduct a Futures thinking process, that cannot be all included in a single tool.

The Futures thinking process, has different steps or activities that can be prolonged over time, such as looking for trends and collecting emerging issues. Therefore, the idea is to develop a toolkit that contains different tools or exercises that tackle the phases of a Futures thinking process and a business innovation design process. The value that a Futures thinking process could have in preceding the Strategic design process (that includes business innovation) was discussed the literature review of chapter 3.

Steps towards developing the toolkit structure:

What are the different phases of the toolkit?
The main structure of the toolkit have been developed around the existing canvas of the first concept, by reflecting on the insights of the testing session. The different phases within the toolkit have been established by reflecting on the main conclusions of the research of the project. All three areas of research of the project have been considered.

From Futures thinking, the main process of the discipline has served as inspiration to decide on the first steps that the toolkit had to take. The key objectives of the first phase of the toolkit has to be facilitating the Futures thinking activities of 'exploring the macro-context to collect signals' and 'looking for the interrelations within these signals collected and their effect'.

Oak & Morrow's design process, with the three phases of 'explore, dream, create', has also been considered. 'Explore' would be the phase of Futures thinking of scanning the macro-context in search for trends and signals of change. 'Dream' would be the phase of using the knowledge generated in the 'explore' phase to devise a future scenario and develop the idea of the possible business. 'Create' would be the phase to make tangible all that previously devised, and come up with a business model for the idea chosen.

Moreover, the insights from the literature research on societal challenges and social innovation were also considered. The insights on how to take a project up through the three last phases of social innovation, 'sustaining', 'scaling', and 'systemic change', offered inspiration for how to structure the last steps of the tool. Creating a viable business model for the idea sets the project already at the 'sustaining' stage of social innovation. However, further steps in the toolkit that would take the solution up the last stage of having a systemic im-

pact should be added.

What are the requirements that have to be fulfilled in each phase of the toolkit?
With an initial idea of the different phases of the toolkit in mind, the next step has been to revisit the different criteria developed for the design of the toolkit. The criteria have facilitated the process of designing the toolkit, because of pointing at what the toolkit has to do in each of the steps and phases. Once all these criteria have been assigned to the right phase, and the needs or objectives of each of these phases has been further defined, it is the moment to bring back the list of valuable tools.

What tools tackle or help achieve those requirements?
The valuable tools are distributed per requirement or criteria, result of the filtering process explained in chapter 4. Therefore, the tools of the list related to the requirements of each phase or step of the toolkit have been checked for inspiration. These step has helped define further the tools needed within each step of the toolkit.

What is the type of input that has to be collected and output that has to be delivered, in each phase?
Finally, the flow of information of each process within the toolkit has been determined. The flow of information is the input (the information collected or needed to use a tool), and the output (the information that results from the process of using a tool). This step has allowed to check that each tool and step, already defined for the toolkit, would generate the right output and would be meaningful in that position within the toolkit.

(In parallel) What are the tools used within each phase and their exact format?
Having the list of valuable tools per phase ease the process of designing the tools within the toolkit, but in some cases further research on tools and methodologies of, for example, Futures thinking had to be conducted. In parallel, a co-creation session has been held with designers from Oak & Morrow to develop the final selection of tools that the toolkit would include and the formats of these. The session was the last step of this ideation process of the toolkit and after it the last details of the final concept have been arranged.
More information on this session and its results is given in the next section.

7.2.5. Co-creation session with Oak & Morrow

Once the overall structure of the toolkit has been designed, to decide what exact format the tools within each phase would have, a co-creation session with Oak & Morrow has been organised. The objective of the session is to show the structure, content, and purposes of the toolkit to the designers at Oak & Morrow that will use it and discuss the last details to have a final concept adapted to them. The designers at Oak & Morrow are expert users; they will be the users of the toolkit and are experienced in using and developing design methodology. Therefore, their input on the design of the toolkit is very valuable.

The session has been conducted with designers Jeroen van Geel and Sophia Altekamp. After pre-

senting to the designers the design of the toolkit and explaining the reasoning behind each design choices, they have been encouraged to give feedback on the toolkit. Moreover, they have been asked to draw on paper the different ideas that they had on the different formats for the tools and changes in general to the toolkit. Their thinking behind each of their drawings or proposals has been discussed to understand the best way to convey their feedback in the final design of the toolkit.

During the session, the designers have been presented with an evolved version of the first concept of tool that was used in the testing session with design students (Figure 28). This "second prototype" has been designed taking the insights of the testing session into account. The objective is to use it as the main tool during the 'translating phase' of the toolkit. The content and format of this tool has been as well discussed with the designers during the co-creation session, and changed have been proposed for its final design.

The information collected from the co-creation session on the designers' opinions on the toolkit and proposals of tools has been processed and analysed in search of the main insights. The conclusions taken from these insights have been implemented in the final concept of the toolkit, in combination with other conclusions of the ideation process. The main transcripts and results of the co-creation session can be seen in Appendix E.

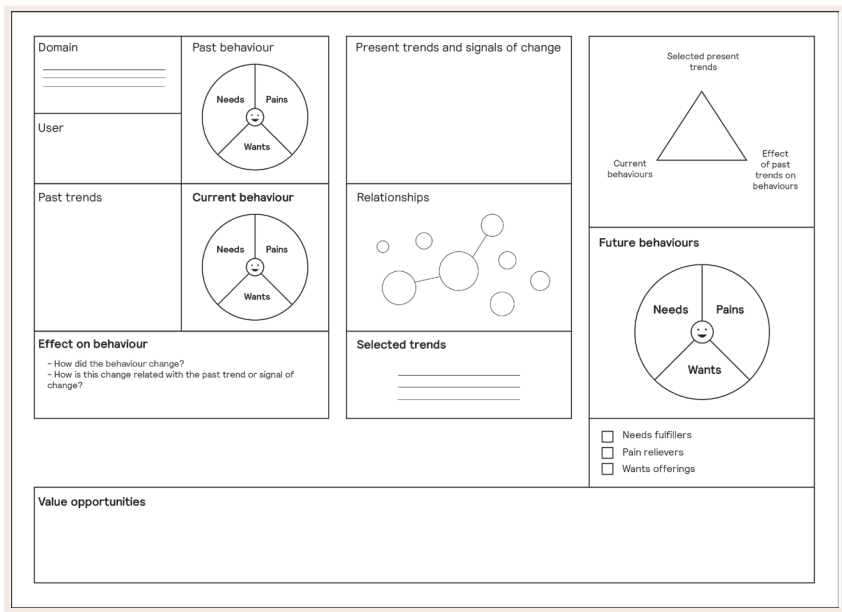


Figure 28. Second version of the first concept of the tool, updated with the insights of the testing session with students.

7.3. Final concept

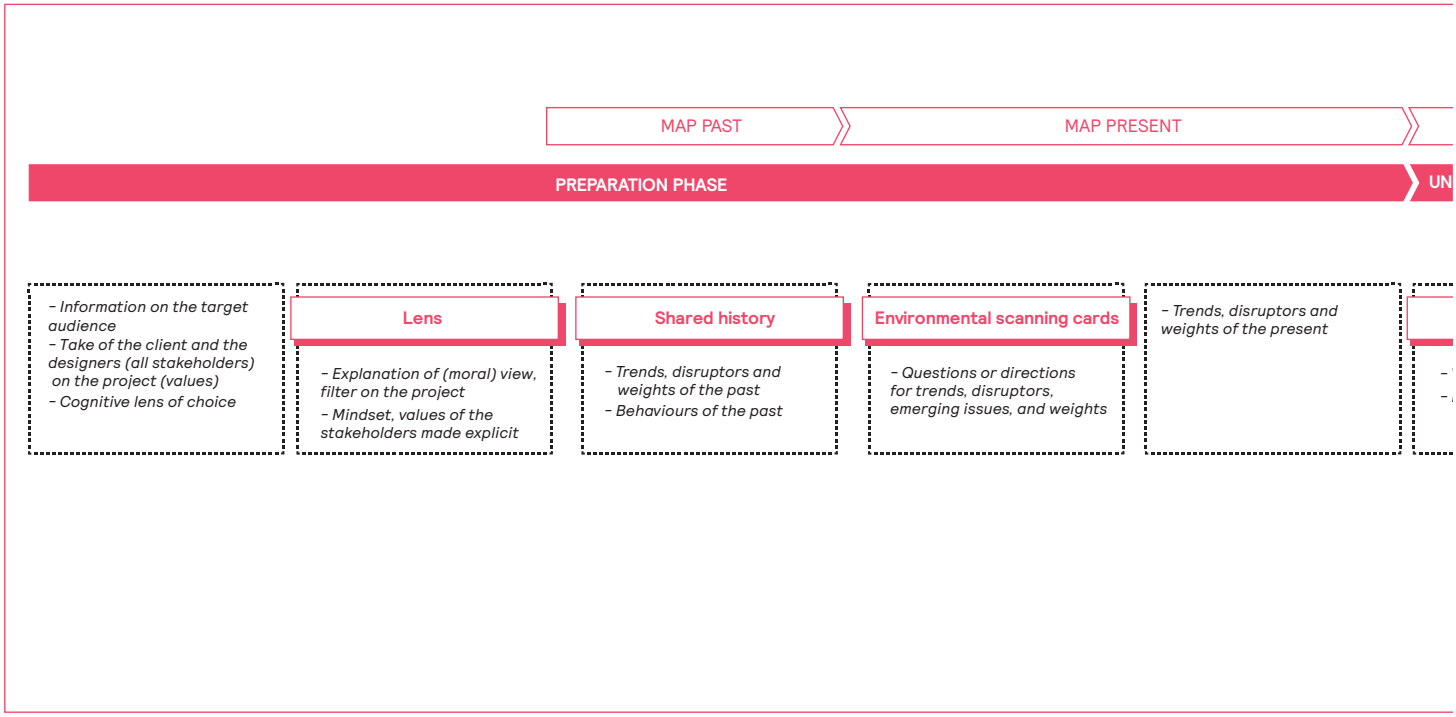
With the conclusions of the co-creation session, the last details of the toolkit have been defined. The final adjustments to the design of the toolkit have been made. In this section, the result of the design phase of the project in its definite structure is presented.

Final structure of the toolkit

In Figure 29, the structure of the toolkit has been visualised: the different phases, tools within each phase and information flow (input and output) between each of the tools.

The toolkit contains different tools that are structured under the phases of:

Toolkit structure



1. Preparation phase:
The phase for setting the base for the project, align mindsets and collect information to use further on in the process.

Actions within this phase:

- *Discuss which is the societal challenge domain to tackle, the user, the values of the project, the timeline that will be explored, etc.*
- *Collect past and present trends, disruptors and weights, and explore user's past and present behaviour.*
- *Map and analyse interrelations among the different information about the future collected to uncover emerging patterns or other insights of the future.*

2. Uncovering value opportunities:
The phase for using the information and insights collected in the Preparation phase, to uncover 'value opportunities'.

Actions within this phase:

- *Analyse the interrelationships between the information about the future collected (trends, disruptors, weights) and user's behaviours.*
- *Develop a 'future scenario'*
- *Generate 'value opportunities'.*

3. Towards systemic change:
The phase to define a specific business proposition around the 'value opportunity' and establish a long-term plan towards having a positive systemic impact in society with it.

Actions within this phase:

- *Develop a business model of the 'value opportunity' that focusses on generating "shared value" and being socially, financially and environmentally sustainable in the long term.*
- *Discuss and establish a long-term plan to advance the business through the social innovation stages of 'scaling' and 'systemic change'.*

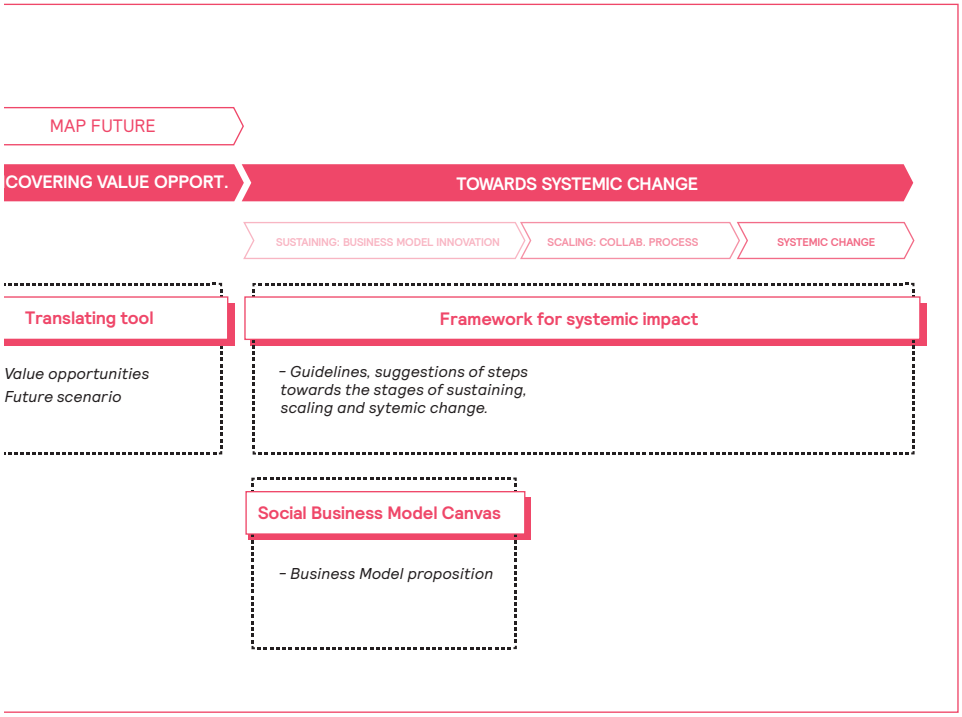


Figure 29. Structure of the toolkit

7.4. Conclusions of the chapter

The seventh chapter of the report has dealt with the design part of the project. In this chapter, the design brief and design goal have been presented; these combine the main conclusions and criteria generated in the research part of the project. Starting from that design brief and design goal, the different steps in the ideation process have been explained. The objective of these ideation process was to create the final concept of the project that would assist Oak & Morrow when designing for projects that tackle societal challenges.

The initial steps of the ideation process have led to the design of the first concept of a tool. The testing of these tool with design students has lead to the conclusion of iterating on the design goal. The new design goal has been to create a toolkit, to be able to contain the different phases of Futures thinking, business innovation and social innovation wanted in the final concept. To establish the structure of this toolkit, the set of different criteria collected in the research phases of the project and the list of valuable tools has been used. Once the final structure was clear, this one has been presented to Oak & Morrow in a co-creation session. During this session, the designers of the studio have proposed changes and additions to the content of the toolkit. The conclusions of this session have been applied to the toolkit, obtaining the final concept of the project.

The main takeaway of the chapter is, therefore, the final outcome of the project: the toolkit, and the structure of it.

The next steps

In the next chapter, the toolkit will be explained in detail, presenting the tools within each phase and explaining how to use them. Additionally, the implementation of this toolkit at Oak & Morrow and the final conclusions of the project will be discussed.

CHAPTER

8

The toolkit and its implementation at Oak & Morrow

Content

In the previous chapter, the different phases of the toolkit, final concept of the project, has been presented. The processes within each of these phases and the tools used to facilitate them will be explained in depth in this chapter. Moreover, the content of the Booklet of the toolkit, that is the instructions on how to use each of the tools is disclosed.

Once all aspects of the toolkit have been explained, the implementation of this concept within Oak & Morrow will be discussed. A workshop conducted with the studio as an implementation activity will be explained, as well as the conclusions from it. Finally, to conclude the chapter, the limitations and recommendations for further research of the project will be described.

8.1. Deliverables

8.1.1. Oak & Morrow's futures thinking toolkit

In the previous chapter, the structure of the toolkit; the different phases and tools within each of these, has been presented. In this section, the content of each tool will be explained, as well as how to use them in a workshop session.

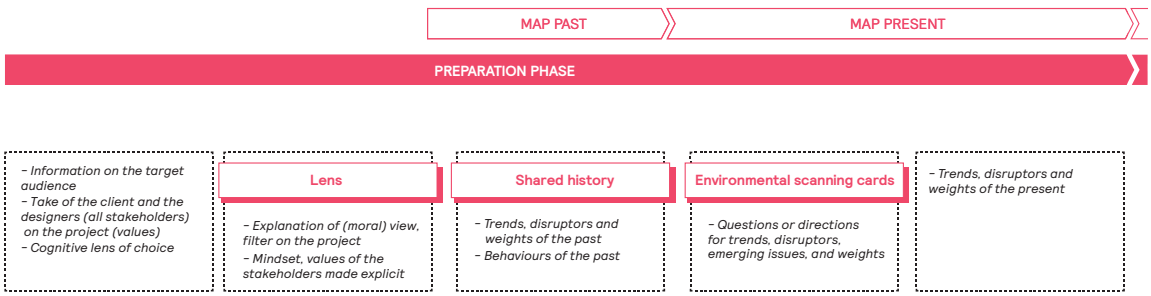
1. Preparation phase

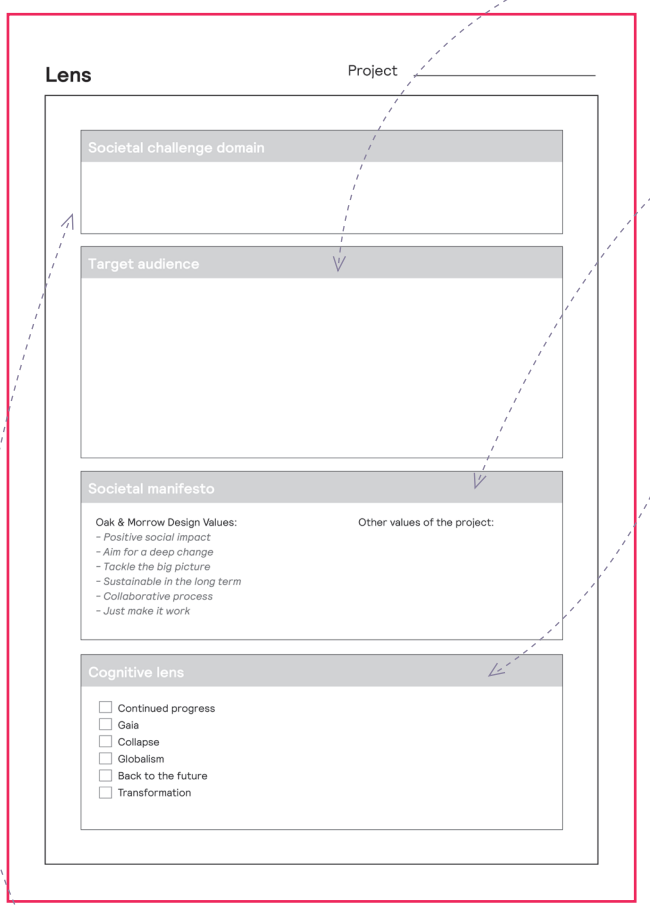
The phase for setting the base for the project, align mindsets and collect information to use further on in the process. This phase includes the tools 'Lens', 'Shared history', and the 'Environmental scanning cards'. The 'Lens' help set the base of the project, the tool 'Shared history' facilitates an exercise to align perspectives and get into the Futures thinking mindset, and the 'Environmental scanning cards' help in the collection of information.

Tools within this phase:

LENS

How to use this tool:
The Lens is used to establish the context, focus area and moral approach to the project. The format of the Lens is an A4 document; a "contract" that is filled in by the design studio and the client at the beginning of the project. The Lens contains four different sections, the societal challenge domain, the target audience, the societal manifesto and the cognitive lens.





Lens tool template

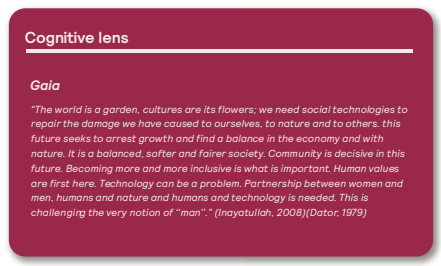
1 The first section of the Lens is the societal challenge domain, where the type of societal challenge that the project tackles is specified. This exercise is good to discuss among the team of the project the respective perspectives on the societal challenges, as most of them affect different areas and can be understood from different perspectives. The complete list of suggested societal challenge domains, to be used as starting point when filling in this section, can be seen in Appendix G.

2 **In the target audience section,** the user of the project is defined. The way of defining the target audience has been left to personal consideration. The design team can decide if is needed, for example, to specify demographics, needs, aspirations, etc.

3 **The societal manifesto** is the section to establish the values of the project. Starting from the Design Values of Oak & Morrow, and adding to these any other values that the team of the project wants to prioritise.

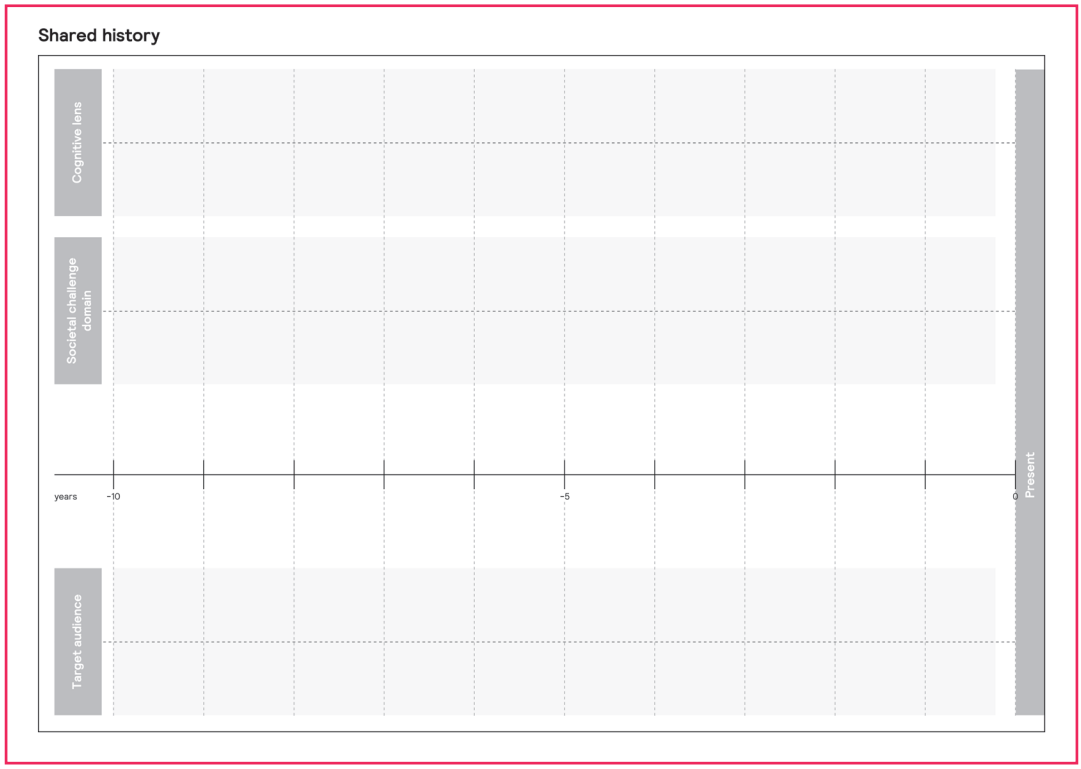
4 **The Cognitive lens** is used to make explicit the moral perspective or view of today's world, that will be used by the design studio and the client to approach the project. This specific worldview will affect the way the team analyses the macro-context and creates images of the future, ultimately affecting the outcome of the project. It is therefore important to specify it at the beginning of the process.

The Cognitive lenses come in a set of big cards or templates. This format has been chosen because the lens selected should be present at all times during the design process of the project. In each of these cards, a description of a Cognitive lens, typically used in Futures Studies, is given. This description illustrates the perspective of this lens of the world, including the specific moral views that this Cognitive lens entails. Each of the Cognitive lenses and the research on what they are based can be seen in Appendix G.



Example of the Cognitive lenses cards

SHARED HISTORY



Shared history tool template

How to use this tool:
Sohail Inayatullah, renowned futurist, proposes this mapping method of Futures thinking as a way to align mindsets and bring awareness to what has shaped our present, before moving to reflect about our future. The method of 'Shared history' is a good exercise to do in a workshop setting, and consists of writing down in a timeline the main events and trends that have led up to the present and reflect on their implications. The exercise proposed by Inayatullah has been adapted here, adding to the general timeline, the timelines of the "target audience", the "societal challenge domain" and the "cognitive lens". What this means for the exercise is that in addition to mapping general events or trends, also those that affect specifically the societal challenge of the project, or are seen from the perspective of the target audience or of the cognitive lens are mapped.

1 Create a timeline for the last 10 years (or 5 years if preferred), and look for the main events or trends that affected the world in that period of time and map them in the timeline. Another option is to start the exercise with a timeline template, where the most significant events or trends have been already mapped.

2 Bring back the Cognitive lens that has been chosen for the project; think in trends or events that affected the world from that perspective. Looking at the trends or events mapped in the general timeline can help in figuring out those of the Cognitive lens timeline, as they are usually equal or similar, but perceived from an specific worldview.

3 With the societal challenge domain of the project in mind, mapp the main events or trends that happened in that domain in the past 10 years. Looking at the trends or events of the general timeline can help in coming up with those of the domain, or as guide on where to start researching to find them.

4 Define your Target audience, and think about what have been the milestones for them in the last 10 years. Map them in their timeline.

The following questions are meant to guide the process of thinking, discussing or searching for trends, events or milestones:

- *What were the key events, trends or decisions (in the last 10 years) that have created our present?*
- *What have been the main life changes for the target audience in the last 10 years?*
- *What was valuable for the target audience of the project in the past? (e.g. regarding how they lived, worked, interacted with each other; regarding their beliefs, customs, their community, political system, environment, health and wellbeing, personal and property rights, their safety, their fears and future aspirations, etc.)*
- *What have been the main changes in the domain of the societal challenge of the project? What have been the main changes in all/other domains? (Consider answers from societal, organisational and individual perspectives.)*
- *What are the continuities and discontinuities? (What has remained or survived and what has stopped?) Why do you think these continuities prevailed while other contexts became extinct?*

5 The last step, once the events or trends have been mapped in each timeline, is to reflect on the information collected with mapping steps of the exercise. Looking for interrelations between the events or trends from different timelines can offer insights about the systemic implications or effect of these. Some questions that can be made to stimulate discussion around the insights of the exercise:

- *How do these trends relate to the situation now in the present, and into the future?*
- *How do the general trends or events relate to the life changes of the target audience?*
- *How do the trends or events mapped at the Cognitive lens timeline relate to those in the general one? And to those in the timeline of the societal challenge domain?*
- *Regarding the societal challenge at hand in the project, how would it evolve naturally if nothing changes? What are the implications if nothing is done to tackle that societal challenge?*

ENVIRONMENTAL SCANNING CARDS

How to use this tool:
Once the base of the project has been expressed in the Lens and the past has been mapped with the Shared history tool, it is time to look at the future. The cards for Environmental scanning assist in scanning the macro-context in search of trends, disruptors (also called emerging issues) and weights. Different cards have been created for each of the three types of information that will be collected. The purpose of these cards is to help get you started on scanning the macro-context to collect information about the future. Each type of cards is explained in the following paragraphs:

Example of the both sides of the Trend analysis cards

Some important terms:

Trends definition: "Things long after they initially emerged, but before they have become commonplace. Trend analysis can use facts and figures, since the thing has been noted, documented, tracked". (Dator, 2009)

Example of a trend: An aging population.

Trend analysis definition: "Identify something important in the present, trace back its historical development and then cast that rate of development ahead into the future and see what that reveals" (Dator, 2009)

Trend analysis cards

Out of the three types of information that the environmental scanning cards help collect, trends is the easiest one to search and gather, specially for professional designers that are updated on the latest news and innovations from many different areas, from technology to demographics. Therefore for collecting trends certain cards with examples of trends have been included as inspiration. However, a more extensive list of trends is needed for each project. The designers at Oak & Morrow, when discussing the implementation of the toolkit, agreed that researching for global trends could be an exercise that the studio does yearly, with the purpose of using this list when using the toolkit for projects.

Currently, there are many different institutions that issue their yearly report on trends, most of these publications being of free access. Therefore it is possible to access already researched trends for each year and area (Figures 30 and 31 show some examples of easily accessible publications on trends).

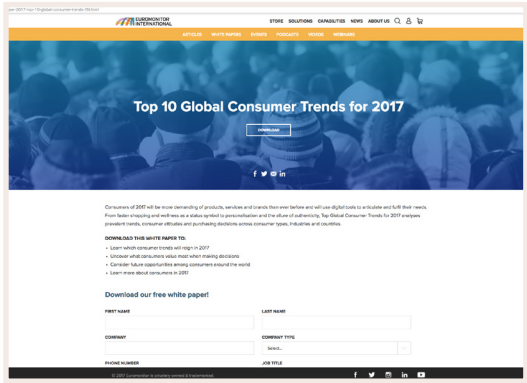


Figure 30. Website of the Euromonitor International where their white paper on the 'Top 10 Global Consumer Trends for 2017' can be downloaded.

Figure 31. Article on the website of the Huffington Post on global trends.

Regarding doing research and writing and/or publishing their own list of trends yearly, this is a practise not uncommon among design agencies of international reach. An example is Frog design, that publishes each year their own list of tech trends (Figure 32 shows Frog's Tech Trends site).

More specifically to the aim of the toolkit, some non-profit organisations or institutions publish public reports on trends on a specific topic, such as an specific societal challenge. An example is the 2016's Global Trends on forced displacement from the United Nations High Commissioner for Refugees (Figure 33).

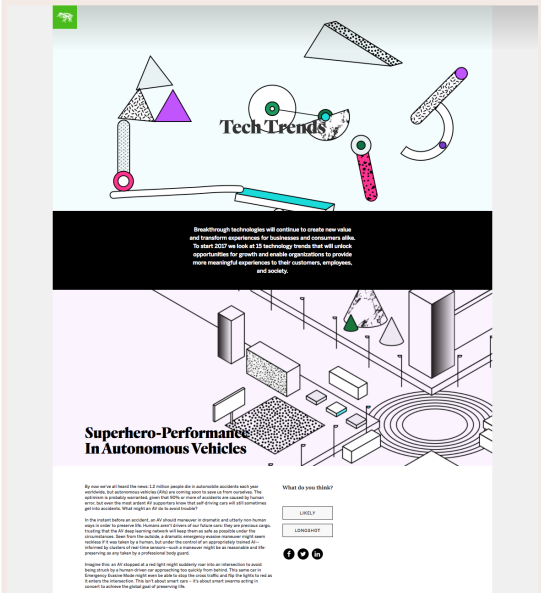


Figure 32. Tech Trends Website of Frog design.

Figure 33. United Nations High Commissioner for Refugees report on Global Trends about forced displacement on 2016

The proposed cards with trends, as example of what Oak & Morrow could develop, and as inspiration on the format and level of abstractions trends can have, can be seen in Appendix G.

Some important terms:

Weights definition: "Barriers to the change we wish to see. Each image of the future has differing weights. Those who imagine a globalized world are weighed down by nationalists and the brutal fact that while capital may be freer, labor is still tied to place. The Gaian image is weighed down by the dominance of hierarchy – male, empire or expertise. ''The boss is always right,'' is the guiding myth." (Inayatullah, 2008)

Example of the both sides of the Weights analysis cards

Weights analysis cards

As explained by Inayatullah in the definition of the term weights (at the *'Some important terms'* square), weights are the existing barriers to the future world we envision. This weights can be related to many different factors, however, they are directly related to the Cognitive lens of choice for the project. The best system to search for weights is to consider the future aspirations of the chosen Cognitive lens, and then reflect on what actual fact could become an obstacle for that aspiration to be realised. To assist in this process, the Weights analysis cards contain possible aspects that could become an impediment to change. These serve as inspiration and starting point; by reading them the team should be able to come up with the current weights for their worldview without the need of further research. This exercise is interesting as a discussion starter for the team involved in the project; specific concerns regarding the problem that the project aims to tackle can come to light in this step. The proposed Weights analysis cards can be seen in Appendix G.

Disruptors analysis cards

The only way to collect disruptors is to start analysing information from the most contrasting and offbeat sources from the general public we can think of. Some disruptors can be encountered accidently. However, if the intention is to collect a considerate amount of them, consulting different sources in search for the divergent or different content is the usual process. The cards to help in this process include questions and tasks that serve as inspiration on where the team should get started with looking for disruptors. The complete set of cards proposed can be seen in Appendix G.

Example of the both sides of the Weights analysis cards

How to differentiate Emerging issues or Disruptors from Trends:

- *Trends are quantitative, figures related with them can be collected. Meanwhile emerging issues have no such clear facts or numbers.*
- *Trends are mostly recognized by the general public, especially by professionals of their area. Meanwhile emerging issues are not at the stage of being recognized by a group, but proposed by an individual or a minority.*
- *Trends can be discussed on the television news. Meanwhile emerging issues stay among alternative circles.*
- *Emerging issues can evolve into emerging patterns further up in their life cycle. The end of this life cycle is when they become a recognised trend.*
- *Emerging issues are as close to their very first notice as possible. Meanwhile trends establish as such when the topic has been repeatedly discussed.*

Some important terms:

Emerging issues/ Disruptors definition: Both emerging problems and emerging opportunities: "Things in their earliest stage of development, disruptors, as close to their very first notice as possible". (Dator, 2011)

Emerging issues analysis: "Emerging issues analysis has no such clear facts and figures. It tries to see things that are barely visible". "Its sources are crazy people, marginal people, offbeat publications and websites, in the recesses of the mind of some scientist or engineer, the concern of some artist or poet, or unpublished novelist" (Dator, 2009).

"Many futurists look for things in their earliest stage of development by scanning for new ideas, technological prototypes, new lifestyles, and other indicators of what might eventually become trends and then problem/ opportunities." (Dator, 2011)

Mapping dartboard

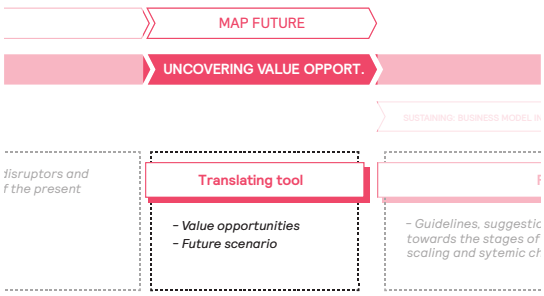
While collecting information on trends, disruptors and weights these should be mapped in a visual manner, so that through the process is easier to uncover interesting interrelationships among them. Additionally, it is important during the environmental scanning process to have present a set-up that pushes the team to consult all different areas of the context. After all, the collection of information of the future should tackle the macro-context, not only those areas related with the societal challenge domain of the project. With these two purposes previously explained, it is proposed that while using the Environmental scanning cards, the Mapping dartboard is used. This mapping visual can be adapted to different structures, depending on the preferences and the experience of the team, with the two conditions of

facilitating visualising interrelations and scanning different areas of the context.
All the proposed templates for the Mapping dartboard can be seen in Appendix G.

2. Uncovering value opportunities

In this phase, the information and insights collected in the Preparation phase, are used to uncover "value opportunities". These value opportunities are how the ideas for business innovation have been named. This is, therefore, the phase of the toolkit when the generation of ideas take place. This ideation process is facilitated by the 'Translating tool', with an outcome of both a future scenario and value opportunities.

Tool within this phase:

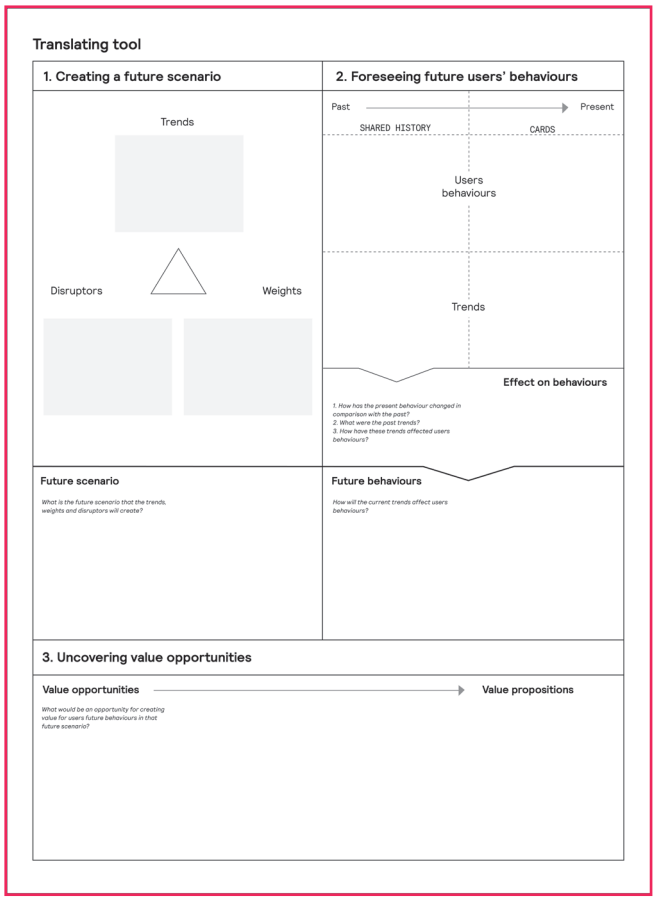


TRANSLATING TOOL

How to use this tool:
All the information collected with the 'Environmental scanning cards' is going to be used in this phase to generate a business idea or 'value opportunity'. This is going to be done by foreseeing future users' behaviours (what are the interests, needs or aspirations, for example, of our target audience in the future) and brainstorming ideas that would deliver value for these users in the future regarding the social challenge of the project. The future users' behaviours will be foreseen by reflecting on the effect that current trends, (and disruptors and weights, but mainly trends) will have on the users' present behaviours. These process has been explained step by step.

1 The first step of the tool is to create a future scenario*. This is done by reflecting on the combination and interactions between the present trends, disruptors and weights collected with the 'Environmental Scanning tool'. This step of the tool is inspired by the 'Futures triangle', a tool of Futures thinking. With the tool 'Shared history', used in the previous phase, we mapped the past. In this phase, with this step inspired in the 'Futures triangle', we are mapping today's views of the future (Inayatullah, 2008). To develop this image of the future or scenario, we have to analyze and discuss the interactions of the three forces of the triangle, the trends, disruptors and weights.

There is no one way of doing this, however it is easy to start visualising an scenario where the trends collected have become a reality, and then select the disruptors that we think will become an established future trend and think of the effect these have in this future image. Lastly, review the image of the future with the weights collected; what trends disappear from the future scenario once the weights are considered? This future scenario



Canvas of the translating tool

can be explained or visualised in the format that works best for the characteristics of the project or the workshop session. Ideally, a document with a story that tells the common daily life in this future scenario, or a detailed visual of the main characteristics of this future should be created.

- **Regarding the term "future scenario": In Futures thinking, three main types of futures scenarios are usually defined: the possible, probable, and preferred (Kuosa, 2010).For this toolkit, the focus chosen has been on developing a preferred future scenario. What this entails for the use of the 'Translating tool' is that you should develop the image of the future you prefer to see, taking into account your workview or Cognitive lens and the values of the project.*

2 With the future scenario created, it is the moment to foresee the future users' behaviours**. To do this, there are different sub-steps that the 'Translating tool' proposes.

A First of all, the information about the past that was mapped with the 'Shared history' exercise in the first phase of the toolkit, and the information about the future collected with the 'Environmental scanning cards' is used:

Locate yourself in the part of the canvas of the tool of step '2. Foreseeing future users' behaviours'. The idea is to visualise for the team the main or selected users' behaviours and trends of the past on the left side, and the collected future trends on the right side. Present users' behaviours are mapped as well on the right side.

[Additional research on the present behaviours of the target audience should be made before this step. The design studio can conduct this research is the best way they consider (interviews, ethnographic research, personas, etc.).]

B With the information needed visualised for the team to see, the effect that past trends had on the present users' behaviours can be analysed. This is done by reflecting on the changes that can be seen from the past to the present behaviours, and the way in what the past trends could have caused these changes. It is an abstract exercise, but with the use of paper sheets and sticky notes, the thinking behind it can be visualised to discuss it with the team. The outcome of this sub-step should be a list of statements on the "effect on behaviours" of the past trends.

C To foresee users' future behaviours we have to reflect on the "effect on behaviours" of the past trends while looking at the current trends. If we extrapolate this "effect" from the past trends to the current trends, what effect do we think they will have in people's current behaviours? Therefore, what will be these future behaviours? As with the previous sub-step, this thinking

process should be mapped question per question and conclusion per conclusion, to be able to go through it with the team and have it documented.

- ***Regarding the term "users' behaviours": Originally, this tool proposed to deal with users' behaviours, understanding these as the combination of their needs, aspirations and problems or pains. However, to uncover what is valuable for the user appears as an important aspect for societal challenges in the research of the project. Therefore it has been considered to focus on "what is valuable for the user", instead of user behaviours. Which of these two options would help generate better outcomes has to be uncovered through further testing of the toolkit. Another option is that the designers at Oak & Morrow use their expertise to decide what option is most interesting for their process with the toolkit.*

3 Finally, when both the future scenario and the users' future behaviours have been uncovered, it is the moment for brainstorming ideas on "value opportunities". A value opportunity is that gap or possibility that we see in this future scenario to create value for the user that faces the societal challenge. They are the idea at a rough state, that comes before formulating a "value proposition". A value proposition is a combination of products and/or services that deliver value to the user by tackling a problem the user is facing.
To come up with value opportunities we have to imagine the aspects of of the life of the future user, related with the societal challenge, in this future scenario.
In this step, the value opportunities can be already evolved into value propositions if the team feels confident on doing so. I could be the case that a value opportunity has be explored with further research after the session where the 'Translating tool' is used, to be able to translate it to a value proposition. This is also a possibility.

3. Towards systemic change

The phase to define a specific business model around the value proposition (or value opportunity, if it has not been translated into a proposition yet), and establish a long-term plan towards having a positive systemic impact on society with the business. The main activities within this phase are to develop a Business Model that generated "shared value", and discuss and establish a long-term plan to grow the business towards the social innovation stages of 'scaling' and 'systemic change'.

FRAMEWORK FOR SYSTEMIC IMPACT

The core tool within this phase if the 'Framework for systemic impact'. This framework visualises a set of guidelines to take a value proposition and transform it step by step to, eventually, create a positive systemic change in society. The structure of the framework is based on the last three stages of social innovation: 'Sustaining', 'Scaling' and 'Systemic change' (Murray et al., 2010). It gives an overview of the different steps within each of the stages of a social innovation. Each of these steps explain an activity, tool, requirement, or goal of each stage. By visualising these steps, the framework helps in communicating what is needed for social innovation. Moreover, it helps to remember, organise and communicate all the different aspects that are needed in the quest for positive systemic impact.

How to use the tool:
It can be used in a workshop setting as a brainstorming and discussion tool, to agree on long-term planning activities with the different stakeholders of the business proposition.

The framework offers the main guidelines or suggestions of what should be done in each stage. The team should discuss what steps per

Framework for systemic impact

STAGE	ACTIVITIES	TOOLS	REQUIREMENTS	EVIDENCE GENERATED
SUSTAINING Business ideation and testing	*Collect insights on the business proposition from users and stakeholders with early prototyping.* *Collect needs of the community and the target audience by interacting with them with the prototype of the business proposition*	*Social Business Model Canvas* *Prototypes of the business proposition*	*Consider guidelines for social, environmental and economical sustainability in the ideation* *Uncover what is valuable for the user and the community and deliver that with the solution*	*Insights about how to reformulate the Business proposition to be successful and sustainable for the community*
SUSTAINING Final business proposition	*Develop the revised business model proposition* *Have a thoughtful plan on the economical, social and environmental sustainability of the business* *Create an implementation plan*	*Social Business Model Canvas* *Roadmap* *Implementation plan* *Organisation design*	*Innovative Business models that create "shared value" with their business proposition* *Consider the political, organizational and cultural implications of the business proposition* *Strong leadership, management and implementation skills*	*An implemented and sustainable business model*
SCALING & SPREADING	*Create ways for connecting with experts and facilitate a collaborative process to scale and spread the business* *Reassess the Business model to consider scaling activities such as licensing or franchising* *Spread the story* *Organise activities to transfer the practice* *Work for legislation changes*	*Collaboration tools* *Scaling plan* *Future vision* *Tools for communicating the story and knowledge generated (websites, online platforms, documentaries, etc.)*	*Involve interdisciplinary relevant stakeholders. Scaling is a collaborative process* *Consider guidelines for Universal or Inclusive design* *Evaluate the business proposition and strengthen it*	*Evaluations of the effect of the business in multiples sites*
SYSTEMIC CHANGE	*Understand interactions among different sectors* *Build and institutionalise partnerships and networks* *Create infrastructures for the new system* *Study behavioural change* *Grow self-organising social movements* *Implement legal and regulatory changes*	*Campaigns that create new evidence or practical examples* *Rewiring different sectors or economies* *Working prototypes/pilots of the new system* *Tools to empower the beneficiaries of the new system*	*Map potential unintended effects* *Transform some of the fundamental systems on which we depend* *Create a change of mindset in all the sectors of business, government, civil society and the household*	*Transformations in the ways we do things: changes in behaviours, habits, business models, policies, professional practises, laws, etc.*

Canvas of the Framework for systemic impact

stage are most suitable for the project and its characteristics. Once the steps within a stage are agreed on, the team can discuss how they will tackle each of these activities. Then the framework can be updated with the specific content for that project, to be used as a roadmap or visual that communicates the project's plan in each of its stages.

Different stages of the 'Framework for systemic impact':

- ***Sustaining: Business Model Innovation***

Objective of the stage: Translate value opportunities into a business model proposition that creates "shared value" (Kramer & Porter, 2011) for the organisation and the society/ community. This translation is done with the use of a tool for creating business models.

In this stage, the existing tool 'Social Business Model Canvas' developed by the Accelerator, of the Young Foundation, is proposed as business model canvas with a focus on creating social value in addition to market value:

Social Business Model Canvas

("The Social Business Model Canvas | The Accelerator", n.d.)

The version developed by the Young foundation is proposed. However, there are many other versions of business model canvas for social innovation or social purposes. The Social Business Model Canvas is a good example to start with. However, if other canvases adapt better to the process of using the toolkit or to tackling societal challenges, should be judged further on.

How to use this tool:
The Social Business Model Canvas is directly inspired in the Business Model Canvas (Osterwalder & Pigneur, 2010). Therefore, it is used following the same process as the latter. The book "Business model generation", by Osterwalder & Pigneur (2010), explains in detail how to use the Business Model Canvas.

The other two phases contemplated in the 'Framework for systemic impact", 'scaling' and 'systemic change', have been tacked within the framework with guidelines alone. There are no further tools developed for each of these phases.

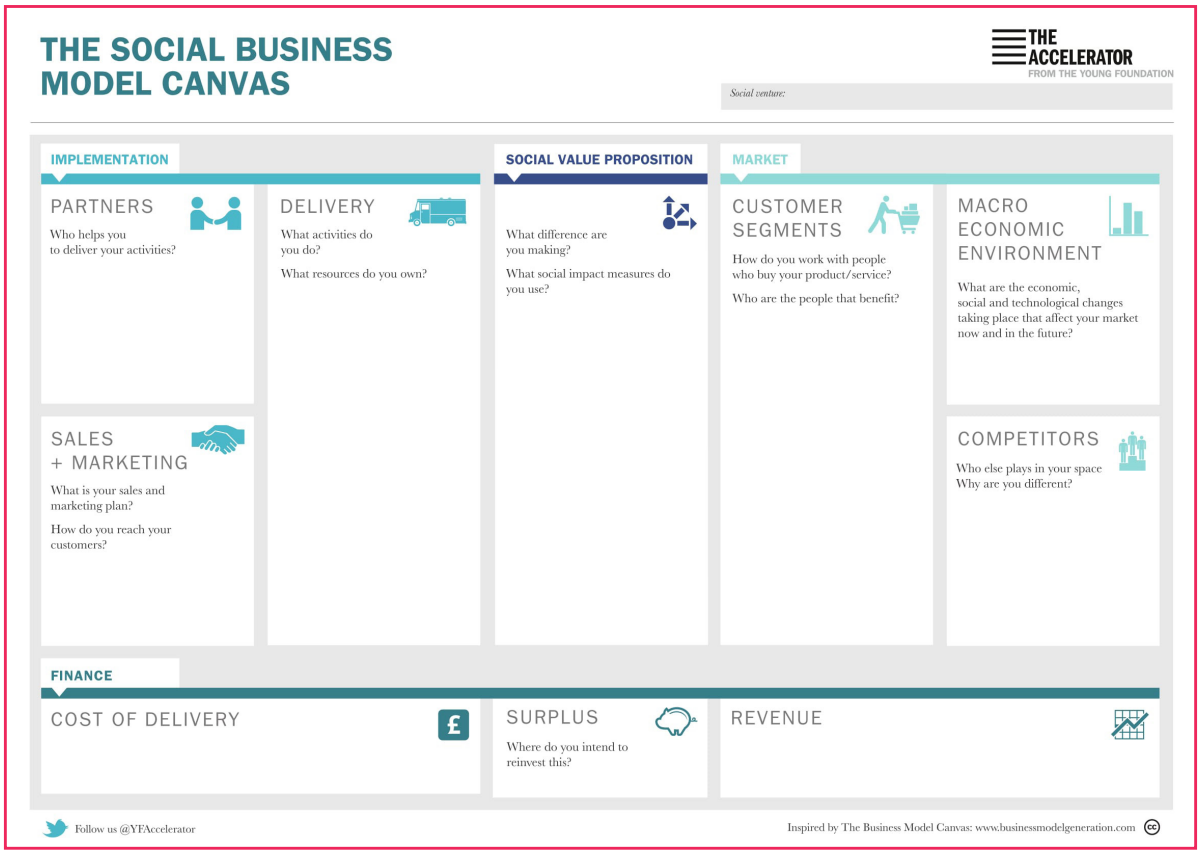
The two next phases towards systemic impact are:

- ***Scaling: Collaborative Process***

Objective of the subphase: Take the developed sustainable business from the "sustaining" to the "scaling" stage of social innovation.

- ***Systemic Change***

Objective of the subphase: Take the developed, sustainable and scaled business from the 'Scaling' to the 'Systemic change' stage.



Social Business Model Canvas by The Accelerator (The Young Foundation)

8.1.2. Booklet of the toolkit

The booklet of the toolkit is next to the templates of each tool, the main deliverable of the design process of the project. This booklet acts are manual of use for the toolkit and the tools within it. Its content has been included in the previous section, to explain properly each of the tools in the toolkit.

The booklet is meant to facilitate the implementation of the toolkit within Oak & Morrow, by informing the reader on everything they need to know to use the toolkit in a project. The objective is as much to explain the steps of each exercise, as to express the reasons for using each tool; why is the process and outcomes they facilitate valuable.

8.2. Implementation

In the previous section, the final concept of the toolkit has been explained. However, the last details of its design have been decided in a session with the designers at Oak & Morrow, as part of the implementation activities. This session had two objectives. First, to introduce the designers the background theory on Futures thinking on what the toolkit has been based. This was important because, to implement properly the toolkit at Oak & Morrow, the designers should understand the reasoning behind each of the exercises it contains and the value of these. The second objective of setting up the session has been to check with the designers what exercises of the toolkit should be developed further and which ones were ready for them to use.

The session is explained in the next subsection, as well as the conclusions made from what was discussed with the designers on the last details of the design of the tool.

Additionally, a brief presentation to the complete team of Oak & Morrow will be done in their internal sessions called 'Monthly showcase', where the outcomes of the research of the project and especially the toolkit will be shown and explained.

8.2.1. Implementation session

The implementation session has been set up as a moment of transmission of the toolkit to Oak & Morrow. In the session, the designers have been presented the content and the background knowledge it has been based on. The last details of the toolkit have been agreed with them to transfer them some weight of the responsibility on the toolkit. To fully implement the toolkit at Oak & Morrow, the designers will have to test and play with it, adapting it further to the real cases they will use it for. Therefore, as one of the last steps of the project is was important to spark their internal contemplation about in what ways they need to keep on defining the toolkit.

For the project, this session has been an opportunity to establish the limits of the final concept; what still had to be defined as part of the deliverable of the project, and what could be left unstructured for the designers of the studio to decide how to approach it. To collect these insights, the designers were asked to think how they would use the toolkit with a case example. Due to time constraints, this exercise was more a simulation, and a discussion about the exercises each tool within the toolkit facilitates than a usability test. The complete set-up of the session can be seen in Appendix F.

Insights of the session

The conclusions of the implementation about the last details of the tools within the toolkit have been already applied in the version of the final concept previously presented in this chapter.

On the 'Lens' tool:

Regarding defining the 'Societal challenge domain' in the 'Lens' tool:
To define the societal challenge of the project, many different terms can be used. The list of societal challenges was useful for the designers to agree on the broad category that describes the societal challenge of the project, and to discuss the

approach to it when deciding what more specific terms defined it better. It was also observed, that some projects could tackle multiple societal challenges at the same time. The designers were in general very positive about the exercise of having to define the societal challenge, and they saw value in doing it to align mindsets of the team regarding the perspective on the societal challenge of the project.

Regarding the ways the 'Target audience' could be described in the 'Lens' tool:
Defining the target audience of the project was an effortless task for the designers, and they showed their personal ways of doing so. Therefore, it was observed that due to the designers being experienced in this exercise, the way of defining the target audience of the project in the "Lens" tool could be left open for Oak & Morrow to decide.

To describe the target audience of the case at hand, the designers defined their demographics, values (such as political orientation), specific aspects such as their living situation, and especially their pains (or problems) and needs.

Regarding defining the 'Societal manifesto' in the 'Lens' tool:
The designers think is good to have the Design values of Oak & Morrow as part of the Societal manifesto. However, they agreed that a discussion around the specific values of the project was needed, beyond agreeing on the Design values of Oak & Morrow. They see the need of making explicit the particular values of the client, or those that both the client and Oak & Morrow share, plus any "sub value" or distinct interpretation of a value.

The way the designers imagine doing the exercise with the client is by having a discussion with the client about the values of the project, starting with the Design Values of Oak & Morrow as a base.

Additionally, when the **'Cognitive lens'** had to be chosen, the designers thought it was interesting to go back to do this in conjunction with the 'Societal manifesto' to make sure the values defined in both exercises aligned or were compatible (each Cognitive lens defines a worldview and therefore certain set of values).

Regarding collecting information about the user to explore how their behaviours or values, needs and pains change through time due to the effect of trends:
The designers of the studio discussed in the session that they are experienced in user research and have their own different methods that they use depending on the characteristics of the project, such as personas, diaries, interviews, etc. Therefore, they did not see the need of defining an exact method of collecting information about the user within the toolkit.

On the 'Shared history' exercise:

When they were presented with this exercise, the designers found it interesting to align mindsets within the team, but simultaneously too broad to be valuable. They would instead use it to explore, in addition to general past trends and events, the past years of the defined Target audience, or the events that affected their past lives, and that may have lead to their current behaviours. They struggled with the idea of mapping the general events of the past, and not only those concerning the societal challenge of the project. They would, therefore, prefer to map as well the specific trends

and events that are directly related to the societal challenge domain of the project. Their idea was to have this three parallel "timelines"; the general one, the one of the target audience, and the one of the societal challenge domain, to be able to compare them at first sight and explore the possible interrelations.

Regarding searching for the past trends and events, the designers thought it would be useful to have a list or set of past general trends and events that they could revisit for each project when starting the 'Shared history' exercise. Another idea was to have a template with a basic timeline that would include already general past trends and events.

In conclusion, the designers proposed rethinking this exercise, to be done after using the 'Lens' tool, and therefore with the target audience and societal challenge domain already established, so that the 'Shared history' exercise could include these timelines as well.

"I would like to have a set-up, or cards so that already we know what happened... You can already make a basic timeline and put it on the wall, and say these are the main events... and you are like, 'oh wao, ten years ago there was no smartphone'. In a discussion, things always look closer by, further away... or you forget stuff."
Jeroen van Geel

"This (the general timeline), I think you could take just a history book basically, then the other ones they are interesting (the target audience timeline), cause then you are like... 'ok, we became a couple, then the kids came...', and for this one (the societal challenge domain timeline), it is like 'what happened here?' and then you do some specific target research... and then you ask 'what are the patterns? (looking at the three timelines as a whole)... I think this really helps because you see it immediately'"
Sophia Altekamp

On the 'Environmental Scanning Cards' tool:
Regarding the Trends analysis questions:
The designers discussed they could have a list of trends as the starting point that they would compliment for each different project. They did not see so much value in the questions for guiding the trend research; the considered the example questions given or too abstract to be helpful or obvious. They discussed the idea of doing themselves a trends research once a year or collecting interesting trends from other parties that do trend forecasting, to have a list of the main trends to work with, in the projects.

Discussion of the designers about the differences between the concepts of Emerging Issues and Trends:

"The word trends sounds like it is something that just came up, but it is something that has already been established for a good while"
Sophia Altekamp

"I think what we forget with the trends and the emerging issues, the bigger picture here is that often for us, well we think 'that's already a trend!', because we know, my mum doesn't. And with our clients, in the part where they call us, we are the experts so often we know things and they are like 'what? Is that possible?'"

Sophia Altekamp

"I understand them, but then we need to have the game rules of when it is a trend and when it is an emerging issue"
Jeroen van Geel

Due to this discussion, some statements that help understand the differences between Emerging issues and Trends have been included in the booklet of the toolkit.

Regarding the Emerging issues analysis tools:
The designers thought that for this analysis it was needed to have questions that pointed at more specific tasks than the ones they were shown. However, they reflected on the fact that they would have many personal sources where to start an emerging analysis research, as they are updated on cultural and independent publications. The conclusion was that these step would be treated as "homework" for the designers, but that having more specific questions or tasks would be helpful.

Additionally, the term "disruptors", a synonym of emerging issues that Jeroen found easier to work with, has been introduced in the toolkit to replace the latter.

Regarding the Weights analysis tools:
For the designers it was enough for this step to have a list of aspects you should think of that may present weights for your worldview. Aspects such as political powers, religious beliefs, science limitations, etc.
Jeroen expressed that it would be interesting to have a middle step to reflect on the positive aspects of weights or how these obstacles could become opportunities. The researcher explained regarding this aspect that the way in which the weights are handled should go in line with the 'Cognitive lens' chosen. With the more positive lenses, the idea of Jeroen of looking for the good aspect of the weights may be applicable, but that is a discussion that should happen among the team when mapping the weights in the 'Mapping dartboard'.

Regarding the 'Mapping dartboard':
The designers saw the value in having a set up similar to the dartboard and adapting the given one to different examples that they could play with when using this tool.

About the tools 'Translating tool' and 'Framework for systemic change' the designers did not have special remarks when they used them. They understood their functioning and they showed confidence when going through the 'Translating tool' to create value opportunities.

Packages of the toolkit

One of the main outcomes of the session is the idea of defining certain "packages" or ways in what the toolkit could be used in shorter versions of a workshop setting.

"I personally think it should be good enough to do it in one full day"
Jeroen

Jeroen and Sophia discussed the value of having a one-day session set-up, that although it would not address the entire process of the toolkit, it would give the clients a first taste of what the studio could do for them with it.

Additionally, Jeroen thinks that when facing the more time-consuming process, such as the collection of trends, the designers of the studio should trust their own gut feeling and knowledge of the audience. In the case of the trends, doing a more brief and subjective research on trends that could be included within a one day workshop would also be valuable.

Another idea the designers discussed is to use the toolkit with companies that do their own trends research, adding the value of the knowledge of the designers of sorting through data and generating fast insights for their business.

With the conclusions of the implementation session in mind, the challenges and opportunities of implementing the toolkit at Oak & Morrow have been discussed in the next subsection.

8.2.3. Challenges and opportunities at Oak & Morrow for implementing the toolkit (guidelines)

The final concept of the project is finished, and the activities for its implementation that could be accommodated within the project have been already conducted. Now, it is important to reflect on the challenges that Oak & Morrow will face to fully implement the toolkit among their own set of tools, and the opportunities that this project and its outcome presents to them.

Challenges

- *Further work on implementing the practices of Futures thinking at Oak & Morrow is needed. The value of combining Futures thinking with their current expertise to tackle projects on societal challenges or social innovation should be further on communicated across the studio so that it triggers other designers apart from those that participated in the project to use the toolkit. Futures thinking workshops where activities of the discipline such as scanning the macro-context are explained and practised could still be done so that the designers feel comfortable in dealing with this discipline and enthusiastic about it.*

- *The team of designers that work on the strategic level within Oak & Morrow is still reduced. Therefore, it is not often that these designers have time between client projects to work on developing and adapting the toolkit further for the studio. This means that the studio would need the toolkit to be a ready-to-use product that has been already tested in cases and real projects. This was not possible within the time-frame of the project, therefore Oak & Morrow still has the challenge to find time to use and test the tool to see what aspects can be kept as they are and what could be adapted.*

- *Finding projects where Oak & Morrow can design for societal challenges could be one of the main challenges of using the toolkit. Among the studio's type of projects and clients, it is still not often that the focus is on social innovation. On the other hand, the toolkit*

gives to the studio a new offering to have when searching for this type of projects by themselves.

- *Even within projects that would aim at tackling a societal challenge, Oak & Morrow still will have to work on communicating to the client the importance of continuing the project once the business proposal is finished. Taking the client with them through the different steps towards systemic impact and communicate the importance of a long-term plan could be challenging.*

- *The task itself of aiming at having a systemic impact offers different challenges for a design studio. However, for Oak & Morrow is important to know the steps of this process and the challenges that come with it, to search for collaborations that could make this task easier to grasp.*

Both a challenge and an opportunity:

- *Approaching and creating collaborations with organisations that work on social innovation or on tackling societal challenges is definitely a task that, although it would be interesting for the next steps of the project, could be challenging or at least time-consuming for the current functioning of the studio. However, the creation of the toolkit offers the studio the opportunity of seeking for these collaborations.*
-
- *The last phase of the toolkit, 'towards systemic change' still needs to be worked out to become more easily graspable. This is both a challenge and an opportunity for Oak & Morrow, that can turn this task into one of the dream projects, where they could explore further the steps within social innovation with a systemic impact. Researching how design studios can help their clients in taking projects through the different phases of social innovation and intervene in the process of having effect at the systemic level, would put them in an expert position in this area.*

Opportunities

- *During the Futures thinking workshop session with Oak & Morrow, Jeroen van Geel commented that he could see the designers at the studio using different tools of the toolkit, such as the Shared history tool, for projects that were not dealing with a societal challenge. This is indeed an opportunity that the toolkit presents for the studio. If they keep on adapting the toolkit towards their needs and type of project, the tools within it could be useful in many different situations or could inspire new tools.*

- *With their design values and design process mapped, Oak & Morrow has now a better chance at tackling their issues with tacit knowledge within the studio. They could continue mapping other internal aspects so that the studio would have a sort of Oak & Morrow's internal manual of design practices.*

- *In the implementation session, the designers expressed that they saw the possibility of*

combining tools within the toolkit with the current tools they use, as well as using tools within the toolkit for aspects of projects that did not tackle a societal challenge per se. With their knowledge of the design process and experience in what information is most valuable for clients, Oak & Morrow has many opportunities of taking the developed toolkit as a base and evolving it to different applications. Or combining it with existing tools within their toolkit that may be lacking in strategic and foresight intent.

- *The project and outcomes of it are heavily conceptual. However, Oak & Morrow have plenty of expertise on taking ideas from the conceptual to the tangible level. That expertise offers many possibilities for the outcomes of the project. From continue developing and perfecting the toolkit to create an attractive format that can be communicated and shared with the design community as self-promotion, to simply using the research outcomes to develop new ideas.*

8.3. Limitations of the project and recommendations for further research

The project has provided some first insights on the value of combining Futures thinking and Strategic design to tackle societal challenges, and how to convey this in a toolkit. However, due to certain limitations of the project, the exploration of the possibilities of combining these two disciplines has been conducted at a superficial level. Moreover, further work could be done to test and define up to the last detail the content of the toolkit designed for Oak & Morrow. All the different limitations and recommendations for further work in each area of the project are explained in the following paragraphs:

Research on Futures thinking and Strategic design

Limitations

- *Unlike when researching Strategic design, the researcher had no previous knowledge of the discipline of Futures thinking. The research on Futures Studies and Futures thinking was started from a personal curiosity, however, it was challenging to cover the extent of the discipline in the short time available for literature research on the project. This lack of prior knowledge is a limitation of the project. It would be interesting to conduct a research on the value of combining this discipline with Strategic design by futurists or expert researchers of the field.*
- *The duration of the research phase on Futures thinking and Strategic design was as well a limitation for obtaining deep insights. The literature research should have been continued to uncover deeper insights if there had not been the time constraints of a 6-month research and design project.*

Recommendations

- *For acquiring more knowledge on how to combine the discipline of Futures thinking with Strategic design, further research on how Futures thinking has been introduced in other areas or industries, such as education and management, should be conducted. From this research, conclusions on the aspects that are most valuable from the discipline to apply to other fields could be taken.*
- *The commonalities and differences between Futures thinking, technology foresight, Strategic management and Strategic design should be explored to gain a better understanding of the application of theory from Futures Studies to areas related to implementing strategy in businesses.*

Internal analysis of Oak & Morrow

Limitations

- *Only two members of Oak & Morrow*

participated in all the sessions as representation of the studio. Although the number of designers of the studio that would intervene in the strategic aspects of a project is small, a better representation of everybody's perspective on the different topics dealt with in each session would have offered a more detailed picture of Oak & Morrow. This was definitely a limitation of the research.

- *The analysis of Oak & Morrow's toolkit was conducted with the discussion sessions held with designers of the studio. Therefore, the information obtained was only that expressed by the designers and learnt from their internal documentation. This level of information is still superficial, and further generative research on how the designers make use of the studio's toolkit in actual projects would have offered deeper insights. The lack of this research is a limitation of the internal analysis of Oak & Morrow.*

- *The focus of the research on Oak & Morrow has been to understand better the studio's internal routines. However, this focus does not include studying other important aspects of the company such as their clients and their competition. The lack of an external analysis of the studio is a limitation of the research on Oak & Morrow.*

Recommendations

- *Oak & Morrow is a strategic and design studio, meaning that both projects that have a strategic phase, and projects where the brief is mainly on visual design, are done by the studio. This duality of practices and the interrelations between them when working on projects that include both could be explored further.*

Research on societal challenges and social innovation

Limitations

- *The amount of literature consulted for the research on societal challenges and social innovation, and the time assigned to analyse it was poor in comparison to the research on the other two main areas of the project. This created certain limitations regarding the insights collected in that area of research.*

- *For this area of research, the Design Values of Oak & Morrow were used to structure the researching process. This created a focus on the aspects of the field that were applicable to the project. However, it generated as well certain limitations regarding the scope of the literature research and the topics that the publications consulted dealt with.*

Recommendations

- *Taking into account the extent of this project, it was challenging to collect all the knowledge needed to develop the 'Framework for systemic impact'. The content that this tool should convey should be further researched. Moreover, it would be interesting to research how to make the guidelines contained in the framework more actionable and easy to follow by a design studio.*

- *A research on the existing tools and methodologies for social innovation and to tackle societal challenges should be conducted, to gather insights for the tools in this area of the toolkit designed in this project.*

- *It is interesting for the further development of the phase of the toolkit 'Towards systemic change', to analyse how other design studios, of similar characteristics and capabilities to Oak & Morrow, face projects related to social innovation.*

Design process of the toolkit

Limitations

- *The main limitation of the design process of the toolkit is that a testing about its usability has not been performed. The toolkit has been tested with designers at Oak & Morrow to discuss the possibilities of its implementation at the studio and how it should be best finished. However, a testing of the final design with a case and a client should still be conducted to make the adjustments to the structure needed.*

- *The time constraints of the ideation process are a limitation to the project. A considerable amount of insights was collected during the research phase. When designing the toolkit, the time needed to make sure all these insights were contemplated and utilized, when taking each of the design decisions, was not available. Although the main conclusions were considered by going back to the criteria of the design brief during ideation, some insights of the research may have been ignored and forgotten in the process.*

- *The data analysis of the testing session and the co-creation session was performed by a researcher alone. Due to the amount of data to analyse, certain insights may have been overlooked or misjudged by the researcher's personal bias.*

Recommendations

- *The approach proposed by the toolkit in creating solutions that generate value for the user and the society as a whole, in the long term, should be explored further. Specifically, the effectiveness of using Futures thinking processes to create solutions that offer value in the long term.*

- *The format in which different Futures thinking activities have been presented in the tools of the toolkit and its effectiveness should be tested further.*

Design outcome

Limitations

- *Regarding using a tool for creating business propositions (such as the proposed 'Social Business Model Canvas'), after the 'Translating tool' of the toolkit: It should be explored further the effect of creating a business proposition after dealing with information of the future, such as the future scenario and the expected future behaviours of the target audience. It could be analysed how effective would be to develop a future business proposition in this future scenario, and back-scale it to current actions. Additionally, it should be tested if developing business propositions that are future-oriented works in creating as well value as well in their current state.*

- *Regarding the tool 'Framework for systemic impact': More specific steps that facilitate going from one stage of social innovation to another should be created. Case studies of existing examples on how a business proposal can evolve through the stages until having a systemic impact could be researched. This would ideally offer insights on how to include more actionable guidelines in the framework. Interviews with experts in the field of social innovation or professionals involved in business that tackle societal challenges could be set up to learn from experiences on the field and generate more insights for this tool.*

Recommendations

- *The toolkit has been created to be used in a workshop setting. However, the final design relies on the expertise of the designers at Oak & Morrow in conducting workshops with clients. Guidelines or recommendations for using the tools of the toolkit within a workshop setting should be developed and included.*

- *Conducting a number of sessions to use each tool in the toolkit for a project could take a considerable amount of time. The average time needed to conduct the exercises that each tool facilitates should be calculated. Additionally, the outcome of using only a certain selection of tools of the toolkit in combination should be tested. With this information, a more detailed proposal of different packages of the toolkit can be created, to be offered to clients.*

- *Guidelines on how to market the toolkit and approach possible clients or organisations to create business opportunities for Oak & Morrow could be developed.*

*"There are **solutions** to **present problems** lying in **future opportunities** which you should try to **identify**, and **nurture**."*

James Dator

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Appendix content