Ecosystems in transition

Designing collaborative ecosystems to accelerate transitions

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Strategic Product Design
April 2021

Preface

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Dear reader,

In front of you, you will find the final outcome of my graduation project of the study Strategic Product Design at the Delft University of Technology. After seven years of study, both in Delft as well as in Rotterdam, my secondary education journey has come to an end. And although a graduation always comes with it's ups and downs (especially during COVID), it is a journey that I have thoroughly enjoyed. Looking back on these past months, I am proud to present my work, which I could not have completed without the support of a number of people.

First and foremost, I would like to express my thanks to my graduation committee. Although we have done our entire communications online, I knew I could always count on you both. Thank you Rebecca for the quick pep-talks and for understanding and following my intuition in this project. Jeroen, we've sometimes had the most unexpected but fruitful discussions. Thank you for your expert advice, your jokes and your critique as it has definitely benefitted this work.

Secondly, I would like to thank Strategiemakers for the opportunity of graduating in collaboration with you. I would like to thank the entire team for making me feel welcome and part of the club. My specific thanks go to Natalja, who I could always reach for questions and discussions. Thank you to Emma, Myrthe, Pascal and Floor, for letting me experience what your job entails. Thank you Pieter and Ferry, for intensively working together on the client case, valuing my ideas and your considerations regarding my graduation timeline.

Thank you to the participants and experts who took the time to meet with me, describe their experiences with ecosystems and for discussing ways to improve societal transitions.

I would like to thank my family and friends for their support. In particular thank you to my parents, who have always supported me in my studies, supporting me to take detours and encouraging me to always excel. Thank you to my friends, for lifting me up and supporting me. I would like to express a very special thanks to Senna, Lisa, Pip and Pauline, who have gone above and beyond in supporting me, working alongside me and helping me through the final weeks.

My final word of thanks goes to Wietse. Thank you for being there during the highs and the lows, the tours and detours. You made me laugh, calmed me down, boosted my confidence and made sure I took some distance every once in a while. And it's often that during these mini-breaks my best ideas came to be. Truly, there's no place I'd rather be.

I hope you enjoy reading the thesis!

Roxanne van Rijn

Abstract

In the current moment in time, there are large societal transitions happening, such as the transition to sustainable energy or the transition towards a circular economy.

Design-led transitions are societal transitions towards more sustainable futures, led by designers (Irwin, 2015). These transitions help us to move towards a more sustainable future for organizations, and are there- fore something largely all companies would want to participate in to accelerate this.

In this increasingly complex, dynamic and networked world (Dorst, 2015), companies cannot solve these large-scale societal issues alone. Therefore, in order to accelerate the transition, it is vital for companies to work together, as the challenges of today cannot be solved by companies by itself.

One of the ways in which companies can collabora- te is in ecosystems, which has increasing interest of scholars and practitioners. Specifically, this project focuses on transition ecosystems, a specific type of ecosystem focusing on accelerating transitions. In transition ecosystems, companies build multilateral partnerships that need to interact with the shared goal to help accelerate transitions.

These ecosystems are first explored by parties and then formed before they work towards the transition. The forming phase of ecosystems is a critical phase, since during this phase a lot of tensions and complications arise, which need to be taken into account in order to have a succesful ecosystem formation. These tensions occur, because within forming an ecosystem there is a gap between the organisational perspective and the ecosystem perspective
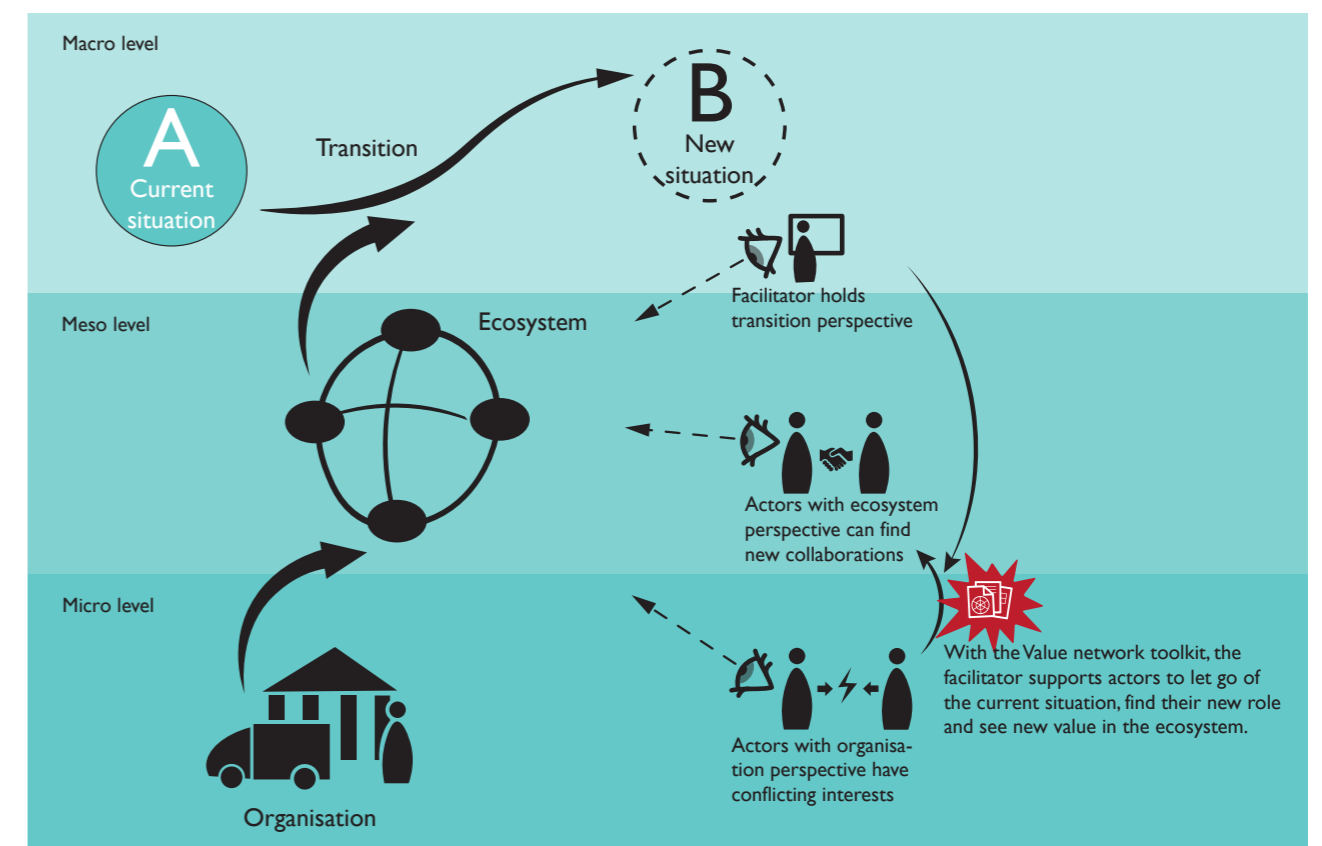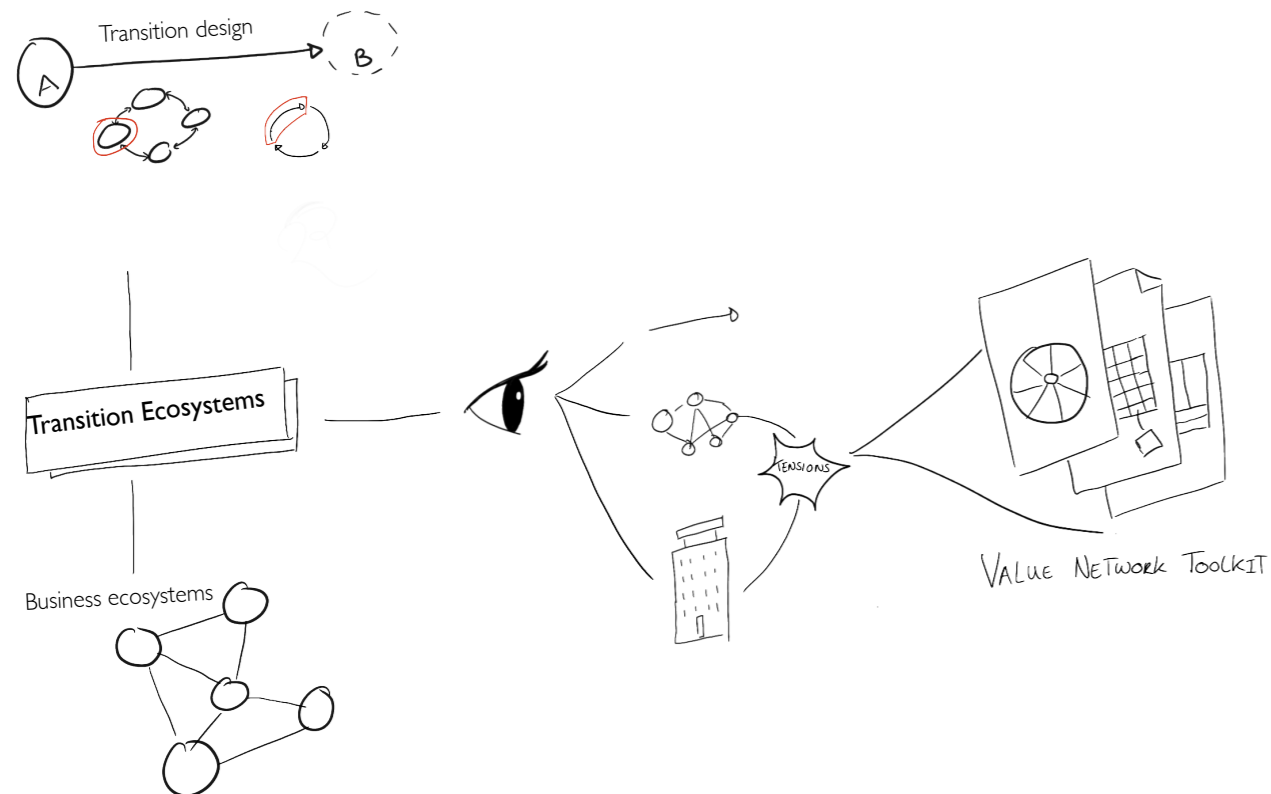
Organisations want to participate in the transition in order to stay relevant, but might feel threatened or vulnerable by having other parties present. If actors can move towards an ecosystem perspective, they are able to find new collaborations. In order to be able to see their possible new roles and co-cre- ate possible futures in the ecosystem, they need to release their concern about current threats and competitiveness. In order to get these parties out of their current role, a dialogue is needed between actors striving to form an ecosystem.

This project included a design approach to under- stand how designing ecosystems can accelerate transitions. For this research, 15 interviews are conducted (13 initial interviews and two follow-up interviews for validation). These interviews informed the designer, to design a toolkit to bridge the gap between the organizational and ecosystem perspec- tive in transition ecosystems.

The Value Network toolkit designed in this project aims to bridge the gap between the organisational and ecosystem perspective. It aims to do so by allo- wing organisations to think free of the constructs of the current situation, see their organisation in a new role and see the value of the ecosystem . The toolkit is aimed at strategic designers facilitating the for- ming phase of an ecosystem. In the value network toolkit, three tools were developed to facilitate discussions to relieve tensions.

The three tools were validated and tested using both expert interviews and a test case, and based on this iterations were made.

The project concludes with a critical reflection and relates back to existing literature.

With the Value network toolkit, the facilitator supports actors to let go of the current situation, find their new role and see new value in the ecosystem.

Reading guide

Colour coding

Different colours show in what part of the design process you are. You can use these to navigate more easily through the report.

|	
▬	**Context**
▬	**Research**
▬	**Design**
▬	**Implement**

The design process is further described in chapter 1.2.

Glossary

Often used terminology or abbreviations and how I interpret these are described here:

UBE	Utrecht Bike Ecosystem, a test case described in chapter 8.
Actors	A partner within an ecosystem
Ecosystem	A system where organizations work together
Transition	A societal change from one state to another
Multilateral	Having many partners from different areas.

Chapters
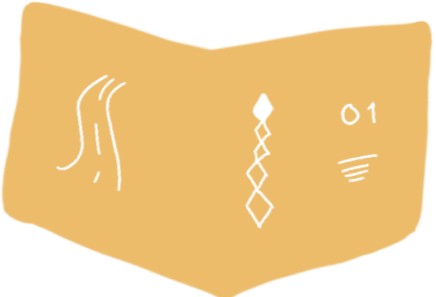
Chapters can be easily recognized by a full coloured spread at the beginning of each chapter
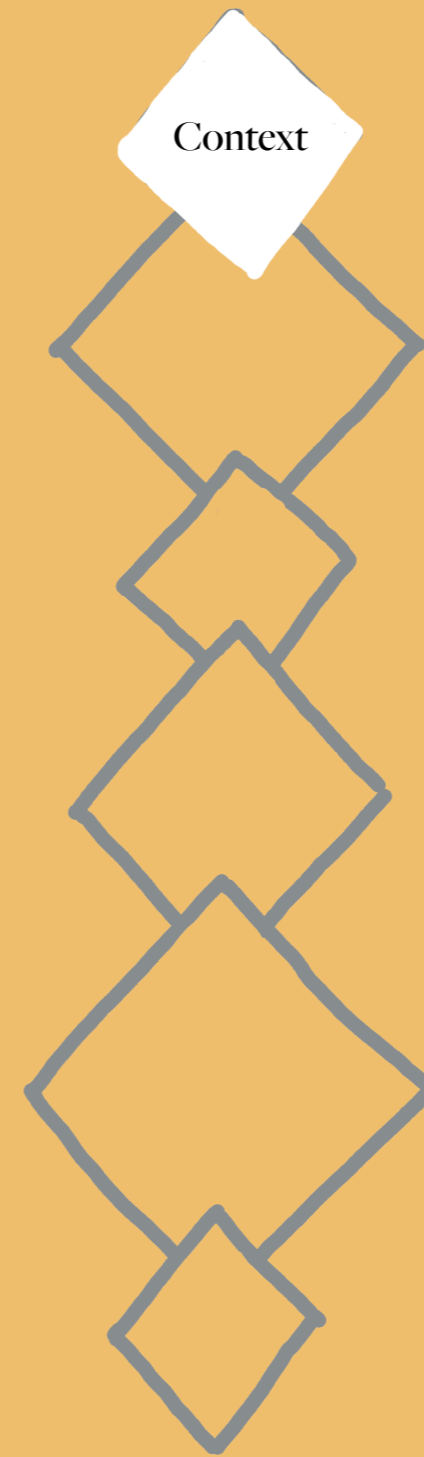
My insights

All fully coloured block with text present the most important information, insights, decision or conclusions.

Table of contents

Context

01

Introducing the project

This chapter describes the introduction of the project. Chapter 1.1 describes the situation of the project, and chapter 1.2 describes the project approach.

Chapter 1.1
Introduction

This chapter introduces the topic and the context of this project and the research question. Additionally, it describes the approach of this project in order to answer the initial research question.

Companies around the world are increasingly pressured by external factors. Next to the implications of COVID-19, the issue of climate change is pressing companies to make different choices. In these turbulent times, fundamental changes in our society and behavior are needed, as well as new ways of approaching these challenges to address these wicked problems (Irwin, 2015). Now that we've reached this pivotal moment, research calls for thinking more broadly about our current society, economy and the transition at hand. Building a network of partners to innovate together, acting as an ecosystem, has the prospect of accelerating transitions at an early stage. However, now it is unclear how collaborating with partners could aid this transition. As well, the question remains on the approach for businesses to start and guide ecosystem innovation.

Introduction into the topic
Transition design can be used to the combination of an ill-defined 'wicked problem' of societal, environmental, economic and business nature (Irwin, 2015). Thus, transition design may be a possible solution towards the challenges of the current age. However, how transition design can be applied is yet unclear. This project investigates the opportunity of using collaborative transition ecosystems to accelerate early stage transitions to a sustainable world.

Given the problem definition within the mentioned context, the research question (RQ) for this project is defined as:

RQ: How can design aid businesses to transition to a sustainable economy by innovating in ecosystems?

Context project
This thesis is the result of the Master Graduation Project to obtain a MSc degree in Strategic Product Design. The project is done in close collaboration with Strategiemakers, which "helps companies to become sustainable, innovative organizations" (Strategiemakers, 2020). Strategiemakers has a strong focus on design and sustainable transformation and is currently seeking new ways of transforming business. As part of their 'Strategy 3.0' approach (see chapter 2.2), they view that ecosystem innovation is a skill which is necessary for building strategies for companies, and that company strategies should be co-created in ecosystems.

Project stakeholders
This project includes multiple stakeholders. The main stakeholder is the author. From an educational perspective, there is the TU Delft, represented by the graduation committe. From a client perspective there is the company Strategiemakers, as well as the multiple participants in this research.

Implications of COVID-19
This project has been carried out during the pandemic of COVID-19. The implications are that there is a limited possibility to integrate and experience the company partners. However, an opportunity for the author was learning during the project how to perform online interviews, co-design and facilitate sessions online.

Project approach
This project applies a design approach, consisting of different phases. For this project, six phases have been established, based on the book Brand Driven Innovation (Roscam Abbing, 2017) and the Delft Design Guide (van Boeijen et al., 2013). Each phase comprises of a diverging and converging part to come up with different ideas and to analyse and select these. A graphical representation of these phases can be in chapter 1.2, with a relation to which chapters in the report correspond to the different phases.

Different design techniques are combined in the project, such as creative thinking, research, stakeholder involvement and visualizing. A way to innovate and provide new value propositions to customers is to integrate different design methods (Price & Wrigley, 2015).

Picture courtesy of Strategiemakers
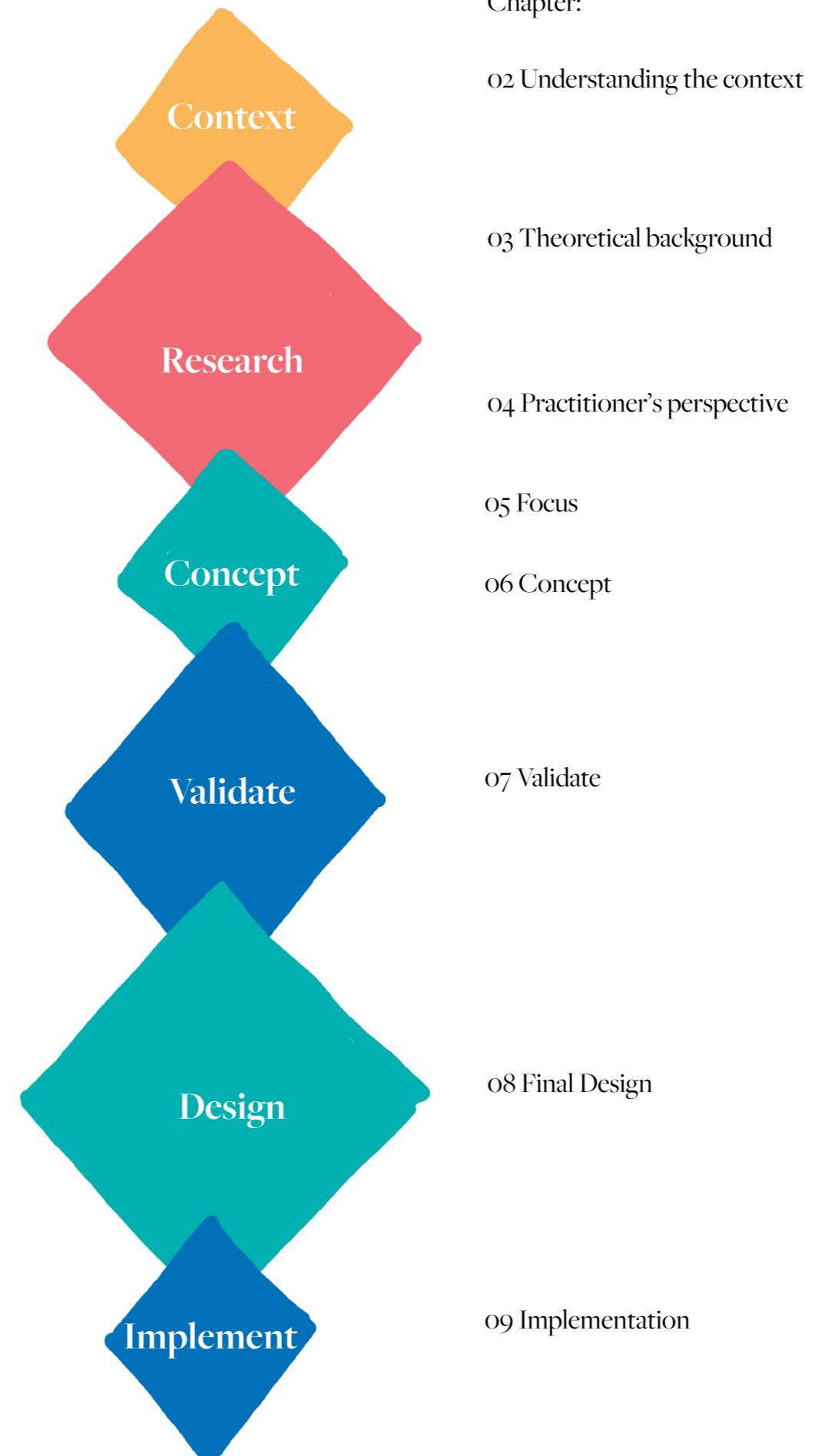
Chapter 1.2
Project approach

As stated in the previous chapter, the initial research question of this project was on how design can aid businesses to transition to a sustainable economy by innovating in ecosystems. This chapter describes the approach of this project in order to answer the initial research question.

This project applies a design approach, consisting of different phases. For this project, six phases have been established, based on the book Brand Driven Innovation (Roscam Abbing, 2017) and the Delft Design Guide (van Boeijen et al., 2013). Each phase comprises of a diverging and converging part to come up with different ideas and to analyse and select these. A graphical representation of these phases can be seen on the right, with a relation to which chapters in the report correspond to the different phases.

Different design techniques are combined in the project, such as creative thinking, research, stakeholder involvement and visualizing. A way to innovate and provide new value propositions to customers is to integrate different design methods (Price & Wrigley, 2015).

My Insights chapter 1

•The initial research question is "How can design aid businesses to transition to the next economy by innovating in ecosystems?"
•The project and this report are structured according to multiple diverging and converging phases, as this helps me to see new perspectives in every phase.

Chapter:

02 Understanding the context

03 Theoretical background

04 Practitioner's perspective

05 Focus

06 Concept

07 Validate

08 Final Design

09 Implementation

Context

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Context

02
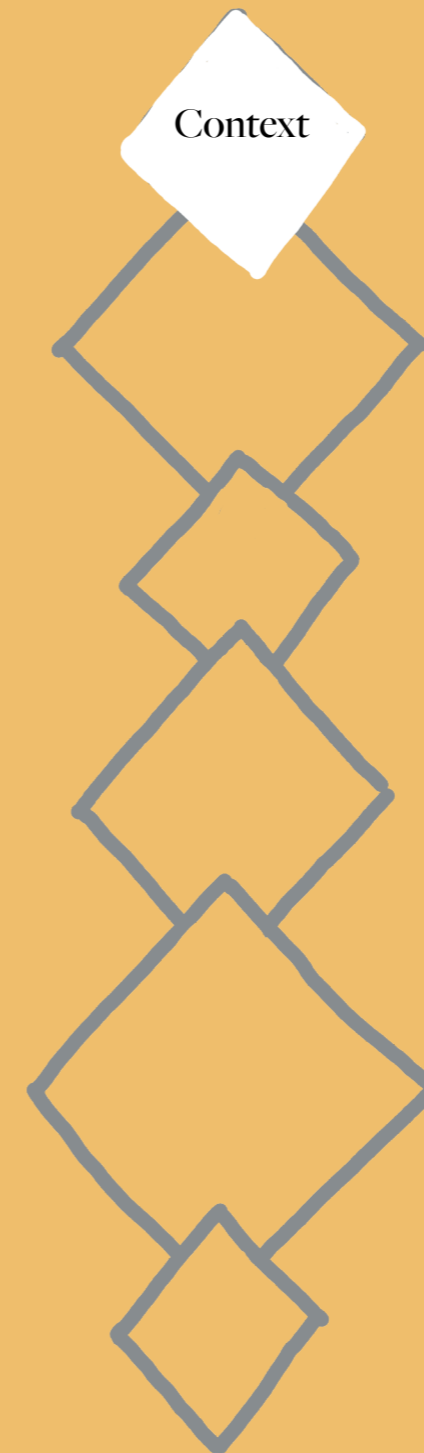
Understanding the context

The outcomes of this project are specified to the context of this time and place. Therefore, this chapter aims to understand the context in which the project is situated. Chapter 2.1 describes the context in the world during the timespan of the project. Chapter 2.2 describes the company context in which the research was performed.

2.1 Understanding the world

This chapter describes how we can understand the world around us during the time of the project, and the relationship of this context to the project.

With climate change being an increasingly important factor in the survival of companies, organisations are seeking new ways of doing business and a sustainable recovery out of the COVID crisis.

New technology advancements alone are going to be not sufficient to transition to a carbon-neutral world, therefore lifestyle and business changes are necessary (Wiedmann et al., 2020). With the deadlines for international agreements (United Nations, 2015) approaching and the effects of climate change emerging, organisations are assessing how much their business is negatively affecting the planet.

Many people and organisations want to use the COVID crisis to shift to a more sustainable economy. This is also reflected by policy makers, with a percentage of recovery plans of countries and from the EU dedicated to investment in sustainable growth (Figure 2). One of the new missions of the European Union is to "accelerate the transformation to a climate resilient and just Europe by 2030". (European Commission, 2020, p.1). The ambition is to build resilience in social and economic systems where there is a commitment to sustainable development, equity and social and gender justice. The mission "employs innovation as a way to catalyze systemic change" (European Commission, 2020, p. 7)

The current economic model may not be sustainable for a longer period of time, as it fails to deliver inclusive as sustainable growth (Mazzucato & Jacobs, 2016). We as humanity are living beyond what the planet has to offer and at the same time our

economy fails to include people living in deprivation (Dearing et al., 2014; Raworth, 2010).

By learning from previous crises and from the flaws in the current system, prominent economics are proposing changes and models to make the economy more inclusive and sustainable (Mazzucato & Jacobs, 2016; Raworth, 2017). These models, are often grounded in different areas of research and the first small examples of implementation are emerging, but large-scale experimentation is often not evident. For example, the Doughnut economy (figure 1) is a model where you as a society must stay within the planetary boundaries (Raworth, 2017) but the first large scale experiment has only been recently started in the city of Amsterdam (Gemeente Amsterdam, 2020).

Insight: A sustainable economy is a new version of the economy where the focus is on the welfare of both the people and the planet. In this 'new economy', growth is focused not just on capital growth, but on growth which builds towards "a sustainable and just society"
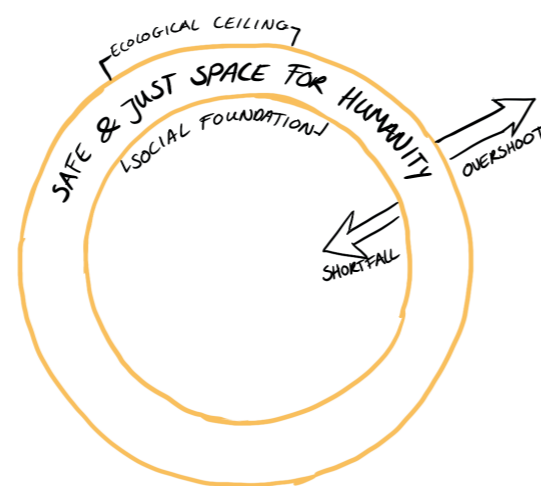
Using Transition Design
Transition design proposes a method and space for design-led societal transitions toward more sustainable futures (Irwin, 2015). In order to get to this sustainable economy, a transition is needed and transition design could be a possible method. Theories of transition design have been emerging over the past years (Geels, 2011; Irwin, 2015, 2018; Price, 2019) as well as case studies (Shah & Price, 2020) and literature studies (Van Selm & Mulder, 2019). However, research has not yet been found into how transition design can help transition to a sustainable, inclusive economy.
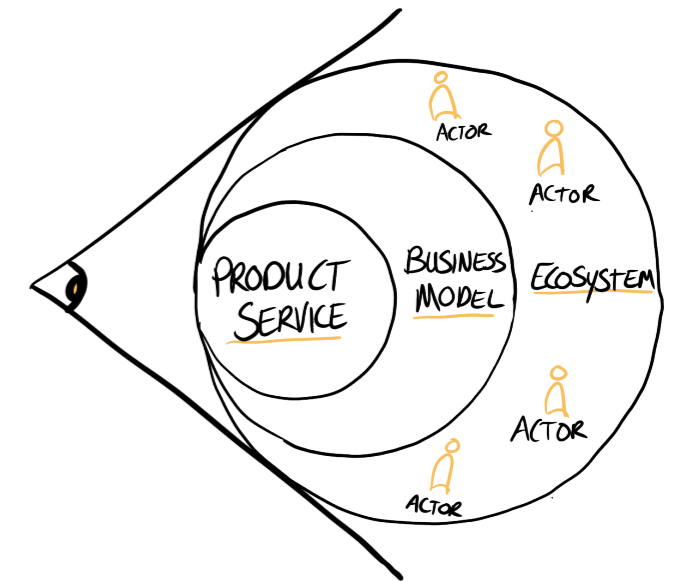
Figure 3: Ecosystem innovation perspective (Konietzko, 2021)

Ecosystem innovation
Because the complex nature of the economy, all businesses are dependent on each other. Businesses cannot solely transition to the next economy, but need to do this collectively. By incorporating ecosystems innovation, businesses aim their efforts not just on their own service or business model, but rather relate to the wider ecosystem incorporating how different actors can achieve a collective outcome, as can be seen in figure 3 (Konietzko et al., 2020).

"A Climate Resilient Europe - Prepare Europe for climate disruptions and accelerate the transformation to a climate resilient and just Europe by 2030. Resilience of social and economic systems with a commitment to equity, social and gender justice, to engage children and youth, and to leave no one behind. The Mission's approach to societal transformation pervades all community systems and embraces social, economic, and cultural value changes. Making societies less vulnerable leads the way for building new norms, practices and habits that preserve the environment, enhance wellbeing, and shift from a market-fixing framework to a market-shaping framework redefining the meaning of public value."

Source: European Commision, 2020, p.1

Figure 2: Extra information on Europe's mission:

Figure 1: Doughnut Economy, Raworth (2017)

2.2 Understanding the company

The project is executed in close collaboration with the Strategic Design consultancy firm Strategiemakers. This chapter aims to understand the work of Strategiemakers and demonstrates the relevance of this company to the project.

Strategiemakers is a strategy consultancy that uses design practices to ensure sustainable transformations for their clients wich they "help to become sustainable, innovative organisations where people love to work" (Strategiemakers, 2020).

Strategiemakers aims to build new capabilitites within the client's organisation, instead of providing external consultancy services and reports. This approach requires close collaboration with their clients. Strategiemakers helps organisations to experiment with new ways of working to bridge the gap between strategy and execution.

According to the Miles & Snow framework, (van Boeijen et al., 2013), Strategiemakers acts as a Prospector. It is proactive in searching new market opportunities, works in a dynamic environment.

Strategiemakers can be percieved as creative and innovative in comparison to tradional consultancies

Why is that?

• *Approach & results*: They focus on sustainable results rather then one-off services, helping clients experiment with new ways of working and capability building. They have a co-creative / cooperative with clients and their stakeholders, and a custom approach tailored to the unique context of clients.
• *Team*: Strategiemakers is organized horizontally, with a shared responsibility for company results. The team has the ability to learn and innovate, due to high degree of freedom en responsibility for individual team members and fostering an entrepreneural mindset.

• *Goals:* Strategiemakers stands for impact driven business, moving beyond financiel results. Their goal is creating positive impact for employees, clients & society as a whole. Therefore, they introduced newly developed metrics incluse 4 P's: people, planet, profit, purpose. As one of the founders mentioned: "We want to help companies train in building capabilities for a better future and to be critical in which companies we need to help".

An example to illustrate their way of working can be found in their growth by design framework. Strategiemakers performs design driven transformation using their growth by design framework. With the growh by desing model, they help companies use design to grow their business. The growth by design canvas can be seen in figure 4. The holistic approach resulted in designing a canvas, testing this in practice and learning how they could improve on this.

Strategiemakers saw a transition in its field in recent year, with the clear need that companies must become more sustainable. Strategiemakers believes this starts with the strategy and is implemented in the organization and through innovation. Part of shift is thinking beyond the boundaries of organizations, including using ecosystems for innovation.

To achieve this, they set out a roadmap to help companies to move to a 'strategy 3.0', which is informed by their client projects. Within Strategy 3.0, The strategy is purpose and transformation driven with a central long-term vision. The strategy is sustainable, innovative and puts people first. Important aspects are that companies have integrated values, have strategies that are simultaneously for the short and long term and that they co-create strategy in ecosystems.

One capability they want to build within companies is to make active use of the ecosystem of an organization. Strategiemakers sees that a sustainable strategy may not be achieved within the borders of one organization. Therefore, the right stakeholders should be brought together to effectively tackle certain problems within an ecosystem context.

GROWTH BY DESIGN CANVAS
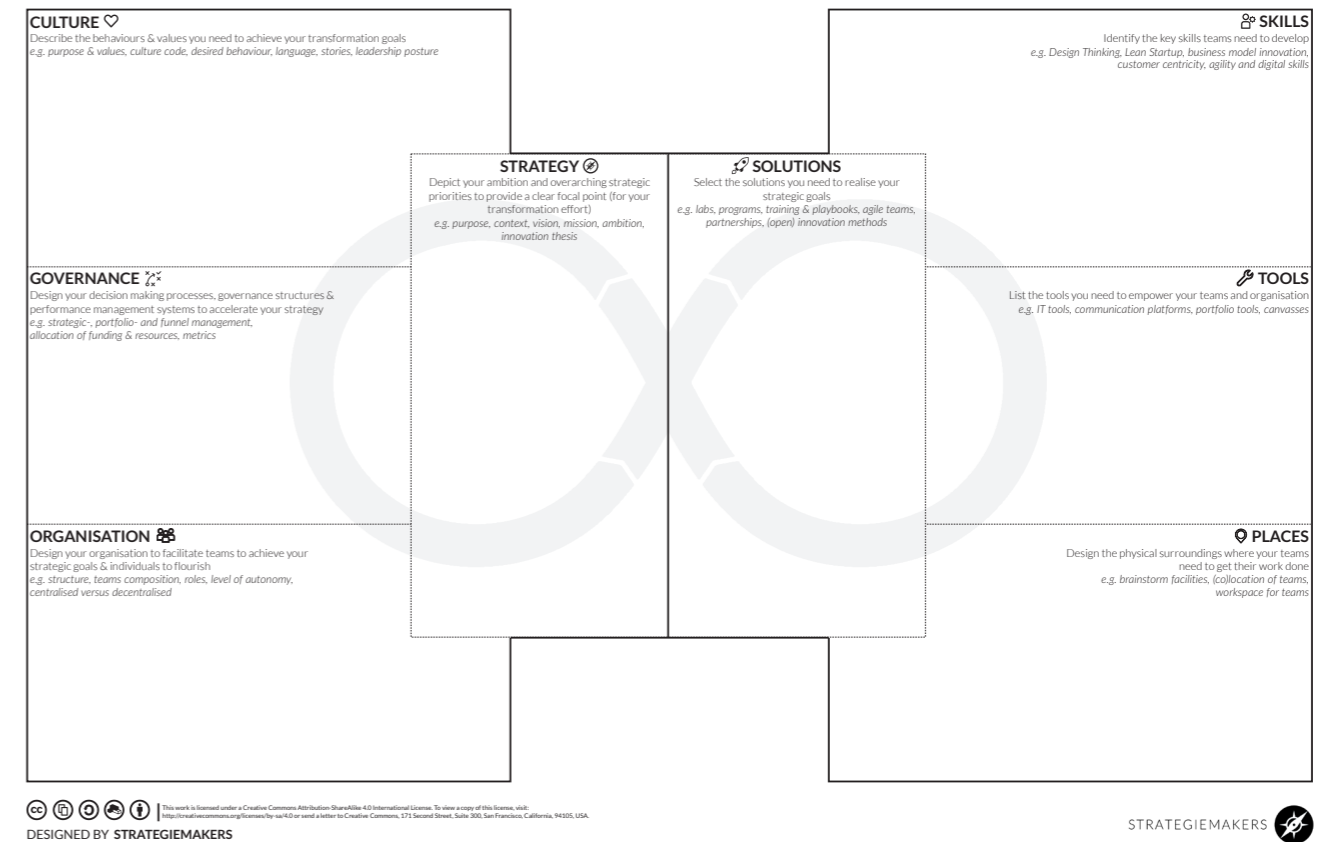
Figure 4: Growth by design canvas (Strategiemakers, 2020)

In order to ensure a relevance to the strategic design field, it helps to test the designed tools in practice, and the collaboration allows for this through access to both design strategists and cases they do for clients.
Strategiemakers' approach is creating and testing project approaches with client. This gives the author the opportunity to experiment and learn what adding ecosystem thinking may bring as value to customers.

The organization is of relevance to this project as it actively wants to aid transitions by their consultancy practice and believes a possible way to do this is by building ecosystem capabilities in companies. Doing this project in collaboration with Strategiemakers also allows for the opportunity to test designs in practice with their client.

My Insights Chapter 2

• This project connects to one of the missions of the European Union, which is to transition to a sustainable and just economy.
• Businesses cannot solely transition to the next economy, but need to do this collectively.
• The client, Strategiemakers, aims to pursue projects benefiting the transition to a sustainable economy.

Research
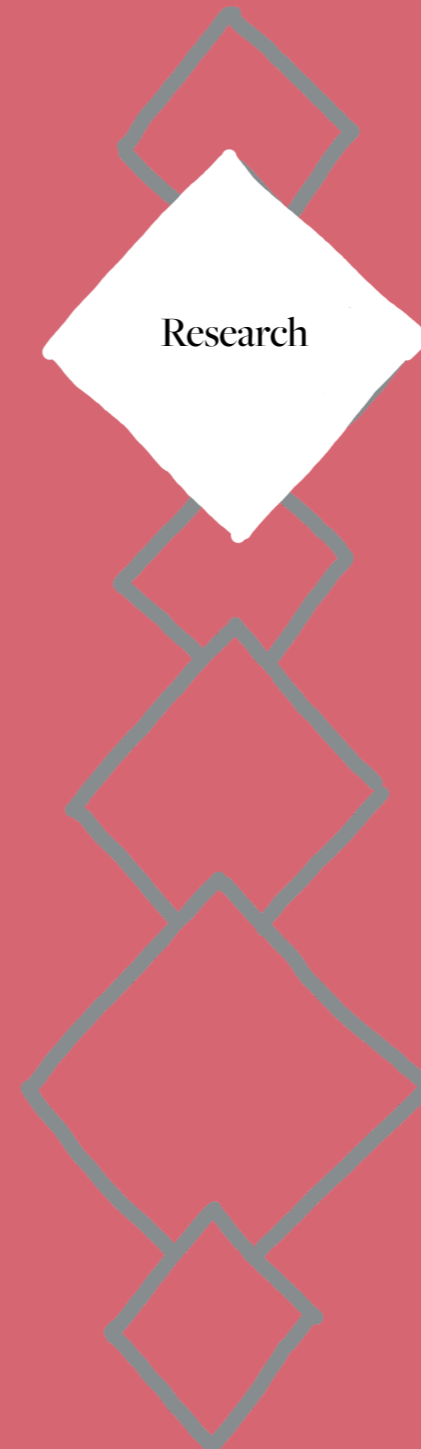
03

Theoretical foundation

This chapter aims to understand the theoretical foundation behind the project. As proposed in chapter 1, within the first phase of the project an understanding is needed of the theoretical background in which the project plays.

3.1 Approach to literature review

This chapter will set out the approach to gather information around the project and proposes research questions which will be discussed later in this chapter.

The aim of this search is to gain an understanding of how ecosystem innovation can be used in transition design.
To know how to build ecosystems for innovation, one should first understand what ecosystem innovation is, and roles and responsibilities within an ecosystem should be evident. On top of that, success factors of ecosystem innovation are well needed to collaborate successfully within an ecosystem. Finally, as Irwin (2015) describes, transition design offers a way for a design-led transition toward sustainable futures. However, what this design-led transition might look like is not evident.

This results in the following research questions for the analysis of existing research:

> RQ1: What is ecosystem innovation?

> RQ2: How is an ecosystem built?

> RQ3: What are the barriers and enablers of collaborations?

> RQ4: What does a design-led transitions require from designers?

Approach

The primary source of information to answer these questions consists of academic publications. Additionally, this data is supported by public press and publicly available material, such as news articles and annual reports. Finally, inquiries are made into consultancies who currently write about or market about their knowledge on ecosystem innovation.

The publications were found using the Scopus worldwide database of publications. Here searches were made using keywords such as ecosystems, transition design, collaborative networks and convener.

3.2 How to build ecosystems

The aim of this chapter is to understand what an ecosystem is and why this may be of importance to the project. Furthermore, the terminology will be discussed, how an ecosystem is built and the potential role of a convener.

>RQ1: What is an ecosystem?

The dictionary describes the word 'ecosystem' as follows:
The Merriam Webster dictionary (2020) describes the word 'ecosystem' as follows:
   : the complex of a community of organisms and its environment functioning as an ecological unit
   : something (such as a network of businesses) considered to resemble an ecological ecosystem especially because of its complex interdependent parts.
(Merriam-Webster, 2020)

Although the inspiration of using the word 'ecosystem' may come from the interconnectedness of a natural ecosystem, in this project, when talking about ecosystems the focus is on business ecosystems. In business ecosystems organizations work together to deliver services of value to customers (Moore, 1993). This central company is viewed as an 'ecosystem leader' and enables other actors to align their strategies and have shared visions. (Moore, 1993, p.26)

However, a business ecosystem is not the only term used for collaborations between companies. Other examples include those more used in academia, like 'networked innovation' (Bergema, 2015) and those more used in practice at present, like ecosystem innovation or innovation ecosystems (Accenture, 2018; BCG, 2019; Deloitte, 2017; Jacobides, 2019). Because this project is practice-oriented, the focus will be on ecosystem innovation.

Where collaboration in a traditional sense is about building bilateral intra-industry partnerships, in ecosystem collaboration the focus is on multilateral cross-industry partnerships. This can be seen in examples like the car industry (BCG, 2019) and the aviation industry (Price et al., 2019).

Definition of ecosystems in this project

Within the practice-oriented context of this project, the definition Ron Adner gave in the Journal of Management (2017, p.42) provides the best framework to think of ecosystems: *"An ecosystem is the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize"*.
In order to comprehend and understand the definition above, I will examine this definition further.
Adner describes the alignment structure is the predefined roles of actors within an ecosystem. The different actors may have different end goals in mind, but they need eachother to get there. He adds an ecosystem to be inherently multilateral, as you need not only partners who are already in your network or supply chain, but often additional partners who are perhaps cross-industry or might be your competitor.

A 'Set of actors' means the membership is defined. Defined does not have to mean complete or unvarying but it does imply that the goal of the participating actors is to have a joint value creation effort. The last part of the definition indicates the focus on the value proposition, which is to say, it lays emphasis on what value may be 'received' out of the ecosystem as opposed to what firms are expected to deliver. According to Adner, this allows for an ecosystem to naturally incorporate partners who might otherwise not be working together.

Systems or ecosystems?

The terms 'systems' and 'ecosystems' are often used interchangeably in the design realm. However, in business literature the term 'ecosystem' is used for collaboration in 'business ecosystems' (Moore, 1993), whereas 'system design' is used for describing the (IT) architecture of products and services. Therefore, in this work both system design from design literature and ecosystem design from business literature are used.

> RQ2: How is an ecosystem built?

Ecosystems for innovation, unlike natural ecosystems, do not already exist, but are built. And unlike traditional systems, they are not built in a topdown way, but rather emerge spontaneously from intentional collaborative activities of actors. (Russell & Smorodinskaya, 2018).

An ecosystem is there to build towards a common goal, together with partners. These actors are preferably from different industries and sectors and need to align interests and define roles and responsibilities. (Adner, 2017; Konietzko, 2021). These roles and interests change over time and therefore may need to be continuously re-evaluated. The partner selection process was found to be important in forming an ecosystem (Konietzko, 2021).

If ecosystems are formed to together innovate towards a shared goal, one would assume every actor would be proactively solving parts of the problem. One would assume most actors in an innovation ecosystem only work towards solving challenges to achieve the goal of the ecosystem, as Deloitte (2017) calls 'problem solvers'. However, within ecosystem innovation the actors can have different roles, according to Deloitte (2017). These can also be seen in figure 6. The five roles are those of problem solvers, conveners, enablers, motivators and integrators.

The role of a facilitator

Some studies reported there was a missing role in coordinating or facilitating the ecosystem, with a role that would include managing the combined work packages, coaching, moderating, and motivating partners (Konietzko, 2021; Konietzko et al., 2020). This role could be either an integrator or a convener, according to the Deloitte model (2017).

This 'convener', or ecosystem leader was already described by James Moore:

"The […] function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments, and to find mutually supportive roles." (Moore, 1993, p.26)

Other studies mentioned not the five different roles of Deloitte (2017), but rather a specific 'facilitator' next to the problem solving actors. This would be an actor to organize and manage the ecosystem, define roles, responsibilities and contributions upfront, without being involved in the content of the ecosystem (BCG, 2019). Another term for this is the 'stewardship' role, where the 'steward' guides the system in the right direction (Boyer, 2020).

In innovation processes there is the importance of a 'shared vision' and 'shared ownership' (Calabretta et al., 2017), for which this ecosystem coordinator should take responsibility.
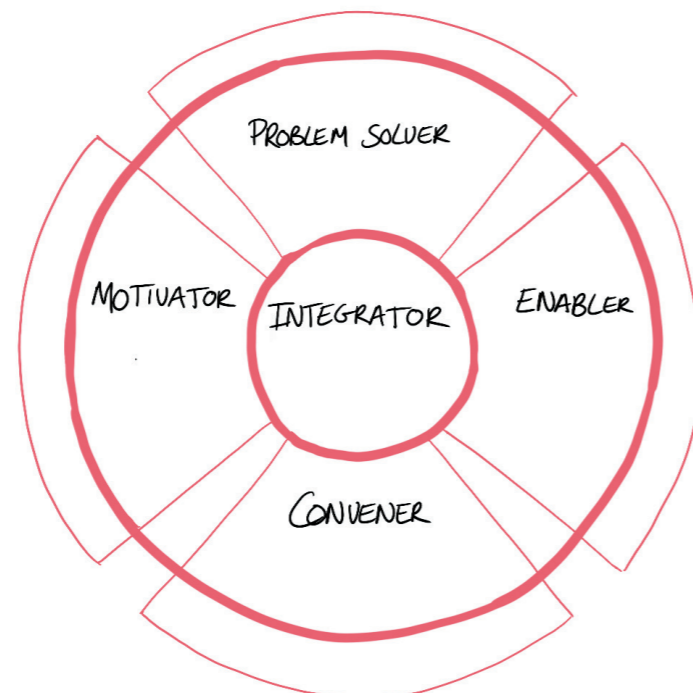

Figure 6: Five roles within ecosystem innovation according to Deloitte (2017)

> RQ3: What are the barriers and enablers of collaborations?

Charnley et al., (2011) describe various barriers for successful collaborations. These include different interests within the organization, varying compositions of actors attending project meetings and too detailed discussions in meetings. They also note success factors, including system level discussions, good team climate and a flattened hierarchy. Another key success factor is for collaborators to create a common language (Heger & Rohrbeck, 2012)

Bergema (2015) notes that the absence of common knowledge between actors, and difference in terminology for similar or different meaning were perceived as barriers for successful collaboration. She also notes that understanding of value of knowledge and of other actor's ways of working adds to the success of a collaboration, as well as face-to-face contact.

Radical outcomes

As can be seen in figure 7, when there is an increase in collaboration happening, there is an increasing sustainability potential for radical innovation (Brown, 2020).
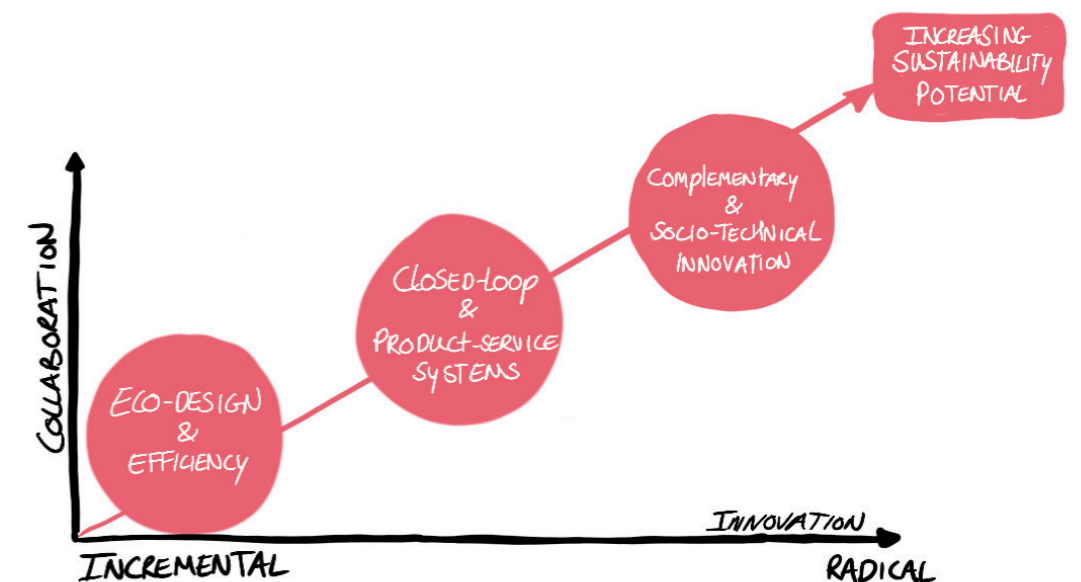

Figure 7 : Evolution of sustainable oriented innovation and collaboration (Brown, 2020)

3.3 How to lead design-led transitions

This chapter aims to describe the theory of design-led transitions and how designers can play a role in this. The transition design approach is described, and how ecosystems can be used in design-led transitons.

Figure 8: An s-curve shows technological advancements over time

## > RQ4: What does a design-led transition require from designers?

The Transition Design Framework (Irwin, 2015) consists of four different mutually enforcing areas, as can be seen in figure 9. There you can see the four co-evolving areas of new ways of designing, mindset, theories of change and visions for transitioning (Irwin, 2015).

A design-led transition is a societal transition towards more sustainable futures (Irwin, 2015). Such a transition can be displayed as an s-curve (Price, 2019), as can be seen in figure 8. The key role for designers within these transition is connecting transition efforts in terms of relationships, scale, infrastructure and timing (Shah & Price, 2020).

Transition design Approach
An approach for design-led transitions, as suggested by Irwin (2018), consists of three phases; Re-framing present & future, designing interventions and waiting and observing, as can be seen in figure 10. Rather than a process, this approach suggests different types of action to consider when designing for a transition or system-level change.

In the first phase in the model, stakeholders reframing the present problem and envision a long-term future, in which the problem is resolved. Design practices which may be used in this phase include mapping the problem, mapping stakeholder concerns & relations, future visioning the transition and backcasting from the vision to the present.
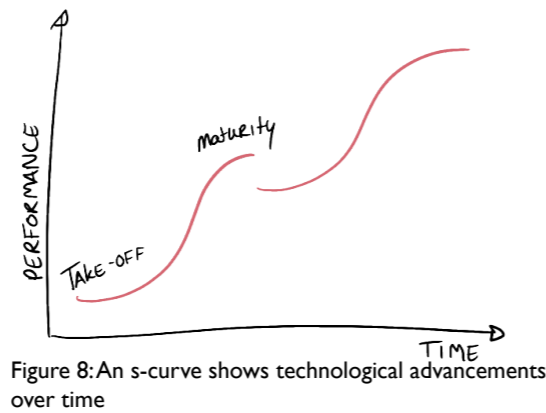
In the second phase of the problem, it is important to situate the problem and future vision in a larger context. Hereby you, as a designer, identify consequences and causes at multiple levels to design interventions to catalyze systemic transitions. Useful approaches in achieving this include multi-level perspective, the Max-Neef's theory of needs and linking initiatives to amplifying and catalyze systemic change.

The third phase covers waiting and observing the transition unfolds, as intervals of interventions and observations alternate. This is an area requiring a new mindset of designers, as this may be unfamiliar to some designers. One way to build this mindset is to understand the slower cycles of ecosystems and to design purposefully for these slower cycles. Designers should also be patient and resist the pressure of too quickly concluding the results of designed interventions.

Insight: Designers should design interventions for transitions with the slow cycles of ecosystem in mind.

Previous graduation student Gina Henselmans designed a framework for systemic collaboration to accelerate the transition to a circular economy (2019). After experiencing the need for a new economic system, a circular system of urgency should be defined, circular system solutions through co-creation should be refined and the feasability of the circular system should be tested. However, her research would be specific for the transition to a circular economy in the context of the company of Value Creators. This research builds on the work of Henselmans, with a differentiation to how broader ecosystems for collaboration are build.

Designer skills
Designers possess skills which may be useful within design-led transitions. The ability of designers combine creative and analytic thinking enables designers to cross multiple angles and contexts and to shift between a detail level and seeing the big picture. However, it helps for designers to have an understanding of all the domains in which a transition is occurring, in order to facilitate seamless working between stakeholders from different backgrounds. (Shah & Price, 2020) .

Insight: Design-led transition require designers to be flexible and adaptable to multiple situations, and to apply their design tools and methods in systemic changes.

Within transition design, the focus of this project will be on early-stage transitions as transition ecosystems may play a role in this.
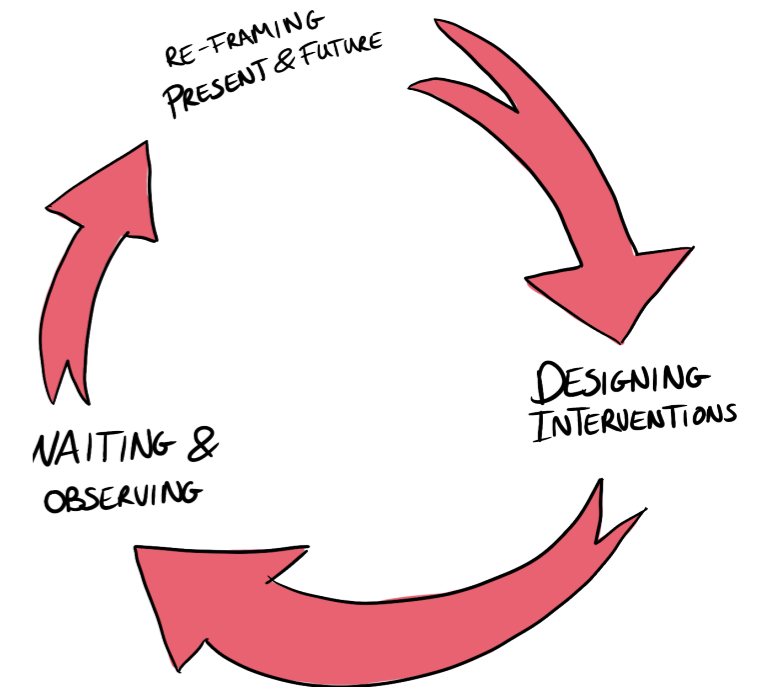
Figure 10 : Phases of a design-led transition (Irwin, 2018)
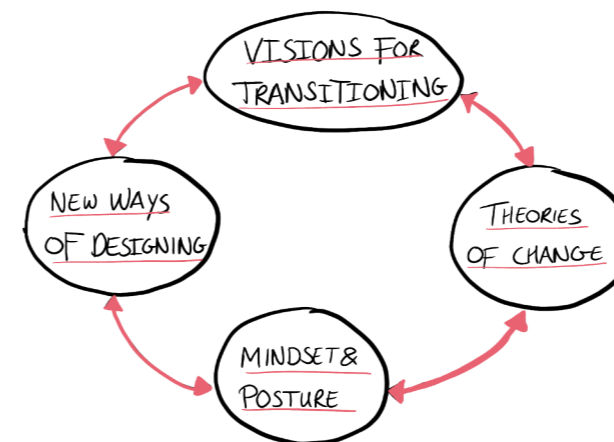
Figure 9: Transition Design Framework (Irwin, 2015; 2018)

My insights

• For this project, the terminology 'ecosystem innovation' fits best.
• With ecosystem innovation you build multilateral, cross-industry partnerships for a shared goal you are not able to reach with your organization alone.
• The management of the ecosystem should not reside with one party, but rather be a collective effort with one party who has an responsibility of keeping the ecosystem in place.
• Designers should design interventions for transitions with the slow cycles of ecosystem in mind.
• Design-led transition require designers to be flexible and adaptable to multiple situations, and to apply their design tools and methods in systemic changes.

Research

04
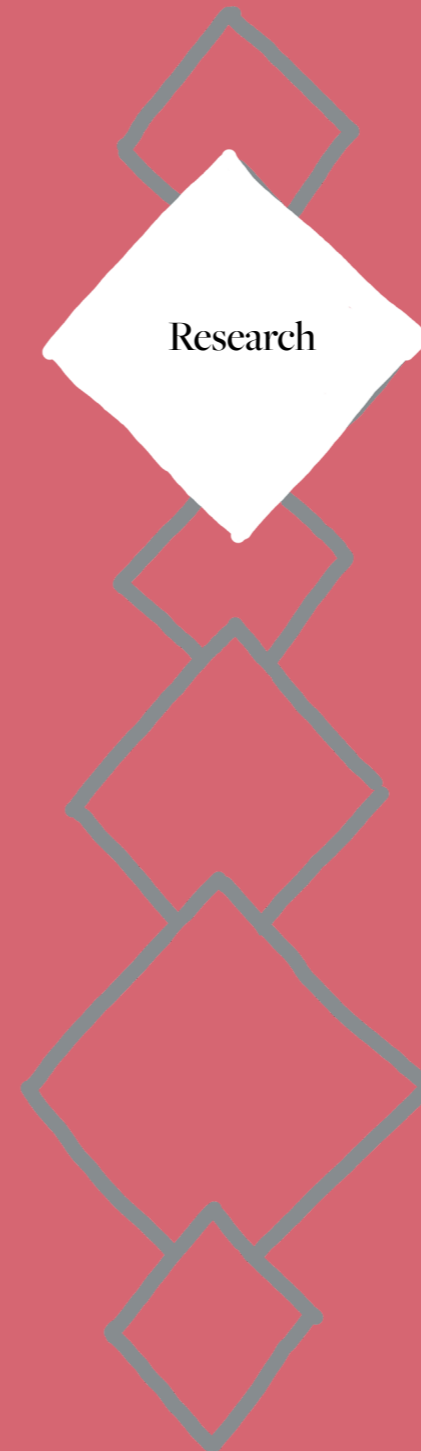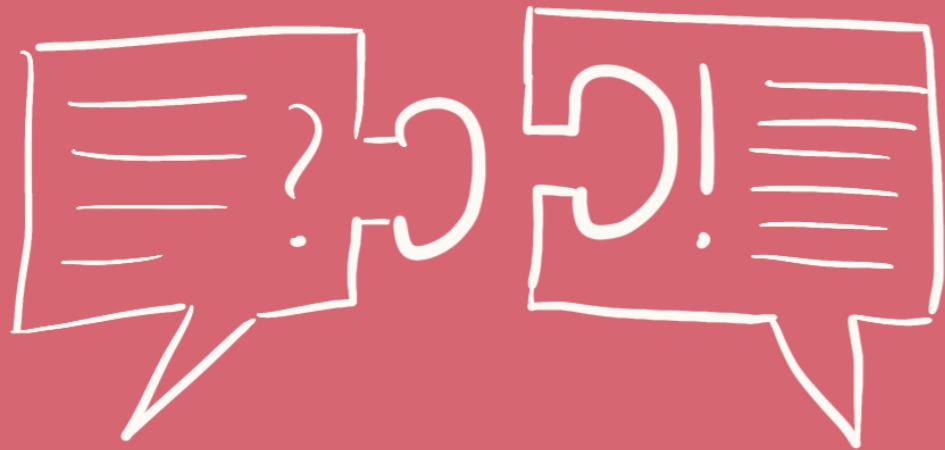
Practitioner's perspective

In order to understand what working in eco-systems means in practice, a research was set out to gather expert insights on how to work in ecosystems.

4.1 Research design

Conscious decisions were made in how the research was exceuted. This chapter aims to shed light on these choices and presents the research strategy to gather expert insights.

This project aims to better understand on the different roles within an ecosystem and how ecosystems of innovation are set up. However well suited the theory might be, the practice of the current use of ecosystem innovation was not evident. Therefore this chapter describes the qualitative research that was conducted. This qualitative research was conducted to uncover how ecosystems for innovation were set up, what the barriers and enables were in setting up an ecosystem and what the roles were within those ecosystems. In chapter 5, these practice insights as well as the insights from theory will be used to craft the design problem and move towards a solution space in chapter 6. The research design was set up holding semi-structured interviews with participants, until there was data saturation necessary for the design process.

Pilot interview

A pilot interview was conducted with an employee of Strategiemakers who used ecosystem innovation in a consultancy project for one of the clients. After this interview, the interview guide was improved to include more follow up questions and to better adjust the questions to the wide variety of participants. The author used an interview guide based on Gioia et al (2013) to cover the interesting areas of research, to include thorough follow-up questions and to include in-depth questions to uncover latent participant opinions and barriers within the ecosystem.

Data collection

The primary source of data consists of 12 semi-structured interviews with participants. Prior to the interviews, all participants were asked for written consent of audio recording and the usage of the data for the purposes of this graduation thesis. All interviews were scheduled and performed using zoom, as the COVID-19 pandemic did not allow for physical interactions, and were recorded locally on the author's computer.

It is essential that the participants could remain anonymous, since it allows the participants to speak freely about their experiences and opinions (Gioia et al., 2013). To ensure the anonymity of participants, identifiers had to be removed from transcripts, participants were referred to using coding, and to describe the coded participants the position and employer of the participants were anonymized, except for the in-depth cases as examples.

Sampling strategy

Participants were selected using a sampling strategy. The sampling strategy used made sure the participants selected were useful for the purpose of the research. The criteria in this sampling strategy were that participants should be either involved in setting up ecosystems for innovation or should be experts who gathered data themselves on ecosystem innovations, such as PhD candidates. An overview of the participants, as well as their industry and company, can be found in figure 11.

For the purposes of data triangulation, secondary data was collected consisting of news articles, company statements and other publicly available data providing context to the statements of participants.

Case

From the interviews with participants involved in setting up ecosystems, case descriptions were noted. These case discriptions can be found in the next pages and illustrate the kind of environments experts work in.
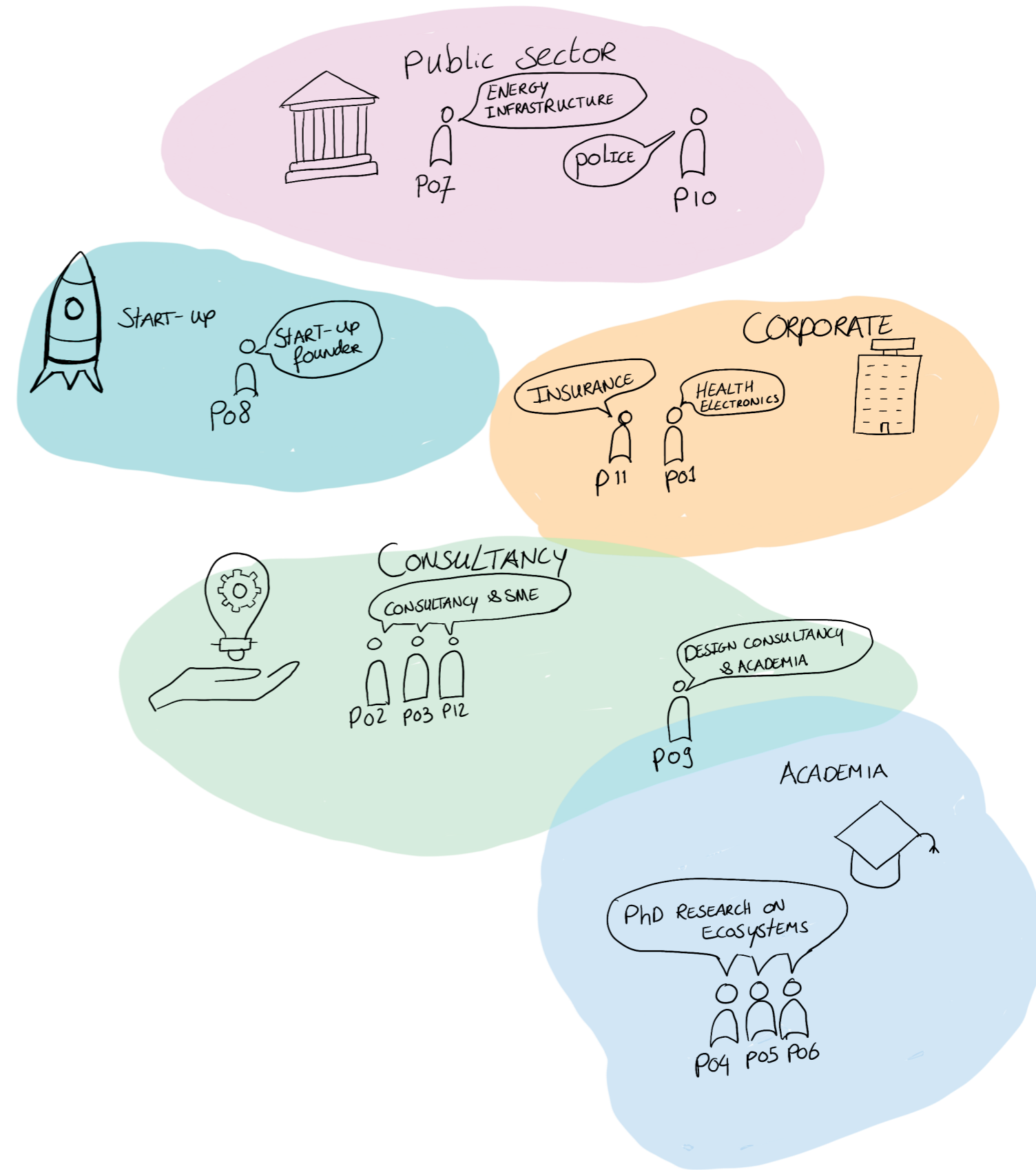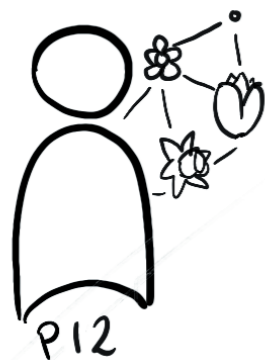

Figure 11: An overview of participants interviewed and their respective expertise and type of industry.

4.2 Case description

This chapter describes three in-depth cases, studied in interviews in order to understand how ecosystems are set up. The chapter continues with short case descriptions of the other participants interviewed for the project.

Case: Flora Holland

The consultancy of participant 12 had been asked to aid a transformation within the flower industry. The flower sector in the Netherlands is influenced by major flower cooperations, who act on behalf of local flower nurseries in getting access to the flower auction. The cooperation needed to hold together the system, as a large section of it was in danger of falling apart. This would cause stress on the flower market with rising prices as a possible outcome.

Participant 12 designed a bottom-up massive participation process to include all 4000 members of the cooperation, as all of these members were considered important stakeholders. During many sessions, all members were physically invited to a location to share their issues and possible solutions in small groups of 6-8 other members. These sessions were facilitated by flower nursery farmers themselves, as this would create the highest form of trust without having other members present.

The issue on the table was that auction prices and commisions were unfair in the eyes of some of the flower nurseries. The issue was not open for compromises, but a real alternative solution needed to be found.

According to Participant 12, these conversations needed to happen without clear communicated plans how to do it differently. Instead, the solutions needed to come from the participants so the participants felt a sense of urgency.
As Participant 12 mentioned;
"The whole system needed to be in the room. Not just management or the board with some invited guest, but every last one of the stakeholders.'

Another important factor noted was that the control of the outcome should reside with the participants of the sessions. This meant that the board had little control over the outcome of the process which caused friction, as they felt left out over the course of their cooperation.

Furthermore, Participant 12 claimed it was important to have potential conflict as early on in the process as possible. This was brought about by seeking the polarity in the subject and to bring the conflict on the tables. As Participant 12 noted, the tensions are a vital part of the transformation process as it shows the underlying fears, which then can be used to redesign the system.

"If a system needs to change it causes 'change energy' somewhere. Conflict or tensions are examples of this 'change energy' and therefore they should not be excluded, but rather put on every table during the session. Only when the tensions are voiced the underlying fears becomes clear, and these fears are the first step in finding solutions."

Following this process, the system of the flower cooperation was redesigned and power was redistributed to the members.

Although this case might not be a direct transition or ecosystem, certain lessons can be valuable insights. One of the insights is that conflict or tension is not necessary harmful, but can help in unraveling the underlying fears and assumptions. As in ecosystems there are sometimes contraticting or competing parties at the table, facilitating the discussion may help. An example might be that it could aid in bridging the gap between the current state of the organisation and the possible new role during the transition.
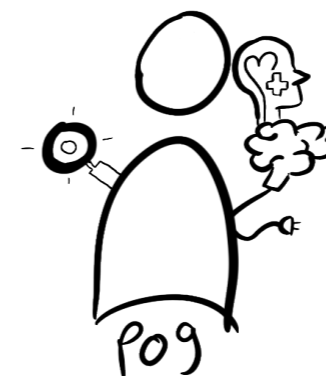
Case: Redesigning psychiatry

Another case which was studied was the case for Redesigning Psychiatry. In this ecosystem, Participant 9 set up a network of designers, philosophers, researchers and health professionals to transform psychiatry in the Netherlands.

The network was started from a new shared vision on the Dutch mental health system. From that vision, a contract with parties was formed to formalize the initiatives. Although there was a lot of enthusiasm from actors, set-backs like declined funding resulted that the initiative started smaller than intended. In the beginning there was a classical client-contractor relationship with 10 parties, which acted like a consortium.

After a year the set-up of the ecosystem was changed with a 'membership fee' which actors had to pay to get access to the sessions and relevant information. Initiatives launched by the ecosystem included Summer Schools for mental health agencies to get people to learn how to innovate.

What helped according to participant 9 is having 'ambassadors' in all the actors who would be actively involved in the ecosystem. These act like an intermediary between the ecosystem and the entire organization, and were useful in connecting the ecosystem with the organisational perspective.

In this system, the strategic designer was more than just a facilitator, but also acted as a motivator and kept an eye on achieving the shared vision. The strategic designer did not have a predetermined strategy, but worked on three different levels: deepening the vision, creating movement in the system and changing the current situation.
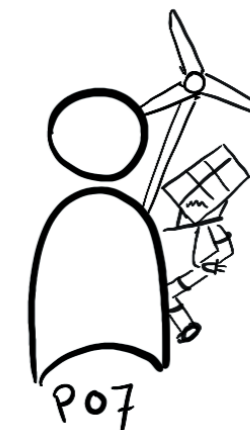
Case: Mission H2

Participant 07 started working at the initiator of the Ecosystem Mission H2, which is a collective of partners from the energy sector aiming to accelerate the transition to sustainable hydrogen.
This partnership was initiated by the CEO's of large energy companies in the Netherlands. After a contract was signed, parties had to buy-in. The sum was dependent on the size of the actor and the role in the network.

The demand for hydrogen in the Netherlands is still low, as the price is very high. Therefore, investments are needed to reduce costs.
Participant 07 noted that without large powerful parties from the energy sector, it is hard to make the transition. The participant noted this was both because of the capital these parties bring, as well as that marketing with using the name of those large parties makes it more convincable.

According to Participant 07, it is vital in these large societal transitions for governments to play a key role in accelerating them. There should be room from the beginning for local or semi-govenmental parties, as having a government attached to it makes it both more credible as well as speeding up regulations.

Building this network helped to bring attention to the need for sustainable hydrogen in The Netherlands. Participant 7 noted that these networks are of vital importance for technologies in an early stage, as the complexity of the world prevents companies to solve these problems within one company.

Short case descriptions

Short case description of cases where ecosystems played a role for the interviewed participants.
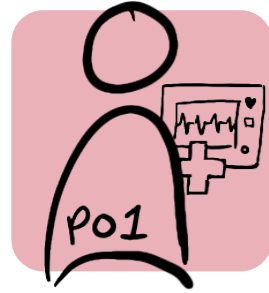
Company: Medical equipment & healthcare electronics
Participant 1 was involved in an ecosystem surrounding healthcare electronics. The aim was to improve the future of healthcare by including preventual care to reduce future care demand.
In this collaboration there were many different stakeholders, such as patients, insurance companies, healthcare practitioners and suppliers of medical and IT equipment. Participant 1 struggled with the decreasing transparancy as the system became more complex, which was harmful for the quality of the collaborati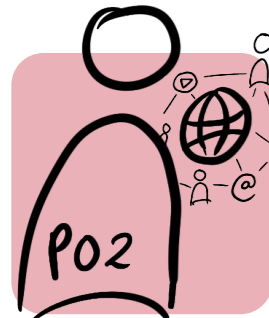on. A convener was opted a possible solution to act as a mediator and ensures balance and transparancy without self-interest

Company: Small consultancy firm specialized in building networks
Participant 2 was involved in setting up a network of companies and consumers to accelerate sustainable behaviour. Consumers could save points by sustainable actions and could use them to fund for example making your home more sustainable.

Participant 2 struggled keeping a balance from the power of organizations. If an initiating party takes an active role in the content, participants will more easily remain passive which destabilizes the democracy of an ecosystem. The goal of the ecosystem should be co-created instead of put out by a single party. But you invite certain parties based on an intitial goal, which might need to be changed.
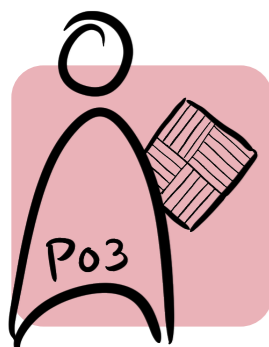
Company: Commercial flooring company
Participant 3 was involved in setting up a collaborative network to ensure the carpets the company sell would be carbon-positive.

In setting up the network it was necessary to look for unconventional partners, as the current partners were not able to deliver on the company's carbon-positive ambition. In this, the participant noted that having a shared common goal helped to accelerate the process of finding the right materials and suppliers.
In this network it was helpful to have partners with a variety of backgrounds as it helped bring new perspective and solution directions.

Company: Solar energy start-up company
Participant 8 set up an ecosystem in order to share resources and knowledge and to accelerate the energy transition. In the ecosystem the accelerating of the transition by using a new way to produce solar panels was central, and this ambition was underscribed by all other partners. Some hurdles included reducing the cost price to obtain financing and grants to scale up, and to simplify revenue streams among parties. For this, an orchestrator was missed and this delayed the process of finding the right funds and kickstart the ecosystem. What helped the ecosystem was the wide sharing of information, except a non-disclosure agreement there were no regulations within the partnership.
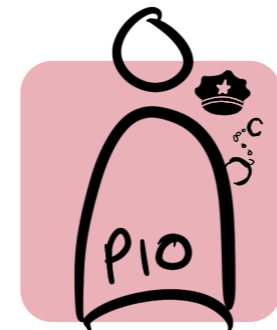
Company: National Police
Participant 10 is currently involved in setting up collaborations between the police and innovative start-up.
As change within the organisation is slow, it aims to accelerate by collaborating in a constructive way with start-ups. Regulations concerning tenders limit participant to set up an ecosystem with equal partnerships, with the only option to have a supplier-seller relationship. The organization does not have the capacity to set up transition ecosystem, and therefore the participant would prefer to join an existing ecosystem. An important factor for participant 10 in building collaborative networks is building a relationship based on trust, before moving towards detailed collaboration.

Company: CEO Medical Liability insurance
Participant 11 is involved in currently setting up an ecosystem with competitors and partners to increase the quality of life of patient by aiming to reducing the claim processing time with about 80%. The ecosystem aims to achieve this by bringing parties together that previously would not collaborate and to only work together towards the shared goal; reducing the claim processing time for the patient. Within the health sector, there is an increase in multilateral partnerships as a way to solve challenges such as an increase in customer demand and the ageing population. The challenge the participant sees is getting people to constructively work together without only focussing on the implications of its organisation

4.3 Results of building an ecosystem

This chapter describes how an ecosystem is built, synchronized from analysing commonalities in participant experiences. The three main phases of ecosystems, Exploring, Building, Working, will be discussed.

The need for building ecosystems was evident among the respondents: *"Society is changing very quickly and we have to change with it. Society has become so complex that we have to utilize the qualities of other parties"* (P10). *The ecosystem approach is about cross-border cooperation, working holistically and less hierarchical, with the result of system change'* (P04)

Participants see the rising need of working outside chain-partners with different actors as well: *"In the past you collaborated much more in a chain than you do outside the beaten track. I see that more and more now. That you look for collaborations off the beaten track. We have now brought all our competitors, or legally speaking 'other parties' to the table to see together what is best for the patient. Some internal employees find that difficult, but we view it's best for the patient in the end"* (P11)

Exploring phase of the ecosystem

The start of an ecosystem is fuzzy and chaotic. People meet each other at conferences, or they used to collaborate together at a different firm. One participant illustrated this fact by sharing an anecdote about the start of their ecosystem:
"We started with an event, which was an anniversary party, where we did not just invite our partners but also our competition. There we had certain round tables where we would have discussions on how to improve the system. And because it was so low-key with a nice vibe, everyone loved it and got really enthusiastic. But then it's hard to form this into a real sustainable collaboration" (P11)

Often, there is already a shared understanding and a certain enthusiasm among actors that collaborating with multiple parties will help to reach a certain goal. However, there is no clear structure yet and it depends on loose ends that no-one is doing something with yet. As another participant shared;
"If you look at transition management literature, we are simply in a phase of chaos. Everyone does different things. Everyone is actually competing with each other. So that's just not productive if you really want to fundamentally change that system" (P09)

Building phase of the ecosystem

After the exploration phase, there often is an initiator or initiating party that takes the lead in bringing actors together and forming an ecosystem (P, n=4). This 'forming' phase is essential as it lays the foundation to the ecosystem, such as which actors are involved, how the ecosystem will function and the goal of the ecosystem. The role of initiator is evident in this phase. One participant shared their perspective:
'The more active the initiating party is in forming the ecosystem, the better the ecosystem is able to perform in the long run' (P02)

"So we really have a lot of discussions about: Who are we to initiate that? But did we say we will take the responsibility and try to facilitate it. We are just going to organize that masterclass and we are just going to involve partners at least with our members and their region and then set up transition experiments to see how we can change certain things and thereby form a learning network." (P09)

To start off the formation process, it is important to choose the right set of actors for the ecosystem. Sometimes, you need unexpected partners in order to have your idea take off. Participant 6 illustrated this with the following example:
'For example, when Philips invented an HD Tv, it needed to convince television producers to buy expensive equipment and film in HD, even though no one had an HD TV yet' (P06).

Having diversity in the types of actors appears to play an especially important role in forming ecosystems (P, n=3 (P01, P04, P08)). The diversity should be not just in the type of organization such as public or private or large or small, but also in the type of products, skills, knowledge and industry the organization brings to the ecosystem.

This diversity is especially important in ecosystems where there is technology that still needs to be developed, as the larger players can invest more resources for the development where the smaller actors such as start-ups may add more knowledge or new ideas. (P, n=3 (P06, P07, P08))

In this phase the shared goal of the ecosystem should also be determined. This goal should transcend the ability of separate actors and should be built together with all parties rather then put upon by the initiating party (P, n=7).
"We facilitated designing the vision together with all the parties involved, so we knew everyone would agree with the vision and would stand by it" (P09)

With the goal, the values from which you work should also be determined: *'The values of which you work from are very important. How do you as an ecosystem choose values together and pursue these?'* (P02). These values should not be monetary and should be discussed continuously, so there could be a deviation if necessary. (P, n=2).

Finally, there should be some kind of formalization of the collaboration. This includes good agreements about Intellectual Property, investments, commercialization, and possible financial and brand damages (P, n=6; P01, P02, P03, P04, P06, P08). In short; *"Everyone has to have skin in the game"* (P01), but *'this can vary per partner, a start-up has a different kind of input then [Name multinational].'* (P08). These different types of risks are illustrated by P10: *"We cannot have a damage to our image, then society will lose confidence in us, but it is easier for us to deploy extra manpower and resources. You have to take calculated risk and keep asking questions, but in return you'll say "I'll take this one if it backfires".* (P10)

The Work phase

Once everything is settled in, it is important to start soon into the content with the different actors (P, n=5) and to show practical results quickly (P, n=2). *'Within these ecosystems where the focus is on exploration, it is hard to measure impact. The exploration goes really well, but it is hard to upscale'* (P06)

Therefore, *'In the work stage, the delight is in the detail, otherwise it's just a collaboration. You need to keep working in a way that 1+1=3.'* (P01)
Building results helps to legitimize the ecosystem and to re-evaluate the ecosystem, as *'perhaps after the first results you come to the conclusion you still miss a partner'* (P01)

4.4 Results of ecosystem roles

Next to the process of building ecosystems, another important finding in the research was the different roles within ecosystems. This chapter aims to describe these different roles and how they relate to eachother.

Many participants (P, n=7) noted the necessity of a coordinating role within the ecosystem. Therefore, this role and the characteristics thereof where further explored in the interviews. As P01 describes: *'Someone must be appointed, or an organization, who selflessly keeps an overview and ensures that balance and transparency are maintained. Purely the whole process.' (P01)*

This coordinator keeps the overview, makes sure all interests are looked after, if there are conflict of interests and if the contributions of the actors collectively build towards the shared goal. As one participant notes, the coordinator role can be compared to a conductor.
'An awful lot of cooperation is needed for the transition, actually an ecosystem. It is as if we have an orchestra pit full of musicians and we have placed a few pieces of sheet music somewhere, but there is no conductor. And then we say "Good luck with everyone". And then of course you hear all kinds of false notes.' (P08)

As mentioned in 4.1, within the forming stage there is a necessity of an initiating party. But after the forming of the ecosystem and within the work stage, the initiating party may have a shift in roles (P, n=2). This role might not be clear from the beginning, as a participant notes that without the convener everything goes wrong : *'If the [convener] is missing, everything will go wrong (laughs). And it is quite difficult to find someone like that because you probably have to appoint him in the beginning. In the beginning it is of course less clear whether something is still productive or positive or whether there is still a conflict of interest, especially with commercial parties.' (P01).*

Thus, the initiating party does not need to be the central actor in the network later on. However, both roles share some overlapping characteristics: *'In order for actors to work together closer, the initiator and convener need to have certain character traits, such as a natural charisma, being a systems thinker and energizing the actors' (P04).*

Some parties were aware that they were the facilitator in their ecosystem. *"that's my job, otherwise nothing will happen (laughs)" (P10)*. Others co-facilitated this with multiple parties *"We are trying to set-up a foundation from where we could do the facilitation with multiple consultancy parties together" (P09)* .

Getting the funds right for a facilitating party was considered not easy: *"It is not something we have had many years of experience in. If I have to sell a workshop that I already have mastered and I know exactly how it should be done, then you are also a bit more confident about how you can sell it and you know its value. There is also quite a lot of risk for us here. Then I find it difficult to ask a lot of money for it." (P09)*

The convener should make sure every company is on the same speed. *"Suppose you think of an analogy, like a cycling peloton. Is the pace of the group determined by the fastest or slowest? If it is determined by the fastest then we as an organization lose the speed of the ecosystem, we are the slowest. It requires light-heartedness to consciously choose to go with the fastest, and someone needs to make sure everyone is on the same pace." (P10)*

Figure 12: The facilitator according to participants

Concept
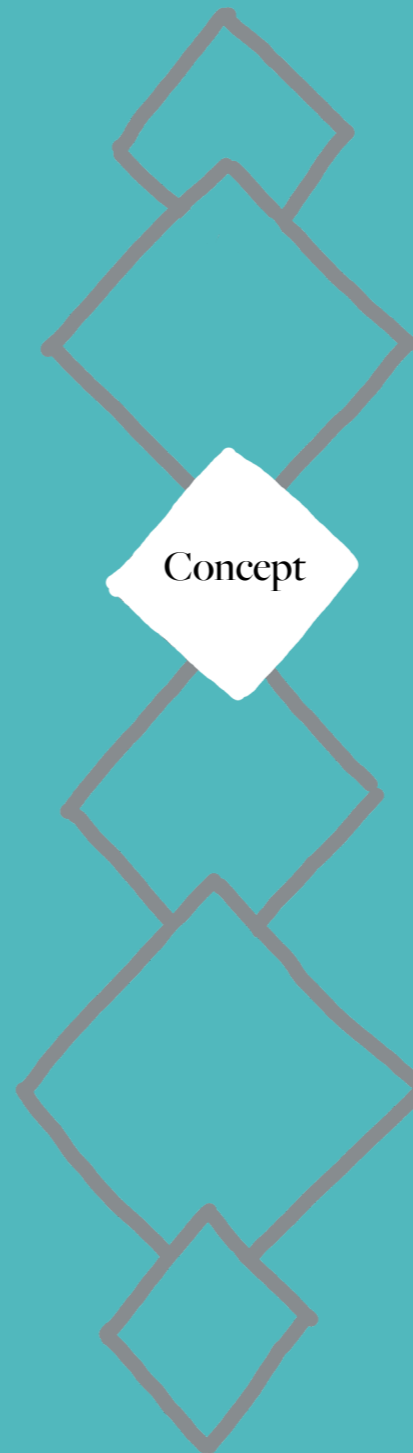
05

Focus

With the insights from the theoretical background in chapter 3 and the research in chapter 4, a focus will be set in order to develop a design.

5.1 Selecting an ecosystem

As can be read in the previous chapter, there is a lot written and said about ecosystems. However, there are multiple different uses for the word ecosystem. In this chapter, the differences between these meanings are unravelled to clarify what this project focuses on.

Ecosystem is a word increasingly used in the business world. For the author, mentioning ecosystem often felt as the new 'innovation', as it seems to appear in almost every business article. However, there are many uses of the word 'ecosystem'. For example, someone may call Silicon valley an 'innovation ecosystem', and someone else may call collaborating in a supply chain an 'ecosystem'. This causes a problem, as it is unclear for practitioners what clients or other practitioners imply when talking about ecosystems. To reduce confusion, a diagram is introduced to form common ground to talk about ecosystems.

Describing the diagram

In figure 13, ecosystems are categorized as either a 'non-ecosystem', or fall under the subcategory 'conditions for innovation' or 'collaborate to innovate' . The first two ecosystems are 'non-ecosystems' in the diagram. If you are collaborating with only one other party or you are working on something your own organization can achieve, it is unneccesary to call it an ecosystem, as you are just talking about a collaboration or your company's mission.

Conditions for innovation

The first main category of ecosystems is the category of 'conditions for innovation'. As mentioned in chapter 3.2, in 'innovation ecosystems', the focus is on how the right conditions can be set in order to get a higher innovative performance of the partners. These conditions can be on merits of location, tools or organization culture. (Granstrand & Holgersson, 2020).

Collaboration for innovation

The second main ecosystem category comprises of ecosystems with the aim of collaborating together to achieve certain innovations.

Specific types of ecosystems are startup ecosystems or supply chain innovations. These are tailored on the specific type of actors involved.

'Forced ecosystems' are not consciously built, but organisations happen to find themselves in an ecosystem. This is often the case by decentralisation or forced market influence, for example in health care or the energy sector. In the Dutch health care system, due to reorganisations hospitals were forced to suddenly collaborate with pharmacies, insurance companies and patient associations.

Then, there are 'Central Actor Ecosystems'. These ecosystem revolve around a central actor, which the ecosystem cannot survive without. BCG (2019; 2021) calls these ecosystems 'Solution ecosystems', in which a central actor combines the services of multiple organizations, or 'transaction ecosystems' in which a platform operates as a 'middle-man' between suppliers and consumers. To avoid confusion, the same names are used in this project.

And finally, there is the last category, in which collaborative networks are consciously built with different types of actors to achieve a shared goal in order to accelerate a transition. This definition is based on Adner (2017) as described in chapter 3.2, with the addition that the aim of these ecosystems should be to accelerate transitions. This addition came from insights gathered in chapter 4. I call these 'transaction ecosystems', as their aim is to accelerate a societal transition by working together. This last ecosystem is what I choose to focus on during this project.
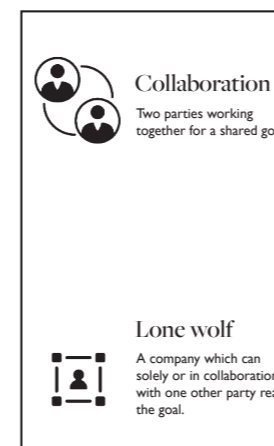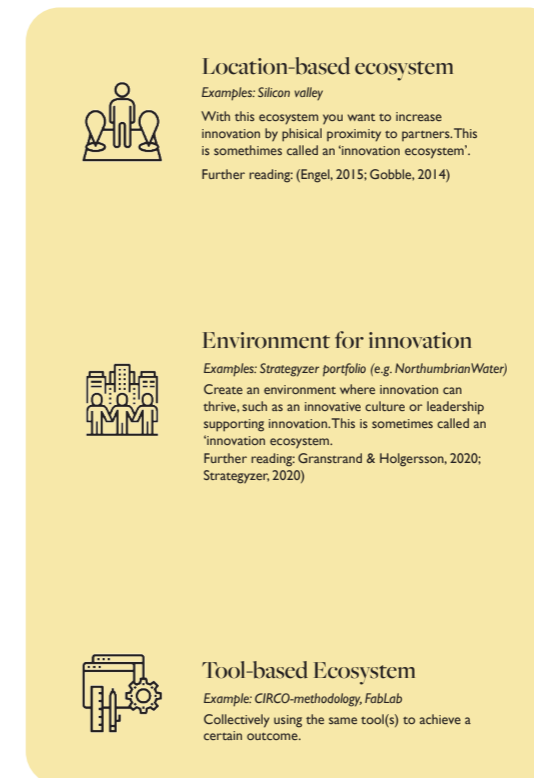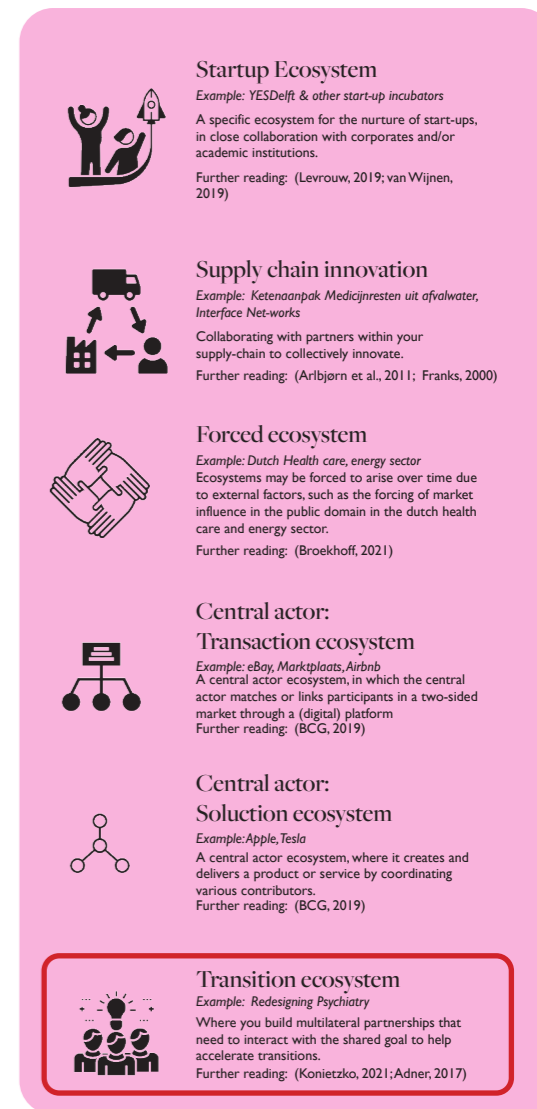
Figure 13: Taxonomy of different ecosystems

Increasing complexity

A Transition ecosystem is where you build multilateral partnerships that need to interact with the shared goal to help accelerate transitions.

My insight

In this project I choose to focus on 'transition ecosystems'. I chose this because in the current societal transitions a key role for ecosystems could be to accelerate these. Furthermore, previous publications focused different types of ecosystems but participants interviewed in chapter 4 expressed the need to further develop this field. From this point on, the word 'ecosystem' indicates a 'transition ecosystem'.

5.2 Selecting the facilitator role

In order to choose a design direction, first the focus of the audience for a design direction should be set. This chapter describes the different roles within an ecosystem, and the choice to continue developing a question for the facilitator role.

In this project, four main roles have been identified to be within an ecosystem: facilitator, producer, enabler and regulator. Figure 14 shows an overview of these roles.

Facilitator

The first role is that of the 'Facilitator'. According to Konietzko, Bocken & Hultink (2020, p. 8), a facilitator, or sometimes called coordinator, is "someone who oversees 'the big picture', both from a technology and a business model perspective. Such a coordinating role may come from inside or outside of the core project consortium, and may include tasks like mediating, coaching, moderating, motivating partners, and managing the combined work packages". Synonyms for this role other researchers named are an 'Ecosystem leader' (Moore, 1993), 'Convener' (Deloitte, 2017), 'Steward' (Boyer, 2020), and 'orchestrator' (BCG, 2019). This role oversees the formation of the ecosystem and keeps the ecosystem together during the projects within the ecosystem. These facilitators should be considered a crucial member of the ecosystem and be seen as a fair or neutral partner by the other actors (BCG, 2019).

Producer

The second role is the 'producer', a provider of products and services for the final user, as described by Walter (2019). This role has often a direct relation with the end-user of the ecosystem. Deloitte calls this type of actor a 'Problem solver' (2017).

Enabler

The third role within the ecosystem is an 'enabler' (Deloitte, 2017; Walter, 2019). The enabler has a further distance to the final user, but enables the 'producer' to deliver its goods and services. This may for example be an IT or infrastructure provider. Without it, the ecosystem would stagnate.

Regulator

The fourth role in the ecosystem is the 'regulator'. The regulator ensures this ecosystem has the correct circumstances to exist. This may include for example lawmakers looking into the regulatory implications . This role is sometimes called an orchestrator (Walter, 2019). However, this term is also sometimes used to describe the 'facilitator' role. Therefore, in this project the term 'regulator' is used to avoid confusion.

Focus

The findings of the research phase show that the role of facilitator needs attention. Chapter 3.2 described a research gap requiring more information on how a facilitating role can be taken within an ecosystem. Chapter 4.3 illustrated that practitioners as well missed the role of a coordinator and the lack of tools for this role.

Therefore, the solution for this project will aim to help organizations take a facilitating role in building an ecosystem to accelerate early stage transitions.
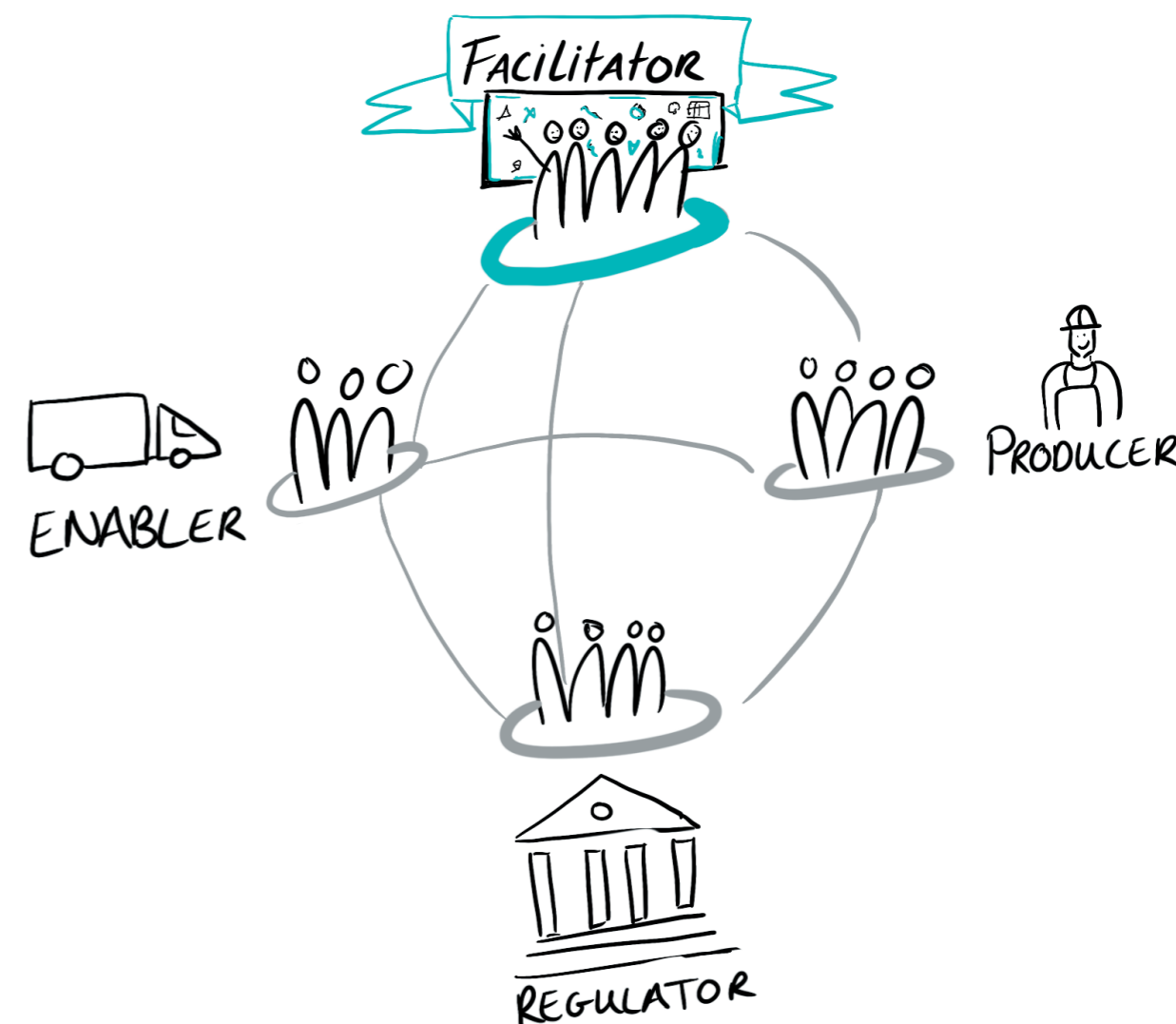

Figure 14: Different ecosystem roles and the choice for a focus on the facilitator role.

5.3 Selecting the Form phase

This chapter describes the different phases within an ecosystem, and the choice to continue developing a question for the forming phase.

Research among practitioners, as described in chapter 4.2, uncovered three main phases of an ecosystem. These phases are 'Explore', 'Form' and 'Work' (figure 15).

Exploring
First, there is an initial exploration between parties whether they would like to form an collaborative network. This stage is often fuzzy and chaotic and can be triggered by certain events, such as a networking event, conference, or just a serendipitous event. These meetings can be either formal or informal, but it is relevant that people connect and find common ground to tackle societal challenges.

Forming
The second stage 'Forming', lays the foundation for the ecosystem. Here, decisions are made such as which actors are involved, how the ecosystem will function and the goal and vision of the ecosystem. Research in chapter 4.2 demonstrated that this is a critical phase, and that it is essential to have an active facilitating role in this phase.

Working
The third phase comprises the start of actualy working together within the ecosystem. Once everything is settled in, it is important to start soon into the content with the different actors (P, n=5) and to show practical results quickly. These results help to legitimize the ecosystem and to build momentum.

The findings of this project show that formation phase needs attention. Chapter 4.2 described the importance of this phase, as this is often a 'make or break' moment for the ecosystem. This phase is also where the direction for the ecosystem is set. This vision should transcend the ability of separate actors and should be built together with all parties rather then put upon by the initiating party (P, n=7).

Next to the direction, in this phase there is some kind of formalization of the collaboration. This includes good agreements about Intellectual Property, investments, commercialization, and possible financial and brand damages.

The role of facilitator is evident in this phase. One participant noted *'The more active the facilitating party is in building the ecosystem, the better the ecosystem is able to perform in the long run' (P02)*

Because the build phase is both a crucial phase and has an explicit need for a facilitating role, this project will focus on the phase of forming the ecosystem.
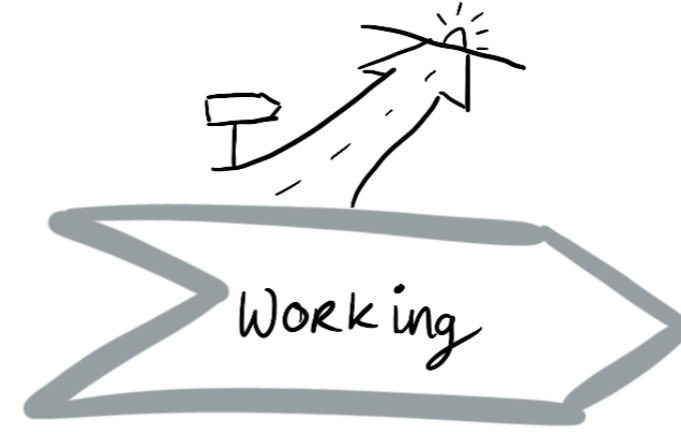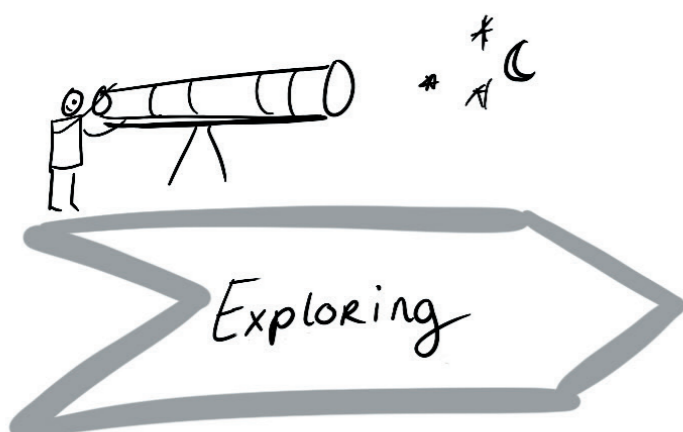

Figure 15: The main phases in building an ecosystem

5.4 Problem space

Looking back at the initial project assignment, new insights were discovered resulting in the need of the setting of a clear focus in order to get into the design phase. This chapter looks at the previous explored topics and results this into a reframing of the project assignment and the setting of a design direction.

Synthesizing the information in the first part of the project resulted in a reframing of the initial project assignment. Insights from the context revealed that in a changing world, large systemic change is necessary on every level of society. The company context learned that Strategiemakers is searching how to play a role in ecosystems for innovation with their experience on guiding strategy processes and facilitating creatively. Both from literature findings as well as the practitioner's perspective led to an interesting new area; the role of a facilitator in ecosystems. This role is most needed in the formation phase of an ecosystem (figure 17). This role is not well-defined in literature yet and there is debate on the characteristics and the exact role such a facilitator should take. At the same time, insights from practice revealed that this exact role was missing in the discussed ecosystems for innovation. Therefore, this is an interesting area for Strategiemakers to play a role in, considering their experience in coaching and guiding organisations. However, the exact role Strategiemakers can play as a facilitator in ecosystems is not yet clear, as well as how they should approach such a trajectory. Therefore, the problem statement is redefined as:

How can design strategists play a coordinating role during the forming phase of a transition ecosystem?

For designing transitions, there are two dominant factors influencing the success of the outcome. These factors are '*a shared vision for the project, and a clear sense of ownership within the organization running the project*' (Calabretta et al., 2016, p. 71) . Therefore, for designing transitions it is essential to work towards an optimum of these factors. These factors can be seen in figure 16.

The results call for an adjustment of the model of van Erp & Hillen (2017). Specifically for ecosystems in transition, two elements should be included, shared vision and collective ownership. Although in projects, there might be a shared vision, within designing ecosystems this vision has to be shared among parties. And in transition ecosystems, there should not just be ownership from one party, but collective ownership by all the different parties. This shared visions for transitioning was also found as one of the main mutually enforcing areas of transition design (Irwin, 2015). Therefore, the model of van Erp & Hillen (2017) as seen as well in figure 16 will be adjusted to include a 'shared vision among parties' and 'collective ownerships. If you want to design ecosystems to accelerate transitions, one would want to include these factors. However, the difference with designing ecosystems is that you don't have a single organization you are working with, but multiple. Therefore, with designing ecosystems you need an ecosystem vision that is shared among parties and collective ownership from all parties. The design phase in chapter 6 aims to include these principles in the design process.

My Insights

• Bringing focus to the project allows me to specify the type of ecosystems and what phase and role I will concentrate on.
• I will focus specifically on transition ecosystems
• Within transition ecosystems, I will focus on the facilitator role within the forming phase of transition ecosystems
• The central question I focus on is *How can design strategists play a coordinating role during the forming phase of a transition ecosystem?*

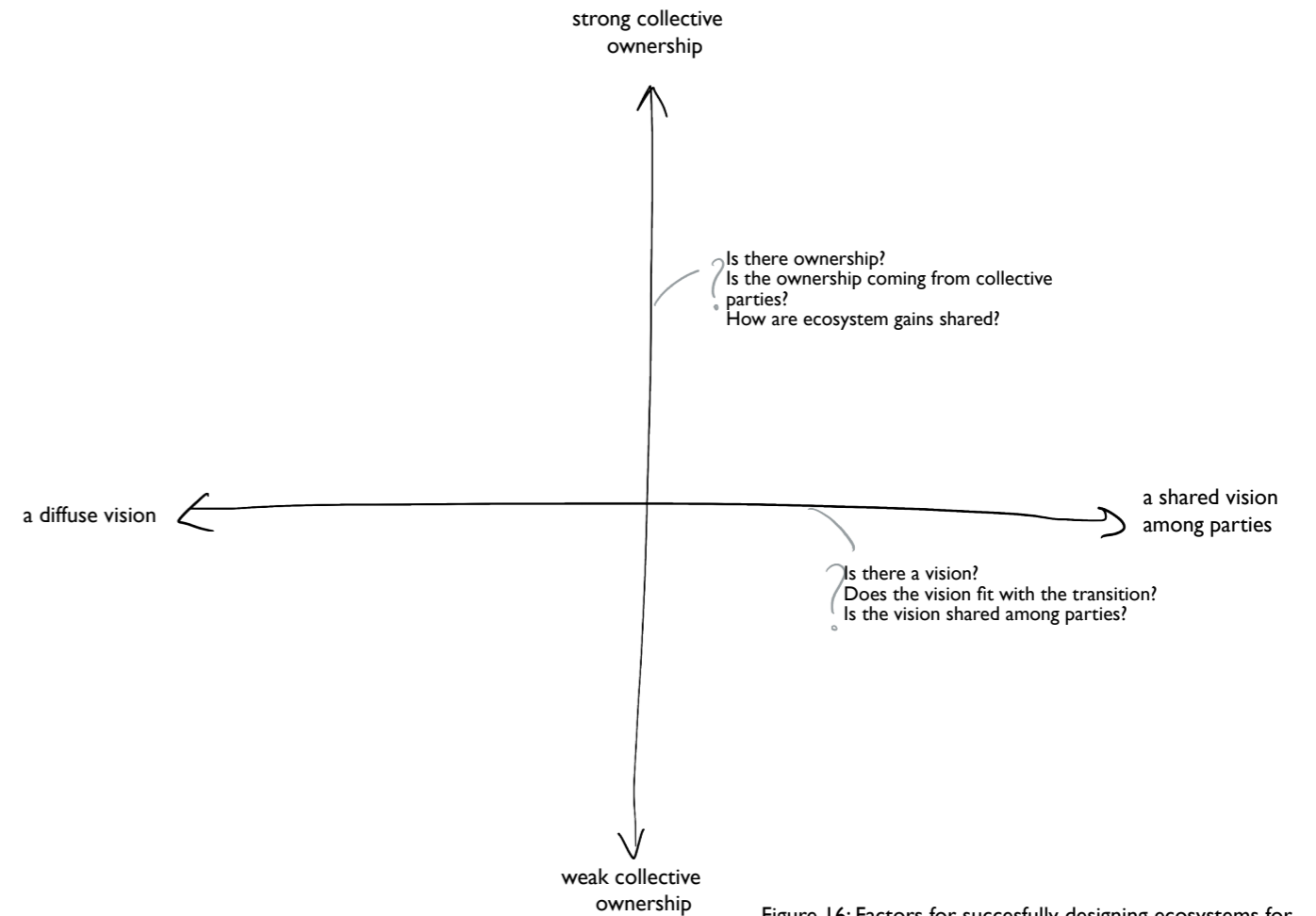Figure 16: Factors for succesfully designing ecosystems for early transitions, adapted from van Erp & Hillen (2017)
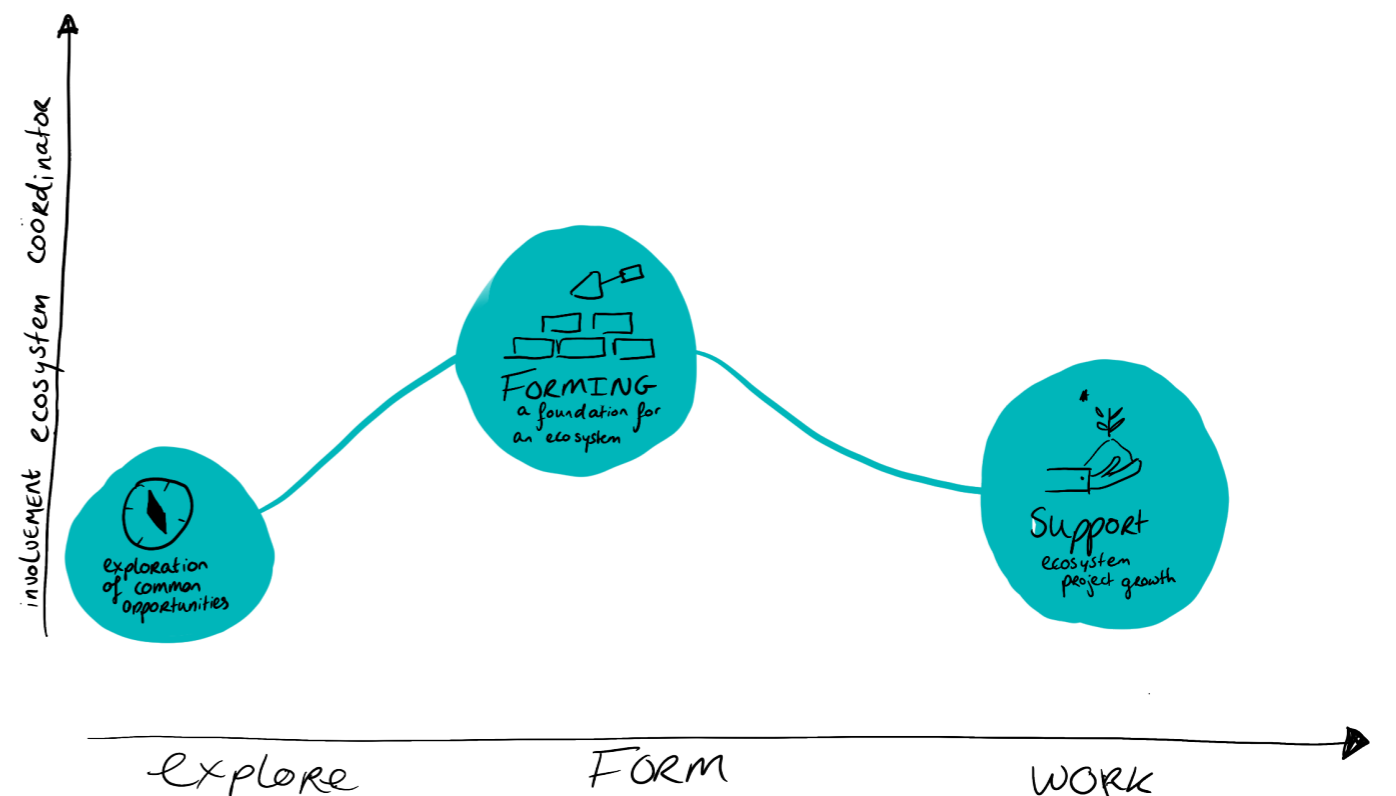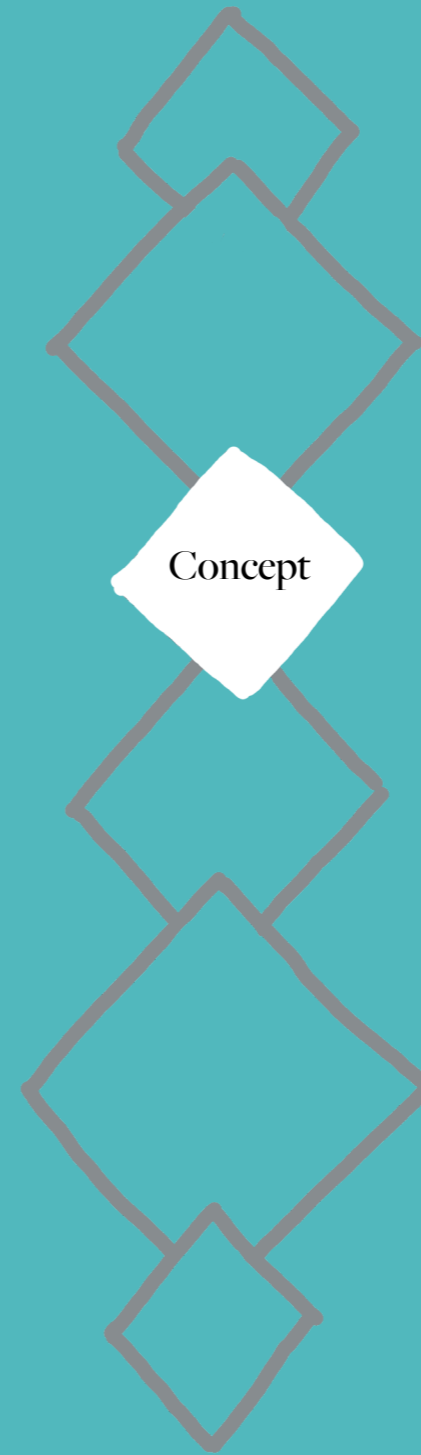

Figure 17: The involvement of the ecosystem facilitator, adapted from CLIC innovation (2020)

06

Concept

This chapter describes the design phase and the initial concept. The design process can be found in 6.1, the concept overview is further described in more detail in 6.2 and 6.3.

Concept

6.1 Idea Generation

This chapter describes the process of the creative idea generation. Multiple sessions were held to gather insights to continue developing a concept with. These insights are shared in this chapter as well.

Design questions

As proposed in chapter 5.4, the design direction was 'How can design strategists play a coordinating role during the forming phase of a transition ecosystem?'. To structure the design activities, design questions are formulated to guide the idea generation. These design questions were based on the design goals formulated in the last chapter.

1. How can you create a shared understanding on the direction the ecosystem will move towards?

2. How can organisations think of collaborating in a possible new role?

3. How can you create a shared understanding on what the first direction of action of the ecosystem is?

Approach

Four creative sessions were held to gather ideas towards how design strategists can facilitate the forming of an ecosystem. During these creative sessions, existing models were evaluated and combined with the insights from chapter 4, from which new ideas were generated.

These sessions were held with both design students, designers and strategic consultants. This was done to ensure the solution would fit the business as well as would not overlap with existing solutions designers have at their exposal. As expert on the topic, the author was not just the facilitator, but also participated to come up with relevant ideas.

The sessions were held through video call and the online brainstorming platform Mural. The choice of using both platforms was made to have a session remotely, in accordance with the Covid 19 measures, while maintaining the creative energy in a group session.

Project insights were shared before moving on to unraveling existing models. Using creative idea generation, ideas and solutions to problem questions were generated. The methods used in the creative sessions are based on techniques provided by Tassoul (2009) and van Boeijen et al. (2013).

Shortfalls of current models

One of the insights was that for the specific focus, current tools were not sufficient in their results. Some of the tools, such as the "Platform Design Toolkit" (Cicero, 2018) were specified on Transaction ecosystems or location based ecosystems (See Chapter 5.1).

Some models, such as the Customer Forces Canvas (Maurya, 2017) focused on a single user need. Other models, such as the 'Ecosystem Journey' (Walter, 2019) left out the shared vision or goal of the ecosystem.

Insights after idea generation

During the idea generation, a lot of interesting ideas were found. These ideas were evaluated on originality and feasibility. There were multiple ideas and insights generated which were interestingly enough to continue to work the final concept on.

One of the main insights was in order to build an ecosystem, a single tool would not be sufficient. In this stage of the ecosystem, one would have to collectively build a shared vision, ensure collective ownership and kickstart the collaboration with concrete ideas on how to accelerate the transition.

Therefore, a process was developed how to design ecosystems for acceleration early-stage transitions. This process will be further described in this chapter.

Figure 18: An impression of existing design and strategy tools used in the idea generation
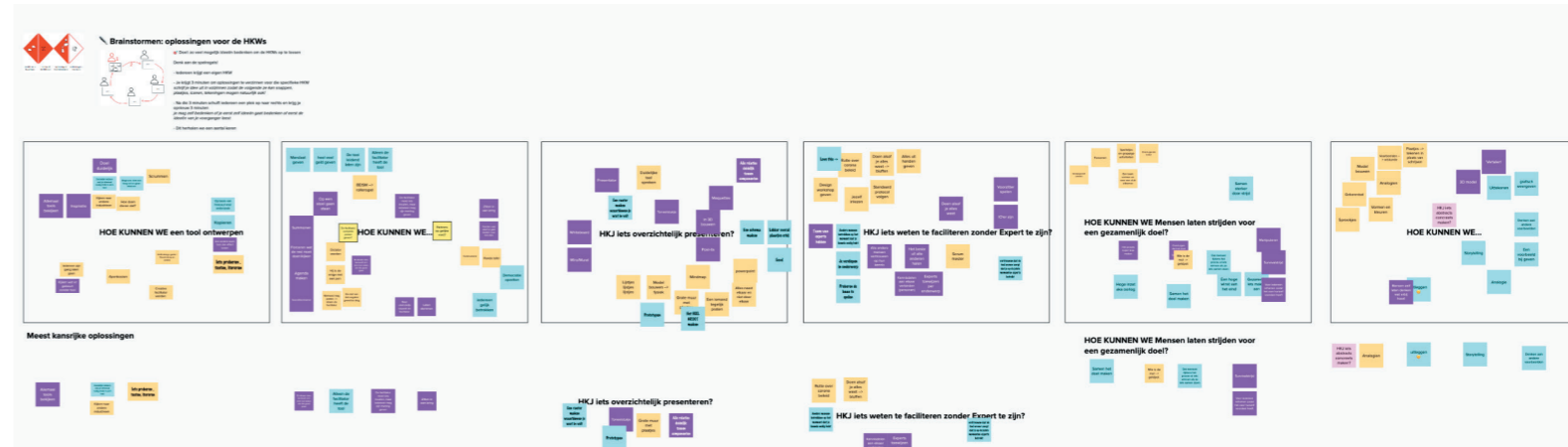
Figure 19: An impression of the generative creative sessions.

6.2 Overall process

In figure 20, a schematic overview of the building of an ecosystem can be seen. In chapter 6.2, the steps of the process will be described, after which the tools will be further illustrated in Concept A, B and C.

The overall process of building a transition ecosystem has three main steps. By having a multiple-step approach, the actors involved have time to activate their own organisations and to consolidate the items previously discussed. The first step concerns building a shared vision from user needs, the second step consists of building collective ownership by identifying possible opportunities for collaboration and the third incorporates building value creation by actively getting started with the ecosystem.

Before you can start building an ecosystem, the possibility for ecosystem collaboration should be explored, on which more can be read in chapter 5.2. When all the actors are brought together, the ecosystem can be built. It is the responsibility of the ecosystem coordinator to evaluate the stage the ecosystem is in, and if further preparation is needed.

In the first step, the main objective is to create a shared vision from user needs and to investigate early opportunities. With this step, further described in chapter 7.2, actors start with sharing a preliminar vision, based on the experiences in the 'explore' phase. Then, actors note activities or themes where the end user comes into contact with the ecosystem. These can be activities like 'commuting to work' or 'feeling at home'. Within each of these activities, actors plot where the current role of the partners, explore the current situation and propose a possible solution for the current problem. At the end of the session, actors look back to the user needs and see if this results in a need to alter the vision.

In the second step, the aim is to build collective ownership and engagement by identifying with possible ideas when parties collaborate. In a matrix, parties are plotted on the X and Y axes. Within this spreadsheet, in every box ideas for possible collaboration between these two parties will be generated. From these ideas, promising ones will be plotted on the core activities used in step 1 and will be investigated if there is opportunity for collaboration between multiple parties. After this selection process, a handful of ideas will be the outcome of the second step.

In the third step, the transition collaboration will be further detailed. To do this, the Business Model Canvas (Osterwalder, 2009) has been adapted to function as a 'Ecosystem Model Canvas'. Here, a detailed description of involved partners, their role and how they aim to achieve their value proposition can be filled in. This gives the participants in the ecosystem a hands-on outcome which can be used to kickstart the working phase in the ecosystem.

After this process, often there would be a form of formalisation from the different partners. This can be the start of the Work phase, which was previously described in chapter 5.2.

The phases are described in more detail in the following pages. In Chapter 8, an example is given how this would look like in practice for a fictional case.
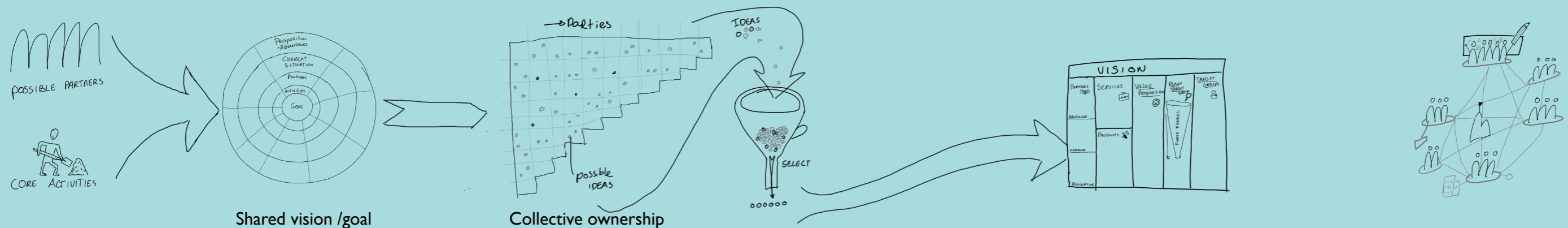

Shared vision /goal   Collective ownership

Figure 20: An impression of the overal process of building an ecosystem

CONCEPT A
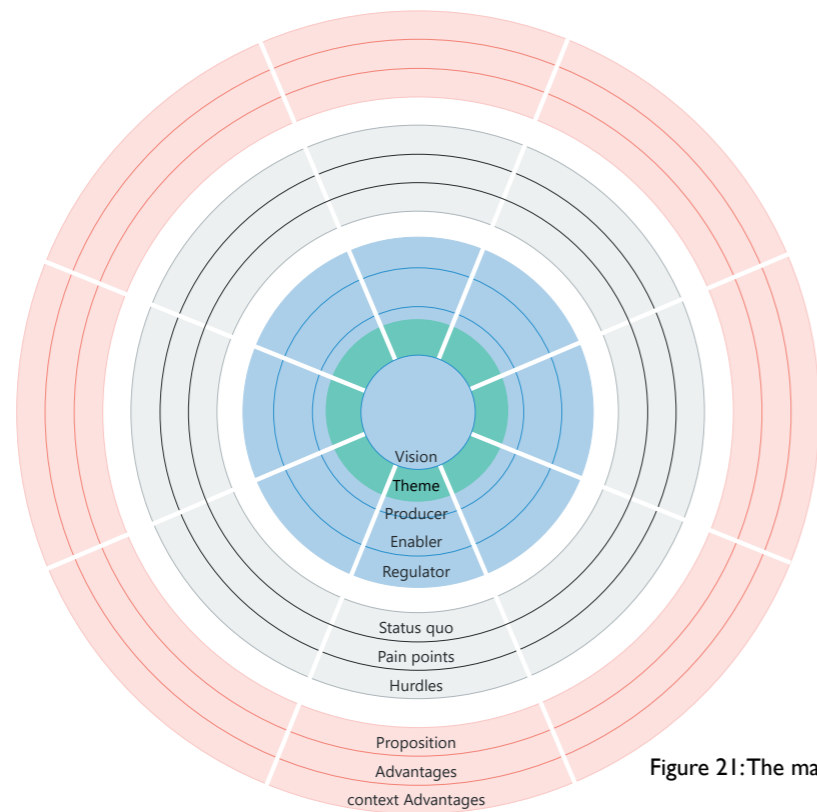
Figure 21: The matrix of the second step.

CONCEPT B

Figure 23: The matrix of the second step.

Figure 24: The How-Now-Wow matrix (Gray, 2015)

As described in chapter 6.1, while analyzing existing tools for building ecosystems, both advantages and disadvantes were found. Therefore, an iteration of different models was made. Based on the Ecosystem Journey Canvas (Walter, 2019) and the Consumer Forces Canvas (Maurya, 2017), a Canvas (Concept A) was developed.

In this canvas, you centralize the initial vision. As a facilitator, you need to clearly communicate that this goal is still up for debate and that this excersice helps to define the ecosystem goal more clearly. After explaining the initial goal, actors move outward, onto the themes. These could be core activities in the final user's life, or interaction moment where the ecosystem wants to play a role. Based on this, the participants can plot their organization within one of the roles in one or more themes. This results in an overview within the themes and how within these themes the roles are distributed.

The next part of the model looks at the current situation. In the 'status quo' ring, you look at why people or organisations still commit to the current alternatives. What pain points does this situation cause, and what are the hurdles of people and

organisations of changing to an alternative solution? This provides an analysis of the current situation, why this needs to change and why it has not been changed yet.

In the final part, the outer three rings of this model, possible solutions are investigated. Next, the advantages of this solution can be plotted as well as the advantages to the context. Context advantages are not necessarily directly for the main user, but may benefit other parties or systems in society.

Afterwards, a critical reflection helps to iterate and specify a new shared vision.
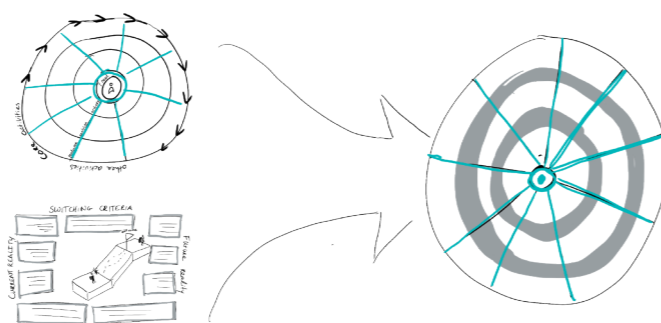

Figure 22: How the Ecosystem Journey Canvas (Walter, 2019) and the Customer Forces Canvas (Maurya, 2017) were used in designing the Transition Ecosystem Canvas
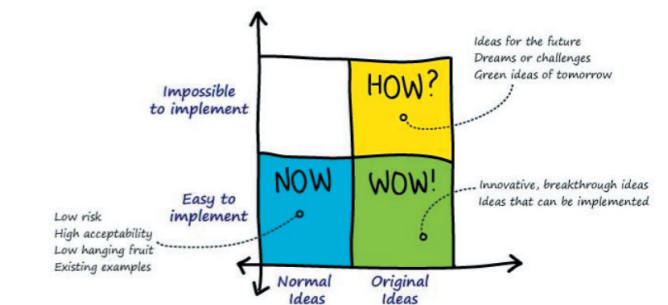
The second step of the model consists of finding opportunities with partners together. This opportunity finding can be facilitated with a 'partner-matrix'. This part of the process is based on a similar approach Roscam & Pellgröm (2020) use.

In this matrix, all partners are listed both horizontally and vertically. In a creative session, partners are encouraged to find ideas for possible collaboration between two parties. The main question asked is "What idea or solution can you together work on to increase the goal of this ecosystem?". The matrix as described can be seen in figure 23.

The goal is to generate as many ideas as possible to both result in a higher commitment and more cross-links between partners. When partners see more ideas for collaboration, their confidence within the ecosystem will grow and they will see more opportunities for collaboration, resulting in a higher engagement. Furthermore, having more ideas leads to possible collaborations with more than two parties involved, as there may be interesting ideas to combine together.

This first element in this step is still two-dimensional, but during the creative session partners are encouraged to, after finding ideas where two parties can strengthen one another, to look for overlap and see if you can form a group which is reinforcing eachother on a shared idea.

In the second element of this step, the aim is to examine which ideas are promising and might be interesting to further develop. A way to investigate which ideas are promising, is to color-code ideas using the How-Now-Wow matrix as can be seen in figure 24 (Gray, 2015). Ideas may be assesed on the possibility to implement and originality of ideas. The 'WOW' ideas indicate clear promising ideas, but sometimes also HOW ideas can be promising if a right combination of partners can be found. These promising ideas will then be plotted on the themes used in the first step, to see which ideas respond to which user needs. Here, an idea might be categorized not just in one, but in multiple themes.

From these ideas thematically categorized, a choice should be made for which cluster of ideas to continue with. This idea or ideas can than be further detailed in the Ecosystem Model Canvas, as will be described on the next page.

CONCEPT C

Figure 25: The Ecosystem model Canvas

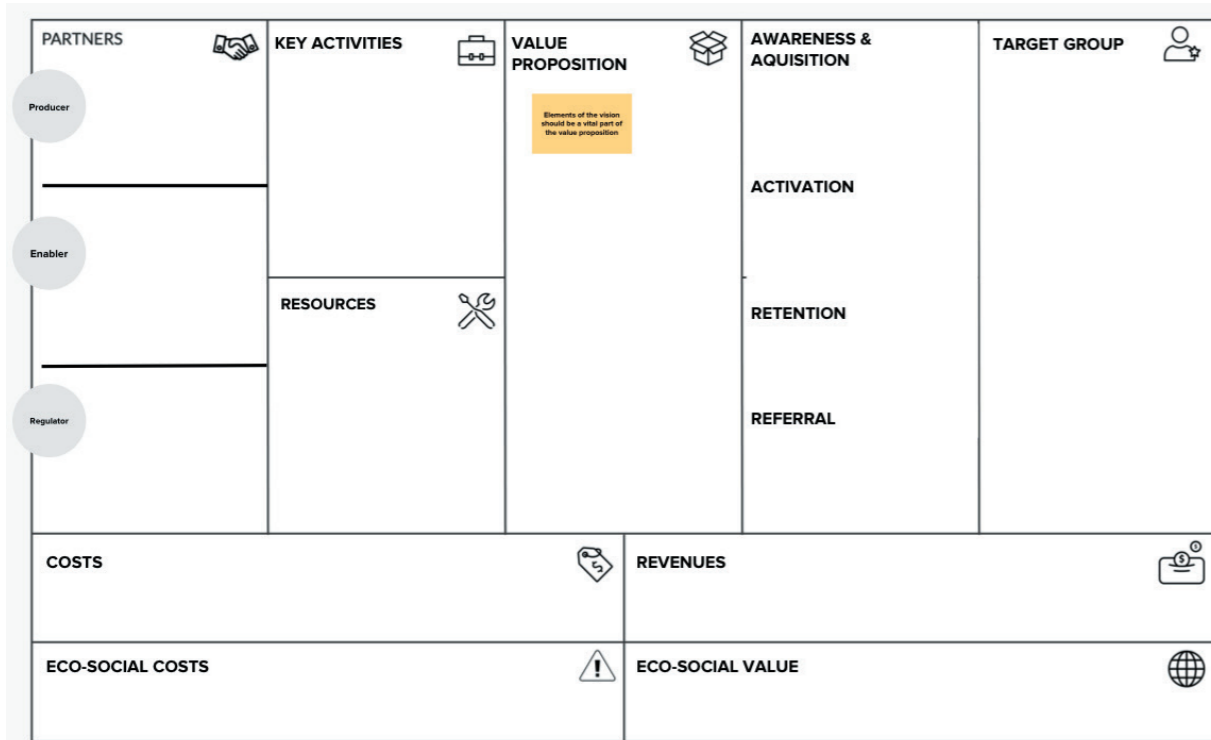In the third step, the transition collaboration is further detailed. The aim of this step is to provide a hands-on outcome and a concrete overview of the ecosystem to facilitate a good start of the working phase.

The original Business Model Canvas (Osterwalder, 2009) has been widely iterated on and changed. Using a tool many people recognize allows for easy interpretation and relieves some of the tensions at play. In this project, the Impact Business model canvas (French, 2020) is used as it includes also eco-social costs and eco-social value, which might be of importance for transitions. The original business model canvas is altered with adding the Pirate Funnel, and dividing the partner section into the content-focused roles within an ecosystem: Producer, Enabler and Regulator.

Within the section of the value proposition, the vision of the ecosystem should be clearly reflected in the value proposition the ecosystem offers. The vision may also be stated at the top of the 'Value proposition' part. With this, Concept C relates back to the vision described in Concept A.

The Pirate Metrics are often used software companies, however in ecosystems it may be applicable as well. Because in ecosystems it may be unclear how it effectively reaches users, these metrics make it easier to measure performane and identify interesting areas in the user's lifecycle (Garcia, 2017). In Pirate Metrics, one moves from how users find you (Acquisition), towards a great experience for users (Activation), if users come back (Retention), how money is made (Revenue) and if users tell others (Referral). Because revenue has another spot in the Canvas, this step is not used.

The canvas should be used as a generative tool to facilitate making initial ideas more concrete. A detailed description of involved partners, their role and how they aim to achieve their value proposition can be filled in. This allows for initial ideas to be further developed and thought out.

This canvas gives the participants in the ecosystem a hands-on outcome which can be used to kickstart the working phase in the ecosystem. As the canvas is the last tool in the concept process of forming ecosystems, this allows for the participants to independently start working within the ecosystem.
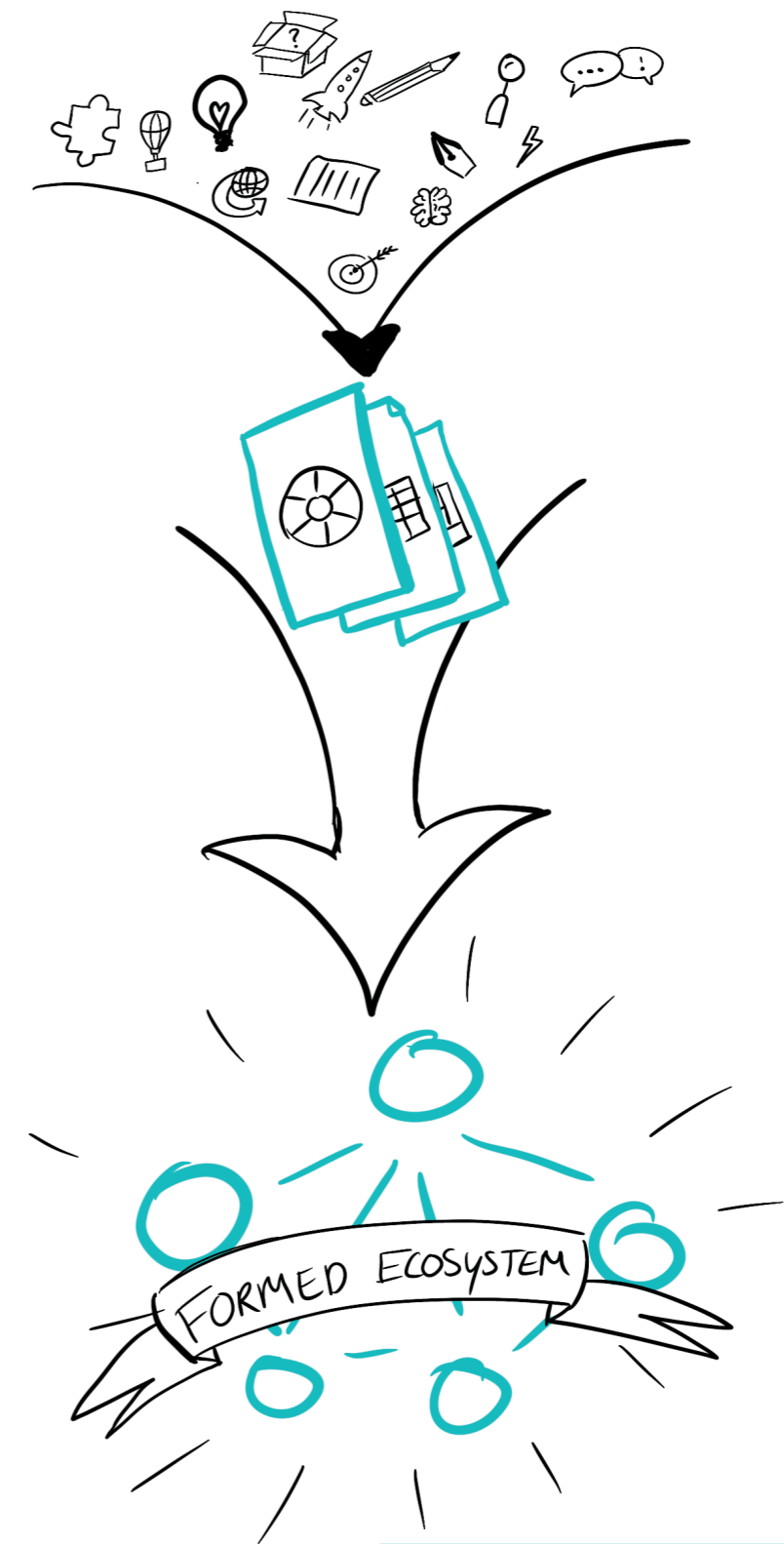
My Insights

- One single tool would not be sufficient to design ecosystems.
- The current tools available to strategic designers have advantages, but are not conclusive in providing a coherent approach for transition ecosystems.
- Therefore, a toolkit with three tools were developed to facilitate conversations during the forming stage of designing ecosystems.

07

Validation

Validate

In Chapter 7, the concept from the previous chapter is validated using both a test case as well as expert validation. This results in a redesign, which is presented in chapter 8.

7.1 Introduction to validation

Validation was done in two-fold, with a test case and by expert interviews. In this chapter, the advantages and disadvantages of both techniques are described.

Validation was done in two-fold. First, the concept was tested and iterated on during an ecosystem project at Strategiemakers. Next, the concept was evaluated with experts who had experience in setting up ecosystems.

Testing by building the Utrecht BIke Ecosystem
During the project, an opportunity had arisen in one of the potential clients of Strategiemakers. The ROM Utrecht (Regional Development Agency) proposed to bring parties within the Utrecht Region together to collectively work towards joint bike propositions in order to help other cities become

more sustainable.

Advantages of the Utrecht Bike Ecosystem
With this particular project, I was able to closely watch an ecosystem being built and at the same time I was able to test the concepts and see if the designed concept would be helpful in building an ecosystem. The role of Strategiemakers in this would resemble the role a design strategist would take as a coordinator.

In testing the concept by building the bike ecosystem, the researcher took an action research approach. Action Research is a context sensitive approah which aims to generate insights to adress real life problems and situations (Scaratti, Gorli, Galuppo, & Ripamonti, 2018; Greenwood & Levin, 2007). It characterizes by being collective, collaborative, self-reflective, critical and performed by researchers themselves (McCutcheon & Jung, 1990). This research approach allowed for the researcher

to be a part of the research, but also iteratively

Disadvantages of validation with the Utrecht Bike Ecosystem
However, this particular project had its own disadvantages. For example, transitions are often chaotic and full of opposite interests, while in this case all parties involved were aligned in exploring the possibilities of the bike ecosystem. It was something that would enhance the current business of the involved actors, not a necessary step to take to survive. This lack of necessity was also reflected in the need for the transition. There is an evident change needed for cities to transition to be able to facilitate more sustainable forms of transport. This was also reflected by the party who initiated the ecosystem, ROM Utrecht, who got regular questions from foreign cities towards bike-friendly solutions. However, the ecosystem was initiated from an opportunity that had arisen and not from an urgent need.

Validation by retrospective expert interviews
The second part of validation included in-depth expert interviews as well. Many of these experts were previously consulted for their opinion and experience with setting up ecosystems, as can be read in chapter 4. These experts were previously involved in building ecosystems and have taken an orchestrating role in this. With consulting these experts, the disadvantage was that only retrospective feedback could be generated. This meant that immediate feedback from the actors in the network and the actual use of the tool could not be tested.

With a combination of retrospective expert interviews and testing the ecosystem design approach in a project, both the expertise opinions are included as well as the practical side of the approach.
In order to validate if the designed tools could be used in the forming of an ecosystem, a test case was found. By being able to closely watch an ecosystem unfold, I was able to see what tools and methods work and if adjustments should be made.
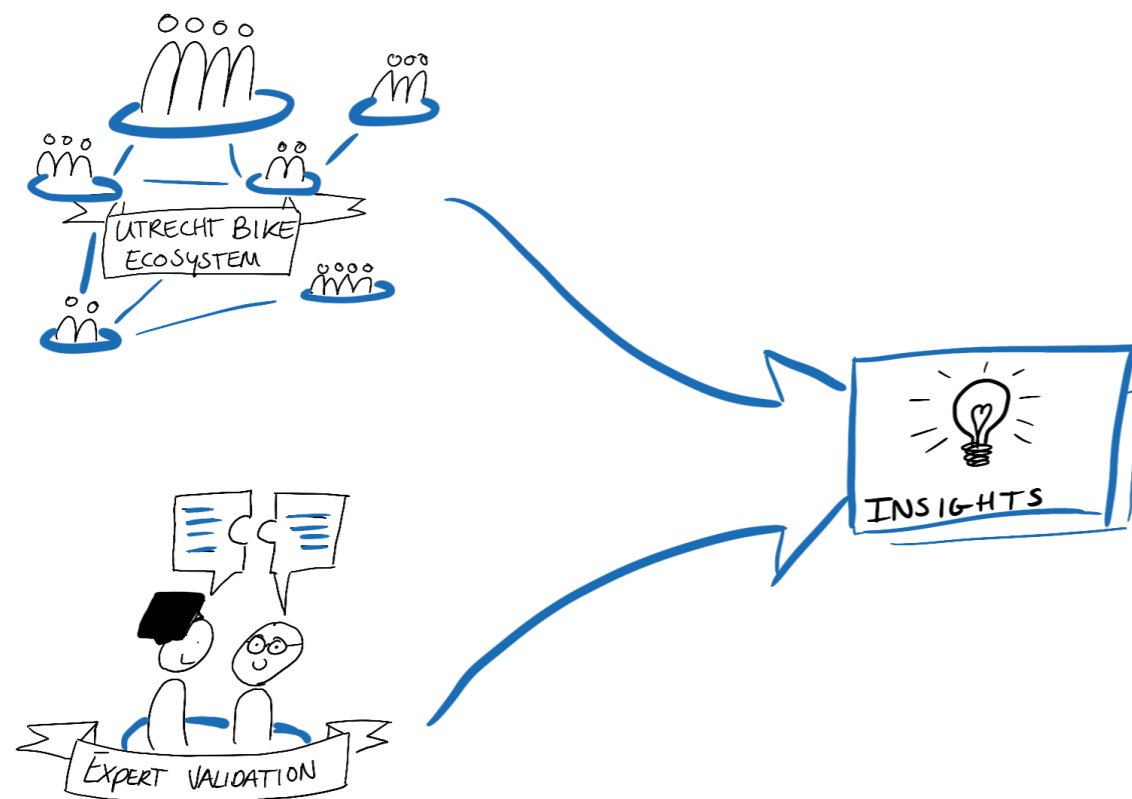

Figure 26: A graphical representation of the validation proces

7.2 Utrecht Bike Ecosystem Case

In this chapter, the Utrecht Bike Ecosystem case is further described. The emphasis is on what was learned during the process and what iterations to the concept could be made.

As a designer and researcher I had two different roles in this project. On the one hand, I was looking at Strategiemakers as they were actively setting up an ecosystem. To understand how they set up an ecosystem and how they dealt with the dynamics of the client project. On the other hand, I was involved in helping to set up and design the ecosystem myself.

Case
The ROM Utrecht (Regionale Ontwikkelings Maatschappij) is a 'social investor' (ROM Utrecht, 2021) funded by local governments in order to boost regional entrepreneurship which contributes to the ambitions of the region.

After a set of initial conversations between Strategiemakers and the ROM Utrecht an agreement was made to organize 4 co-creative sessions with interesting partners from the Utrecht Region, who were specialized in offering bike products or services. These partners ranged from bike producers to road producers and the local government.

The four co-creative sessions were set up using the design ecosystem approach as described in chapter 6. The initial ecosystem vision is discussed with the initiating partner, the ROM, beforehand. During these four sessions, the concept tools will be used when applicable.

First Session
At the first session, 10 members were present. After a brief introduction a generative session was held on key activities and themes, based on tool A. After themes were established, discussion in break-out groups were held on what the current problems were and possible solutions to tackle this. At the end of the session, the vision was revisited and re-fined. Because the participants delved well into the content, the vision was refined but partners agreed this was the right way to go, resulting in a shared vision. This shared vision was valued by participants, as it helped form common ground to further on.

Lessons learned:
• The Ecosystem pie model (Tool A) should be well explained before used and perhaps simplified. The model used in this session had four extra outer rings compared to the model seen in chapter 6. After this session, these rings were deleted to have a better focus within the session.
• Not all actors were familiar with eachother, which is why we organized speeddates in the second session.

Second Session
In the second session, the focus was on actively coming up with ideas to collaborate between organisations. As session 1 learned that participants were not familiar with another, in this session quick speeddates were organized to familiarize with the different actors. Tool B was filled in and colour coded based on the How-Now-Wow matrix (Gray, 2015). Both the speeddates as the idea generation were received well by participants. The speeddates allowed for informal familiarizations. Generating ideas for collaborating generated energy among participants to work together, and participants reflected this helped to also gain an idea of possibilities. After this session, it was clear that most actors were still in the 'explore' phase and were not ready to make the collaboration more concrete. The speeddates helped, but the participants were not ready to form the ecosystem. Therefore, a decision was made not to rush into the formation of the ecosystem, but explore further what the possibilities would be if they would build an ecosystem together.

Lessons learned:
• The speeddates were well received, as well as the matrix with clear opportunities for collaboration.
• When you enter the project as a strategic designer, the explore phase might not be completed yet.
• The process of forming ecosystems is not as linear as suggested in chapter 6 and should be revisited.

Third session:
In the third session many tensions were visible. A first tension was that new participants were attending the session. Having these new participants resulted in the ecosystem and its participants needing to be introduced again which slowed down the first part of the sessions. Some actors of the Utrecht Bike Ecosystem felt the ecosystem threatened their position within an organisation, while others thought the ecosystem would overlap with other initiatives. Examples of these included existing initiatives to export Dutch cycling products or structures to show dutch cycling infrastructure to local governments abroad.
This created tension and conflict, as the purpose of the ecosystem was under constant discussion, resulting in a heated debate in session three. The strategic designers from Strategiemakers had to facilitate this discussion without proper preparation and background knowledge. Although the session ended with a shared understanding of the purpose of the ecosystem, the heated debate was necessary to achieve this.

Lessons learned:
• Tensions may arise during the formation of ecosystems and it is vital to deal with this as a facilitator.
• The facilitator plays a key role in relieving these tensions and shoud prepare for possible tensions before sessions with participants
• Varying participants presents a delay during formation sessions as previous discussed points need to be revisited.

Fourth session:
After session three, the decision was made not to continue with testing tool C, as first the ecosystem should be more at ease with its purpose. Therefore in this session the focus was on strengthening relationships and on finding out how this ecosystem fits in between the existing initiatives. This resulted in a first concept of the ecosystem, how it should work and how working within the ecosystem should be tested. After the sesion, actors were better adjusted to the ecosystem and its content, and better prepared how they should operate. Actors were engaged and ready to start working together in a first iteration of the ecosystem.
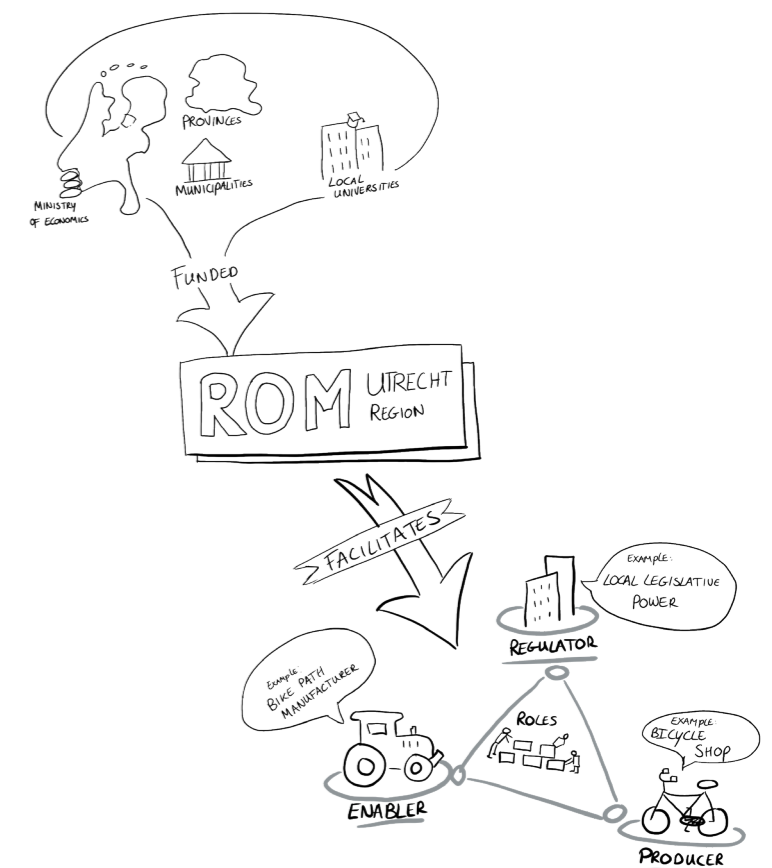
Figure 27: A graphical representation of the ROM Utrecht Bike Ecosystem case

Lessons learned:
• Tension and heated debate may be necessary to find a way to work together in an ecosystem
• Once this tension is resolved, common ground can be found.

My insights
This was the first time I was able to study an ecosystem being formed. I hoped to test a designed process of forming ecosystems. However, I learned that transitions are fluid and cause many tensions. As a designer, you should not try and force a model on the ecosystem but rather let see what tools and methods work best on this specific case. Some of the tools designed proved useful in building the ecosystems, and other tools might not be as useful. Therefore, as a designer you 'sense' what the transition need and design for that.

7.3 Practitioner's evaluation

In order get a wider perspective three practitioners were asked about their opinion on the tools, how they would use them and if they had recommendations for further improvement.

For evaluating the designed tools, they were displayed to three transition experts. The three interviewees had a background in strategic design or societal transitions and were currently involved in accelerating transitions by building collaborative multilateral partnerships. Two participants were previously involved in this project in chapter 4, while participant 13 provided fresh insights and has not been involved in this project before.
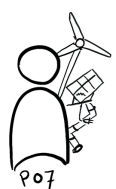
Participant 07 works at an energy supplier in collaborating to accelerate the transition to sustainable hydrogen, and was previously interviewed for the initial research in chapter 4.

Participant 12 helped organizations to transform using a bottom-up approach and is currently involved in setting up a collaborative network in the energy transition and conversations on the nitrogen topics between farmers and the Dutch Government.

Participant 13 was involved in guiding transitions from a strategic design consultancy and has not been previously interviewesd.

The concept was displayed and participants were asked for input based on their expertise.

Well facilitated process
Participants stressed the importance of a well facilitated process. As Participant 13 noted, this should be done by a objective party:

"I believe the facilitation of such a system should be done by someone without a clear stake in the content, by someone neutral." (P13)

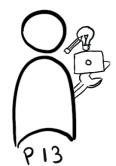Participant 12 added that the objective facilitator ensures a safe environment, while this facilitator should also keeping track on the transition at hand.

"You need to create a safe environment. What binds us? For this a good facilitator is key. The facilitator is there to keep an eye on the transition at hand." (P12)
Keeping track on the transition and making the translation between the complexity of reality was also noted by Participant 13.

"As a coordinator you are responsible for the complexity, and to make the translation between the complexity of reality and to make this simpler so that it is as easy as possible for parties to make the collaboration successful." (P13)
Therefore, one of the insights is that the process of guiding transitions should be facilitated by an objective party, who ensures neutrality, a safe environment and keeps track of how the transition proceeds.

Different perspectives arise
A previously underexposed matter is the different perspectives between organisations and the eco-systems. As participant 7 describes, a shared vision is hard to achieve as organisations first need to see the bigger picture to break out of their organizational perspective;

I think having a real shared vision would work, but this is really hard to achieve as organizations have their own organisational perspectives. They first need to see the bigger picture and what they can do before they can agree on a shared vision or direction. (P07)

Facilitating discussions to relieve tensions was posed as a possible solution early in the proces to bridge the gap between the organizational and ecosystem perspective. Participant 13 notes that the 'elephant needs to get out of the room' before you can discuss working together:

If you start working with a consortium, you are better positioned if you challenge the preconditions of the game soon. Then you get it out of the room. (P13)
Participant 12 confirmed that tensions should be resolved by finding polarity in order to create room to find solutions, even though these tensions might feel awkward:

You should start the conversation when there is not a plan on the table yet, to unravel the tensions in place. The polarity should be sought and discussed in the first discussion, and you want conflict at every table
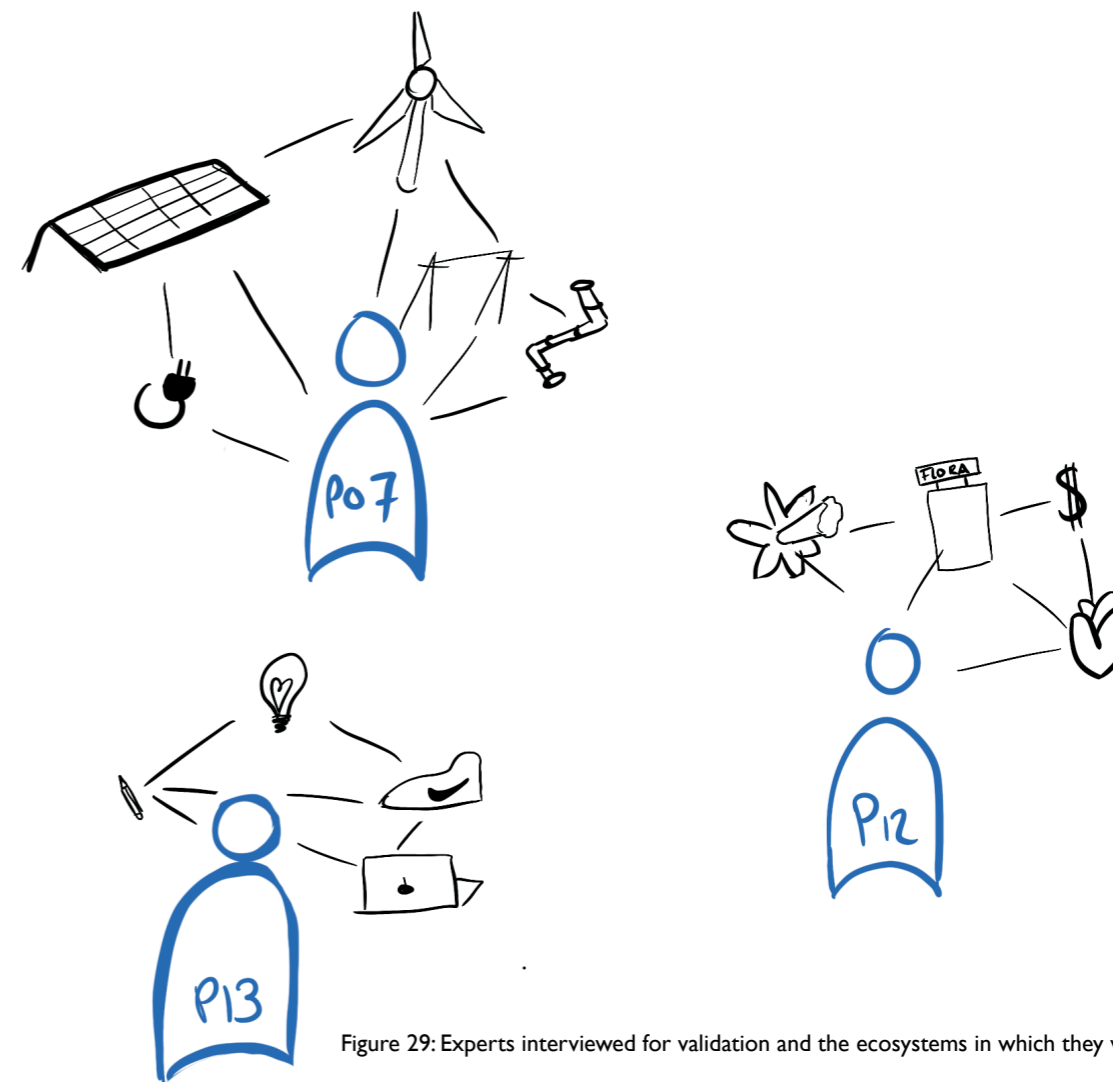
Figure 29: Experts interviewed for validation and the ecosystems in which they were involved

because conflict helps you to bridge the differences in the end. The tensions might feel awkward but create room for solutions. (P12)

These early conversations are also needed as transitions are fluent and subject to change. This causes the need that the process should be flexible as well, and not a step-by-step process. Participant 7 illustrated during a transition regulations, the context and the dynamics between parties can change, and therefore conversations to capture this change are perceived as valuable:

"The tricky thing about transitions is that everything can change during the process. However, it is good to put some things on paper as a starting point, also to start discussion. I'm currently doing something similar for the transition I'm involved in, starting valuable discussions and conversations to materialize the story." (P07)
This resulted in the insight that transitions are fluid and subject to change. The current tool does not reflect this, as it is a process rather than a toolkit.

Therefore, one of the reccomendations would be to test the toolkit for linearity and to test this not just in one test case, but in multiple test cases to see if it works in practice as well.

Governmental parties present
One of the insights was that experts validated the need of room for govenmental parties in the tools. As one participant noted, these governmental parties are essential in transitions and should not be overlooked.

There often is a governmental or legal party present quite quickly in transitions, and I think it's good that this tool has a place for governmental institutions as well. They are sometimes overlooked but they bring advantages to your ecosystem. It gives a whole different perspective then if it's just commercial parties, as if it is already widely accepted. (P07)

Figure 29: A graphical representation of the main feedback on the tools from experts

Participant 13 added that the facilitator needs to bring in these regulatory parties, as in transitions you often need new regulation soon in order to succesfully fulfill the transition.

You quickly reach the limits of normal regulation, so a good cooperation with the regulatory party is necessary to speed things up (P13)
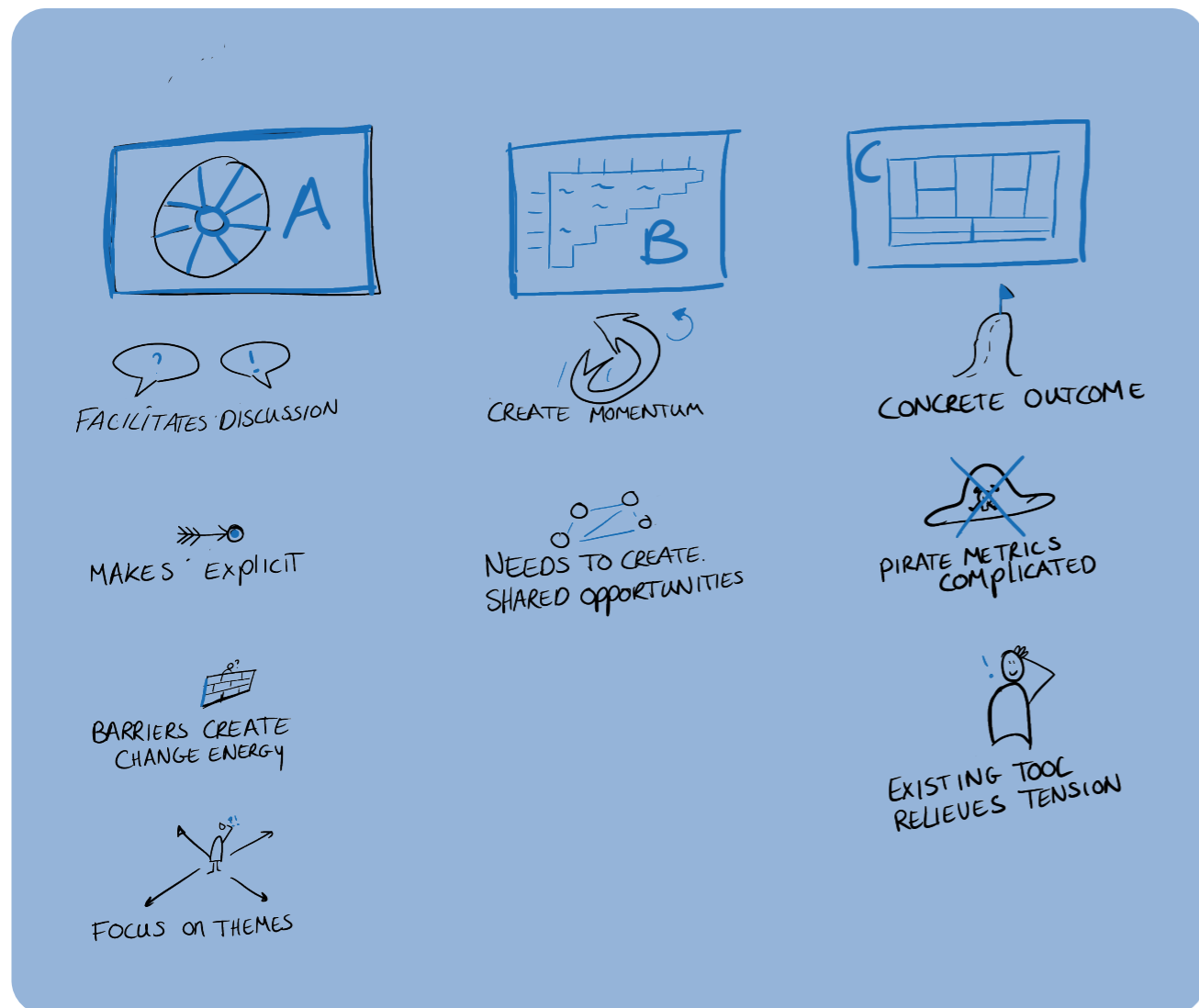
Therefore, the regulator role within ecosystems is validated and needed, and will be kept in the design of tool A.

Validating the tools

The first reaction on the tools as a whole was positive, as the tools help to cluster ideas. As participant 7 noted, clustering ideas together helps to get valuable outcomes.

"I think these tools will help to cluster ideas and to really get something on paper together" (P07)

Value Network Map (Tool A)

In the first tool, the Value Network Map (Tool A), the first impression was that the tool would give a kickstart to facilitate the discussion. The tool would help to make matters explicit, as it is useful in understanding what actors need, as Participant 13 illustrates:

I think such a tool helps to get the implicit assumptions out of the room, as it helps to facilitate the discussion. I think A is very useful in understanding what people know and what they want. (P13)

The barriers of this tool were also valued, as Participant 12 noted this would harnass the change energy present in the room, needed to change the current situation:

The good thing about tool A is the barriers, that you look for the 'change energy' in the system. To look towards the core problems in the current situation (P12)

However, the value Network Map needed more clarification and information. As Participant 7 noted, the current information was insufficient for strategic designers to be able to facilitate the session well:

Because the terminology is new in the Value Network tool you need to make sure there is good facilitation or good explenation. So I would make a kind of 'manual' with information. (P07)

In more detail, the different themes were appreciated as they show strategic priorities of the actors. Participant 13 noted that prioritization helps to gain a better focus of the ecoystem:

The advantage is that you have 8 strategic priorities. All those 8 can be in the journey at the same time, or different. When you have that prioritization, you can better focus. (P13)

Nontheless, Participant 7 added these priorities might differ depending on which ecosystem you are working on.

I think it also depends on which transition you're working on. For example, the energy transition has a clear outcome but healthcare perhaps might not. (P07)

Collaboration Map (Tool B)

Tool B was the most clear for practitioners and would be useful in both helping organizations to think and see their organisation in a new role and creating concrete ideas for collaboration. Participant 13 appreciated the momentum generated from ideas between actors to collaborate:

I think you get momentum to start small together with a group of people, and then continue and build from this. (P13).

For the facilitator, the main challenge in Tool B is to guide the participants to working on shared opportunities, and not have collaboration opportunities that would only benefit one party. Another point of attention is to capture valuable ideas in a way so actors take ownership of these ideas to make it happen.

Value of network canvas (Tool C)

Altering an existing tool did not seem to be a problem for practitioners. Although there were critical notes on using the Business Model Canvas there were also some advantages of using an existing tool. Participant 7 illustrated using an existing tool in another way might relieve anxiety and stress for actors;

I think you shouldn't underestimate the fact that people have seen the Business Model Canvas before, which relieves anxiety and stress. We as designers might be used to using new tools every day, but for other people this might remove barriers to think differently. (P07).

This canvas would be helpful in translating initial ideas into more concrete working conditions. The canvas would be a generative tool for actors to further specify the initial ideas. However, the need to add the Pirate Metrics was not understood by participants and an insight would be that this needs further clarification.

In the next pages, the insights from both the expert validation and the test case will be summarized. In chapter 8.1, an overview will be given of all the iterations used in redesigning the tools into a toolkit.

7.4 Insights for design iteration

In this chapter, insights from expert interviews and the Utrecht Bike Ecosystem are summarized to provide adjustments and an iteration of the design direction.

In order to redesign the original toolkit, all the insights from the validation phase are gathered to iterate the design. During the formation of the Utrecht Bike Ecosystem (UBE), as well as through expert interviews, multiple insights were gathered on the concept tools.
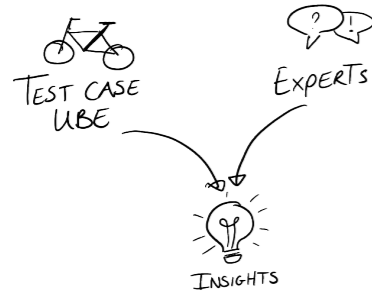
Simplify and make it easy

Both the interviews and testing pointed out the need for a simpler version of Tool A. The Ecosystem pie model should be well explained before use, as the model used in the Utrecht Bike Ecosystem had four extra outer rings compared to the model seen later in this chapter. The initial model used for the sessions can be found in concept A. Therefore, extra caution should be taken towards the complexity of the model in a design iteration.

Another insight was that the concept of 'ecosystem' was not entirely grasped by the actors. It was explained what an ecosystem is and what it aims to do, but during the sessions multiple questions kept rising towards what an ecosystem was. Therefore, the word 'ecosystem' should be used when necessary to participants, and if used clarified with examples.

To make the tools easier to handle, the iteration should include ways to make the tools easier to follow and when they should be used.

Not a straight process

A second insight showed that the 'explore' phase might not be completed when starting the forming of an ecosystem. In the UBE not all actors were familiar with eachother and introductions had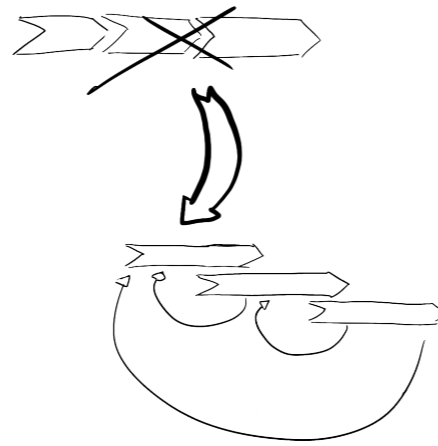 to be made. Expert validation confirmed that a transition is often a messy process without a clear structure. One of the insights from expert validation was the notion that transitions are fluid and subject to change. There was an expressed wish to build towards a shared understanding of the system, without a rigorous structure to follow. Experts added that as a facilitator you should have the freedom to deviate from an initial process if this was required for a specific project.

This leads to the insight that phases might have blurred boundaries and phases might overlap. As these phases overlap it is necessary for the strategic designer to sense what the ecosystem needs, and what tools would facilitate that. This sensing would be understanding the different conflicts at hand, understanding how well partners know eachother and anticipating the different directions the ecosystem may take. Therefore, it may be inconvenient to have a strict process to follow, but rather allow the tools to be used independently.

Conflict is necessary

A third insight showed the discomfort of actors in discussing an ecosystem. Some actors of the Utrecht Bike Ecosystem felt the ecosystem threatened their position within an organisation, while others thought the ecosystem would overlap with other initiatives. This created tension and conflict, as the purpose of the ecosystem was under constant debate. Although the final outcome was an ecosystem that would strengthen existing activities and initiatives, the debate and heated discussions were necessary to clear the air. The strategic designers at Strategiemakers initially assumed there were no tensions in building the ecosystem, but had to shift towards facilitating debates during a session. During the expert validation, it became clear that this conflict is necessary in order to relieve tensions and focus on a better outcome. However, there should be a better facilitation of the discussion and tensions. Concluding from this, the tools should allow for debate and discussion.
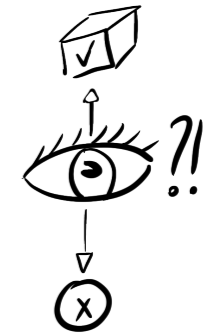
Allow different perspectives

Another insight showed that there are different perspectives to take into account. Organisations often bring their own perspective to the table, where they bring the aim and purpose of the current role of their organisation. This is amplified by the fact that within an ecosystem, they may suddenly collaborate with competitors and orther parties they haven't worked with before. However, if organisations are able to look through the lens of an ecosystem, they are able to see the possible role of their organisation instead of their current role. This creates new collaboration possibilities. In the Utrecht Bike Ecosystem, parties were initially reluctant to work together because they didn't see the need from their own organisation's perspective. However, the current tools provided a medium to facilitate the discussion which relieved some tension. Expert validation affirmed the need to disengage from the perspective of the organisation in order to be able to imagine possible collaboration opportunities or a possible new role for their organisation. Therefore, the iteration should take into account that organisations may bring different perspectives to system, and these perspectives should be well handled. The tools provided a medium to facilitate the discussion in the Utrecht Bike Ecosystem and this was well perceived, so this should be further investigated in the final design.

08
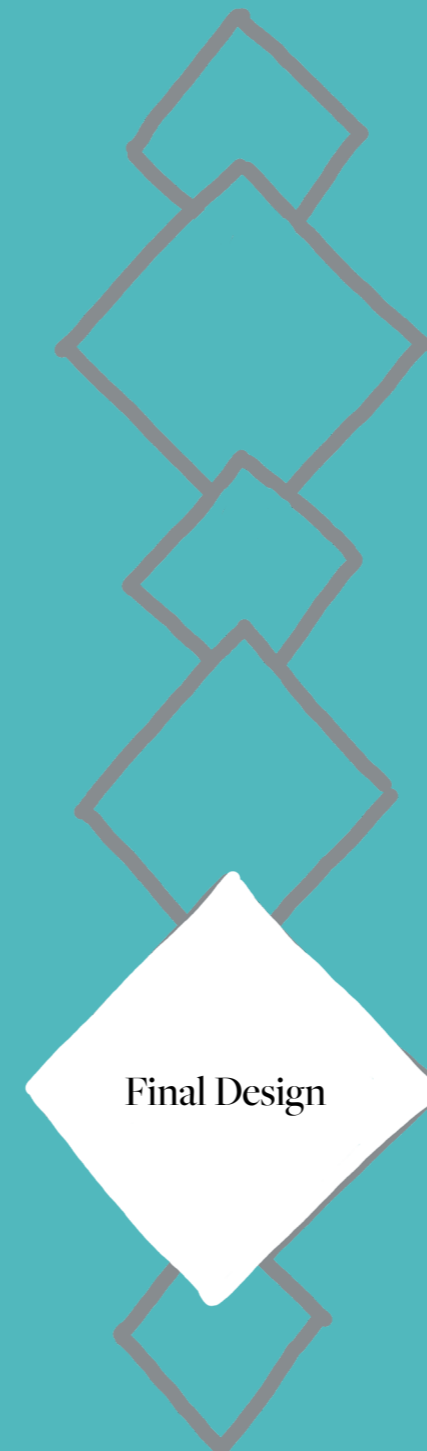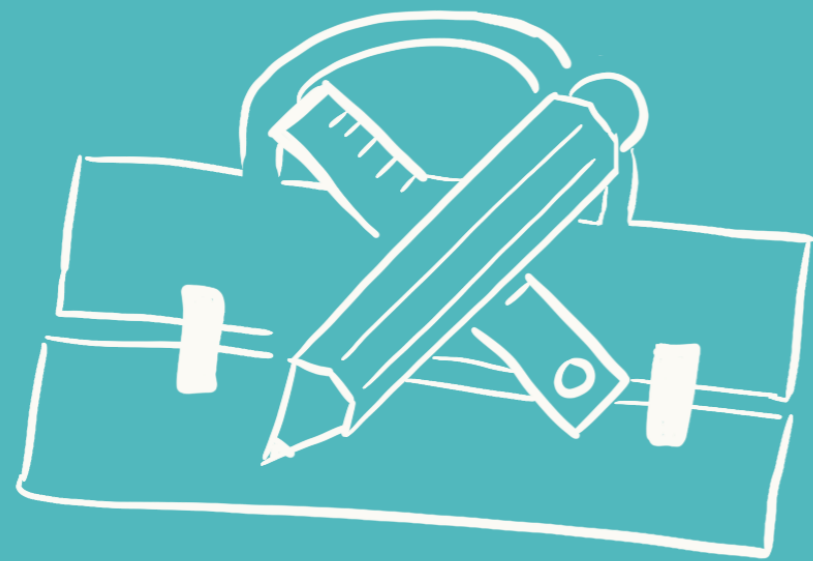
Final Design

Final Design

After the concept was evaluated with interviews and a test case, the concept was iterated on. This chapter introduces the Value Network Toolkit as the final design of this project.

8.1 Positioning the toolkit

After evaluation in chapter 7, this chapter revisits and summarizes previously described topics and concludes with a clear positioning of the toolkit.

It is established that there are large scale societal transitions that we want to make as a society. Some examples are the transition to sustainable energy, the transition to a circular economy and the transition towards a sustainable 'doughnut' economy.

Design-led transitions are societal transitions towards more sustainable futures (Irwin, 2015). Such a transition can be displayed as an s-curve (Price, 2019). S-curves are traditionally used in management theory to exhibit the maturity and adaptation of a technology over time (Christensen, 1992). The conditions surrounding these transitions are uncertain and unstable, where a wide range of diffuce future visions can be found (Price, 2019). These transitions help us to move towards a more sustainable future for organizations, and are therefore something largely all companies would want to participate in to accelerate this.

In this increasingly complex, dynamic and networked world (Dorst, 2015), companies cannot solve these large-scale societal issues alone. Therefore, in order to accelerate the transition, it is vital for companies to work together, as the challenges of today cannot be solved by companies by itself.

One of the ways in which companies can collaborate is in ecosystems, which has increasing interest of scholars and practitioners. Since Moore introduced the 'business ecosystem' in 1992, the research pubished and cited has exponentially increased to 80.000 publications last year (Dimensions, 2020). This is also noticed in the consulting world, where increasingly firms are noting innovating in ecosystems as one of their capabilities in which they help clients (BCG, 2019; Accenture, 2018; Deloitte, 2017).

However, the word 'ecosystem' can have mulitple interpretations. 'Ecosystems' can even be seen as a 'buzzword' of the last couple of years, as a lot of companies mention ecosystems, but rarely are confident in explaining what they mean by it. Sometimes an ecosystem can be defined as a physical area in which companies are located, such as Silicon Valley, it can also be a platform such where companies meet (BCG, 2019) or it can be a network of parties collaborating towards a shared goal or vision. The latter is what this project focuses on. More information on the taxonomy of ecosystems and the differences between them can be found in chapter 5.1. This project focuses on transition ecosystems with the following definition, based on Adner (2017):

A transition ecosystem is forming multilateral partnerships that need to interact with the shared goal to help accelerate transitions.

As described in chapter 5.3, this project identifies three main phases in emergent ecosystems: Explore, Form and Work. These phases are not lineair but can be revisited and iterated on. This project focuses on the 'form' phase, because of two reasons. First, because this is perceived as a critical phase by both research and practitioners. Second, this 'forming' phase is critical, since during this phase a lot of tensions and complications arise, which need to be taken into account in order to have a succesful ecosystem formation.

These tensions occur, because within building an ecosystem, there are many perspectives to take into account. These perspectives can be categorised into the organisation perspective, the ecosystem perspective and the transition perspective.

Organizational perspective

Organizations often have their own perspective on the world. This perspective includes their mission, goals, and worldview. Within transitions, organisations might experience that they are not ready for the new transformed economy. Organisations feel threatened by the transition or afraid by the need to change in order to stay relevant. These organisations experience friction, while the transition occurs around them but also when they collaborate with others.
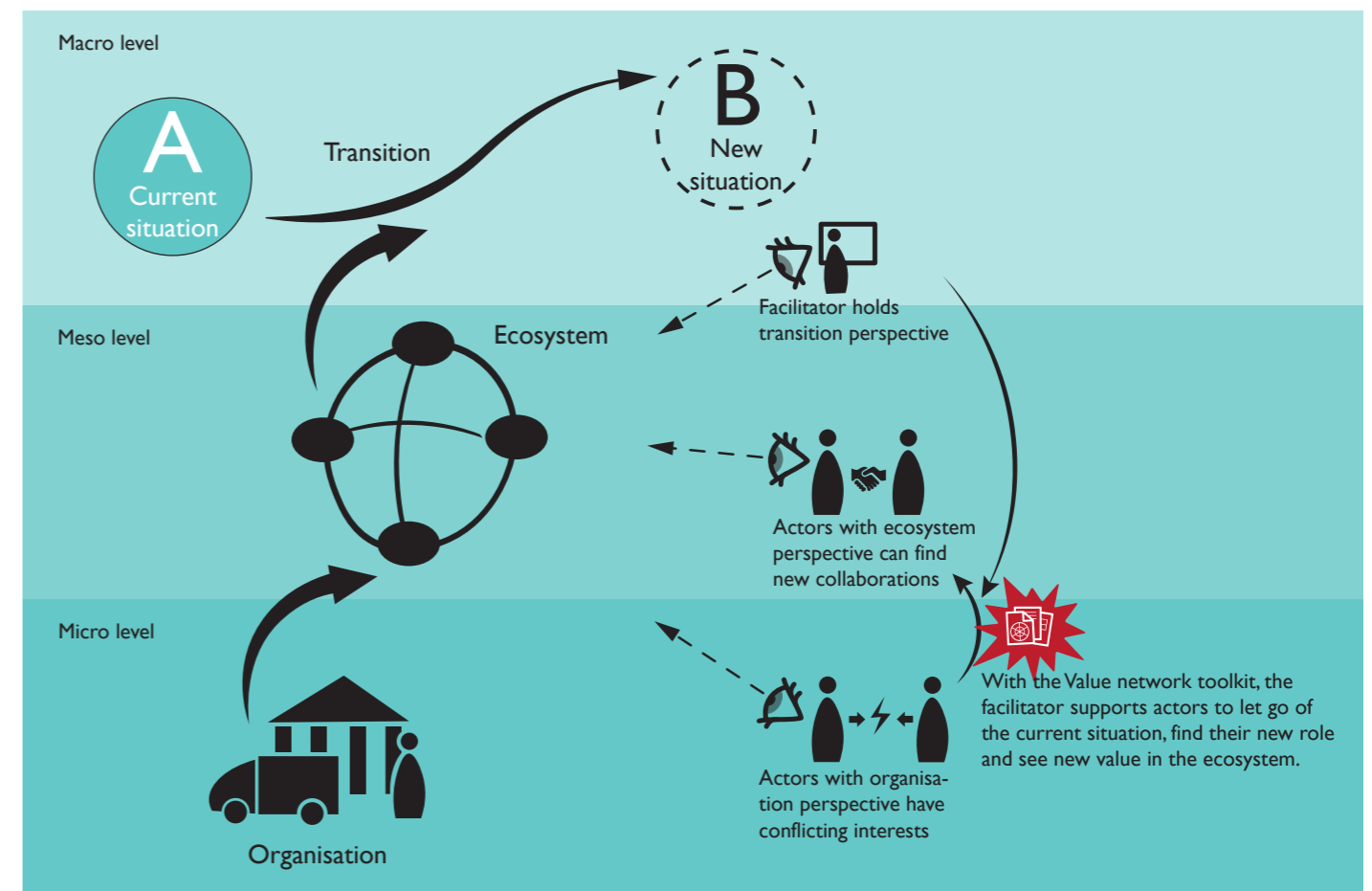

Figure 30: A graphical representation of the gap between the organisational and ecosystem perspective

While collaborating within ecosystems, organizations often find themselves among competitors and other parties that they have not been collaborating with before, whose interests they might perceive to be in direct competition with their own. This causes friction, as organisations feel the need to change, but are not confident in expressing their fears towards competitors and are limited by their current role. They want to participate in the transition in order to stay relevant, but might feel threatened or vulnerable by having other parties present. To make organisations aware of these fears and bring them out in the open, conversations are needed. Thereby these 'transformation pains' can become clear and be expressed early in the process. The insights and value from these conversations ensures a trusted space among parties and helps define a direction for the ecosystem.

Ecosystem perspective

If actors can move towards an ecosystem perspective, they are able to find new collaborations. Organisations need to release their concern about current threats and competitiveness in order to be able to see their possible new roles and co-create possible futures in the ecosystem. In order to get these parties out of their comfortzone and current role, a dialogue is needed between actors striving to form an ecosystem.

Transition perspective

In order to ease the formation process, a facilitator can be introduced. The facilitator holds the transition perspective, keeping track on the transition and how the ecosystem contributes to the transition. As Adner (2017) proposes, the value proposition of an ecosystem is its foundation. Therefore, an important role of the facilitatior is to check how the value proposition of the ecosystem adds towards the acceleration of the transition. To give an impartial perspective, since the facilitator is both facilitating the formation of the ecosystem as well as checking how it contributes to the transition, the facilitator should not be involved in the content and not be an actor itself.

The largest gap which needs to be bridged in guiding the dialogue can be seen between the organisation perspective and the ecosystem perspective. This is because organisations themselves need to adapt this different perspective while also running their current business. The adaptation and having 'two perspectives' in one person creates tension and conflict, and requires to be handled delicately.

Therefore, the redesigned toolkit aims to help the facilitator bridge that gap between the organizational and the ecosystem perspective.

In order to bridge the gap between the organisational perspective and this ecosystem perspective, actors need to:
- be able to 'release' themselves from the constructs of the current situation
- be able to think and see their organisation in a new role
- see the value of the ecosystem

The three tools were redesigned into a toolkit to help the facilitator achieve this.

Iterations towards final design

Figure 31 shows the iterations which are implemented in the final design. These iterations are based on the insights from chapter 7 and the adjusted positioning of the toolkit, as described in this chapter. In chapter 9.1, the redesign is reflected upon, also in relation to the remainder of insights from the evaluation, which have not been implemented in the final design. The next pages describe the redesigned toolkit.

Iterations

1. Bridge the gap
As mentioned, the toolkit will be aimed at bridging gap between the ecosystem perspective and the organizational perspective

2. Emphasis on strategic designer
There would be an emphasis on the strategic designer. The strategic designer needs to decide what the ecosystem needs, based on understanding the different conflicts at hand, understanding how well partners know eachother and anticipating the different directions the ecosystem may take.

3. Facilitate discussions
The tools would allow for healthy discussion, in order to relieve tensions

4. Simplify tool A
In tool A, there were too many rings. Therefore, the outer rings will be deleted.

5. Guidelines
There would be clear guidelines to come with the tools so they are easy to use. These guidelines would be for the strategic designer facilitating the formation of the ecosystem, along with large-size printables for the tools and digital versions to be used when facilitating sessions remotely.

6. Definition Ecosystems
A clear definition of ecosystems will be provided to avoid confusion over semantics.
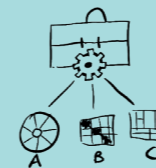
7. Independent tools
The tools can be used independently without a strict process to follow up on. Therefore, the tools will be redesigned into a 'toolkit', which makes it easier to use the tools the specific ecosystem needs.

Figure 31: An overview of iterations towards redesign

Chapter 8.2:
Value Network Toolkit

For forming collaborative ecosystems by facilitating dialogue among actors

In this chapter, the Value Network Toolkit is presented and an overview is given what the tool aims to do, for whom it is designed for and possible points of attention.

This chapter presents the final outcome of the design: the Value Network toolkit. The Value Network Toolkit is a redesign of the combination of concepts in chapter 6, and aids in forming collaborative ecosystems by facilitating dialogue among actors. It is called a 'Value Network Toolkit', because it shows within the collaborative network wat can add value to the ecosystem. The toolkit aims to:

- Give hands-on tools for facilitators to use during sessions

- Get partners out of their comfort zone and brings up points of discussion

- Function as a bridge between initial individual interests and working together on a common goal

- Create a concrete physical (or digital) outcome of the session, which parties agree on and have a shared understanding of, to move forward with.

This toolkit has three tools to start with, but these three are not an exclusive answer or guide to faciliating the formation of ecosystems. Facilitators or designers may use their own judgement to add additional tools to the formation of ecosystems when required.

The tools are open for interpretation and changes if that fits the project better. Therefore, it is a responsibility for the 'ecosystem facilitator' to check whether the tool as it is fits the goal of that meeting. To the right, an overview of the items within the toolkit can be seen.

For whom?
The toolkit is aimed at ecosystem facilitators and strategic designers aiming to learn how to facilitate the formation of ecosystems.
The 'ecosystem facilitator' is a person or organization wishing to build collaborative ecosystems from a process perspective. It is important for the facilitator to be as neutral and impartial as possible, in order to involve perspectives from all parties. Strategic designers with experience in facilitation may be aiming to learn how facilitate the formation of ecosystems. This tool is also aimed at those designers, however they should mind the points of attention as described in the next paragraph.

Points of attention when using the tool
Transitions cause *pain*. This pain almost always comes up during the process of forming an ecosystem. It can arise within organisations or specific actors as their role might change or their existence might be threatened. The ecosystem could delve into the same project space as them, or for individuals, their position might be at risk. This toolkit aims to help with locating these pain points, but be aware that they will likely come up.

This is not a 'one size fits all' tool. It's the responsibility of the strategic designer to sense when tools are needed, when deviation of the tools is necessary and when you want to press on the pause button to delve into underlying issues.

This uncovering latent needs is one of the skills of a designer and can be highly valuable here. Doing so requires strategic designers to have a sense of 'organizational sensitivity' and thus this toolkit is not suitable for all situations or designers.

What?

What's in it?

an instruction booklet
Find it at appendix A

explanation
graduation report
Chapter 8
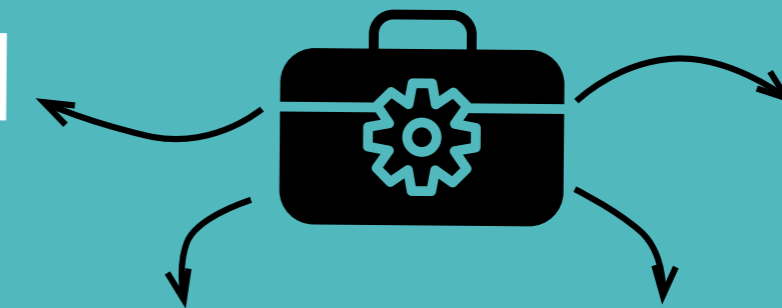
large-size printables
Find it at appendix B

mural templates
Find it at
bit.ly/valuenetworktoolkit

Who?

The **'ecosystem facilitator'** This is a person or organization wishing to build collaborative ecosystems from a process perspective. It is important for the facilitator to be as neutral and impartial as possible, in order to involve perspectives from all parties.
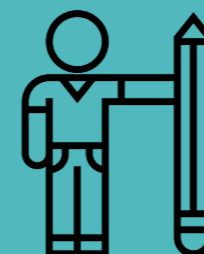
Strategic designers with experience in facilitation, aiming to learn how facilitate the formation of ecosystems.

Tool A: Value Network Map

This chapter describes the first tool in the toolkit, the Value Network Map.

This chapter describes the application of the tool. Chapter 6.2 described how this concept came about. Therefore, this chapter focuses on how the tool should be applied. A summary of the aim of the tool, when this should be used and a step by step approach will follow in this chapter.

The first tool in the toolkit is Tool A, the Value Network Map. The tool is called 'value network map' as it aims to map the network and show where valuable opportunities lie. This map is based on the Ecosystem Journey Canvas (Walter, 2019) and the Consumer Forces Canvas (Maurya, 2017).

The tool introduced in Chapter 6.2 has advanced into an improved version. The tool was considered valuable and inspiring in both the test-case and in expert interviews, so no drastic changes should be made. The base has remained, with changes in how the tool is situated among others, an explanation when this tool should be used. The tool is simplified as well by deleting the outer rings. This was done to make sure the map can be used in a single creative session, and to reduce possible cognitive overload on participants.

Aim
The Value Network Map aims to:
• Give a way to come up with and focus on new themes
• Make clear what the current and desired situation are and the gap that exists in between
• Explore where certain actors are now located and where they could move

When do you use it?
As a strategic designer, you should decide when this is the right tool to use. However, this is generally a valuable tool when the strategic designer wants actors to not only think about the current situation, but think about the possibility of new situations with actors together. You would also use this if you want to specify different themes the ecosystem would focus on and if you want to see what roles actors currently have on these themes. This allows you to see possible gaps in your ecosystem or an overload of actors on a certain role or theme.
Last, you could use this tool if you want to see what the problems are with the current situation and the barriers which withold a transition to another situation.

How do you use the tool?

Step 1: Prepare
The tool can be used both physically and digitally. The first step would be to prepare the session, as a facilitator. You need to understand the ecosystem you are working in as well as understanding possible tensions that might be at play. During the preparation you also invite the initial members of the ecosystem to sessions in which you try to think of a draft shared vision.

Step 2: Shared vision & themes
During the session, the facilitator starts with the shared goal of the ecosystem. As facilitator you might already have an idea of what the goal could be, or you might want to first explore the opinions of different actors. The main question this vision should answer is:

 'What is the vision for the state of the transition what you want to achieve?'.
This vision should transcend the ability of separate actors and should be built together with all parties rather then put upon by an initiating party. However, you might want to have a draft version ready as a facilitator to ease participants into the topic. As a facilitator, you need to clearly communicate that this goal is still up for debate and that this excersice helps to define the ecosystem goal more clearly.
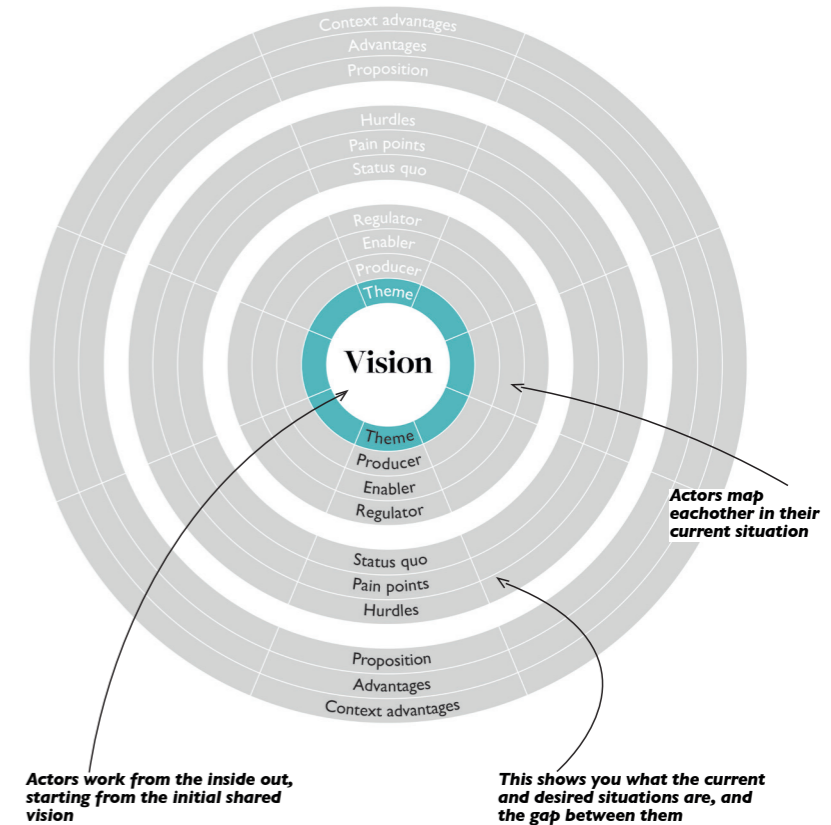
After explaining the initial goal, you move onto the blue 'theme' ring. These themes could be core activities in the final user's life, or could be possible interaction moment where the ecosystem wants to play a role. Examples include for example work life, school, travel or sustainable living.

Based on this, the participants can plot their organization within one of the roles in one or more themes. This can be done physically or digitally, using either a printed A1 canvas or a digital whiteboard tool like Mural. This results in an overview within the themes and how within these themes the roles are distributed. Gaps may indicate a need to invite more parties to the ecosystems, while an abundance of parties in a certain role may illustrate there are too many parties in this particular role. However, an overrepresentation in an area might indicate a strong preference for this and is not necessarily unfavorable. To keep this balance, the coordinater may ask questions like 'do these parties add to the vision? What areas would we like to focus on?

Step 3: Current & Desired situation
The next part of the model looks at the current situation. In the 'status quo' ring, you look at why people or organisations still commit to the current alternatives. What pain points does this situation cause, and what are the hurdles of people and organisations of changing to an alternative solution? Answering these questions provides an analysis of the current situation, why this needs to change and why it has not been changed yet. For this step, as a facilitator you might want to split up particpant in sub-groups on themes to discuss this in a more intimate setting.

In the final part of this model, possible solutions are investigated. This might include the service or idea which initiated the conversation around this transition ecosystem, but there is also room for possible alternative solutions. Next to the proposition of the solution, the advantages of this solution can be plotted as well as the advantages to the context. Context advantages are not necessarily directly for the main user, but may benefit other parties or society as a whole.

Actors map eachother in their current situation

Actors work from the inside out, starting from the initial shared vision

This shows you what the current and desired situations are, and the gap between them

For example, more people using public transport instead of cars might result in a context advantage of cleaner air or less traffic for emergency services.

After this canvas is filled, a critical reflection should be performed to the initial vision. Should this vision be changed based on the results of the user needs? And is this vision shared among the parties involved?

A large scale version of the map can be seen in appendix B, and a filled in canvas would look in practice can be seen in chapter 8.4. As the ways we work are changing, there is also a version for remote work on a digital whiteboard tool through https://bit.ly/valuenetworktoola.

Tool B: Collabo-ration Map

This chapter describes how you can apply tool B in the forming phase of an ecosystem. The chapter describes the aim of the tool, when you could use it as well as a description how to use the tool.

The tool introduced in Chapter 6.2 has advanced into an improved version. The tool was considered as very inspiring and energizing in both the test-case and in expert interviews, so no drastic changes are made. The base has remained, with changes in how the tool is situated among others, an explanation when this tool should be used. The tool is extended as well to include both collaboration opportunities in the current role as well as in a possible new role. This was to make sure participants would not just look for ideas in the current role of their organi-sation, but be able to ideate in how in a possible different role for their organisations collaboration opportunities would arise.

This chapter describes the application of the tool. Chapter 6.2 described how this concept came about. Therefore, this chapter focuses on how the tool should be applied. This chapter describes a summary of the aim of the tool, when this should be used and a step by step approach will follow in this chapter.

The second tool in the toolkit is Tool B, the Collaboration Map. The tool is called 'Collaboration Map' as it aims to map collaboration opportunities between actors. This part of the process is based on a similar approach Roscam & Pellgröm (2020) use.

Aim
The Collaboration Map aims to:
- Identify possible opportunities to collaborate with all actors in a single matrix
- Distinguish between the current role of an organization within the ecosystem and the potential future role the organization might play in it.

In this matrix, all partners are listed both horizon-tally and vertically. The matrix is split in two parts: Part one focuses on collaboration opportunities in the current role and state of the actors, and part two focuses on collaboration opportunities if the current constructs and limitations of the actors fall away.

When do you use the tool?
As a strategic designer, you should decide when this is the right tool to use. However, this is generally a valuable tool when the strategic designer wants actors to think about collaboration opportunities in both the current and possible future state. Furthermore, this would be useful if the facilitator wants to generate energy among parties, as was a result of testing this tool. This would also be useful if the facilitator wants to make it clear that partners are valuable, by showing what can happen if they collaborate with other parties, and if the facilitator wants to get a first direction in ideas, by seeing how partners ideate. This tool would help the facilitator to create clusters of interesting actors or ideas, create energy for a common goal and to get an initial direction to go into.

How do you use the tool?

Step 1: explain the axes
The first step for the facilitator is to clearly explain the axes used in the creative session.
- Yellow squares are for what both parties could collaborate on in their current role or ability.
- White squares are for what actors could collaborate when they release existing constructs or limitations.
As a facilitator, you could add that the yellow squares help to generate ideas in the current situation and these are 'low-hanging fruit' which you could more easily work on. You could explain that while these are easy to implement, these might not be the most impactful ideas on the transition you want to accelerate. Therefore, you give room for both the ideas which could happen in a fortnight, as well as collaboration ideas which are perhaps more far-fetched.

1: In the current state of the actor

collaboration opportunities
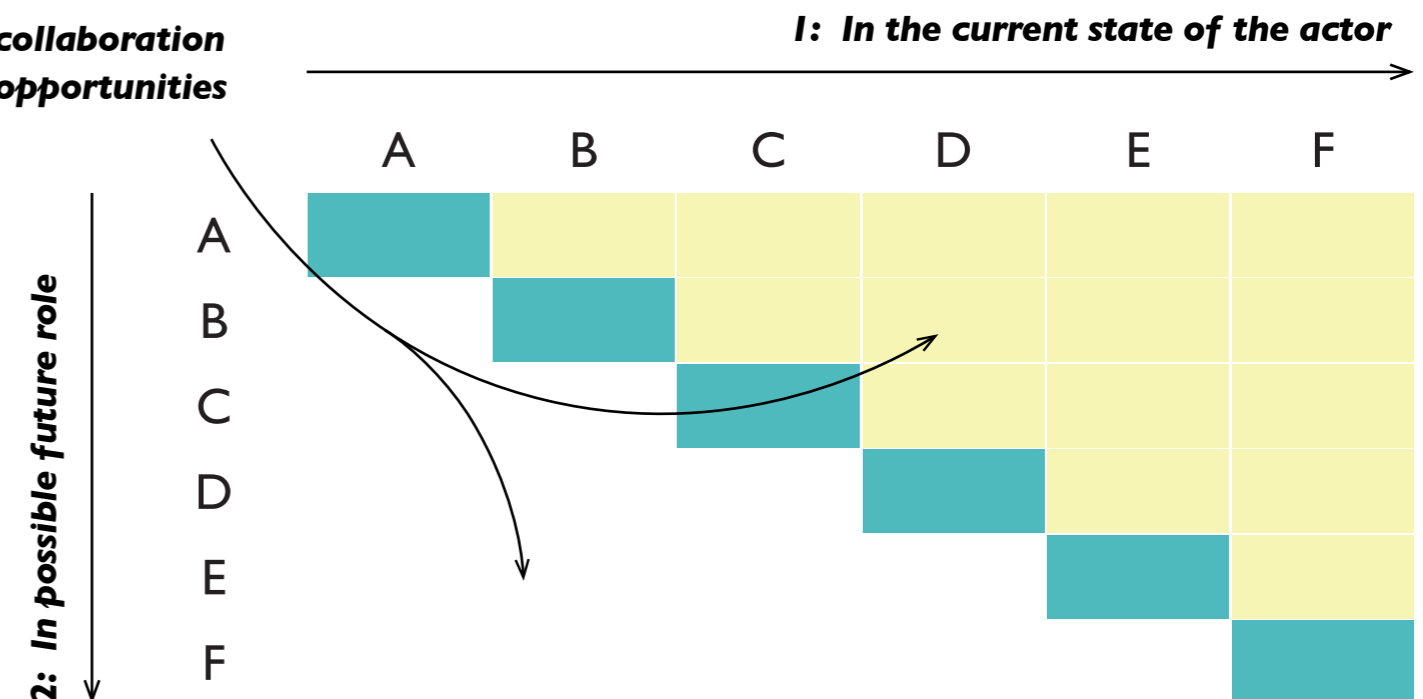
2: In possible future role

Figure 33: The Collaboration Map and where collaboration opportunities are.

Step 2
The facilitator lets partners fill in the canvas. First, the facilitator lets them fill in the yellow squares. Then, after a break or short activity, you let partners fill in the white part of the canvas. As a facilitator, make sure you give plenty of time to partners to both understand what all the other actors do, as well as time for their most creative ideas to spark. Actors should be encouraged to think of creative or wild ideas and to fill in every square of the map.

Step 3
When all squares are filled with ideas, it is now time to find interesting overlap of ideas or matches between organisations. For example, some ideas might come up between multiple parties in which you could form a smaller collaboration idea. Or perhaps a certain direction for the ecosystem is clear from what actors come up with. As a facilitator, you can identify these yourself, but a preferred method would be to host shared discussions with actors to see what they think of the ideas and what they think possible opportunities are.

Step 4
As a last step, the facilitator concludes with what partners want to continue on based on these outcomes. This might need more time then just one session, as partners need to see if collaboration ideas are fully implementable.

Using the tool showed that it sparks interesting discussions or shows underlying tensions between actors. This is a necessary step in the process, as actors need to shift their organizational perspective to an ecosystem perspective (see Chapter 8.1). As a facilitator you need to make sure that these conversations happen, but not to push them into happening. Rather, the tool should spark discussion which you as a facilitator then guide.

A large scale version of the map can be seen in appendix B, and an example of how this canvas would look in practice can bee seen in chapter 8.4. As the ways we work are changing, there is also a version for remote work on a digital whiteboard tool through https://bit.ly/valuenetworktoolb.

Tool C: Ecosystem model canvas

This chapter describes how you can apply tool B in the forming phase of an ecosystem. The chapter describes the aim of the tool, when you could use it as well as a description how to use the tool.

The third tool in the toolkit is Tool C, the Ecosystem model canvas. The tool introduced in Chapter 6 has advanced into an improved version. The tool was considered valuable in expert interviews, so no drastic changes are made. Experts valued the recognizability of the canvas, how this would be used in a generative way. Furhtermore, experts valued that using an existing canvas in a new way helps to relieve anxiety and tensions of actors. Therefore the base has remained, with changes in how the tool is situated among others, an explanation when this tool should be used. What is changed in the canvas itself is the removing of the Pirate Metrics model. This part of the model was not received well by experts and it makes the model less familiar for participants, therefore the original boxes of 'Relationships' and 'Channels' are used.

This chapter describes the application of the tool. Chapter 6.2 described how this concept came about. Therefore, this chapter focuses on how the tool should be applied. This chapter describes a summary of the aim of the tool, when this should be used and a step by step approach will follow in this chapter.

Aim of the canvas
- Visualize the value that lies in your network in a recognizable canvas
- Further develop potential collaboration ideas generated with the help of the Collaboration Map and make them more concrete
- Create shared understanding and make a first 'rough draft' on what gaps and opportunities for development to continue with

When do you use it?
As a strategic designer, you should decide when this is the right tool to use. However, this is generally a valuable tool actors have a vague collaboration 'idea' and want to make it more concrete, or if the facilitators want an outcome that participants can work with independently. This tool helps the strategic designer to co-create a concrete proposition among partners, and helps to make clear who is going to work on what.

In the partner section, the original partner section is divided among three of the core ecosystem roles. The coordinator role is not seen here as this role is focused on the process and not on the content the ecosystem will create. Although the boxes within the canvas are the same as in the Business Model Canvas, the boxes should be filled in from an eco-system perspective. This asks from the facilitator to know when actors are talking from an organizational perspective, and when they are able to think from an ecosystem perspective.
This step is important in relieving tensions, as tensions may only rise when the ideas to form an ecosystem become more concrete. Therefore, if tensions arise during this excercise, it is possible to leave the tool and first discuss these tensions between the organizational and ecosystem perspective (See chapter 8.1).

How do you use it?

Step 1: Find an initial idea
The first step for the facilitator is to find an initial idea why partners want to build an ecosystem. This would be the starting point of the canvas. These ideas could come from the outcomes of tool A or B, or from other initiatives.

Step 2
Either in one large session or in smaller break-out groups, the facilitator guides the actors to use the Ecosystem Model Canvas as a generative tool. Since
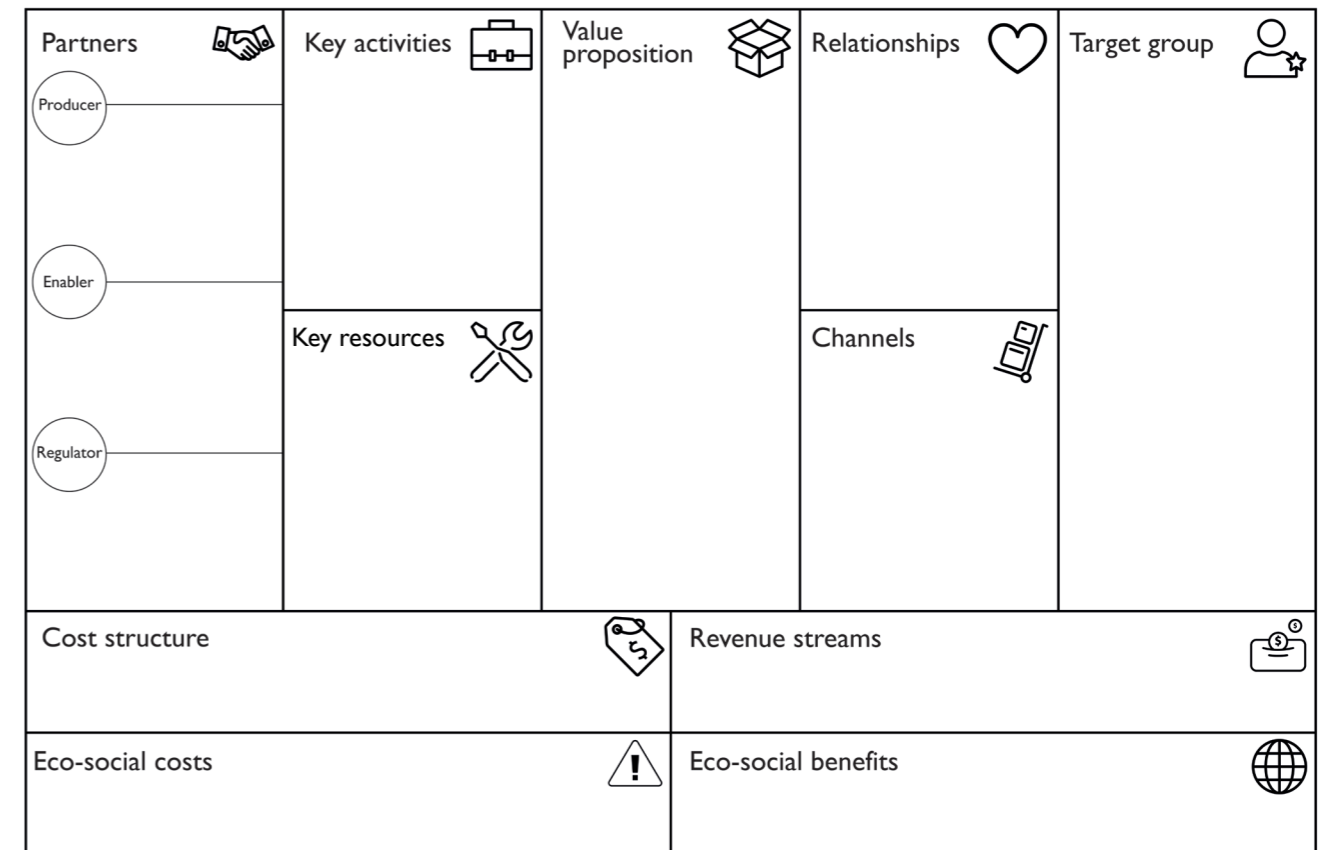
C: Ecosystem model Canvas

Figure 34: The Ecosystem Model Canvas.

it is a generative tool, it is important to explain to participants that the desired situation for the ecosystem would be filled in, not just the current state. As a facilitator, you facilitate the discussion on who takes what roles within the ecosystem and how to specify the items listed in the canvas.

Step 3
As a facilitator, you find common ground to work from. What do participants want to continue on? Would this ecosystem work? Where are still questions or tensions to be resolved? Would this ecosystem benefit the transition? And how do actors feel they are represented between them? From which actors may the revenue come from, and which actors make more costs? How do you deal with that together? These are questions to ask as a facilitator to ensure the outcome is build from an ecosystem perspective, and partners not just focus on their organizational perspective

Step 4
The last step is concluding with what partners want to continue on based on these outcomes. This could be the kickstart of the working phase of an

ecosystem, or perhaps more tensions need to be relieved or issues discussed.

A large scale version of the map can be seen in appendix B, and an example of how this canvas would look in practice can bee seen in chapter 8.4. As the ways we work are changing, there is also a version for remote work on a digital whiteboard tool through https://bit.ly/valuenetworktoolc.

8.4 Example case

To better understand how these tools would work, a fictive case is described in this chapter. The case is the current energy transition, and how an ecosystem for hydrogen may accelerate this.

To illustrate the phases of building an ecosystem, the tools are used for a case study. The researcher was not involved in this case study, but one of the participants was also involved in this ecosystem. This may not be a fully accurate description of the real ecosystem, as only public available information is used.

Case description

Currently, the world is in a transition to move from fossil fuels towards more sustainable energy sources. This is a large societal transitions with widespread implications. Currently, there is no alternative widespread and applicable enough to take over the current fossil fuel industry. To accelerate this transition, partnerships are set up to collectively find solutions. One of these alternatives in the Netherlands is Mission H2, a collective effort from multiple parties in and out of the fossil fuel industry. These parties include influential organizations like Shell, Gasunie, Stedin, Toyota and Port of Amsterdam. Although it is debated how sustainable hydrogen is as a replacement for fossil fuels (Jacobsen et al., 2021), this is a good example of an ecosystem aiming to accelerate the transition, even though it is still unsure what te best answer to the problem is.

A: Value Network Map

Figure 35: Tool A visualized for the Mission H2 case

B: Collaboration Map

Figure 36: Tool B visualized for the Mission H2 case

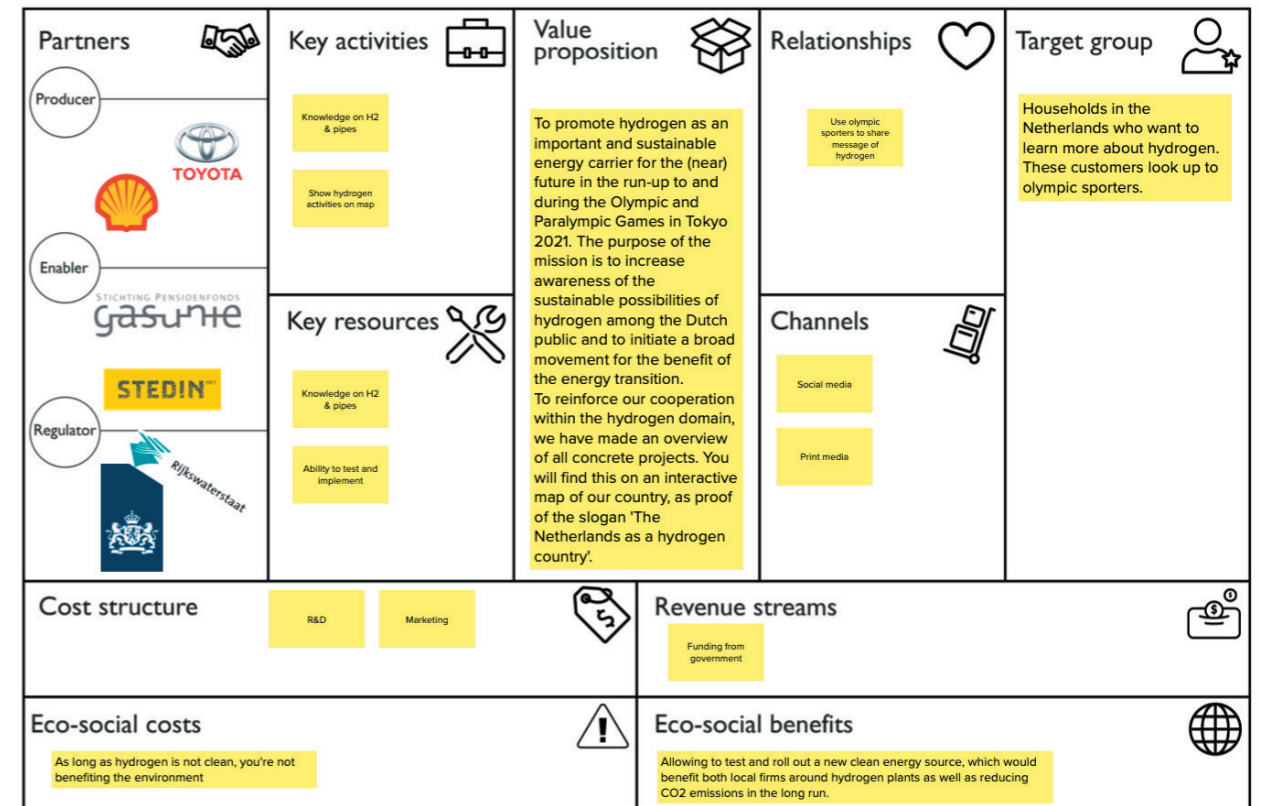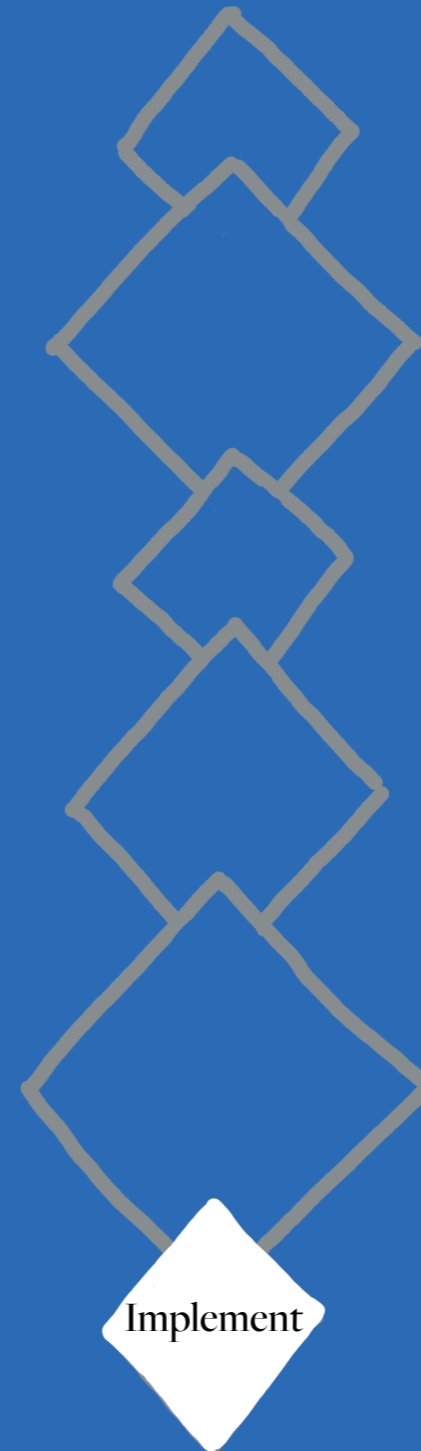## C: Ecosystem model Canvas

Figure 37: Tool C visualized for the Mission H2 case

Implement

09

Implementation

This chapter describes the steps to implement the transition ecosystem process into practice, and what the implications are for strategic designers.

9.1 Further development

After the iterations implemented in chapter 8, there is still room for further development of the toolkit. This chapter describes further recommendations for development of the toolkit.

Chapter 8.1 shows which iterations are integrated in the final design of this project. However, this design did not include all of the recommendations from the validation. Furthermore, as this design is situated in this context, iterations might be needed to apply this model elsewhere. Therefore, this chapter describes further recommendations to look into.

The outcomes of this project reflect the current challenges regarding the formation of ecosystems in the context of Strategiemakers, and is as such 'frozen in time'. Therefore, the outcomes of this project might not be directly applicable to other cases or contexts.

Although multiple insights from the validation were incorporated in the final design, there are recommendations which were not incorporated and are interesting to look into in further research.

Further development of ecosystem phases

One of the recommendations for further research is setting guidelines for the different ecosystem phases. The phases Explore, Form and Work are inspired by research in chapter 4 and further described in chapter 5.3. However, it would be helpful to know more characteristics of these phases. Questions may include:
- When do the phases end?
- Are there certain characteristics which show the end of the phases?
- What capabilities do organizations need in each of the phases, and where would the focus be on?
- What are indications that certain phases should be revisited?
- How can these phases be presented in a way that allows for revisiting or revising?

Consistency in participants

The second recommendation would be to have the same people present during the formation of the ecosystem. As found in chapter 7.2, a varying number of participants leads to a delay as previously discussed items need to be revisited. Therefore, a recommendation would be to make sure the same people from organizations are present, as it strenghtens connections and speeds up the process.

Being equipped to relieve tensions

The tools in chapter 8 are presented as a way to relieve tensions and facilitate discussions. However, being able to navigate difficult discussions and deliberate on tensions is a trade of its own. It is unclear if strategic designers are best trained to facilitate discussions, or if other backgrounds like psychology excel in this. Therefore, the recommendation would be to investigate if designers are equipped to relieve these tensions, and what might the field of design learn from other disciplines.

Role of governmental party

As mentioned in chapter 5.2, the role of the 'regulator' is imperative in the ecosystem. The need to have such a governmental party present is also expressed in the expert validation (Chapter 8.3). However, the exact role of this governmental party in the ecosystem, how they should act and how this role helps in accelerating the transition is yet unclear. Therefore, a recommendation for futher research would be to look into the role governmental parties play in transition ecosystems.

Contextual bias

The tool presented in chapter 8 is aimed to bridge the gap between the organizational and ecosystem perspective by relieving tensions in the forming stage of ecosystems. This tool is tested in the specific context of Strategiemakers and validated by expert. However, this limits the current tool to this context. Therefore, one of the recommendations would be to test the toolkit for linearity and to test this not just in one test case, but in multiple test cases to see if it works in other practices as well.

9.2 Fit with Strategiemakers

After defining the focus of the project and developing the concept, the previous chapter concluded the validation of the concept. Chapter 9.2 aims to answer why and how Strategiemakers could implement the concept into their offerings.

Strategiemakers has the ambition to actively help organizations to transition to a sustainable world. Since ecosystems may help accelerate early stage transitions, they can incorporate ecosystem design in their strategies and other offerings.

In order to implement this at Strategiemakers, a Roadmap was created to give an impression on how to incorporate this in their offerings. This roadmap can be seen in figure 39.

The first step to implement the toolkit into their offerings is to test the toolkit with multiple clients. A first test case is described in chapter 7, where the toolkit was tested with one client. Nonetheless, in order to sell this toolkit to multiple clients it would be beneficial to further test the toolkit. The outcomes of these test would be shared with the teams.

The second step would be to gather insights while starting to offer the toolkit to potential clients. Here, insights would be gathered towards what clients need and how Strategiemakers could offer this to the ecosystem as a whole. This would include how a design strategy consultancy could offer this

as a service not just to one client but to the ecosystem with multiple actors, with a corresponding business model.

The third step would be to coach clients to build ecosystems. Coaching clients would help put Strategiemakers in a position to further develop the toolkit and the way to work in ecosystems, while also keeping track on large societal transition.

An important value of strategiemakers is building strategies together, with different stakeholders at the client. In order to build these strategies together, they use a three step approach; *Show it, do it together, do it yourself.*
These steps can also be applicable on the approach described in chapter 6. The first session would then be facilitated by Strategiemakers, the second would be co-facilitated by both strategiemakers and the client and the third would be facilitated by the client, coached by Strategiemakers. That way Strategiemakers can ensure the knowledge transfer as well as the ecosystem functioning as a independent system.
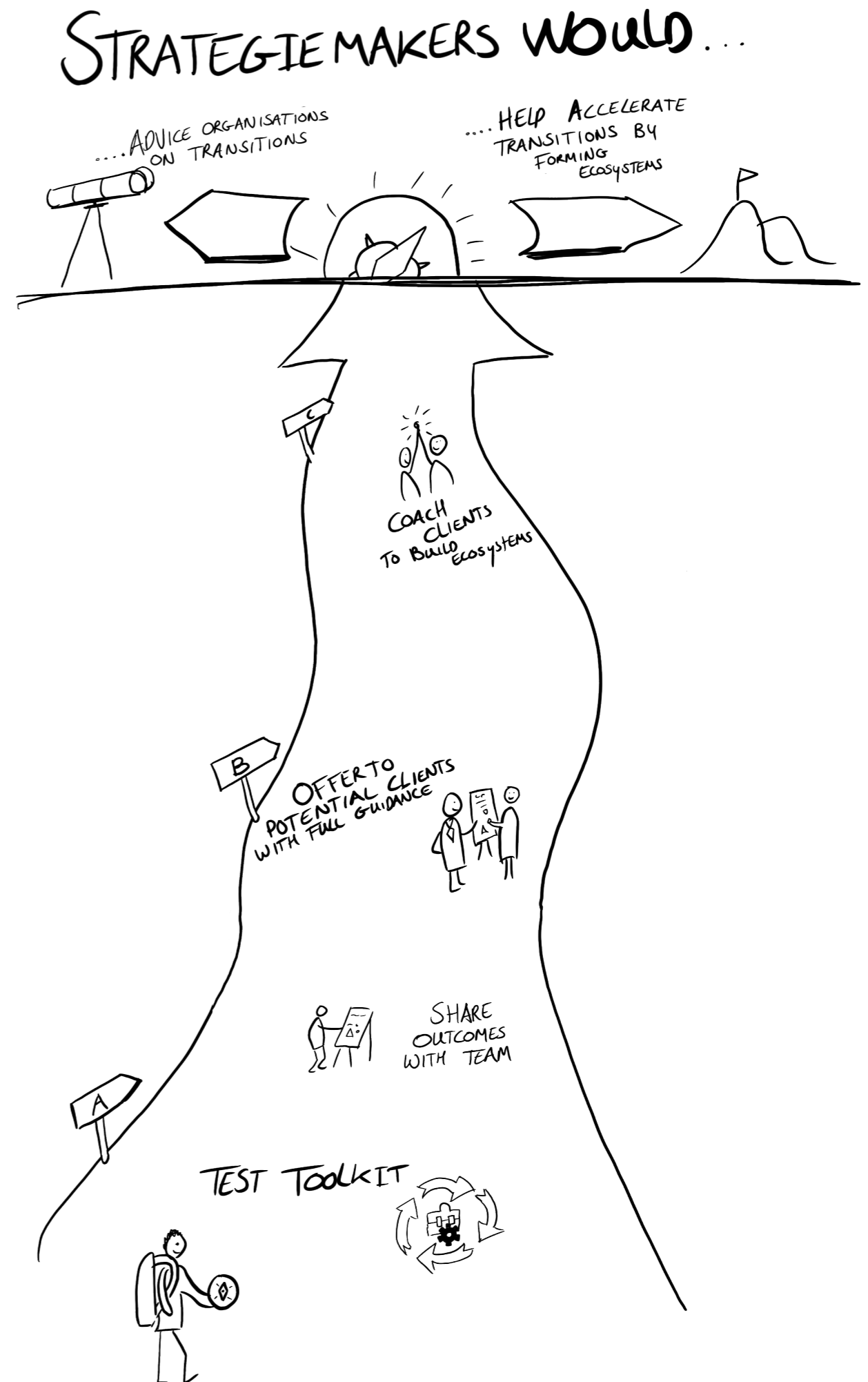

Figure 39: A roadmap to implement the concept at Strategiemakers

9.3 Implications for Strategic designers

Next to implications for the collaborating company, there are also implications for the larger design practice as a whole. This chapter aims to describe the implications for strategic designers in practice.

The practice of design has been changing for decades. Looking at the cone model, as described by van Erp (2011), designers have moved from a pure design function to concept development and strategy development. Looking at the intra-organizational approach of ecosystem design, the design discipline may well ascend to the intra-organizational level. Buchanan (2016) notes a shift from the design of symbols through physical objects, activities and processes towards designing environments and systems.

I believe that because designers can deal well with ambiguity and complexity, this is not a shift to be worried about. The increasing complexity and abstract systems within the design field have brought designers to other disciplines and levels of society. This has brought other disciplines the traits from design, as designers are now working in even more variable functions. Furthermore, it has brought designers the insights and inspiration from a wider field than just the design or product development field.

This project adopts a similar approach, as it positions itself in designing networks between organisations. Although this design of collaborative networks is not new (Bergema, 2015), this project identifies itself by forming collaborative ecosystems towards accelerating early-stage societal transitions.

Strategic designers have often found themselves on the intersection between strategy and design, and this project is no difference. Because if you are designing a trajectory for large scale transitions, where does strategy into design?

This intersection gives rise to a number of new opportunities, such as moving more to the organizational or business field. Having majored at a business school as well, I have found this project interesting because of the fine line where strategy is design and design is strategy.

Furthermore, the toolkit aims to relieve tensions in the formation of ecosystems. This requires a whole different skillset from designers, as they navigate difficult discussions or undercover latent fears. Undercovering latent needs is not new for designers (Sanders & Stappers, 2012). However previously latent needs were used in helping designers understand their users to design better products and services. Helping to relieve tensions might require a new approach, learning from other fields how these discussions should be facilitated. This may be an area of opportunity for designers to learn from other fields once again in its existence.

The toolkit may help strategic designers in including ecosystems in their aim to solve the societal challenges of today and tomorrow. At the same time, it gives strategic designers guidelines to understand the concept of ecosystems and what is meant with this. The word 'ecosystems' seems sometimes to be the new buzzword, like 'innovation' was some years ago. In order to ask the right critical questions to clients, it is important to have this framework of what type of ecosystems there are and how you can use these in your design process. This is an area where more research can be done, but hopefully the framework from chapter 3.4 gives a first start. Who knows, maybe the designer of the future will even be a designer of ecosystems.
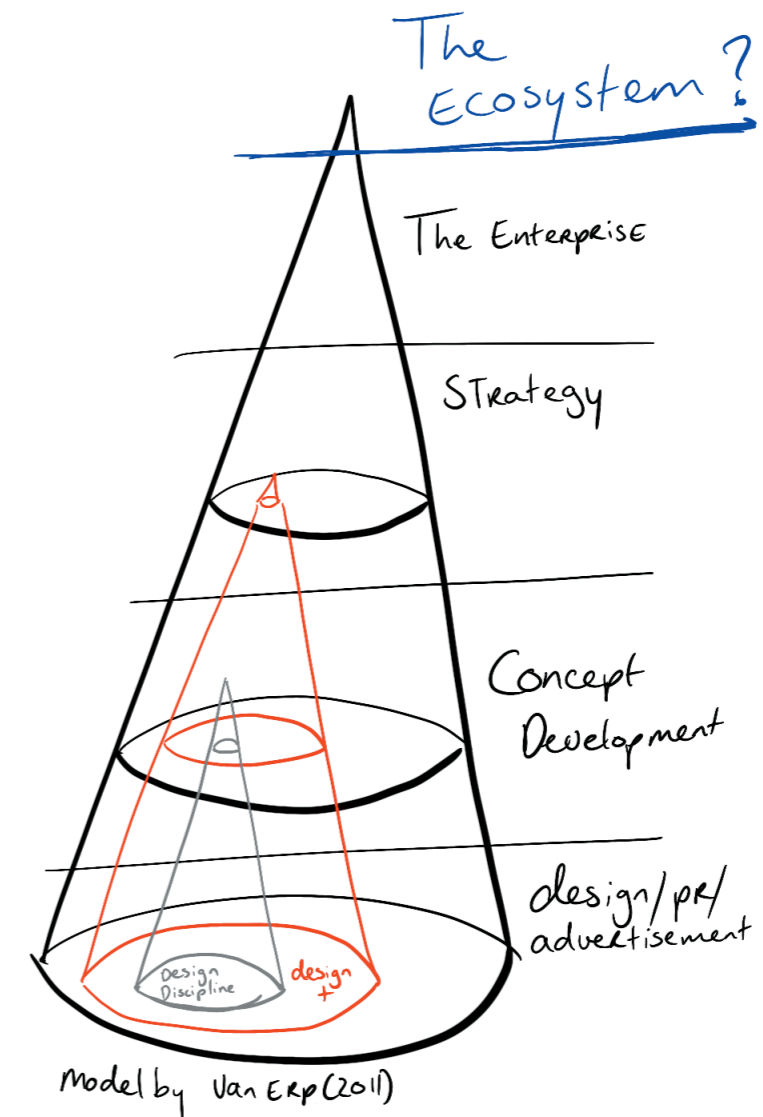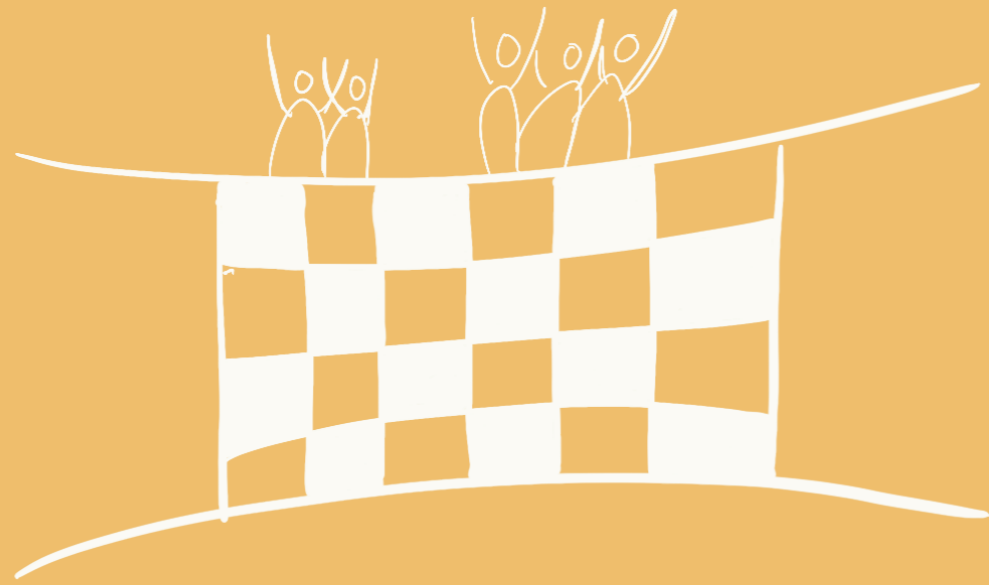

Figure 40: The cone model (van Erp, 2011), with additions of the author in blue. Ecosystem design may result in a even more changing position of the designer.

10

Concluding the
project

*This chapter concludes the project. It relates
back to existing literature and ends with a
personal reflection of the project.*

10.1 Discussion

This chapter relates the project back to existing literature, discusses its limitations and describes its contribution to literature.

The initial question of this project was to investigate how design can help accelerate transitions by collaborating in ecosystems. After exploration and research into how ecosystems are being formed was found that the 'facilitator' role in the forming phase of transition ecosystems needed attention. After validating a design concept, an iteration lead to an adjusted focus:

Within transition ecosystems, how can you bridge the gap between the organisational perspective and the ecosystem perspective?

Addition to Transition literature

Literature notes the need for designers in societal transitions. These transitions consist of three re-occuring phases; 'reframing present and future', 'designing interventions' and 'waiting and observing' (figure 10). The designing of interventions should occur at multiple levels over long periods of time, and should link and amplify existing projects (Irwin, 2018). Here, there can be a role for the Value Network Toolkit as it is one intervention at a systematic level which. By collaborating in transition ecosystems it may connect existing projects to accelerate the transition at hand.

Transition design proposes a model with four mutually enforcing areas (Irwin, 2015;2018; Price, 2019). The designed value network toolkit adds a possible design tool to one of these four areas, called new ways of designing.
As Irwin (2015, p. 232) states:
"The transition to a sustainable society will require new ways of designing that are informed by a vision, a deep

understanding of the dynamics of change and a new mindset and posture."
The Value Network Toolkit adds to this area, as the toolkit acts on the interplay between the organisational and ecosystem perspective as a new dynamic of change and a changing the mindset of actors within the ecosystem. Furthermore, Tool A centralizes a shared vision of the transition. However, a limitation of the toolkit in relation to transition literature is that the toolkit is designed specifically for transition ecosystems and not for transition design as a whole.

Addition to Ecosystem literature

Since Moore introduced the 'business ecosystem' in 1992, the research pubished and cited has exponentially increased to 80.000 publications last year (Dimensions, 2020). The increasing interest is also noticed in the consulting world, where increasingly firms are noting innovating in ecosystems as one of their capabilities in which they help clients (BCG, 2019; Accenture, 2018; Deloitte, 2017). The increase resulted in the wide variety of definitions used in ecosystems and the many applications it now holds. This poses a challenge; How do you know what type of ecosystem you are dealing with?
In order to understand better what ecosystems exist, the project proposed a taxonomy of ecosystems (See chapter 5.1). This taxonomy adds to the existing body of literature, by including definitions of others in this taxonomy.
For this project, the term 'transition ecosystems' was identified and used. The definition of transition ecosystems is
"Building multilateral partnerships you interact with, with the shared goal to help accelerate transitions" and is largely based on Adner (2017).
The limitation of using a term that has not been used before is that it does not have a clear connection to existing literature. Therefore, further research should investigate if this taxonomy and terminology is preferred.

The outcome of this project aims to bridge the gap between the organizational perspective and ecosystem perspective in societal transitions. However, this is an area in which research has been inadequate as it is a new area of research. Therefore, further research should be conducted in the three perspecitves of transition ecosystems; Organizational, ecosystem and the transition perspective.
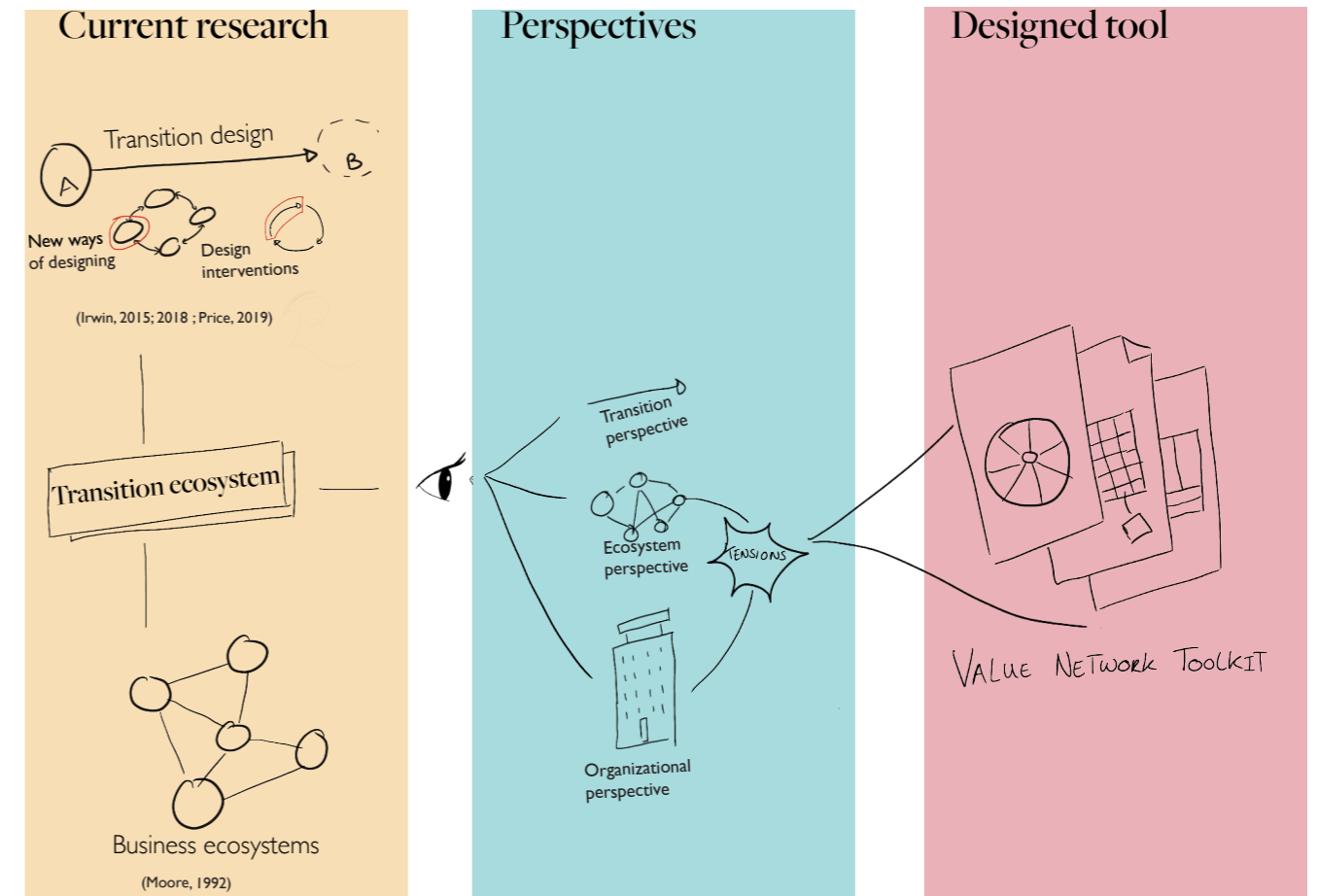
Figure 41: A graphical representation of where the designed tool fits in existing literature

Limitations of this project

This project included a design approach to understand how designing ecosystems can accelerate transitions. For this research, 15 interviews are conducted (13 initial interviews and two follow-up interviews for validation). These interviews informed the designer, to design a toolkit to bridge the gap between the organizational and ecosystem perspective in transition ecosystems.
The design approach also poses limitations. One limitation is that the researcher is the designer, and is influenced by everything that is said by participants and read in literature, making the research increasingly subjective. Also, because this project is the final delivery for a MSc Programme, the project is conducted by a single author, therefore missing inter-codar reliability or different perspectives.
Another limitation of this project is the variety of ecosystems initially studied. Because not only transition ecosystems were studied but, among others supply chain systems, this may have influenced the result of this project. However, since there is now a proposed distinction between ecosystems, future studies might benefit from this.

Additions to research

To conclude, this project has contributed to research in the following ways:
• Adding a toolkit towards the area of 'new ways of designing' in transition design (Irwin, 2018)
• Increasing the understanding of the 'Designing interventions' of transition design
• Proposing a taxonomy of ecosystems, as research has not yet proposed clear distinctions between different types of ecosystems
• Introducing the term 'transition ecosystem' to describe ecosystems accelerating societal transitions
• Proposing a research gap between different perspectives with which companies join ecosystems.

10.2 Reflection

This chapter concludes the project with a reflection. It includes a personal reflection, things that were learned during the course of the project and limitation this project has.

As designers, we often believe that our solutions could solve the world's problems. I certainly believed that at the beginning of my project. Maturing into the project meant that I learned a few things along the way I'd like to share.

As with everything we do as designers, this project is situated in this context and time. The outcomes of this project reflect the current challenges regarding the formation of ecosystems in the context of Strategiemakers, and is as such 'frozen in time'. Therefore, the outcomes of this project might not be directly applicable to other cases or contexts. This also results in having still open ends of the design. The application of tools to different contexts and applications in different ways is still needed and this project did not focus on that. I learned from this that as a designer, I should be more critical of where my designed outcomes may or may not be useful

Analyse results
During this project, I learned that I think very analytical and systemetic. This allowed me to deconstruct the abstract constructs of ecosystem and to use existing tools in a new and unexpecting way. Yet, this also resulted in sometimes sticking to just the analytical mindset and trying to use every bit of information I gathered, which is not always beneficial for designers. Therefore, writing a coherent and consise story that also reflected my insights was sometimes a challenge. I tried to visualise my findings in order to get comfortable with 'unfinished' outcomes, and in the end many of the drawings ended up in my thesis as well. In the future, I would like to continue visualising early on in the process in order to process the information I gathered and to see the aspects valuable to my project.

Trust my intuition
As mentioned before, my analytical mindset sometimes held back my designerly approach. I often struggled with crafting my own opinions based on what I read. However, when I started to trust myself on my expertise gathered during the project, I was able to detatch a moment from the analytical mindset and craft my own insights. I learned from this that 'turning upside down' as Jeroen called it, allows me to both get to the essense of the abstract concepts, as well as using this to find new ways of designing concepts. I would like to further develop this to craft better insights and to gain more confidence in my abilities a strategic designer.

Scoping down
During the project I noticed that I find it quite hard to make decisions and move on. I sometimes had to be pushed into choosing to break down the project into smaller pieces. I was afraid that if I did this, the project would miss the impact I wanted it to have. However, in the last weeks I naturally scoped it down even further and this really helped me to find a new gap in which my design can play a role. I learned that scoping is necessary, but may also come at unexpecting times.

Working from home
This project would not be complete without a note on the context of COVID. Due to restrictions, the project was done almost entirely from home. Becoming more acquainted with the context, managing the stakeholders and their expectations from behind my desk was not in every case straightforward. This resulted in sometimes frustrating moments where I would have otherwise more easier approached colleagues, students or supervisors for a quick chat or a question. The energy which you get from in-person interaction is not the same as video conferencing, and I often had to be more prepared to make sure I could ask every question. However, working from home also helped me to familiarize myself with digital tools like Mural and easier access to interviewing participants.

Iterations are highly needed
The concept of this project showed an intermediate result, and validation learned that it needed iteration. Because validation showed clear need to adjust, I learned from this that validation is really essential in the design process. I had not experienced before that validation would be so valuable and this is definitely a learning I would take with me in my work as a designer.

Personal ambitions
Looking back on my personal ambitions from the project brief (Appendix C), I was able to learn how to facilitate online creative sessions. I was amazed by how well this works, since you are more easily able to organize the information generated by participants. However, since as a facilitator you're not in the same room as the particpants, it's harder to sense the energy in the room. I learned that with facilitating online sessions requires more preparation in the form of designing the online tools and that it requires taking more breaks and energizers. I also learned a lot more about how systemic change is achieved, and that collaborating entails a lot more then just a good initiative. I learned that sustainable change is achievable by systemetic collaboration between parties who see the same vision for the future.

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Appendix

Value Network Toolkit

For forming collaborative ecosystems by facilitating dialogue among actors

Why a toolkit?

Gives hands-on tools for facilitators to use during sessions

Gets partners out of their comfort zone and brings up points of discussion

Functions as a bridge between initial individual interests and working together on a common goal

Creates a physical (or digital) outcome of the session, which parties agree on and have a shared understanding of, to move forward with

For whom?

The 'ecosystem facilit ator'. This is a person or organization wishing to build collaborative ecosystems from a process perspective. It is important for the facilitator to be as neutral and impartial as possible, in order to involve perspectives from all parties.
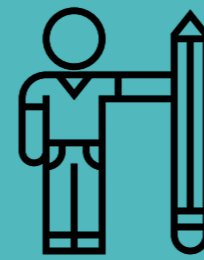
Strategic designers with experience in facilitation, aiming to learn how facilitate the formation of ecosystems.

What? The value network toolkit!

Why is it called 'value network'? Because it shows *within* the network what can add *value* to the ecosystem.

What's in it?

an instruction booklet
(hint: you're holding it right now)

explanation
graduation report Chapter 8

large-size printables
see appendix B

mural templates
see bit.ly/ valuenetworktoolkit
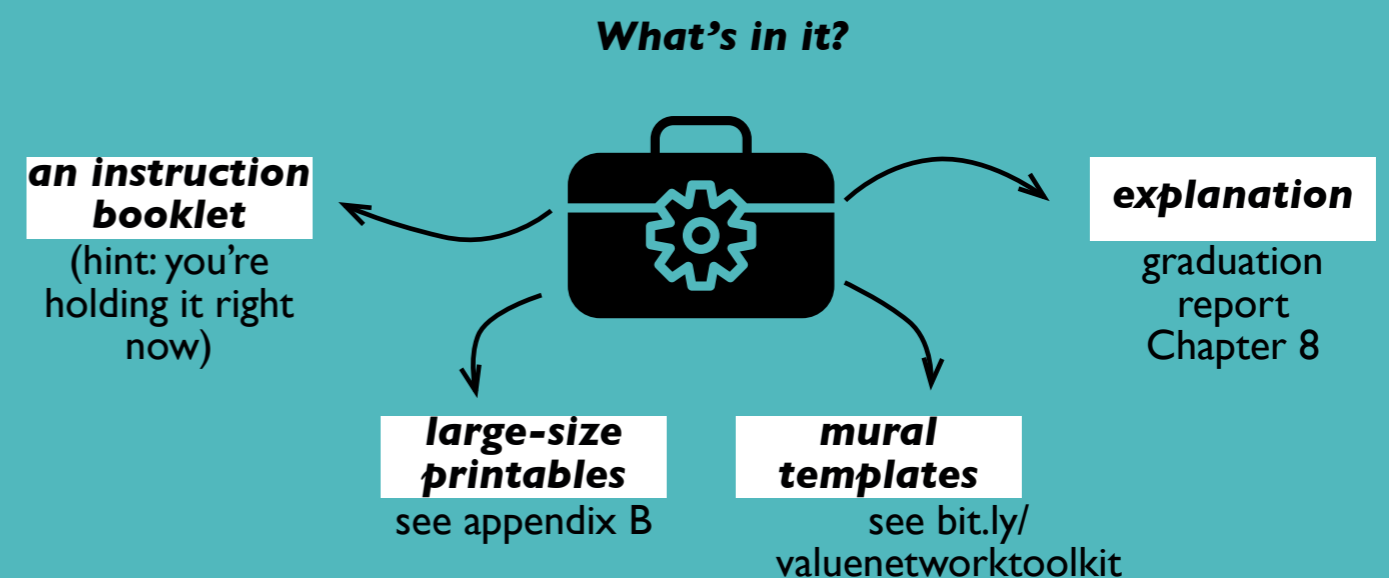
What is in it?

This toolkit has three tools to start with, but these three are not an exclusive answer or guide to faciliating the formation of ecosystems. Use your own judgement to add to the toolkit where required.

The tools are open for interpretation and changes if that fits the project better. It is a responsibility for the 'ecosystem facilitator' to check whether the tool as it is fits the goal of that meeting.

Disclaimer

Transitions cause *pain*. This pain almost always comes up during the process of forming an ecosystem. It can arise within organisations or specific actors as their role might change or their existence might be threatened. The ecosystem could delve into the same project space as them, or for individuals, their position might be at risk. This toolkit aims to help with locating these pain points, but be aware that they will likely come up.

This is not a 'one size fits all' tool. It's the responsibility of the strategic designer to sense when tools are needed, when deviation of the tools is necessary and when you want to press on the pause button to delve into underlying issues.

This uncovering latent needs is one of the skills of a designer and can be highly valuable here. Doing so requires strategic designers to have a sense of 'organizational sensitivity' and thus this toolkit is not suitable for all situations or designers.

Value Network Map

You work from the inside out, starting from the initial goal

You map actors in their current situation

This shows you what the current and desired situations are, and the gap between them
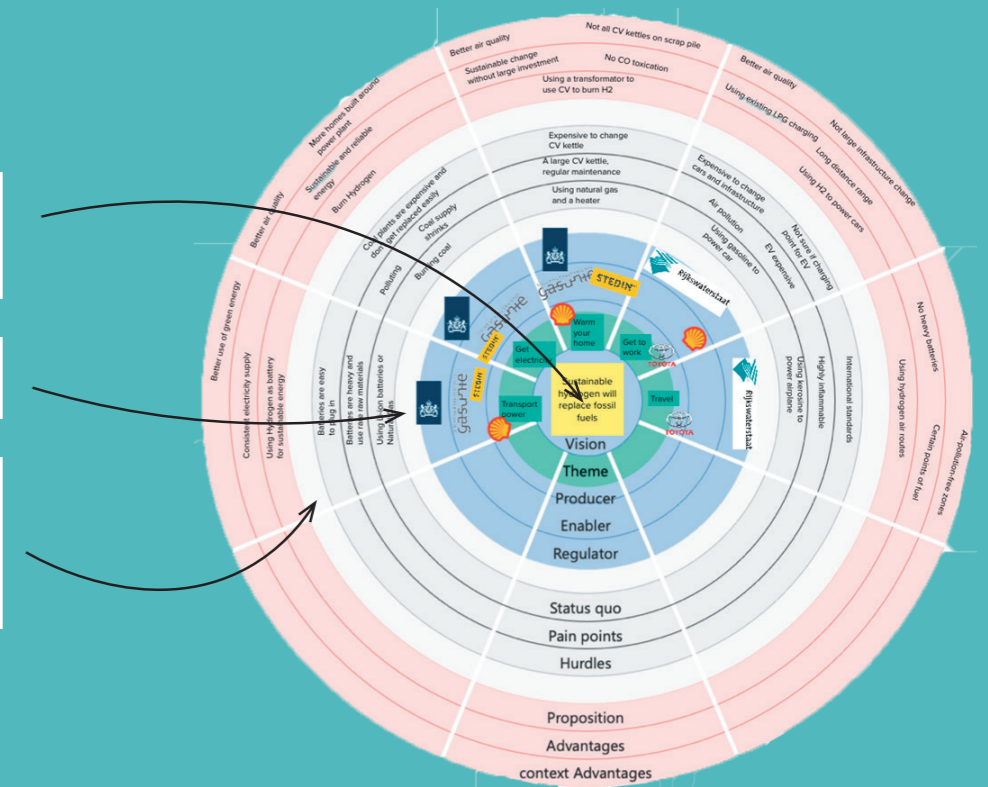
Tool A: Value Network Map

What does it do?
- Gives a way to come up with and focus on new themes
- Makes clear what the current and desired situation are and the gap that exists in between
- Explores where certain actors are now located and where they could move

When do you use it?
When you want actors to not only think about the current situation, but together, think about the possibility of new ones.

How does it help the strategic designer?
- To see possible gaps in the ecosystem
- To spot an overload of actors on a certain role or theme
- To see what the problems are with the current situation and the barriers which withold a transition to another situation.

Tool A: How to use

Collaboration Map

Step 1
Physical: Print the template on A3 or A2
Digital: Use the mural template via bit.ly/valuenetworktoolkit

Step 2
The Facilitator starts with the shared goal of the ecosystem. As facilitator you might already have an idea of what the goal could be, or you might want to first explore the opinions of different actors. You put this in the central ring before the session.
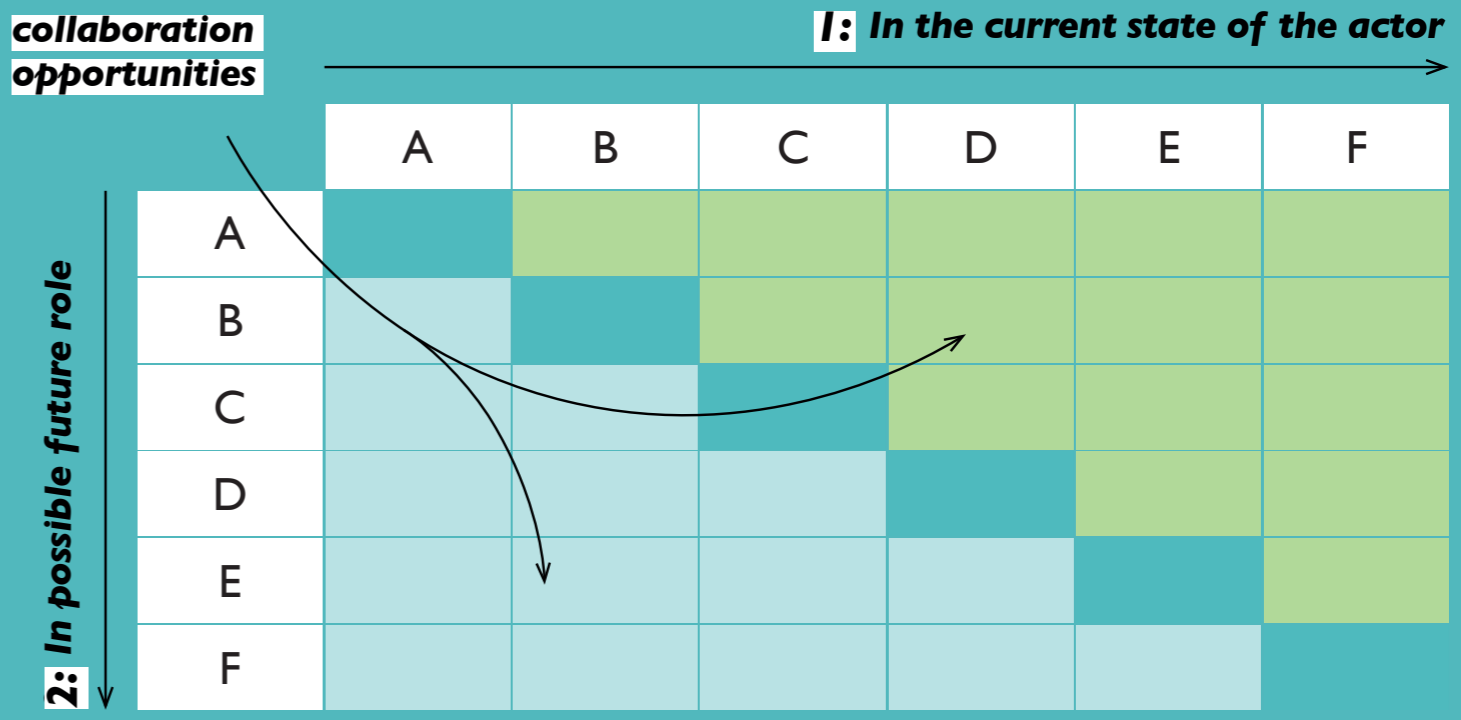
Step 3
During the session, you work from the inside of the circle towards the outside. First, you discuss key themes or activities in which the actors play a role in the life of users. This might for example be moments where you take the car, or ways of using energy.

collaboration opportunities

1: In the current state of the actor

2: In possible future role

	A	B	C	D	E	F
A						
B						
C						
D						
E						
F						

Tool B: Collaboration Map

What is it?
- A matrix in which all actors identify possible opportunities to collaborate
- A way to distinguish between the current role of an organization within the ecosystem and the potential future role the organization might play in it
- A way to continue on the insights from the Value Network Map

When do you use it?
- If you want to generate energy among the partners
- If you want to make it clear that partners are valuable
- If you want to get a first direction in ideas

How does it help the strategic designer?
- To create clusters of interesting actors or ideas
- Create energy for common ground
- An initial direction to go into

Tool B: How to use

Step 1
Clearly explain the axes:
- Yellow squares are for what both parties could collaborate on in their current role or ability.
- Grey squares are for what actors could collaborate when they release existing constructs or limitations.
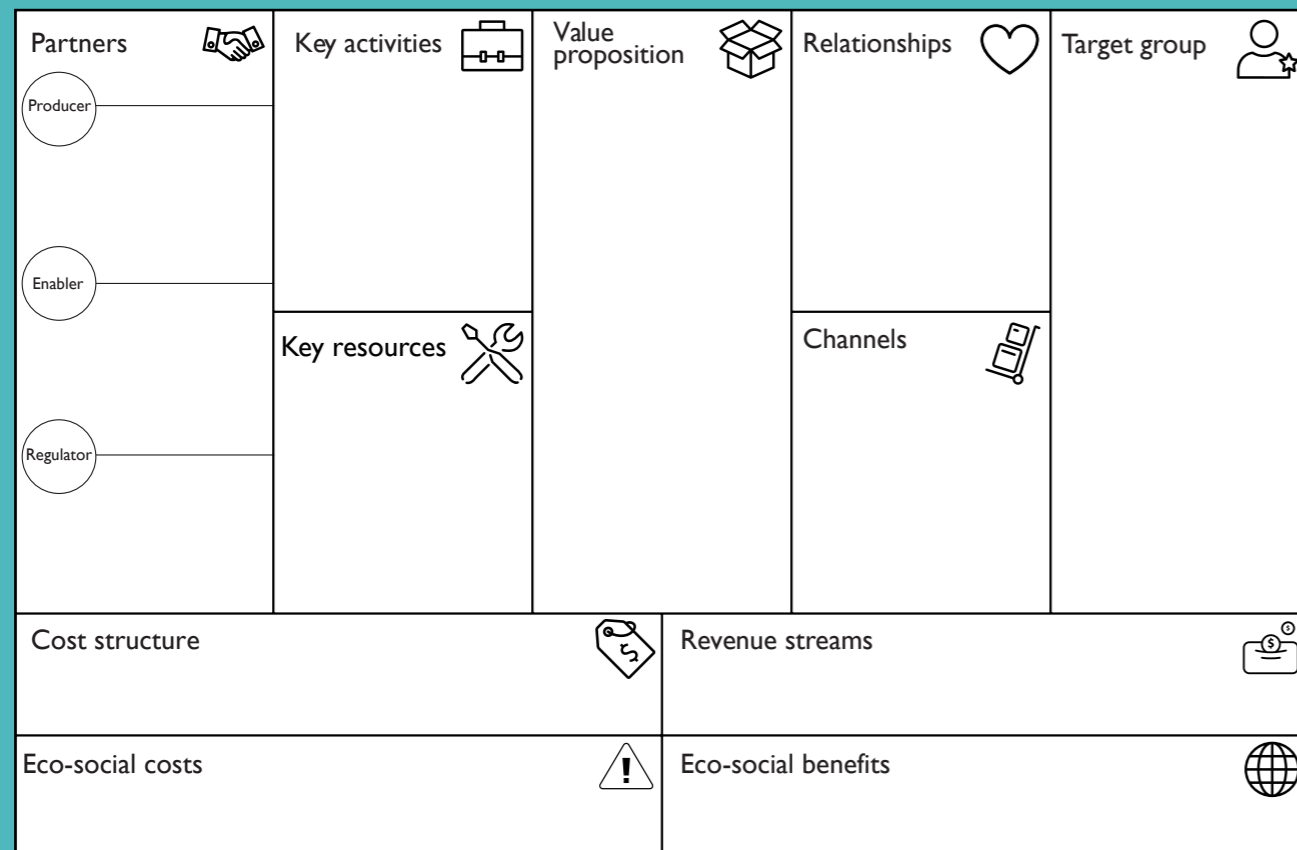
Step 2
Let partners fill in the canvas.

Step 3
Find interesting overlap or matches and identify possible opportunities.

Step 4
Conclude with what partners want to continue on based on these outcomes.

Ecosystem Model Canvas

Partners	Key activities	Value proposition	Relationships	Target group
Producer				
Enabler	Key resources		Channels	
Regulator				

Cost structure	Revenue streams

Eco-social costs	Eco-social benefits

Tool C: Ecosystem model canvas

What is it?
- A recognizable canvas to visualize the value that lies in your network
- A way to further develop potential collaboration ideas generated with the help of the Collaboration Map and make them more concrete
- A generative way to create shared understanding and make a first 'rough draft' on what gaps and opportunities for development to continue with

When do you use it?
- If you have a vague collaboration 'idea' and want to make it more concrete
- If you want an outcome that participants can work with independently

How does it help the strategic designer?
- Helps to co-create a concrete proposition among partners
- Helps to make clear who is going to work on what

Tool C: How to use

Step 1
Find an initial idea why partners want to build an ecosystem. This would be the starting point of the canvas. These ideas could come from the outcomes of tool A or B, or from other initiatives.

Step 2
Use the Ecosystem Model Canvas as a generative tool. Facilitate the discussion on who takes what roles within the ecosystem and how to specify the items listed in the canvas. This step could be done in sub-groups as well.

Step 3
Find common ground to work from. What do participants want to continue on? Would this ecosystem work? Where are still questions or tensions to be resolved?

Step 4
Conclude with what partners want to continue on based on these outcomes.

Appendix B:
Large-size tools

A: Value Network Map

Context advantages
Advantages
Proposition
Hurdles
Pain points
Status quo
Regulator
Enabler
Producer
Theme
Vision
Theme
Producer
Enabler
Regulator
Status quo
Pain points
Hurdles
Proposition
Advantages
Context advantages

B: Collaboration Map

Opportunities to collaborate in the current role

Opportunities to collaborate in a possible future role

	Partner	Partner	Partner	Partner	Partner	Partner
Partner						
Partner	What could both parties collaborate on in their current role or ability?					
Partner	What could both parties collaborate on if they release existing constructs or limitations?					
Partner						
Partner						
Partner						

C: Ecosystem model Canvas

Partners	Key activities	Value proposition	Relationships	Target group
Producer / Enabler / Regulator	Channels			
Cost structure	Eco-social costs	Revenue streams	Eco-social benefits	

Appendix C: Project Brief

TUDelft

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

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

⚠ **USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT**
Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME
Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name	Van Rijn
initials	R.A.C. given name Roxanne
student number	4360443
street & no.	
zipcode & city	
country	The Netherlands
phone	
email	

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

IDE master(s): ☐ IPD   ☐ DfI   ☒ SPD

2nd non-IDE master: _____

individual programme: ___ - ___ (give date of approval)

honours programme: ☐ Honours Programme Master

specialisation / annotation:
☐ Medisign
☐ Tech. in Sustainable Design
☒ Entrepeneurship

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

** chair	R.A Price	dept. / section:	MCR
** mentor	J.v.Erp	dept. / section:	HCD
2nd mentor	Natalja Laurey		
	organisation:	Strategiemakers	
	city: Amsterdam	country:	The Netherlands
comments (optional)			

⚠ Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

⚠ Second mentor only applies in case the assignment is hosted by an external organisation.

⚠ Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

Using Design to Transition to a next economy

project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date   09 - 10 - 2020   06 - 05 - 2021   end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Companies around the world are increasingly under pressure by external factors. Next to the implications of COVID-19, there is an urgent transition needed regarding climate change. In these turbulent times, research calls for thinking more broadly about our current society, economy and the transition upon us.

Climate change
Climate change is an increasingly pressing matter as deadlines for international agreements are approaching, and with it the tipping point of a temperature increase of 2 degrees. New technology advancements alone are going to be insufficient to transition to a carbon-neutral world, therefore lifestyle and business changes are needed [1]. With the deadlines approaching and the effects of climate change emerging, organisations are assessing whether their business is negatively affecting the planet, or positively contributing to it. With climate change being an increasingly important factor in the survival of companies, organisations are seeking new ways of doing business and a sustainable recovery out of the COVID crisis.

Need for inclusive, sustainable economy
In recent years, a rising number of prominent economists is increasingly critical towards the current capitalist economy. By learning from previous crises and from the flaws in the current system, they are proposing changes and models to make the economy more inclusive and sustainable [2][3]. These models are often grounded in different areas of research and the first small examples of implementation are emerging, but large-scale experimentation is often not evident.

Using Transition Design
In order to get to this sustainable economy, a transition is needed. Theories of transition design have been emerging over the past years [4][5][6][7] as well as case studies [8] and literature studies [9]. However, research has not yet been found into how transition design can help transition to a sustainable, inclusive economy. The Transition Design Framework [5] consists of four different mutually enforcing areas, as can be seen in figure 1.

Ecosystem innovation
In this increasingly complex problem of transitioning, all businesses are dependent on each other. Businesses cannot solely transition to the next economy, but need to do this collectively. By incorporating ecosystems innovation, businesses aim their efforts not just on their own service or business model, but rather relate to the wider ecosystem incorporating how different actors can achieve a collective outcome, as can be seen in figure 2 [10] .

Strategiemakers
Strategiemakers is a strategy consultancy with a focus on design and sustainable transformation, and they "help companies to become sustainable, innovative organisations" [11]. Strategiemakers designs future proof organisations by designing sustainable innovative strategies and by using sustainable transformation. They perform design driven transformation using their growth by design framework. Strategiemakers helps organisations to experiment with new ways of working and to bridge the gap between strategy and execution. As a company which was founded at the end of the last financial crises, they embrace the fact that times of crises are the right time for innovation to emerge. With COVID limiting client assignments, they founded teams to build the future of their organisation in teams, with one team focusing on the business opportunities within a new, sustainable, post-COVID economy.

space available for images / figures on next page

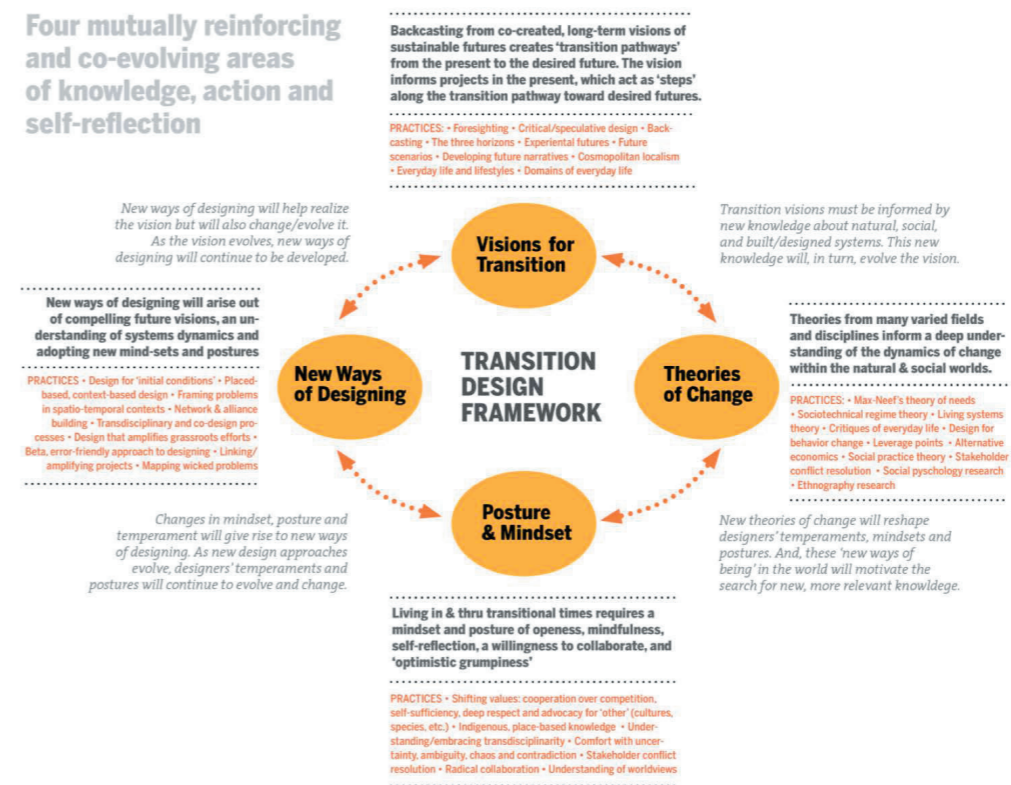introduction (continued): space for images

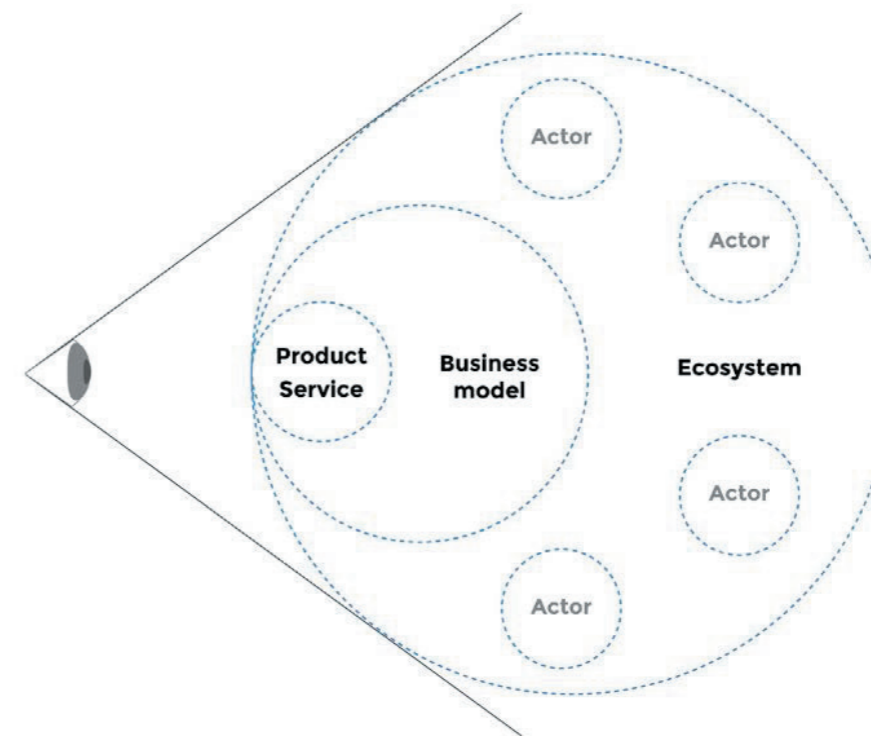image / figure 1:   Transition Design Framework according to Irwin, Kossof & Tonkinwise (2015)

image / figure 2:   Ecosystem innovation perspective, according to Konietsko, Bocken & Hultink (2020)

PROBLEM DEFINITION **
Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Companies are investigating ways to transform their venture to be ready for this different future with a sustainable economy. However, it is unclear on how organisations can transition to a new economy. Since there is no consensus on how the future will exhibit and the outcome will depend on how society has transferred, it is vital to understand how organisations can commence transitioning without a specified prospect.

Furthermore, it is unclear how collaborating with partners could aid this transition. Innovating in ecosystems has the prospect of accelerating transitions by including necessary innovation associates, nevertheless the question remains on the approach for businesses to start and guide ecosystem innovation.

Transition design can be used to address this combination of an ill-defined 'wicked problem' of societal, natural, economic and business nature [5]. However, a challenge remaining is to uncovering the role of transition design in transitioning to the next economy.

Given the problem definition within the mentioned context, the key research question for this project can be defined as:
"How can design aid businesses to transition to the next economy by innovating in ecosystems?"

ASSIGNMENT **
State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

The aim of my research is to understand; "How can design aid businesses to transition to the next economy by innovating in ecosystems?". With this research question in mind, I will create design principles for transitioning.

The aim of my research is to understand; "How can design aid businesses to transition to the next economy by innovating in ecosystems?". With this research question in mind, I will create design principles for transitioning.

Sub questions within the key research questions include:
- How can you use your capabilities and expertise at an ecosystem innovation level?
- How do businesses start transitioning towards a sustainable economy, and how can they start ecosystem innovation?
- What does co-create innovations in ecosystems mean in practice?
- What is the influence of transition design on developing strategies?

The aim of this project is to come up with design principles which can be used to start and guide a transition to a new economic model. I aim to develop these design principles to be used by designers as well as businesses to cooperatively transition towards a new economy.

To create these design principles, I will use an iterative design process with a basis in the Double Diamond approach in combination with transition design methods. This process is aimed to be co-created with different stakeholders to ens

PLANNING AND APPROACH **
Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date   9 - 10 - 2020   6 - 5 - 2021   end date
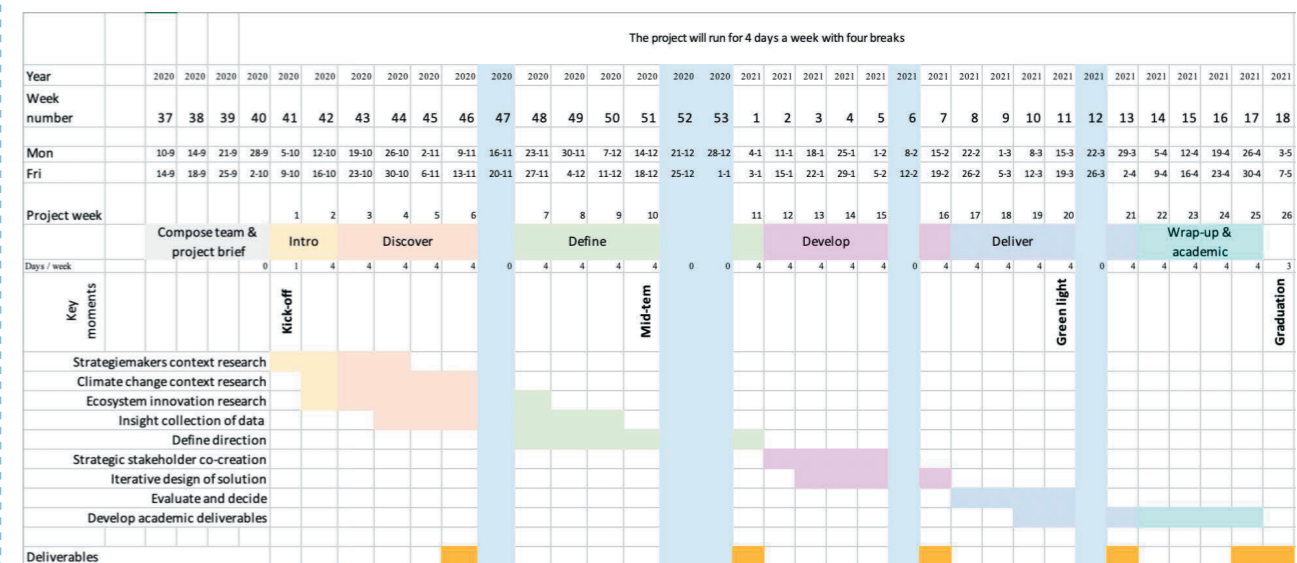
The project will run for 4 days a week with various breaks in between, adding to a total of 100 working days of the project. I will work part-time on the project for 4 days a week, next to a side job. In the Gantt chart above a planning can be seen.

I divided the project into the double diamond phases, combined with a period that allows for introduction and a period to finish the project with writing a report and presenting the project on the final day.

Initials & Name   R.A.C.   Van Rijn   Student number   4360443

Title of Project   Using Design to Transition to a next economy

MOTIVATION AND PERSONAL AMBITIONS
Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

Sustainability is not yet a topic of which I consider myself an expert. This is the first large project that I undertake with the focus on a sustainable world, hence I am yet not familiar with it. Yet by seeing the societal need for strategic design on a system level within this domain, I feel it is my obligation as a designer to contribute to this. Recently I have developed an interest in how you can use the economy as a vehicle for change and how you can design transitions towards a different future. By reading books by prominent economists on how the world should be different, I am motivated to play a part in that transition. I believe that we as designers have a responsibility to use design at a system level, and I'm eager to learn more about how that unfolds not just in research, but also in practice. I believe this ecosystem innovation for a sustainable future has a mixture of societal, economic and business perspectives which allow me to use my strategic design skills to try to solve part of this wicked problem. Therefore, I am interested to find out what innovating in ecosystems means in practice and how design can help there.
When I heard that Strategiemakers wants to take the lead in the transition to the next economy and that they are seeking for ways in which they as a consultancy can make strategies for the next economy, I was interested to hear more. I believe they are a good fit with my graduation project, since they are convinced this is the way to go and have already taken some steps towards this.

Personal ambitions
Although this project is centered around a sustainable economy and the shift businesses make to a new economy, I would like to find out what my personal responsibility in the transition to a sustainable economy is. Thus, as a designer and a human being, I want to explore what my actions produce in a larger social and ecological perspective. Therefore, aim to find ways to reduce my personal footprint, as well as learning how I can contribute to transitioning to a sustainable economy, for example by learning to constructively talk about the subject by following a course with workshops from 'Klimaatgesprekken'.
Secondly, I would like to explore how I can improve my public speaking skills. I will schedule regular presentations and sessions with stakeholders and use them both for the progress of my graduation project and the improvement of my public speaking skills.

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[4] Irwin, T. (2018). The Emerging Transition Design Approach. Proceedings of 10.21606/drs.2018.210
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[9] van Selm, M., & Mulder, I. J. (2019). On transforming transition design: from promise to practice. In Academy for Design Innovation Management Conference 2019.

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

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[11] Strategiemakers. (2020). our vision. Www.Strategiemakers.nl . Retrieved 17 September 2020, from https://www.strategiemakers.nl/en/vision/

Roxanne van Rijn
April 2021