DESIGN FOR A CIRCULAR NETWORK

SUPPORTING SOCIO-ECONOMIC INITIATIVES IN A LOCAL CIRCULAR COMMUNITY

MASTER THESIS | DESIGN FOR INTERACTION

BY JULIAN VAN DEURSEN

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THERE IS ONLY ONE WAY TO LEARN. IT'S THROUGH ACTION.
EVERYTHING YOU NEED TO KNOW YOU HAVE LEARNED THROUGH
YOUR JOURNEY.

PAOLO COELHO - THE ALCHEMIST

ACKNOWLEDGMENTS

You are about to read the thesis of my graduation project with which I am completing my studies at TU Delft. As satisfied as I look back on my study time, I look forward to dedicating my work to society.

Designing for the BUCH organization gave me the opportunity to explore public sector design my way. At the same time, I couldn't have done this without all the people around me. Collaboration was a continuous topic in my project, and through this way I would like everyone who supported me in this project, one way or another.

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I want to end by thanking my lovely fiancée, Christine. From listening to my ideas about what to do to helping me with preparing the Green light presentation. You have been there to support me, comfort me and inspire me with your unique view on things. Thank you so much.

EXECUTIVE SUMMARY

We have come to a point in time where we can no longer just vision, but must act. We are talking about the transition from waste to material. The normal course of business around raw materials is a heavily environmentally polluting business, which contributes to global warming.

In 2015, 196 countries signed the Paris Agreement, agreeing to a plan to limit global warming to 1.5 degrees.

The Netherlands also contributed to this and translated this into its own Climate Agreement. In this agreement, attention is paid to the transition to a circular economy in order to limit the dependence on new raw materials.

Circular craft centers are part of this circular economy. Points that replace the recycling centers and where material reuse is central.

The clients of this graduation project are the BUCH municipalities: Bergen, Uitgeest, Castricum and Heiloo. These municipalities are faced with an extremely high level of bulky residual waste per household, which must be reduced to 5 kg by 2030. This thesis focuses on connecting local socio-economic entrepreneurs to the material flows in order to reduce bulky residual waste. The transition to a circular economy is not so much a technical challenge but a social one: how do we connect the necessary parties?

Local entrepreneurs are key partners in this. Together with them, we are looking at the possibilities of setting up circular initiatives around the material flows. In addition to establishing a link between the entrepreneur and the material flow, this thesis examines the possibility of a circular network: a group of entrepreneurs who support each other in setting up circular businesses.

The aim is therefore that the relevant network is truly the business of the entrepreneurs. Involving participants in such a project requires a combination of top-down and bottom-up management. For this, literature on change management and inclusive design was consulted. A visit was also made to the pioneering Recycling Boulevard Leeuwarden. The literature and field research showed that the focus of the project should be on the ideals and ambitions of the participants (Dorst & Schaminée, 2021), and that the participants should be given the space to develop themselves.

Based on the insights and theories, a list of requirements and a design direction have been formulated. To set up this network, a participatory approach has been designed in which circular capacities and collaborations are central. This approach consists of three layers, inspired by the Open4Citizens project, creating 1) Immediate value for the participants, 2) Tools for supporting the participants and 3) An network of actors. Setting up the network has been a research through design process, in which design questions were answered with a design that was immediately tested.

Over a period of 3 months, local entrepreneurs participated in this project and met, talked, formed first collaborations and exchanged circular ideas. Worksheets were designed for the sessions in which this took place, which were improved or supplemented on the basis of the output.

In this way a twofold design was made as a result of a participatory process with local entrepreneurs. Firstly, a vision for a circular network in the BUCH municipalities has been designed, with a name, website, shape and vision for the future. Second, a Circular Community Startkit was designed based on the formats used in the project. The aim of this starter kit is that the process can be repeated in the BUCH municipalities, but can also be applied in other regions.

The start kit consists of an overview of the process and six worksheets in which circular activity is stimulated. By using this starter kit, municipalities can inspire local entrepreneurs to start circular business during a participatory project. The start kit ends with an exit phase in which the facilitator hands over the baton to the participants.

The project concludes with a starting circular network in the BUCH, full of enthusiastic participants and inspiring ideas, and a starter kit for circular communities. Supporting socio-economic initiatives in a local circular community.

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INTRODUCTION

CH.1 PROJECT RELEVANCE

CH.2 PROJECT APPROACH

This introductory section sets out in two chapters: the relevance of the topic and the approach of the project. The reader becomes familiar with the context of the project, the formulated scope, and the assignment that follows from it.

Subsequently, the research questions are presented, together with an approach to answer those questions.

CHAPTER 1
Project relevance

1.1 The project scope

PERSONAL MOTIVATION

Over the course of my master I became enthusiastic about working on societal challenges that involve a big variety of stakeholders, a governmental institute and design thinking sessions. It all started with one design sprint in Rotterdam with the municipality and other government agencies. I discovered the societal value of designers in a new perspective; exploring how design thinking, which we learnt in the bachelor Industrial Design Engineering, can be used as a tool to create impactful societal change together with the people. Not necessarily to design products, but to design sustainable change.

This is getting more and more relevant. Design thinking, and thus participatory design, starts to grow within the public domain. The essay *Design Thinking binnen de overheid* (Schaminée & Dorst, 2021), was for me a sign that what we are working on as designers in the public domain is relevant, and that even though you might find reluctance within the government or your target group for your approach, it is needed to create vital and sustainable change. In the introduction of this essay, the authors state that:

> *"The point of view of design thinking is to arrive at new connections based on values. Do not convince each other, but delve into the insights of yourself and that of the other person and then take steps together."*

In a world where we are discovering what drastic measures are needed to improve, qualitative collaboration is necessary. The writers of this essay are promoting the standpoint of not proving yourself, convincing the other, but growing towards each other. This is unique, since in corporal and governmental issues, we often see power play and dominant statements. By accepting new connections and discovering new values and insights through design research together, the future can be designed in a sustainable way.

This is exactly what I saw in the graduation assignment for this project: a societal challenge that is interesting and relevant, that asks for creating new connections and collaborations between a variety of stakeholders. This made me excited to start on the project.

A CIRCULAR NETWORK IN THE BUCH

In line with the Dutch Klimaatakkoord, the municipal work organisation BUCH formulated a vision to create a circular craftscentre in order to fight the excessive residual waste in the region. In 2019, they won a prize for including, amongst others, the TU Delft as a knowledge partner Over the past years, multiple projects have been carried out by the TU Delft, exploring the possibilities of circular innovation in design, but also in participation.

Participation is key in circularity. The transition to a circular economy (CE) as is aspired in

Figure 1: Design thinking can achieve a shared vision without convincing, which can help battle climate change step by step.

Introduction

the BUCH area, is not merely a technical challenge; we already have the knowledge to make this transition. The true challenge can be found in the social area. Moreover, the social dimension in CE is non-existent (Padilla-Rivera, Barros Telles do Carmo, Arcese, & Merveille 2020). Therefore, in designing a network that facilitates in circularity, the role of social interaction and participation is crucial.

In a circular economy it is not only about reusing materials, refurbishing products and a stop on virgin materials, it is a local approach on businesses, relationships and knowledge. Instead of having big companies that can do everything and are independent, there is a yearning for more small, specialized companies that can support each other, share knowledge and help where needed. It can be stated that this asks for a social framework, rather than a technical one.

For this reason, the connections between local businesses, local initiatives and entrepreneurial residents with their needs, their capabilities and

obstacles for cooperation, are studied within the scope of this project. Through this project, these initiators get to dream about how they want to be part of the circular centre of the BUCH and get the possibility to explore their own ideas. This participatory approach will go further then informing or consulting, but will actively involve the stakeholders and partner up with them to reach a preferred solution for their needs.

Within this project the goal of participation is to get an outcome suitable for its stakeholders, but the participation on itself is an outcome as well. As mentioned above, participation and the sharing of knowledge, ideas and supporting each other is the social drive for circularity. Therefore, this project aims to design a mutual interaction between local entrepreneurs within the BUCH that supports them in (1) (re)using the material streams, (2) setting up circular businesses, and (3) communication towards the local community.
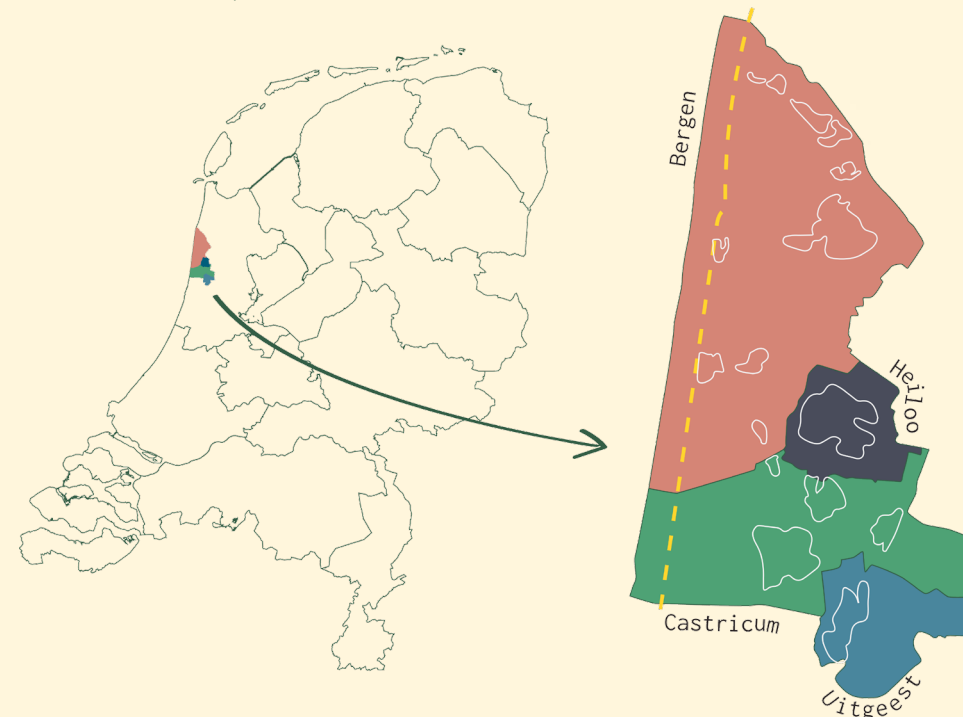

Figure 2: Location of the BUCH area in the Netherlands

1.2 Context of the circular necessity

The daily consumerism and lifestyles that are represented in the current worldview are assuming that our resources are infinite. However, resources are becoming scarce and the extraction and transport of new resources produce a lot of CO2. In the current trend, the earth's temperature will rise up to five degrees Celsius by the year 2100.

With this knowledge, the United Nations Framework Convention on Climate Change (UNFCCC) wrote and signed an agreement to combat climate change and pursue a sustainable low carbon future. The ultimate goal is to keep the warming of the earth below two degrees Celsius (pre-industrial levels) and ultimately limiting it to 1.5 degrees (UNFCCC, 2015). This *Paris Agreement* brings all nations into a common cause, and forces all the participating countries to formulate their own ambitions and efforts to cut their emissions and make their CO2 as little as possible.

Next to setting the goal of lowering the emissions, the *Paris Agreement* encourages to make place for new technologies and new capacity-building to reach its goals.

The ministry of Economic Affairs and Climate of The Netherlands, introduced their plans for living up to the Agreement: *Het Klimaatakkoord*. Part of this agreement is the goal to reduce the bulky residual waste per person to five kilograms by 2025. In order to achieve this goal, the government raised the taxes on burning this waste with 200% in 2019.

Amongst other things, the reduction of bulky waste can be realised with the transition to a circular economy. Therefore, the Klimaatakkoord aims to make the Netherlands 100% circular by 2050: no more waste, products and materials will be reused, repaired and recycled.

Becoming circular is not merely a technical challenge: technologies are innovated enough to set up circularity. The eyes are now focussed on social and economic challenges. There are numerous opportunities for businesses and consumers to make use of all used materials, used products, and creating a circular economy instead of a linear one. Thrift shops are already doing this, but can do better by starting to look at the repair possibilities. The way of looking at waste as a resource asks businesses for a change of mind, and they might have the ambition; but they also need the access to the waste streams.

This thesis focuses on the disposal of bulky waste as can be found on the municipal recycling centres and in the containers of thrift stores and other big companies in the region. This is the type of bulky waste that has to be considerably reduced by 2025 and to achieve this, this thesis project explores how local business and initiatives could support each other in reusing materials and products, and therefor decreasing the waste streams.

1.3 Design objective

The design of a circular centre, with its circular boulevard and makerspaces, requires a transition with the municipalities of the BUCH on many levels. Earlier graduation projects have focussed on how the behaviour of residents can be nudged towards circularity, how they can be involved in circular initiatives and how the municipality can facilitate all this. Now, the challenge lies with the local entrepreneurs and socio-economic initiatives that are interested in joining the circular transition.

It is not enough to just connect them to the waste streams; Circularity is about networking, sharing knowledge and helping each other. A transition like the one envisioned by de BUCH requires a designed infrastructure that facilitates fruitful interactions between local organizations, entrepreneurs, entrepreneurial residents and the municipality itself.

To design a community like this, it is crucial to get to know the possible stakeholders and identify their internal drive to participate in a circular transition. What needs are there to be answered, what demands and obstacles lie there.

This type of objective asks for a participatory approach where the community starts from the first moment of interaction with the potential stakeholders. It is exactly this participatory approach that I am looking

for in projects and that is wished for by the municipality. I have never before set up a community through participation, but I believe in the power of coming together, design together and the inspiring results that it brings.

The design as a result of this thesis - a design for a circular network - will contain a clear overview of the various types of participations within this community, and how they can be connected with each other, the municipality and the waste streams. It will give an answer to the needs of the participants in their transition towards circularity and provides the BUCH with a proposal for how the network should operate in the future.

THE DESIGN OBJECTIVE OF THIS PROJECT

In this project, I will research if building a community together with local socio-economic initiatives can create inspiring and fruitful collaborations that will tackle the excessive waste problem from the BUCH. This results in the following design objective:

To design a community that connects local socio-economic initiatives in the region to each other and ultimately to the material streams of the BUCH, in order to enable them to reuse those materials and so decrease the residual waste in the region.

PARTICIPATORY CITY MAKING LAB

The Participatory City Making Lab (PCM lab) is one of the Delft Design Labs at the faculty of Industrial Design Engineering. These labs are an initiative that aims for the integration of science, design and innovation. They are known for their relevance to society and design knowledge, and the synthesis between design and research. Within the faculty, they facilitate and promote collaborations between researchers, students and society.

The PCM lab explores this collaboration in quite a literal way. The lab believes in the powerful role of design in a transforming society, and promotes the integration of participatory principles, design methods and techniques to facilitate participation and design within societal challenges with a sustainable aim. The lab aims to create frameworks of participation, transitioning tools and facilitation of change-makers through small hands-on projects, and researches the possibilities of scaling societal innovations. The city is their space for transitional experiments and systemic design approaches.

COLLABORATION WITH SE.LAB

During this project I work together with se.lab, a cooperation that focuses on supporting social innovations. They are committed to topics such as healthcare, the jobs market, education and the environment. Their assignment from the BUCH municipalities is to find a set of potential circular business cases and help them to set up. They have experience in setting up innovative thrift shops, makerspaces, repair café's throughout The Netherlands, and know their way around. Their assignment aligns perfectly with mine, and thus we work together on this project as one team.

CHAPTER 2
Research question and project approach

2.1 Research question

The goal of this project is to answer the question how the BUCH can support the local socio-economic businesses in the realisation of their circular business in order to reduce the residual bulk waste in the region. The BUCH wants to bring all the circular initiatives and interested parties together in a network. To find out how this network should function within the BUCH, I will perform this research.

RESEARCH QUESTION

Based on the design objective, the following research question is formulated:

How can socio-economic initiatives be enabled to connect and support each other and decrease the residual waste in the BUCH?

This research question aims to explore the possibilities of connecting socio-economic initiatives, and will therefore also be answered by the design that is made in the end.

LITERATURE AND FIELD RESEARCH

As the research question covers some unmentioned aspects, four substanting sub-questions are formulated to be answered in the literature and field research:

1. What is the current state of the circular transition both worldwide as in the BUCH area?

2. How can participatory change be facilitated?

3. In what ways can you facilitate circular activity?

4. What is the internal drive for socio-economic initiatives to join a circular network?

RESEARCH THROUGH DESIGN: A PARTICIPATORY DESIGN PROCESS

In order to answer the research question, I will initiate the circular network over the course of this project, performing a research through design approach. In multiple workshops I will explore the capacities of local stakeholders, the possibilities and obstacles that they face, and ultimately how they can actively decrease the residual waste.
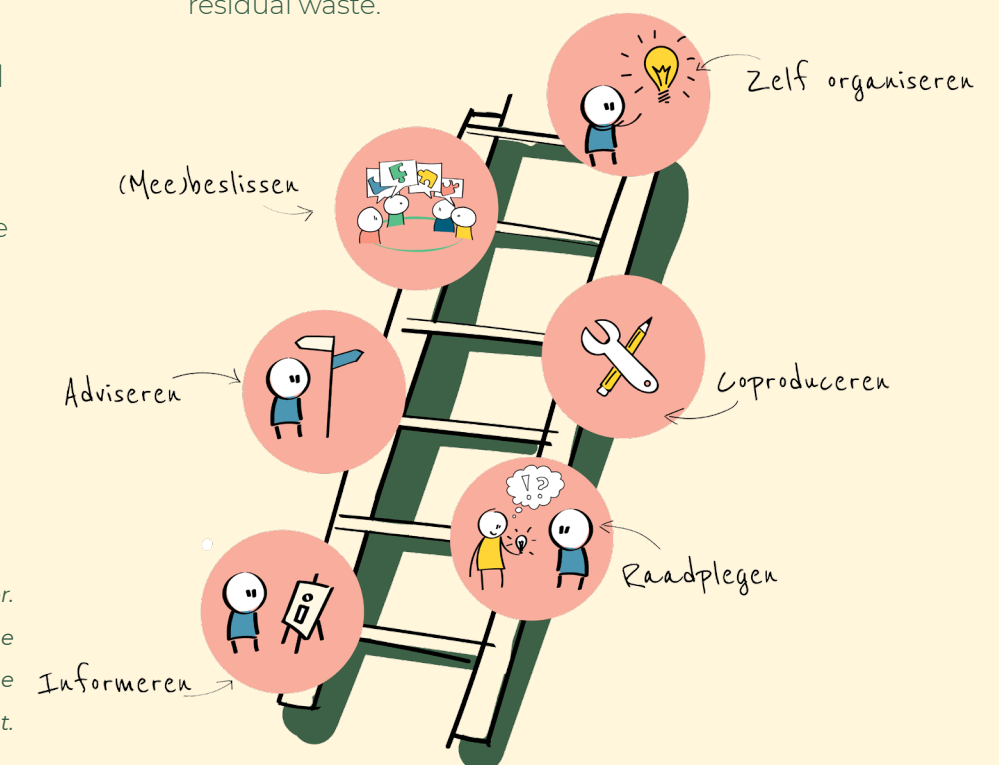
Figure 3: Participation ladder. The higher on the ladder, the more stronger the voice of the participant.

2.2 Project approach

In order to design a network for the local socio-economic initiatives and the BUCH - through which the initiatives can tackle the residual waste problem - a research question was formulated. As mentioned before, a research through design approach is set up to execute the research and design activities. The project approach is visualized in figure 4.

In the first phase of the project, field- and literature research is carried out to answer the sub-questions. In order to design a network while putting it in practice, I follow the *Open4Citizens* (O4C) approach (Morelli, Aguilar, Cincilio, De Götzen, Mulder, Pedersen & Klitgaard Torntoft, L, 2017). This approach defines three design action levels:

1. Value in use

2. Infrastructuring

3. Ecosystem

The first level, creating value in co-creation, is a process of interaction with the stakeholders, where new relationships and solutions are created. As described by the O4C Project, the outcome of this level are the design solutions generated by the different stakeholders and is therefore standing high on the participation ladder (figure 3, previous page).

The second level focusses on supporting the first level through the development of templates, tools and a supporting framework for participation. This level is the domain of the designer with help of other experts. The outcome of this level consists of a toolset and knowledge for applying these tools for organising the participatory projects.

The third level as defined by the O4C project consists of the definition of the ecosystem of actors. This requires a slight turn in defining the various types of actors in this project, so it can be used as a framework for action in similar projects in other cities.

These three levels are implemented in the research through design process, as visible in the sections visual (figure 4). A design proposal is created for the BUCH with the insights and designs as a result from that process.

The report is divided into five sections, each described briefly:

SECTION I – EXPLORATORY RESEARCH
In this section, the current state of waste disposal and circular transition in the Netherlands and then the BUCH is studied in both literature and the field. Next, inspiration is being gained on the topic of circular activity: what defines circular activity, and what challenges and stories does it hold? Various examples of network facilitation are being studied, and finally the first stakeholders are being interviewed to form a frame for setting up the research through design process.

SECTION II – DEFINING THE DESIGN DIRECTION
Based on the findings of the exploratory research, a design direction is formulated for setting up the network for the next phases. The needs and ambitions for the network are explained, and a vision for the network is created. Design questions and requirements are formulated to guide the research through design process.

SECTION III – RESEARCH THROUGH DESIGN
Based on the design direction, a participatory research through design process is walked through. The design in this phase searches for answers to the design questions. Simultaneously, the design takes place in the three levels from the O4C approach. The first level can be found in the primal interaction with the stakeholders, where new collaborations are initiated and design solutions are being created. The infrastructuring level is part of the analysis and design of every session. The output of the sessions is input for the infrastructure of the circular network that is being designed while performing the project. Finally, the ecosystem level is the result of the research insights that are generated, creating an overview of the type of actors in the network that can be projected on other cities as well.

SECTION IV – FINAL DESIGN
In this second last section, the final design is proposed to the BUCH municipalities to support the network of local socio-economic initiatives in their goal to achieve circular activity. This proposal is an overview of the designed network and its possibilities, and a startkit for circular communities.

SECTION V – REFLECT
In this final section, a project reflection is written as well as a personal reflection.

I. Exploratory research
Literature and field research
II. Design direction
III. Research through design
Set-up
Carrying out
pre-phase   1.   2.   3.
Research & Analyse
IV. Final design
V. Reflect
2030
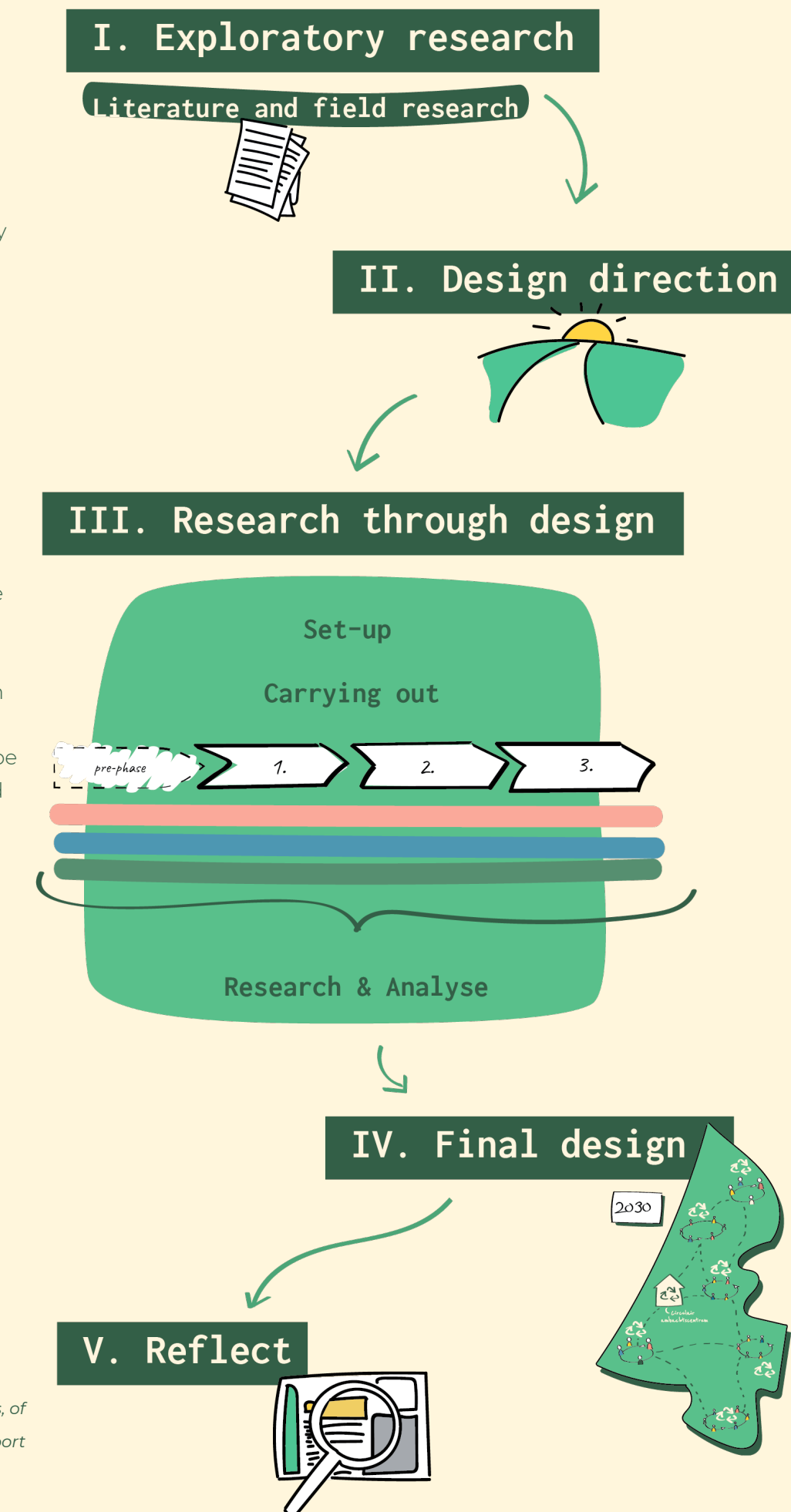
Figure 4: The five sections, of this report

I. EXPLORATORY RESEARCH

In the exploratory research, answers are searched to the research questions. The context of circularity and waste is explored and knowledge on starting a circular community is gathered.

Project introduction

Vision from the BUCH

Research question

How can socio-economic initiatives be enabled to connect and support each other and decrease the residual waste in the BUCH?

I. Exploratory research

Literature and field research

The context of circularity and waste is explored and knowledge on starting a circular community is gathered.

II. Design direction

A design direction is defined to guide the design process of this project. A list of design questions and requirements is the result.

Design questions

List of requirements

Updated list of requirements

III. Research through design

Building on the design direction and requirements, a design will be made during a research through design process.

Set-up

Designing the process

Carrying out

pre-phase   1.   2.   3.

Research & Analyse

The process will be analysed and learnings will be implemented in the final design proposal.

IV. Final design

Based on the outcome and iterations of the research through design process, a final design is presented.

V. Reflect

Finally, a reflection on the project is written.

I. Explore

CHAPTER 3
Exploring the circular landscape
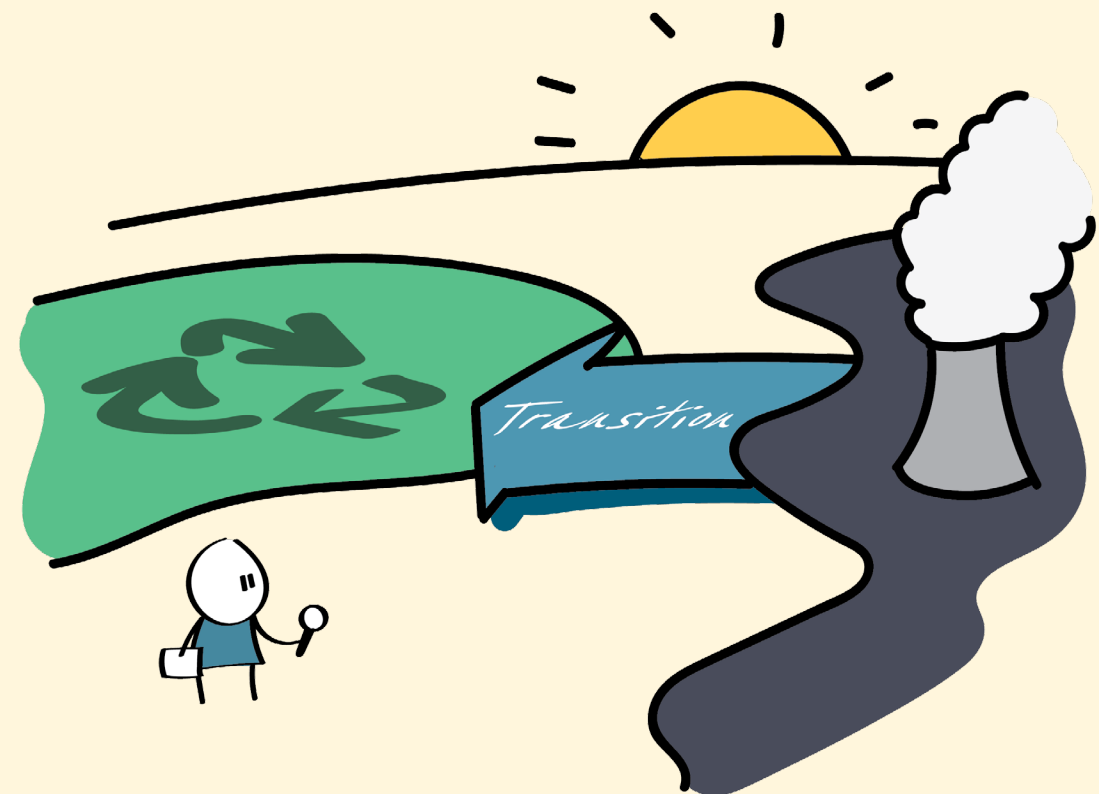
3.1 The circular economy

Over the past years, the awareness around our consumerism has grown. National leaders and big corporates began to learn that even though a linear economy brings a lot of wealth, the impact on our climate and resources is not sustainable. We are literally draining our earth's resources dry, and to prevent this from happening we are forced to start thinking as a circular economy (see figure 6, next page).

In 2011, the term Circular Economy became popular after the Ellen MacArthur Foundation and McKinsey published their report named 'Towards a circular economy' (Ellen MacArthur Foundation, 2013). This report calculated the cost reduction per year by a more efficient use of resources in 2025. After this report, they wrote several reports on the translation of their findings to various sectors and got rid of the idea that sustainability is expensive.

The circular economy focuses on maintaining or reclaiming value in resources, products, parts and waste streams. The focus on resource-usage follows the 3R-approach:

·   Reduce (minimal use of resources)

·   Reuse (maximal (re)use of products and parts)

·   Recycle (high qualitative reuse of resources)

These three R's are part of the bigger ladder of circularity, which exists of ten R's, rated from low value of circularity to high value (see figure 5). The most important key in the circular values is to preserve the economic and environmental value of materials for as long as possible. The higher the circular approach is on the scale, the higher the value of materials is. Figure shows how materials can be brought back in the system after it is used in a product.

The circular mindset challenges designers to come up with sustainable product design. This includes longer product lifespan, possibility to repair, re-styling, modularity, and focus on using alternatives for toxic or unsustainable resources.

This focus on re-use, repair and re-furbish and together a shift to a more local economy creates interesting social and economic opportunities for bringing back technical and physical jobs to the local job market (cirkellab. nl, n.d.).

This makes the circular economy attractive for
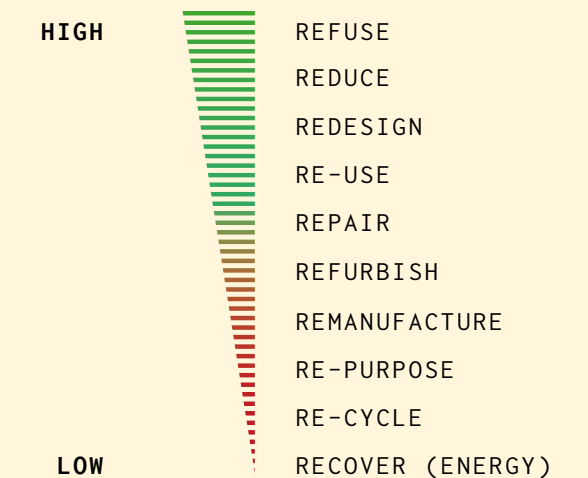
HIGH

REFUSE
REDUCE
REDESIGN
RE-USE
REPAIR
REFURBISH
REMANUFACTURE
RE-PURPOSE
RE-CYCLE

LOW   RECOVER (ENERGY)

Figure 5: The R-ladder defines your circular value: the higher on the ladder, the higher your circular value is.
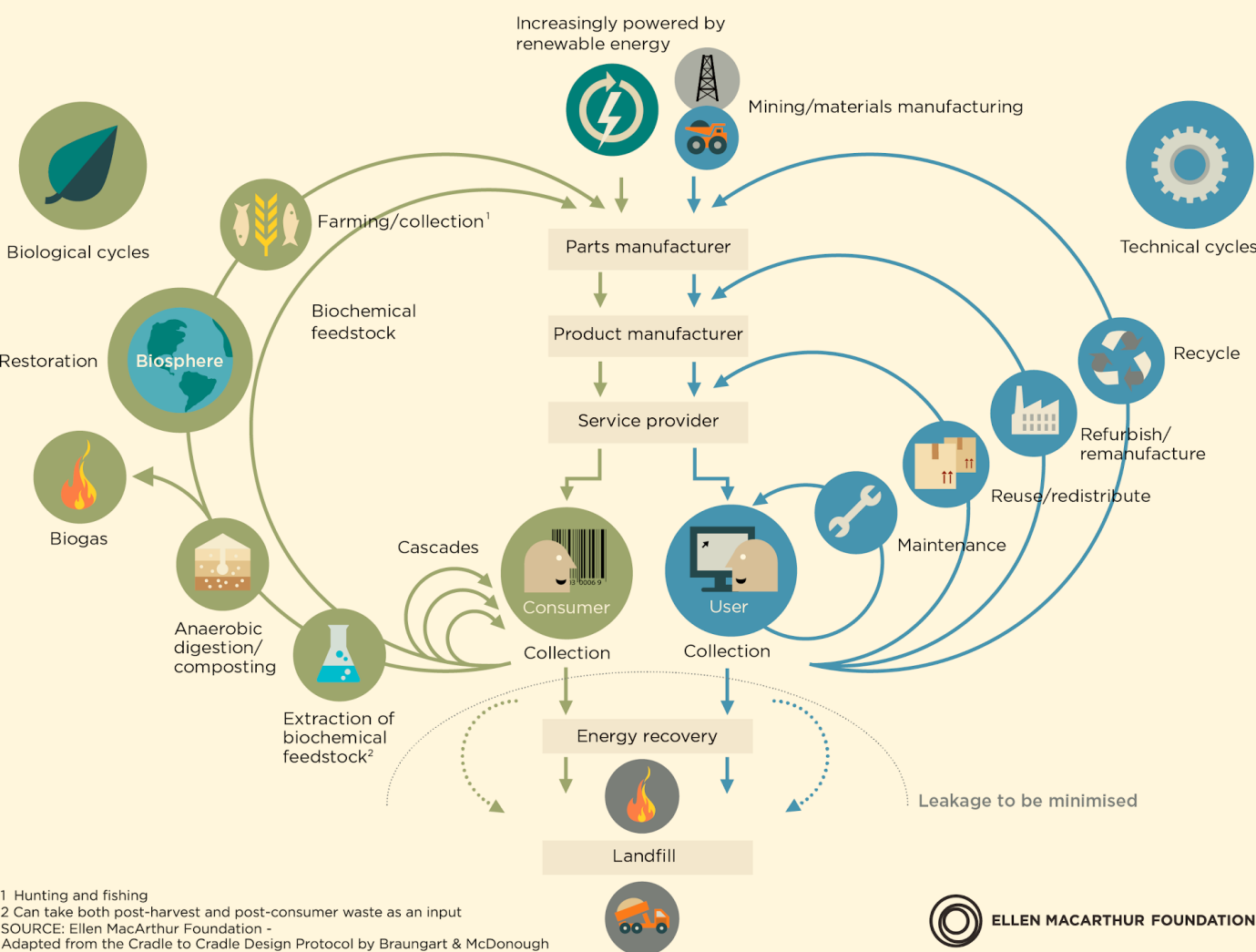
I. Explore

Europe and the Netherlands. Europe itself is relatively poor on resources, while the dense population and high prosperity in Europe imposes many severe restrictions when the raw material extraction has to compete with health, liveability and well-being of people and nature.

Together with the goal to combat climate change and pursue a sustainable low carbon future, the United Nations Framework

Convention on Climate Change (UNFCCC) wrote the *Paris Agreement* to unite all nations (UNFCCC, 2015). All the participating countries are asked to formulate their own ambitions and efforts to cut their share of the emission, and are encouraged to stimulate the innovation of new technologies and capacity-building to reach their goals.

Figure 6: In a circular economy, both materials and products are almost 100% reused, through, and new resources are not needed anymore.
Source: Ellen MacArthur Foundation

CIRCULAR ECONOMY - *an industrial system that is restorative by design*

1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input
SOURCE: Ellen MacArthur Foundation -
Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

ELLEN MACARTHUR FOUNDATION

3.2 The Netherlands, circular by 2050

The Netherlands also signed this agreement, and feels the pressure from the European Union to undertake action towards a circular economy. The ministry of Economic Affairs and Climate in the Netherlands introduced its plans for living up to the Agreement: Het Klimaatakkoord. This agreement aspires to make the Netherlands a Circular Economy (CE) by 2050. Concrete, this means that by 2050, all raw materials will be used and reused efficiently. To achieve this, Rijkswaterstaat created a policy framework for waste in the circular economy in the Netherlands. Part of this policy is VANG: Van Afval Naar Grondstof (from waste to resource).

VANG

The VANG program helps municipalities in their transition towards a circular economy. It does not merely focus on waste separation but also on prevention and closing the resource streams. The objective included to reduce the residual waste per resident from 250 to 100 kilograms per year by 2020, together with 75% waste separation. Now that 2020 is over, the VANG is creating a new program for 2021 and on. Amongst the successes of the VANG is the support of 14 municipalities in setting up projects to stimulate less waste and more waste separation, and the network of 90% of all municipalities that have a waste and resource policy that fits the VANG goals.

These municipalities have multiple measurements and strategies to reach the VANG goals. Measurements such as DIFTAR (short for gedifferentieerde tarieven, or differentiated rates in english), lower the

frequency of residual waste collection, but also the intensifying of communication has been a measurement of municipalities. DIFTAR makes use of a financial stimulus to favour better waste separation. Residents pay for the amount of waste that they put away. Residents who better separate their waste pay less waste taxes (VANG-hha.nl, n.d.).

POLICY SHIFT

In the political landscape of waste, there is a shift in policies. The policy of waste management in the Netherlands is written down in the national waste management plan (Landelijk Afval Plan, LAP). The LAP is a dynamic policy document that is being actualised regularly to suit the developments in the transition to a circular economy. Currently, LAP3 is active and already updated twice (afvalonline.nl, 2021) to better suit the European guideline for waste (Kaderrichtlijnen Afval, or Kra) and the environmental code. The current LAP will run until 2023, only to be followed up by a new plan: The Circular Material Plan (CMP).

The current LAP3 is mainly focused on the back-end of the chain: waste management, and lacks actual policy making. With the CMP, the state secretary aims to cause changes higher on the circular ladder, such as prevention and reuse. It should stimulate businesses to innovate in the circular economy. At the time of writing of this report, there are no further details about the elaboration of CMP1, which should be implemented and started by 2023.

3.3 Circular craftscentres

As a part of the VANG that is discussed before, municipalities can contribute to the climate goals by setting up a circular craftscentre: one central place where renewed resources, products and waste can be processed and reused. These centres can host a thrift shop, repair café, makerspace and waste depot on one location (Inspiratiegids Circulair ambachtscentrum, 2020). Together, the circular centres exist of four building blocks (see figure 7).

The goal for these centres is to conserve the economic and sustainable value of resources (Inspiratiegids Circulair Ambachtscentrum, 2020). A circular centre assesses discarded products for a second life: is it up for reuse? Then it can go to a thrift shop. Does it need repair? Then it can go to the repair café. Are there any good materials left? That can be used in a makerspace to make new products out of it. Circular centres are about the cooperation between these initiatives, favourable on one location to keep the logistics simple, and the threshold for residents low. Circular centres offer opportunities for education and job provision. In the repair cafés and makerspaces, students and people with a distance from the job market can follow courses or internships.

In the summer of 2019, Rijkswaterstaat hold a contest for creating a concept plan for a circular craftscentre. The criteria for the plans were:
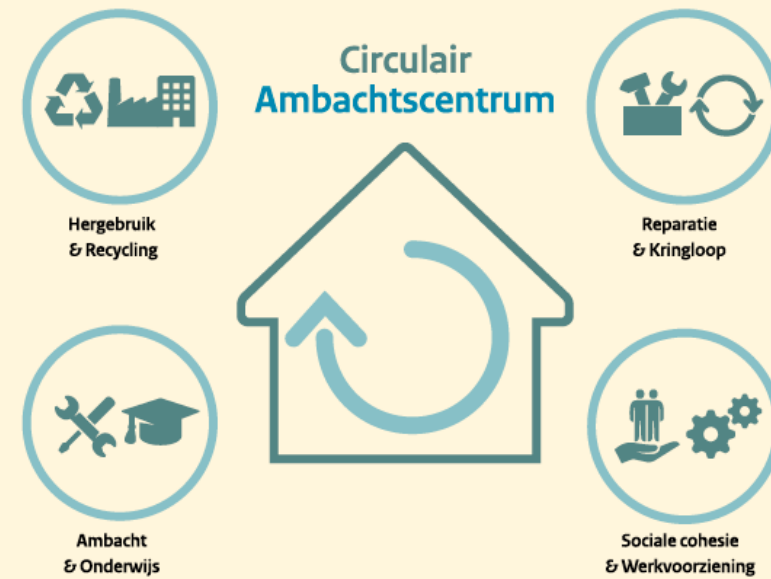

Figure 7: The four pillars of circular craftscentres

1. Contribution to lifecycle extension of products and high-quality product and material reuse.

2. Synergy between at least three of the building blocks of circular centres (see figure 7).

3. Scalability for other municipalities

4. Involvement of residents and/or other stakeholders

5. Exploration of possible cohesion with the social domain and education

One of the 10 best rated plans is the plan for a circular craftscentre in the BUCH. The jury explained that the collaboration with - amongst others - the TU Delft makes the plan interesting, and the commitment with other stakeholders looked/seemed promising.

A VISION FOR A CIRCULAR CRAFTSCENTRE IN THE BUCH

The BUCH municipalities follow the goal from the government to reduce the bulk residual waste per resident to 5kg per resident by 2025. However, the six recycling centres from the BUCH are outdated and have no opportunity to modernise to support the 5kg target, let alone play a part in CE. The four municipalities of the BUCH have to write a new policy on the development of new recycling centres. Therefore, they had to come together and formulate a vision together.

The current recycling centres are focused on waste separation and recycling; the new recycling centre needs to be a place where reuse and repare are the main activities (see figure 7).

The vision for the circular centre is in line with the four building blocks as framed by VANG, and exists of four pillars:

1. Reuse and repair: inspiring residents to reuse and facilitate repair cafés and makerspaces together with the thrift shops

2. Education: implementing 'maakonderwijs' at local schools to create awareness and gain skills for the circular economy

3. Social domain: access to workplaces for people with a distance to the job market

4. Circular entrepreneurship: facilitating socio-economic activities around the material streams

Within this project and the development of a circular network and platform, all four pillars come forth in various importance. The main part of a circular network is the

Figure 8: impression of a future circular craftscentre in the BUCH. Retrieved from the BUCH organization.

I. Explore
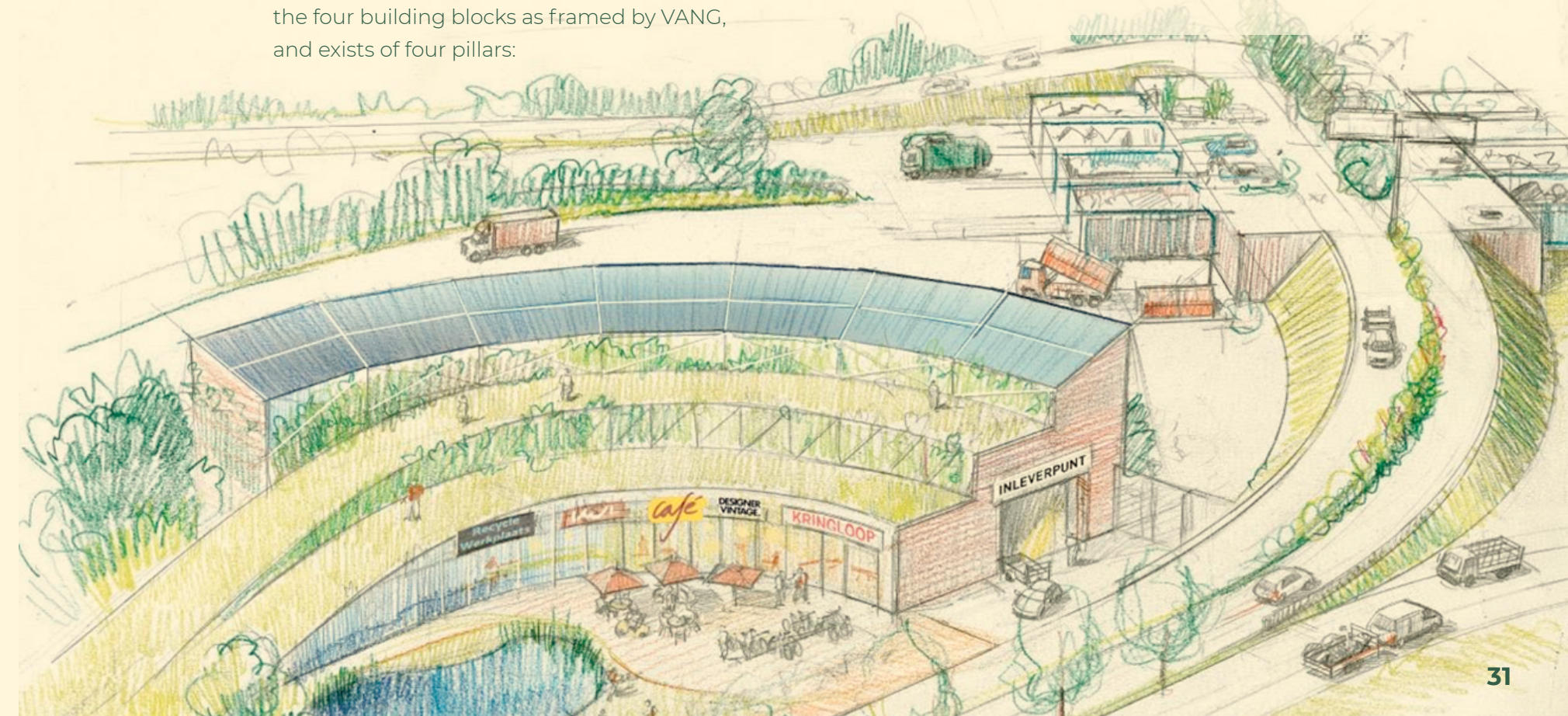
entrepreneurship: connecting the interested parties. However, schools, repair cafés and thrift shops: they are all part of that network. The expansiveness of the BUCH area asks for an overarching network that connect those parties to one vision for a circular centre as mentioned in the project introduction. These people, parties and their capacities and needs are introduced in the next chapter.

The vision for the BUCH as formulated in the *Startnotitie* can be found in appendix A7.

POINTS OF ATTENTION FOR UPCYCLING BUSINESSES

Based on *Aandachtspunten voor Upcycling-businessmodellen* by Geert Smolders, 2021

As one of the goals for circular crafts centres is to facilitate local circular businesses, upcycling becomes a major activity around the material streams. Upcycling is a way of producing in the circular economy. There is a clear advantage: reuse saves CO2 since new material is not

extracted, processed or transported. Yet, we also distinguish disadvantages: used material is rarely suitable for use without processing, let alone sale. The costs associated with this processing are often the limiting factor for a circular business model. In addition, consumer products rely heavily on good design to be interesting for this business as well.

Se.ab has guided the development of a number of such business models in recent years. With their experience, they developed an upcycling model (see figure 9), based on the Business Model Canvas (Osterwalder and Peigneur, 2010), with eight building blocks for upcycling. Design is the leading factor in this canvas, because with the challenges of reusing materials and products, the design is integrated in every block.

THE DESIGN
A characteristic of circular redesign is the focus on source/residual materials. A circular designer starts with a consideration of the available

materials and counters this with a concept of a product that is attractive to the market. The upcycling product is created from the interaction between the two.

THE SOURCE MATERIAL
Consumer waste as collected at recycling centres is extremely diverse and mixed. Most consumer products are not designed to be disassembled. A large part of the products consists of different materials that are difficult to separate. Think, for example, of different types of plastic or glued parts.

THE PRODUCTION PROCESS
The operational costs of an upcycling revenue model are mainly in production. Controlling those costs is crucial for the viability of the revenue model. A circular design therefore takes 'manufacturability' into account. Or the design is adapted to meet the limitations of the production process.

MARKETING AND SALES
The marketing of upcycling products does not differ significantly from other product types. And that is immediately an important observation. The fact that your product is climate neutral or otherwise 'green' does not mean that customers are buying it for that reason. Recent research shows that for only 6% of consumers, the impact of a product on the environment/climate (...) is decisive for their purchases (Climate Neutral Group, 2018). For the most part, it is a pleasant side effect:

Customers want to buy sustainable products, but that is rarely their motivation.

The product will therefore have to compete with 'grey' products and with the increasing number of sustainably produced alternatives. This is only possible if both product and marketing are in order. The quality of the product must be in order, the price must match the intended customer groups, the marketing strategy must be cost-effective (i.e. lead to sales).

AFTER SALES AND RECOVERY
A 100% circular design/business model provides for the full recovery and reuse of all materials. This is an enormous challenge and in many cases it will not (yet) be fully possible. For example, chemicals such as paint are extremely difficult to separate from other materials.

It is equally important to understand and anticipate the product life cycle. A first step is to think in advance about the period after sale, the period after use and the way in which you can extend the lifespan as long as possible. How do you handle warranties, repairs and returns? Can you buy the product back from your customer and repurpose it?

What you do after sales is generally split in two sides/directions. You increase the durability of the product through maintenance, return and reuse or resale on the one hand. On the other hand, you provide your customer service by keeping the quality of the product high, offering replacement and 'unburdening' when the product is no longer desired/usable by organizing the disposal.
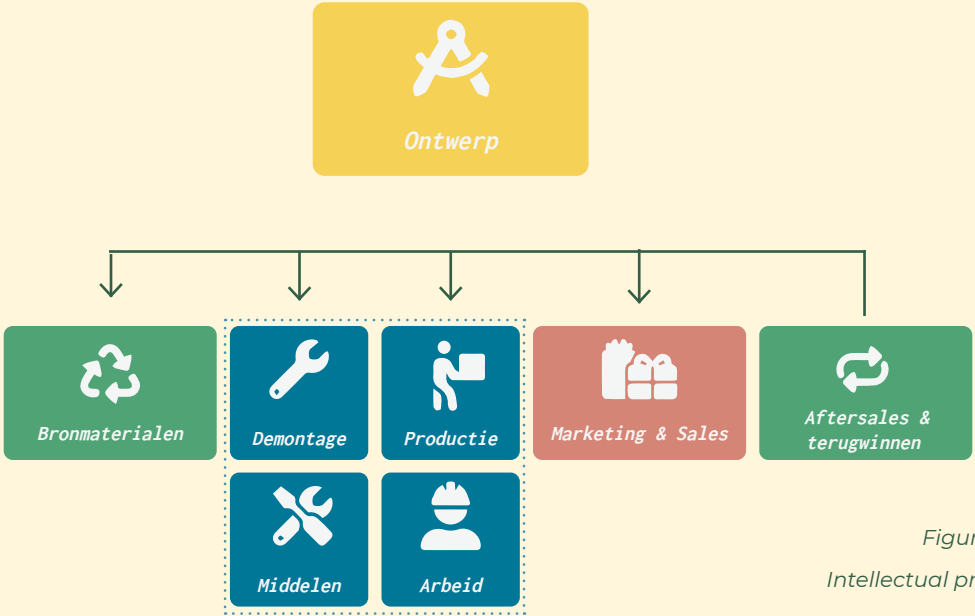

Figure 9: Upcycling model.
Intellectual property of se.lab (2021)

CHAPTER 4

The current waste situation in the BUCH

I. Explore

This chapter zooms in on the current 'waste situation' in the BUCH. Which waste streams are present in the BUCH, and what potential do they have for a circular centre? What is already happening related to CE? And what chances and opportunities are actually there?

In 2019, the BUCH municipalities updated their waste-management policy. This update was applied to advance waste separation (at home) and to reduce the residual waste per household. It includes improving service on resources, introduction of DIFTAR and optimising the recycling centres (Grondstoffenplan, 2019). The ambition and achievement of this new policy can be visualized in a triangle existing of service, environment and expenses. The key factor in this triangle is the reducing of residual waste through services for other streams and cost increase for residual waste.

4.1 Waste streams of the BUCH

It is clear why residual waste is so important in the policy update: it is the biggest stream in the BUCH (see figure 10), even after separation and recycling. Two third of this stream exists of resources (Grondstoffenplan, 2019), which is part of the reason why the separation at home is being encouraged.

The other biggest streams are type-B wood, bulk/extensive green waste, paper and GFT (vegetables, fruits and gardenwaste).

68% of fine residual waste in Castricum can be classified as GFT, or PMD, but also old paper and cardboard. Currently, PMD is not scoring high on the waste scale, since much of it is lost in the residual waste. This project is not focussing on the reuse of PMD, which is done by GP Groot through Circulair in Bedrijf. But what waste streams are interesting to open up for local businesses?

B-WOOD
This name covers multiple types of wood: hardboard, chipboard, fiberboard, pressed wood, furniture, painted wood, doors, frames and non-impregnated wood. This stream is interesting for parties that work with wood, because often good pieces of wood are thrown into this stream. Currently, all this wood is being pressed together and turned into chipboard. By separating good pieces of wood from scraps, this stream can be reduced.

TEXTILE
Textile might not be one of the bigger streams at hand in the BUCH, but is an interesting stream for local businesses that want to work with used textile. This is currently not possible, unless the textile is delivered at the thrift shop.
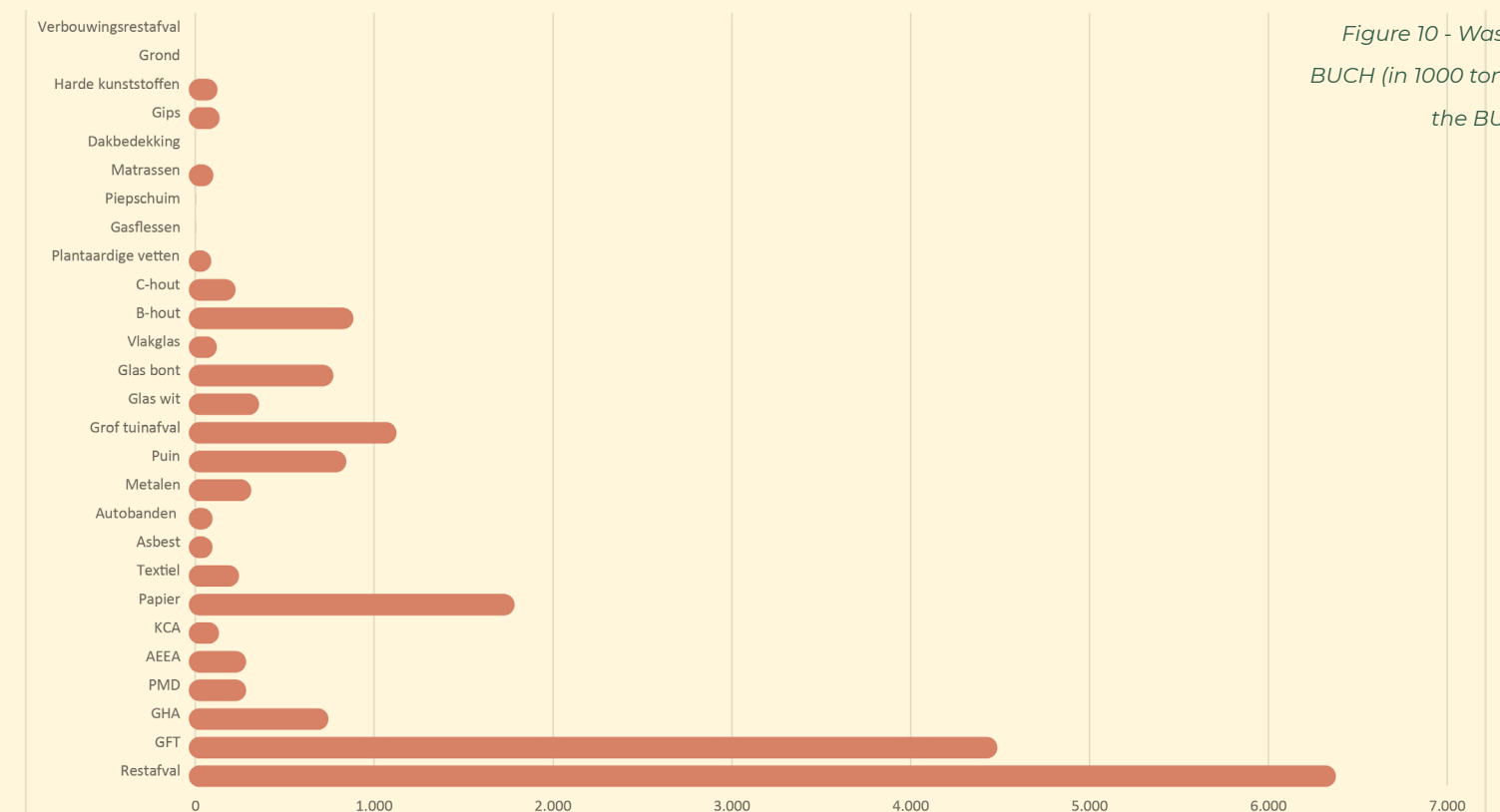
Figure 10 - Waste streams in the BUCH (in 1000 tons), retrieved from the BUCH organization.

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METAL

The metal stream holds a great number of different metals and is attractive due to the types of products that end up here. As can be seen in the pictures from the visit to the recycling centre (page), products like bicycles, table stands, heaters and other products with parts that can be reused can be found here. Opening this stream can create opportunities mostly for makerspaces that want to make products out of waste.

Figure 11: Soft map drawing of the recycling centre in Castricum, drawn during a visit early in the project. Drawing on the previous page is at the recycling centre in Bergen.

4.2 The waste collectors from the BUCH

GP GROOT (AND CIRCULAIRINBEDRIJF.NL)

Originally founded in Heiloo, GP Groot is a company that grew from a waste collection company to a frontrunner for reuse and recycling. This company promotes sustainable entrepreneurship and collaborates in projects where old building parts are reused (link), buildings are disassembled in a circular way (link) and they even have their own material marktplaats (link). GP Groot understood that to become truly a CE, not only should we recycle waste and all resources, we should also increase the demand and supply of circular products. To achieve this, they initiated circulairinbedrijf.nl, a platform that sells circular products and helps companies to start acting in circular business models.

Their bestselling product is the BonTon (see figure 12), a waste collection bin that is completely made from GP Groot's PMD plastic. Next to this product, they produce various products from either their own production or from other circular companies.

The strength of circulairinbedrijf.nl is its strong relationship with GP Groot, being the parent company. This enables GP Groot to take more risks in production, and provides circulairinbedrijf with a material stream. Whenever GP Groot sees an opportunity with a material, it can be used by circulairinbedrijf.nl

HVC

Next to GP Groot, HVC is responsible for the waste collection in the municipality of Bergen. With the policy changes and the accessory ambitions, the BUCH aspires to take over the waste collection in Bergen as HVC is not responding adequately to the transitions towards circularity. However, HVC is not conservative on circularity: they have multiple try-outs with material recycling for the construction industry. One of those projects is a try-out for a circular construction wood cycle, in which they collaborate with GP Groot and local creators, trying to collect scrapwood and create new products out of it. Eventually, this project failed due to policies and financial setbacks, but in a conversation with the director of HVC, he showed interest in this graduation project and showed his interest in participating in a later stadium of the process.

Figure 12: Circulairinbedrijf.nl has a webshop with a variety of circular products. The BonTon(right) is their own product, made from plastic waste collected by GP Groot

4.3 The recycling centres

RECYCLING CENTRE CASTRICUM

The Recycling centre in Castricum is one of the biggest in De BUCH. Compared to the others, it has the most waste streams. Think of roof plates and clean debris amongst many others. They have a separate route for the pick-up service so it can be done simultaneously with the supply.

During the current COVID situation, there is a growth in popularity for going to the recycling centres and by arriving there at 9:30 (1 hour after the opening time) there is already a line of 8 cars.

Due to the situation, a maximum of 7 cars is allowed at the platform, and the employees have to be very focussed on the visitors whether they sort out their waste properly.

"You have to be sharp: if you look there, it goes wrong somewhere else. You'd need eyes in the back of your head!"

Employee at Schulpstet

RECYCLING CENTRE BERGEN

The centre in Bergen is run by the waste processing company HVC, assigned by De BUCH. The centre had a notably pleasant atmosphere when entering. Compared to Castricum's centre, Bergen is very small and approachable. It exists of a square with containers and has space for three visitors. Jos van Engelen, foreman at this location, tells about the various types of people that come there. They get people from Bergen, Schoorl and Egmond. Three different types of people with different social environments.
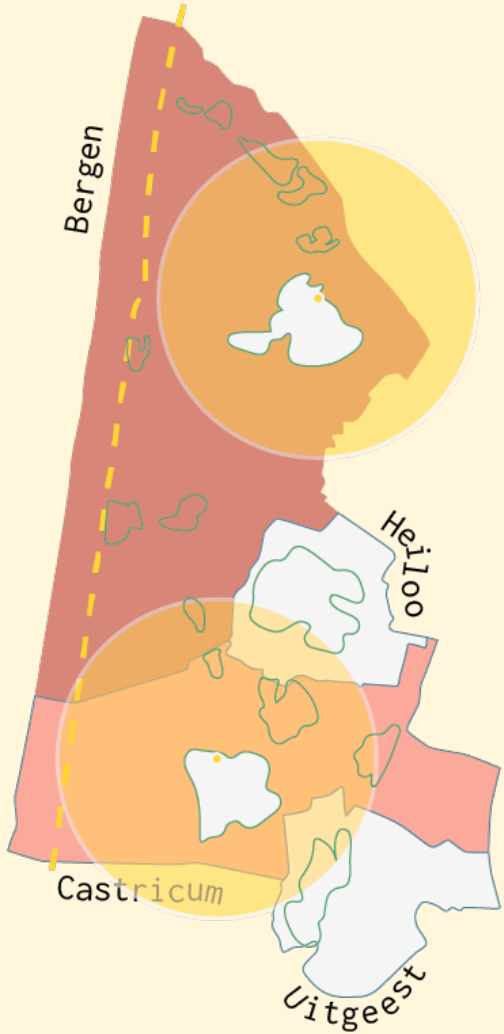
Figure 13: Locations of recycling centre Castricum and Bergen, with a 5km radius

"The people have to do the separating of the waste, we are here to support them. That makes our job a social job, we have to help people: even when they don't want our help."

Jos van Engelen, foreman at recycling centre Bergen

In Bergen, there is no separate route for the pick-up of the containers, so that is done before opening times. These pickups are on appointment, set up a day beforehand. This means that the foreman needs to estimate for every container how much he will collect the other day.

Figure 14: Impression of the recycling centres type of waste

Because this recycling centre is so small, they don't have the possibility to use a press crane to squeeze the waste. Jos: "Often, I deliver 30% air inside a container. With a crane, that would be reduced."

VISITING THE RECYCLING CENTRE, A SOCIAL EVENT

As mentioned above about the centre in Bergen, bringing away your waste to the recycle centre became a social event during COVID. This always has been for the regular clients, but with the lockdown entering the Netherlands in March 2020, the construction markets and recycling centres open, everyone started cleaning and doing home improvements. People stood in line for 4 hours in front of the centres.

A year later - still in lockdown - this was tempered with the closing of the construction markets. But still, people come to the centre for the smallest things, as part of a social activity. Bergen and Castricum respond very different to this: For Bergen, it is nice. They acknowledge that the people need this, and also make

time to chat with them. In Castricum, the atmosphere is more that of a factory and people bringing just some papers are not welcome. The social side is shown in another way:

Next to the canteen there is a table with various interesting objects. When asked whether that's to take with you, the foreman explains that those are gifts from their visitors to them. They have a good connection with their regulars, who even bring glass jars for one of the employees who makes marmalade.

WHAT A WASTE

The items on that table were therefore not just to take with you: "Our visitors are not allowed to pick-up items or waste here. If we would allow that, it would turn into a thrift shop", the foreman from Castricum explains. He recalls the plans for a thriftshop next to the recycling centre, a plan by De BUCH that unfortunately didn't get from the ground due to COVID. The combination of a thrift shop, a makerspace and or a recycling centre is the core of a circular centre as envisioned by De BUCH.

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The foreman mentions it would be very interesting to put an employee at the entrance, who could ask or search for valuable items or materials and take them out before the visitors enter the recycling platform. It would create the opportunity to easily separate waste from interesting materials and products. So, what products are found in the containers?

· Bikes

· Televisions

· Wood

· Furniture

Finally, Jos mentions that thrift shops nowadays don't accept all the furniture anymore if it has only one little scratch. They would bring it to the recycling centre themselves, which is ridiculous. Next to that, he often sees the more wealthy people bringing in products that would make the residents of that neighbourhood 50 meters further really happy. With these statements, Jos showed that as a recycling centre and as a foreman, he can play a key role in connecting the re-use, repair and rebuild initiatives in both a social and a circular business way.

DESIGN CHALLENGES AND OPPORTUNITIES

· How can we pick the right materials from the bulky waste streams?

· Who would be in charge of separating waste from valuable materials?

· How could we arrange the pick-up of materials at the recycling centre?

· How can we use the social strength of recycling centres in our advantage?

4.4 Circular streams

Next to the recycling centres and the waste collection services, there are other material- and product streams (in the BUCH): already functioning circular streams that flow from user to user; no waste collection or trash included. What can be found in these streams, and can a circular network take advantage of their existence?
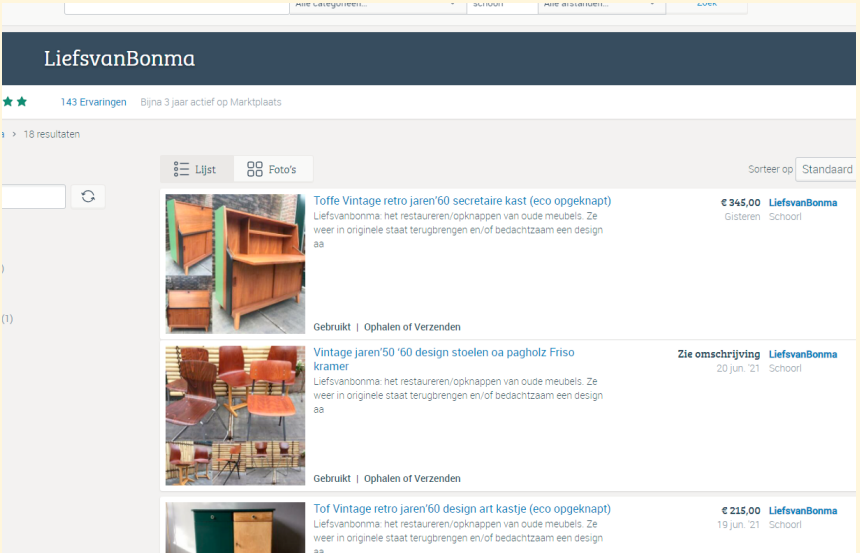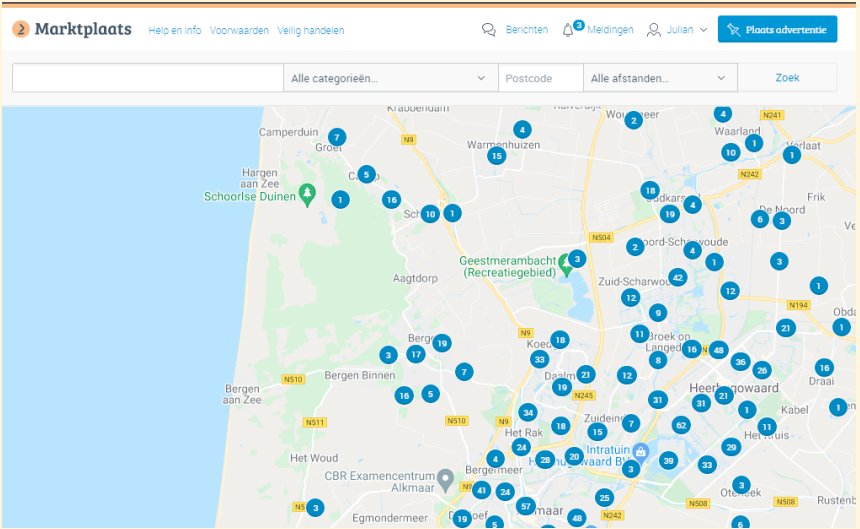
MARKTPLAATS

One of the most well-known circular streams in the Netherlands is Marktplaats, an open market of stuff that people need to get rid of. Nowadays, even cars and houses are being sold here. Needless to say, Marktplaats is also being used in the BUCH region. Even so, it is used by an entrepreneur who refurbishes vintage furniture. LiefsvanBonma (see figure 15) uses Marktplaats as her webshop, next to word of mouth advertising/sales. It is through this channel that I reached out to her and was able to involve her as a participant in this project.

Her business shows how Marktplaats can function as a place for material scouting and upcycling salespoint.

GRATISAFTEHALEN.NL

Gratisaftehalen.nl is a platform that wants to be a Marktplaats for free. Their filosophy is: Help someone. Their goal is to stimulate reuse and recycling. Everything on the platform is for free, no profit is being made. The accountmanager from Dorcas pointed the platform out to me,

Figure 15: From top to bottom: Marktplaats parcels in de BUCH region; A Marktplaats profile of an Upcycling creator; An upcycled cabinet;

I. Explore

as I was not familiar with it. The platform has ads for all types of products, almost similar to Marktplaats. Since it only offers free products, the quality might be inferior to products on Marktplaats.

Gratisaftehalen.nl showcases the possibility of putting your unnecessary products on the digital street before you throw them away. There are always people that might need the products you don't need anymore.

FACEBOOK (MARKETPLACE)

Since a few years, Facebook users can sell and buy products on thiss platform. In fact, the product stream can be divided into two subgroups: the official 'Marketplace' and the unofficial 'Gratis af te halen' pages. The latter has been on the Facebook platform since the early beginnings, with posts like "who can I make happy with this?", including pictures of some products. Later on, these posts became pages with members, such as 'Advertenties Schoorl', with all kinds of ads with products and services.

The interesting value of these pages is the common interest in recycling and reusing,

and the atmosphere of the group that breaths kindness and a sense of looking after each other. This atmosphere is powerful and can be a strong pillar for a circular community.

The other side is the Facebook Marketplace, which is very similar to the regular Dutch Marktplaats. Here, users can sell their products for a price, and Facebook is the middle man in selling. It lacks the charm of the Facebook groups and is a more commercial platform.

VINTED

Vinted is one of the fastest growing second-hand clothing platforms there is. The core business is the sale and exchange of second-hand fashion items. Their ideology is to show how amazing second-hand clothing can be.

Vinted shows how qualitative second-hand clothing can be, and is an example of a movement that goes against the mass consumerism, especially that from the fashion-world. Still, a lot of textiles is thrown away, for example when it is too worn out or broken. For this material stream, another solution must be found.

CONCLUSION

The four channels explained above show how active reuse is already taking place in the Netherlands. Marktplaats could well be used as a digital sales channel for an upcycling collection, and Facebook groups for the spread of awareness, but Facebook marketplace can be too commercial to see as a sales channel. There is also room for innovation in the textile industry, especially in the repair and recycling business on a local scale. A platform like Vinted is more focused on quality clothing, and offers no room for connecting to material streams.
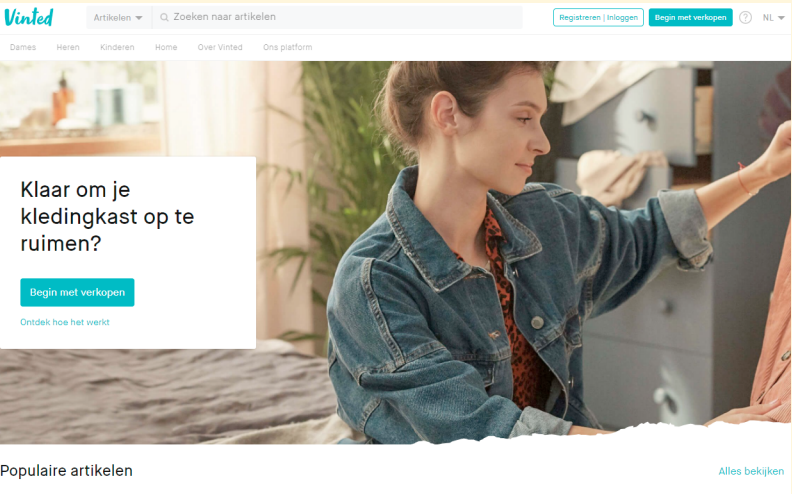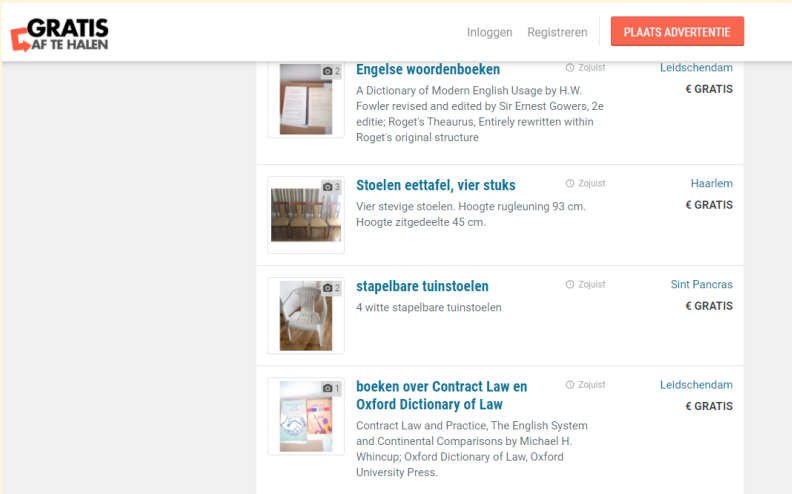

Figure 16: Gratisaftehalen.nl and Vinted.nl, both circular initiatives.

I. Explore

CHAPTER 5
Circular inspiration

5.1 Circular platforms and networks

Spread over the Netherlands, multiple circular initiatives have been launched. This subchapter explores four examples of circular platforms and networks, and highlights the elements that are interesting to include in this project.

TEUN

How can we make consumers bring their waste to the thrift shop instead of the recycling centre? That is the question Teun answers. Teun is a platform that connects consumers with thrift shops through a supply and demand system.

Users can upload their products, and local thrift shops can contact them to pick it up. It is a win-win-win situation: 1) You are rid of your old, but valuable, stuff, 2) the thrift shops receive beautiful items for free, 3) the thrift visitor gives a second life to your products.

This construct is a solution to the challenge of the recycling centre: people just throw away their stuff there, since they do not want to drive the extra mile past the thrift shop. By lowering the threshold for the consumers, Teun is able to reduce the residual waste stream. The

supply and demand solution is inspiring for this project as well. The platform is in its early phase and is initiated in Amersfoort.

DRENTHE GEEFT DOOR

While driving through Drenthe, you can find billboards saying Drenthe Geeft Door! next to the roads. It is Drenthe's way to promote circular activity. Their motto is: Waste is a Resource, and through videos and articles they explain how everyone can learn to separate their waste. With infographics, they give updates on the waste situation in a positive minded way.

Local circular initiatives are showcased on the website, and communicates to the residents how other residents are being progressing the circular transition. This is already implied by their name, Drenthe passes on. The platform is, very similar to the BUCH, supported by a variety of cities and villages in the region. Drenthe Geeft Door's way of communicating and its clear digital touchpoint is inspiring for the project of the BUCH and will be included in the design process.

Figure 17 (left): TEUN is a thrift shop platform that collects old products. right: Drenthe launched a platform to communicate about circularity.

SUPPORTING

I. Explore

ZERO WASTE NEDERLAND

Zero Waste is a collective that aspires a world without waste, hence the name. Their activities are various: lectures and workshops, corporate and government level consultancy, actions and campaigns, sharing tips and tricks with their followers and organizing a variety of events.

Their work can be divided in two focuses: lifestyle and organizations. With lifestyle, they try to inspire and teach their followers to reduce their waste, and they organize zero waste walking tours where they pass shops that promote zero waste.

The organization side supports bigger organizations in reducing their waste, and facilitates workshops and lectures within companies.

What is inspiring about this collective is their strong mission, and the way they communicate their ideology: every organization, company or shop that is connected to them is recognizable by a Zero Waste sticker. You see that sticker? You know you can bring your own packaging, for example.

WAARDERING ZWOLLE

Finally, WaardeRing Zwolle. WaardeRing literally translates to both appreciation and circle of value. This applies directly to their activity. WaardeRing is a circular craftsnetwork in the region of Zwolle, carried by Kringloop Zwolle. Their mission is to use the materials and waste that comes out of the thrift shop as residual, and to search for new, qualitative applications and designs. They work together with the social domain and education, which is very inspiring for this project. As well as this project, WaardeRing is not one singular location, but a network of entrepreneurs that work together.

This is direct inspiration for the initiation of the network in the BUCH, as it shows that "starting a network can be done immediately, by sharing goals and ambitions" (waarde-ring.nl, 2021).

CONCLUSION

This subchapter set out four examples of circular networks and platforms that all have their own unique activities and approaches. What they have in common is the goal to bring waste to a minimum, or, zero. Teun inspires in bringing supply and demand together in an approachable way, Drenthe shows a big network can communicate clearly how you can contribute through a digital platform, focused on the consumer, ZeroWaste accomplishes to have a strong community behind them, by showcasing a lifestyle that is attractive for progressive people, and WaardeRing proves that a network makes it possible to start dreaming immediately, and then realize those ambitions by working together.

Figure 18 (left): The Zero Waste sticker, used to recognize stores. Figure 19 (right): Opening of WaardeRing Zwolle

Figure 20: Wilma Voortman, director of Waardering Zwolle.

I. Explore

5.2 Pioneers of circularity

Next to all the circular networks and platforms that are set up in the Netherlands, one thrift shop was able to create a hot spot for sustainability. In Leeuwarden, the Omrin Estafette foundation has set up a 'kringloop plus'. This new type of thrift shop does not only sell second hand products, but also hosts opportunities for cultural activities, education and entrepreneurs. Therefore, this thrift shop is called a Recycle Boulevard and tires to compete with regular shopping boulevards. What do they do, how do they do it, and what struggles do they tackle?

Estafette opened in 2017, moving from their previous location to a newly available lot that previously hosted a furniture mall. This location was a great opportunity for Omrin to create a thrift shop that can withstand the competition with Marktplaats, Vinted, and other smaller thrift shops in the region. For this thesis, Stephanie de Groot, manager of Stichting Omrin Estafette, gave the projectgroup from the BUCH a tour through the 8000 m2 complex.

The disquisition of the visit to the recycling boulevard can be found in appendix A4.

The Recycling Boulevard in Leeuwarden is an example for circular centres in the Netherlands. Their drive to try all types of collaborations has brought them further and provided them with inspiring businesses, causes and artists. Their collaboration with education and social work has a two-way empowerment: it gives tools and knowledge to the students and employees, and a powerful story for the store.

Estafette has been lucky with a location like this. They acknowledged that getting this location has given them all these opportunities. It helps in housing all the fruitful initiatives in the region in one place. However, in many places, such as the BUCH, this cannot be copied one-on-one. The role of Stephanie, managing the boulevard, might be done by a party that exists above the thrift shops, makerspaces and other initiatives.

Anyhow, the way in which this physical circular centre exists is inspiring through its energy, its enthusiasm, its will to collaborate and all the various talents that are at place. By bringing these assets together in a circular network, fruitful collaborations can be born.

INSIGHTS

· Storytelling creates value for reused products

· Facilitating pop-up's gives space for interesting business cases

· Combining repair and reuse works

· Integrating indirect activities to the circular activity creates interesting interactions

Figure 21: A set of impressions from the Recycling Boulevard, from top to bottom clockwise: Label for upcycled products; Planter from washing drum; Products made from bicycle leftovers and wood; Stadshout, products made from trees from the city; Atlier for studetns from the local beauty school.

5.3 The local circular craftsman

Omrin Estafette in Leeuwarden is a big company, that is able to facilitate a variety of talents and also hosts multiple local craftsmen. For a local circular network, craftsmen and designers are very important. How do these craftsmen work, how do they reuse materials and what are their motives? For this project, I visited a local woodworker from The Hague to learn more about working with used wood and see what values and struggles appear in circular craftmanship.

In the centre of The Hague, next to the royal stables, a small woodworking shop can be found. Walking past it, you can smell the scent of sawn wood. Johan van der Wiel, craftsman, opens the door. When entering, you immediately stand next to beautiful pieces of wood. Placed there either to dry, or waiting for their purpose.

"Some of these pieces are just beautiful, and by putting them here on display, I can be inspired by its beauty and at a certain point, I know what to do with it."

Johan is a storyteller, but in the shape of a craftsman. In his daily work, he makes both handmade furniture and art: Work with a story and craftsmanship, meaningful carpentry.

This becomes clear when you walk around his workshop. Every work that the eye can see has a story. In the corner: a beautiful church pew, completely sanded and renewed. Johan explains that the client wanted to restore their pews that haven't been used do to space for technology in the church. Johan visited the church and was astonished by the church's architecture: brutal in its angular shape, yet soft in its organic roof. That inspired him to design a new cathedra out of the pews. It resulted in a great example of how circular design can tell a strong story of history and future.

Johan gets his new materials at a fine wood warehouse in Amsterdam. Here, he finds the nicest pieces of fine wood. But he is also interested in scrap wood, residual wood, materials that can be found in containers and on the street all around The Hague.

He shows a 40x40 piece of floorwood, found in an old apartment. "I really love the colours, but haven't found anything to make from it. In Indonesia, parts like these are being copied while we can find them here, actually vintage and reusable. With a story."

From the materials he found in one of these containers, he made a stool, called Apeldoornselaan 133. It's the address of the apartment it came from and exists of windowsills, doors and other parts of the house. The house now gets its own house. The story continues, through a new product. That is how circularity gets a place in the workshop.

"We miss stories in the stuff around us. We need stories around us, they make us. It's empty now."

Johan van der Wiel.

CHAPTER 6

Initiating a community

After the circular context has been studied, community building is researched. Starting a community builds onto a variety of thoughts that shape the type of community. This chapter explores both approaches for starting a community, and looks at some inspiring communities, and what their core values are.

6.1 Approaches for creating change

When designing the network in the research through design phase, the main goal is to facilitate in such way that it drives its stakeholders to help decreasing residual waste in the BUCH region. There are multiple ways this can be done, and this subchapter dives into three topics of problem tackling: (1) Appreciative inquiry, which is an approach focusing on what is valuable, and building onwards to that, (2) Creating change, as a tool to overcome the problem and (3) Bottom-up versus bottom down, asking the question how the relationship between a bottom down quest for a network and a bottom-up design of that same network can go hand in hand.

APPRECIATIVE INQUIRY: INCLUSIVE DESIGN

Communities are often started around shared problems: a negative experience with the municipality, project plans that neighbours disagree with, but in the end they turn out to have multiple topics that they have shared dreams about. The appreciative inquiry is an approach that plays on this, by transforming the classic problem-solving approach in a

powerful process of discovering and dreaming, in order to design and deliver. The key aspect of this approach is inclusiveness: as many as possible voices are used as input, preferably from everyone affected by the resulted change.

This inclusiveness is important for two reasons:

1. Involvement creates engagement. When the stakeholders are invited to co-create the solution and discuss how they want to get there, they 'own' that solution. Automatically, they are on board with the change.

2. Everyone has a say, there is not one dominant individual in the process. By involving everyone, their wisdom, experiences, creativity and unique perspectives are driving the project, contrary to top-down management. Top-down works for some initiatives, but often run into difficulties with stakeholders or while putting it in practice. By involving the people that can immediately join the conversation from that practice, they can point out the difficulties so that they can be dealt with in time.

I. Explore

Why is this interesting for this project? The BUCH organizations ask for a participatory and bottom-up design that solves a problem that is owned by the BUCH. Working on such a project often results in us/them behaviour, where participants stand against the municipality (gebiedsontwikkeling.nu, 2019). By approaching the project from a project-solving angle, this might be amplified: it's the BUCH's problem (them) and we (us) can solve it. Instead, the appreciative inquiry can create a space for possibilities, where the stakeholders ambitions and dreams are the at the centre of attention. By approaching it from this angle, the network can be built up in a constructive way.

CREATING CHANGE: THREE APPROACHES

In the public domain, working at governments, two dominant approaches for changemaking can be defined: 1) the cognitive strategy and 2) the negotiation strategy, according to Schaminée and Dorst (2021). The first strategy focuses on proposing a design that is based on relevant knowledge, and that is further developed on project basis. This strategy works really well for technical challenges, but less for social projects since they ask for value and meaning towards the stakeholders. The negotiation strategy touches that part more. This approach looks at the meaning and value for the key stakeholders and tries to compromise between opponents. It often results in a classic political result. As its explanation implies, this strategy works best for solutions that can be found in a compromise,

but does not work for challenges where the solution lies in an area that hasn't been explored yet.

Design thinking is relatively new in the public domain, and yet it holds a great approach for a challenge where the solution area is unexplored. Within the public domain, the approach containing design thinking is called 'learning', and has very different ways of handling a challenge. Figure , from Designing with and within public organizations (Schaminée, 2019) shows how it compares to the cognitive and negotiation strategy. This overview will be used as a ground layer for the requirements of the Research through Design process in chapter 10.

BOTTOM-UP VERSUS TOP-DOWN

The appreciative inquiry already mentioned the bottom-up approach, or in other words: approaching a situation from the context, and top-down, approaching from a system level. Schaminée and Dorst (2021) state that the meeting point of the two approaches is crucial in a project, yet very hard to achieve. The two approaches also come forth in this project. Bottom-up, we are trying to create a network of stakeholders, supporting each others circular ambitions. Top-down, the municipality and eventually the government needs policies to support the circular activities, in this case the legal constraint on materials from the recycling centre, as discussed in chapter 3.2.
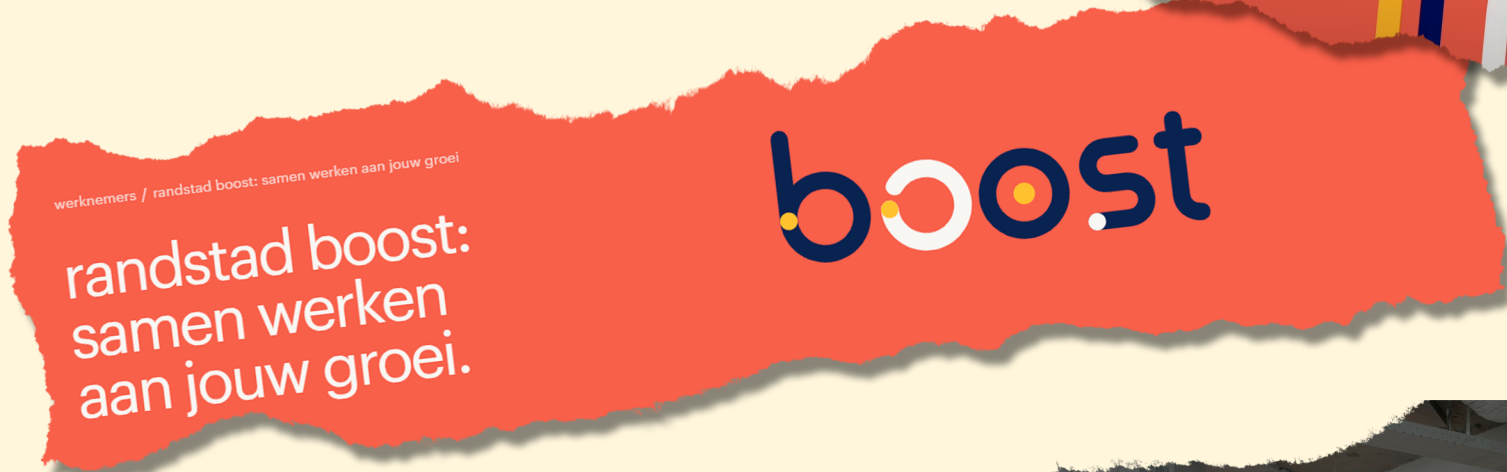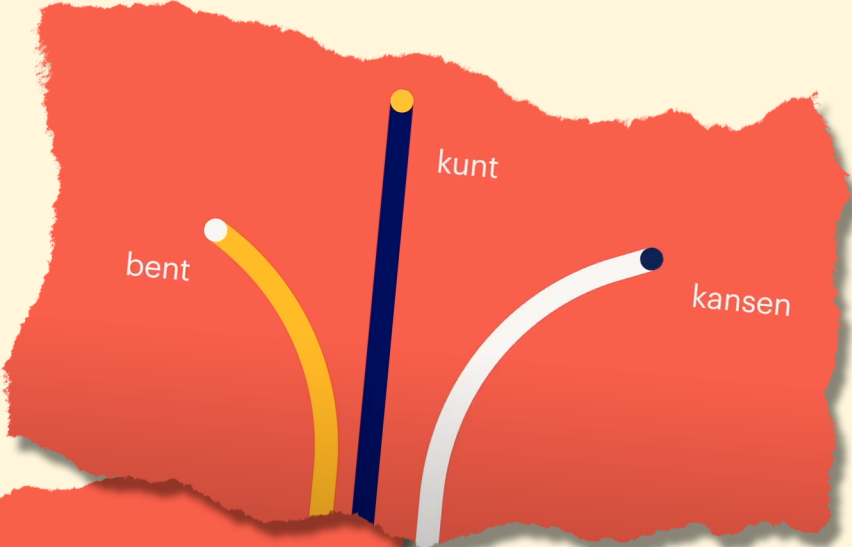
	COGNITIVE (TRUTH FINDING)	NEGOTIATION (POWER)	DESIGN THINKING (LEARNING)
Source domain	Logic	Ideals	Esthetics
Basic attitude	Thinking (intelectual)	Wanting (ethical)	Feeling (empathic)
Core value	Objective	Intersubjective	Subjective
Interpretation	Evaluation	Argumentation	Interpretation
Starting point	Definition (curiosity)	Conflict (urgence)	Illustration (engagement)
Relation to subject	Distance	Influence	Participation
Authority by ability to	Stating	Connecting	Inspiring
Result	Knowledge	Agreement	New meaning

Figure 22 - Dominant strategies for change compared (Schaminée, 2019)

I. Explore

6.2 Inspiring communities

Chapter 5 focused solely on circular inspiration. This part of the research focuses on finding references of inspiring networks in other fields of work. This exploration is inspired by architectural referencing, combining images and text to transfer the ideas.


bent

kunt

kansen

werknemers / randstad boost: samen werken aan jouw groei

randstad boost: samen werken aan jouw groei.

BOOST | RANDSTAD

Not necessarily a network, but its goal and communication style is appealing. Their powerful imagery of Bent, Kunt, Kansen (Being, Able, Opportunities) resonates with the circular idea of using everyones capacities, and creating opportunities together. This inspired me for the first workshop in chapter 14.

VENTURE CAFÉ

Venture café is an initiative in Rotterdam that wants to connect, facilitate learning and share business ideas. Their weekly gatherings are connecting creators, entrepreneurs students and more. The resonating part is their saying:

You belong at Venture café!

meaning that your input shapes those sessions.
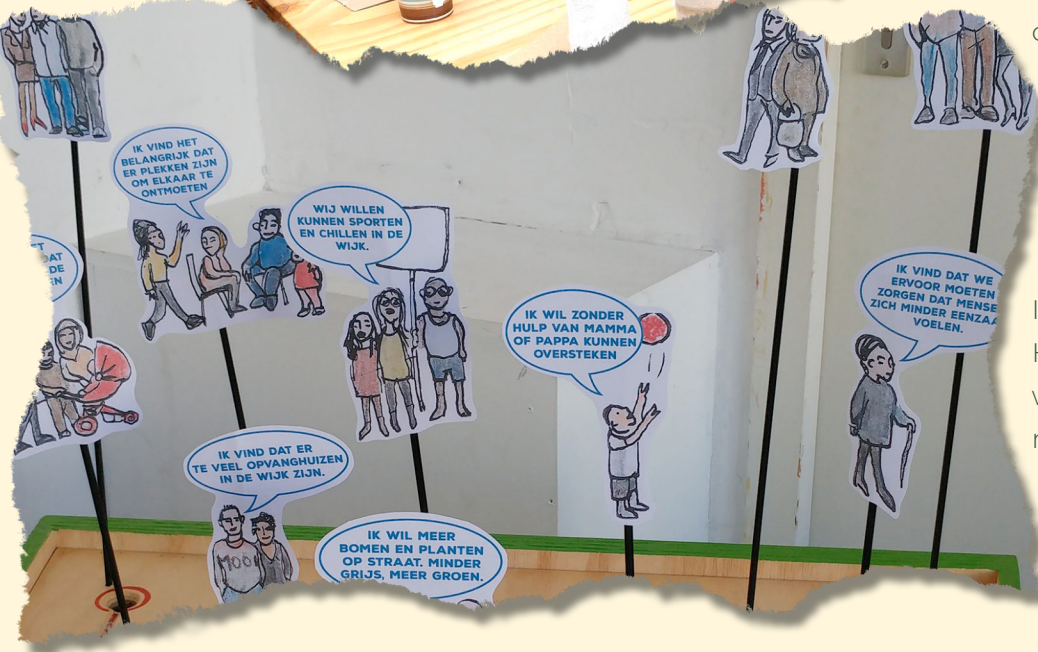
MOOI, MOOIER, MIDDELLAND

I learned about this initiative at the start of my master in the Masterday, and studied their work in the course Design & the City.

What is so inspiring about this initiative is the combination of bottom-up with integrated civil servants that collaborate and realise. Their activites are creative and participative, and are welcome for everyone. For this inspiration page, it is a creative counterpart for Boost and Venture café.

In Middelland, this initiative realised multiple Huize Middelland's (neighbourhood homes) where gatherings can be hosted and the residents are welcome. This is very inspiring for setting up a network in a large region as the BUCH.

I. Explore

CHAPTER 7
The people

Circular economy thrives on the people that keep it running. The previous chapters discussed the circular context and activities that is the décor for this design project. After studying the different times of communities, it is time to meet the people in the BUCH that want to be part of the circular transition.

This chapter focusses on the people that could run their part of a circular economy: residents, thrift shop owners, craftsman, schools, mental health institutes, etc. Through various interviews and a creative session, motives, obstacles and opportunities for a circular network as seen through the eyes of the people were identified.

7.1 Research approach

APPROACH

The key to this project are the people that are joining. A vision for a circular centre has been made and the will to connect with local businesses is there. Yet, these local business haven't been contacted as such and there is a lack in knowledge on who would like to join a circular centre. During this phase, the interaction with the local businesses is made and their needs, wishes, ambitions and obstacles for setting up a circular business are mapped out.

QUESTIONS
1. What businesses or people are interested in joining a circular network?
2. What is their current experience with circularity?
3. What ambitions do the local entrepreneurs have in regard to circular entrepreneurship?
4. What obstacles are there now for circular entrepreneurship?
5. What do the local businesses need to achieve their ambitions?
6. What obstacles can be identified at the recycling centre for using material streams?

RESEARCH GOAL
The goal of this research is to answer the questions above and by doing so find the people that want to join a circular network

and map out their capabilities and needs. This will lead to a design statement that further helps identifying the direction for the circular network.

PARTICIPANTS
In this project, the participants exist of a variety of residents with business ideas, small local craftsman, thrift shop owners, employee's of repair cafés, teamleaders from mental health institutes, and teachers from secondary schools. The BUCH has asked to take everyone that is interested into account to later on in the project determine which type of participants are actually fitting the project.

In total, 25 participants joined the project's first workshop. Five participants were interviewed during one-on-one interviews, and four participants joined for a creative session.

METHODS
In order to answer the research questions, various method were used as a tool, as is explained below:

OBSERVATIONS
As mentioned in the first chapter (page), a visit to two recycling centres was done to get a view of the possibilities in materials that end up at the recycling centre. This visit was also used to hear the opinion of the workmen there on the plans for a circular centre.

I. Explore

EXPERT INTERVIEW

An interview was done with the manager of the recycling centres to learn the obstacles for change at the recycling centre, and the opportunities to overcome those obstacles. Next to this interview, one of the region managers of the BUCH has been interviewed to learn about their role between the municipality and the residents and entrepreneurs, and explore if there are any opportunities there.

QUALITATIVE INTERVIEWS

Five qualitative interviews of approximately 45 minutes were done with people responding to the call for participants. These were either residents with business ideas or ideas for the circular centre, or small local craftsman that are interested in joining the material streams.

CREATIVE SESSION

A creative session has been facilitated to discover the question of access to material streams. Four participants joined this session.

WORKSHOPS

From April to June, multiple workshops have been facilitated together with se.lab to initiate the network and explore the possibilities for collaboration and the design proposal. This initiation of the circular network is discussed in chapters 11-16 as they cover the research through design process.

Figure 23 - Imagery of the observational research at the recycling centres

7.2 Research activities

OBSERVATION AT THE RECYCLING CENTRES

The world of waste is a non-visible one. Yes, we can see litter on the street, and the waste that we bring away or put in the dumpster, but from thereon there is little to no knowledge on what we all produce as waste. Therefore, an observational visit at two recycling centres in the BUCH has been done. The goal of the observational research was to get a view on the type of products that end up at the recycling centre and to hear from the workman how they see the vision of a circular centre.

The chosen recycling centres were (1) Schulpstet, Castricum, and (2) Bergen. Schulpstet is the biggest recycling centre with the most waste streams and was chosen by the BUCH to get a good view on the various material streams. Bergen has a very small recycling centre, and was chosen as a good comparison visit for Schulpstet.

RESULTS

In the containers at recycling centres, you can find perfectly fine products or materials. Most of the products are already disassembled partly, but the electronic goods seem very repairable. The employees agree on that, and shared that the electronic products that arrive there sometimes still work partly.

The visitors at the centre are rushing to get rid of their waste. However, some of them take the time and even view what other people throw away even though taking other people's waste is strictly forbidden. That is also the reason why the employees there are pessimistic about the

ideas for a circular centre. Their reality is the recycling centre where everything will be burnt or reused by big companies, and they don't see anything changing in that.

EXPERT INTERVIEW

The manager of the recycling centres, Tessa Meijer, understands that. She was interviewed to learn about the obstacles for a circular centre at the current recycling centres. Tessa has a protective attitude towards her employees, but also works together Esther Keijser in the plans for a circular centre. This puts her in an important position as a bridge between those two worlds.

Monique Klaver is a region manager in the BUCH, and functions as a participation bridge between the municipality and the residents and businesses. What are her daily activities, how does she see the circular centre, and are there any opportunities for her in a circular network?

RESULTS

Currently, entrepreneurs are in no way welcome at the recycling centres. They are not allowed to deposit waste or pick up materials. However, the mindset at recycling centres is changing, and in order to establish an interaction between entrepreneurs and the centre, strict agreements must be set up. Entrepreneurs should mainly pick up, not depose waste. Only in that way, they can contribute to the reduction of waste in the BUCH. On the question how to create that transition, Tessa explains that a mindset on the workingfloor can

change quickly by trial and error on location. The employees at the recycling centres should be trained in this new way of waste handling, and definitely be included in the transition as soon as possible. There are opportunities to let the bigger thrift shops supply employees.

Finally, the communication around the material streams is of outmost importance. It should be clear to the residents that the things that they bring to the recycling centre can be locally reused or repaired, and sold. The social and circular story needs to be communicated very clearly.

According to Monique Klaver, the role of the region manager is one of participation: inviting residents and businesses to join the conversation on relevant topics. However, she describes that she would like to see the managers divided over societal themes such as housing, climate, and transcend the current domains (regions) and focus on themes based on the ambitions of the BUCH. When asked whether the region managers could play a role in a circular network, she answers that the current role of the manager is too broad to pick that up. There should be a person between the municipality and the network, that facilitates participation, something more like a Kwartiermaker.

QUALITATIVE INTERVIEWS

In order to empathize with the possible stakeholders for this project, four qualitative interviews with five local entrepreneurs and residents were conducted. The participants were found by sending out a call for interested

parties through the BUCH's channels as part of the initiation of the circular network and can be seen in appendix A1. Through local newspapers, forums and social media, interested residents and businesses were reached and invited to share their ideas and reason to join by mail. These participants were then contacted and interviewed. These interviews took place digitally and in Mural.

The participants originated from Schoorl (Bergen), Castricum en Bergen. The goal of these interviews was to learn about the experiences with circular activities in the BUCH and to understand the needs and wishes around a circular centre.

The qualitative interviews followed the path of expression as described by Sanders & Stappers (2012). This method lets participants reflect on their current situation (related to the topic), then they are asked to reflect on their memories and experiences. Sharing these experiences makes participants able to access values and needs, making them ready to dream about the future.

During the interview, the participants were first asked to tell something personal about themselves, such as their relationships, work, hobbies, etc. As a follow up question is asked what their experience with circularity has been so far, taking them back in their memories. The next part of the interview focuses on the possibilities, obstacles and needs that come up with their ambitions. This part leaves room for discussion: depending on the answers of the participant, the discussion went on about those topics.

Finally, the participant was asked whether they would like to join the circular network workshops, and what they would like to get out of that. The mural that was used as an interview template can be found in appendix .

RESULTS

The first participant was already known at the municipality as a woman who'd like to participate in a project that creates access to the material streams. Arian believes in the Pippi Longstocking motto: I have never done it so I think I can! She has negative experiences with the recycling centre, because she sees a lot of nice products but is not allowed to take it. She is very active as a circular resident, creating giveaway boxes for the street and reusing textile waste. She has the ambition to inspire other residents who have lost their jobs, and sees a lot of opportunities in connecting, supporting and helping with businesses as a network.

Hester and Bram would love to see more facilitating in hosting pop-ups and opportunities to sell and promote their products. They love to start the conversation with people, with their customers. They believe in the power of sharing, and have the drive to contaminate other people with the circular virus!

Hans runs a small circular economy together with his friends: when they need something or have something they don't need anymore, they ask each other. When something breaks, someone in the group repairs it. Bringing something to the recycling centre is really the final step. This makes that Hans would like to

see a platform that is one step ahead of the recycling centre, where materials and products can be shared. He sees the policies around recycling centres as a big obstacle for material reuse.

Bonnie envisions a circular network that connects local socio-economic initiatives and promotes their activities to the residents, such as the Zero Waste movement does. She also sees opportunities in creating accessible, sustainable products, such as insect hotels from scrap materials.

Together we ensure that we get rid of one-off and short-term use of products.

Participant during interview

We so live on our own. That's okay, but be aware of what you can do TOGETHER.

Participant during interview

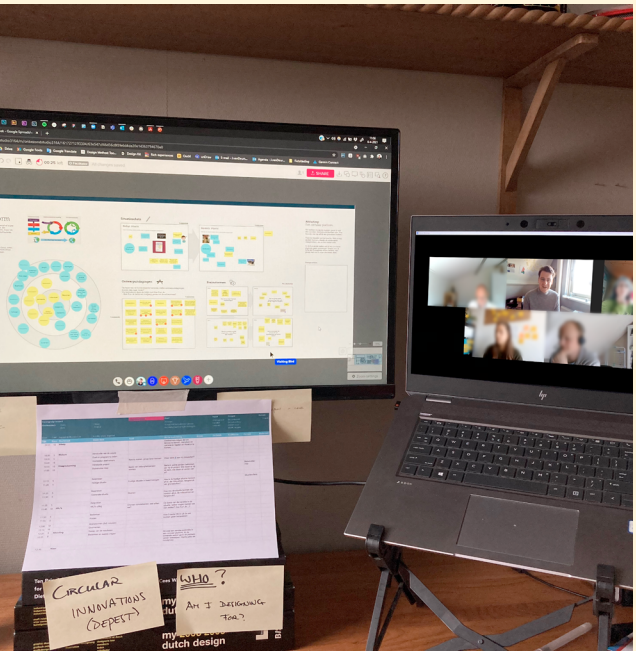*Figure 24 - The interview format for the conversations with respondents.*

*Figure 25 - The setup for the first online session.*

topic. The first step was creating a stakeholder map, to visualize how the participants viewed the problem. In the discussion of this map, a current situation derived. In the next step, the participants were asked to visualize how their desired situation looked like, in comparison with the current situation. Based on this desired situation sketch, the participants formulated design challenges with HKJ's. Finally, four challenges were selected and brainstormed on.

CREATIVE SESSION

In order to explore the context together with the stakeholders, the participants that responded to the call for help were invited for a creative session. The goal of this session was to map out how the stakeholders view the current situation, and what their desired situation is. One of the insights derived from the qualitative interviews was that one of the biggest obstacles is the access to materials at the recycling centre. Therefore, the theme that was being explored in this session was: How can we create material streams out of the current waste streams in the BUCH?

Within Mural, the session was set out in four steps, using four methods to explore the

RESULTS

From the creative session, four important themes came forth: Communication, transparency around material streams, hosting collaborations and keeping the balance between bigger and smaller entrepreneurs.

Ideas around communication are showcasing materials or products that are good for reuse, but also showcasing existing circular activities to promote circular thinking. Another idea about facilitating the collaborations and the balance between the different entrepreneurs is that there should be some sort of circular ambassador that takes the lead in the collaborations.

Figure 26 - MURAL layout for the first session.
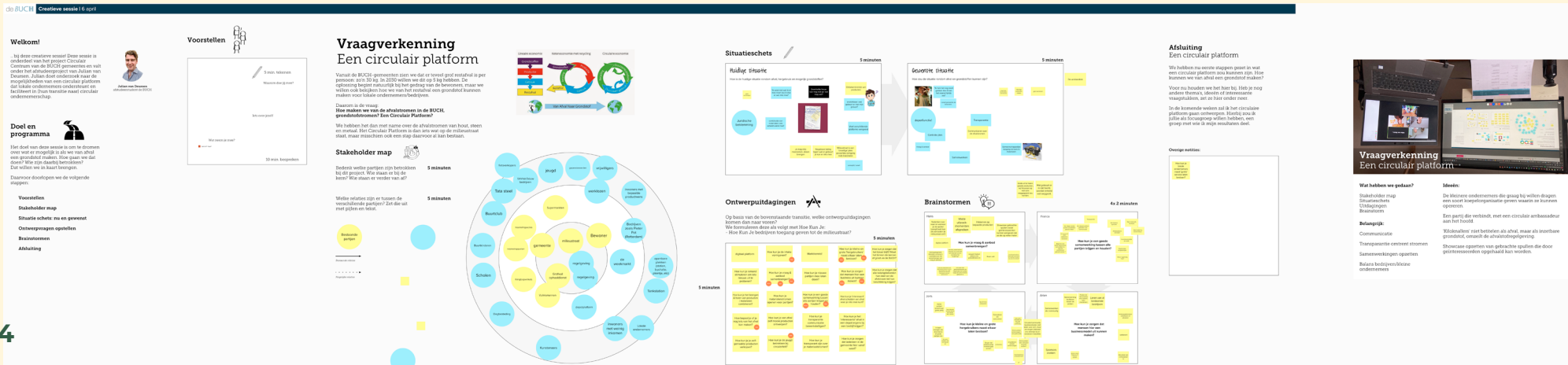
7.3 Conclusion

WHAT BUSINESSES OR PEOPLE ARE INTERESTED IN JOINING A CIRCULAR NETWORK?
The people responding to the call for participants were residents with business ideas, wood workers, schools, mental health institutes, thrift shops and repair cafés. They can be considered the Innovators and Early adopters, as they are the ones that either already acts with sustainable motives, or are the first ones to make that transition after the innovators did.

WHAT IS THEIR CURRENT EXPERIENCE WITH CIRCULARITY?
The experiences with circularity vary per type of stakeholder. The thrift shops, repair cafés and mental health institutes have experience in working with used products and judging the quality of materials and products. This counts for some of the woodworkers as well: the ones that already work with used materials are known with how to handle the material.

The circular experience from schools lies in advising local businesses in circular entrepreneurship.

WHAT AMBITIONS DO THE STAKEHOLDERS HAVE IN REGARD TO CIRCULAR ACTIVITY?
In general, the smaller entrepreneurs want to be able to make use of the material streams to create circular products. The thrift shops see opportunities in working together with the repair cafés more, and to be hosting small businesses in their stores. The call for

collaboration is getting stronger now that there are sounds of a circular centre.

The mental health institutes want to keep implementing their patients into circular businesses for their reintegration projects.

Finally, the schools want to integrate circular education into their curriculum and keep in touch with circular businesses for internships or workingplace possibilities.

WHAT OBSTACLES ARE THERE NOW FOR CIRCULAR ACTIVITY?
One of the biggest obstacles are people who think in problems. In order to make the transition to a circular economy, trial and error is needed to move forwards.

For thrift shops, an obstacle is shortage in space and human resources.

For woodworkers, the obstacle is the fluctuation in resources and quality, but also in general the access to the material streams.

Another obstacle is the lack in awareness amongst residents about the circular activity. There should be more communication towards the residents regarding the circular initiatives.

WHAT DO THE LOCAL BUSINESSES NEED TO ACHIEVE THEIR AMBITIONS?
This research question can be answered more clearly: All stakeholders agreed in the workshop that they need peers, colleagues, and others to be connected with, to share knowledge and

resources. There needs to be more awareness around circular activity, communicated by the BUCH.

WHAT OBSTACLES CAN BE IDENTIFIED AT THE RECYCLING CENTRE FOR USING MATERIAL STREAMS?

Around the recycling centre, three obstacles can be defined: the policies around the use of materials, separating high quality materials from the rest and communicating the circular activity towards the visitors. There needs to be a shift in awareness around the recycling centre on what can happen with the materials that are dropped off there, both with the visitors and the employees. It might be a possibility that for the near future, only waste streams amongst the network is available for use, up until the moment that the policies around the recycling centres change.

Key insights from section I

During section I, a few key insights formed the rest of this project. These are highlighted here. The insight that the design would not be a platform that would be designed together with the participants, but that the interaction between the participants would already be the design, has had major influence on the progress of the project..

Collaborations and mutual interactions between small parties as residents and larger parties as thrift shops **are the real challenges**

The design should not be a digital platform, but **a network of driven initiatives.**

The design must create **value**, and that value lies **in the right interaction** between the stakeholders.

We need to **sit down with these people** and **start the network**, in order to discover how the network can be shaped.

A **research through design** approach.

CONCLUDING SECTION I

As conclusion to section I, Exploratory research, the following sub-questions are answered:

WHAT IS THE CURRENT STATE OF THE CIRCULAR TRANSITION (IN THE BUCH AREA)?

Currently, the waste situation in the BUCH is slightly outdated. Almost all recycling centres need to be updated according to modern standards. However, the responsible persons in the municipal organizations are working really hard to make that transition towards cleaner and more circular focused recycling centres. There are plenty of materials and products at the recycling centres that could be reused, but the policies and the culture of the recycling centres are standing in the way. There is mostly a shift in awareness needed among the residents in order to improve the situation, according to the participants of this project.

IN WHAT WAYS CAN YOU FACILITATE CIRCULAR ACTIVITY?

Initiatives like the Circular Boulevard in Leeuwarden show the potential of a circular crafts centre and -network, where thrift shops facilitate the local creators and access to material streams is enabled at the back side of the social domain and thrift shops.

HOW CAN PARTICIPATORY CHANGE BE FACILITATED?

Instead of focusing on the problem of excessive waste, the accentuation in the process should be on the ideals and ambitions of the participants. By involving them in that way, the engagement grows and the participants are enabled to create change.

WHAT IS THE INTERNAL DRIVE FOR SOCIO-ECONOMIC INITIATIVES TO JOIN A CIRCULAR NETWORK?

The respondents to the call for participation all share the ideal that they want to contribute to a sustainable society, and reduce waste. This shared ideal is a strong drive for participation, and secondary drives are the will to grow as a business, share knowledge and resources.
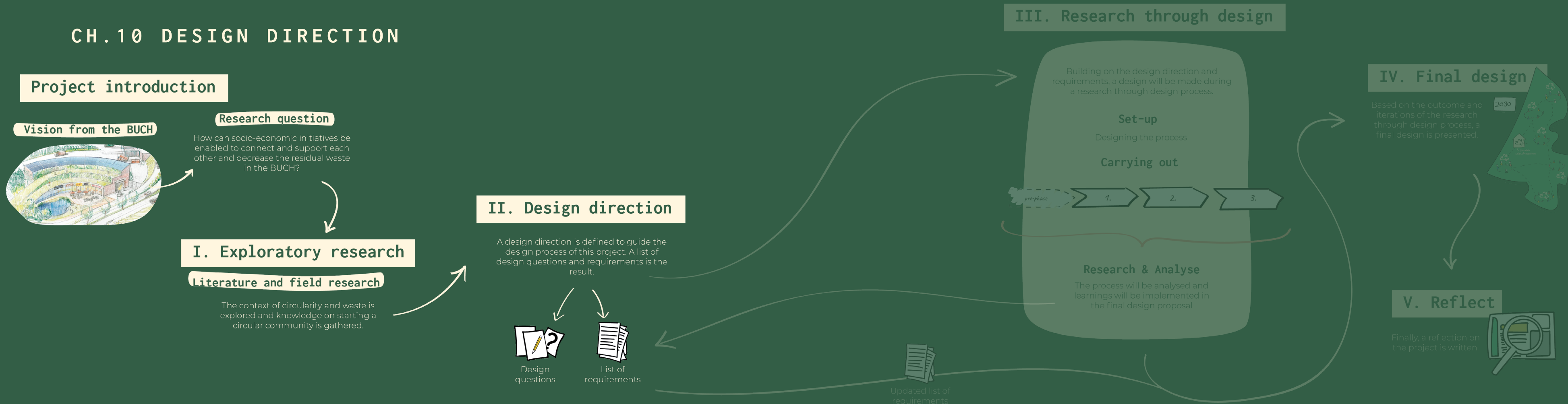
SECTION II

DEFINING THE DESIGN DIRECTION

Section II continues with the knowledge from chapter 7 and formulates the key stakeholders and their role in the project. Based on the research outcomes of Section I, a design direction is formulated to guide the design of the participatory startup of the circular network in Section III and IV.

CH.8 STAKEHOLDERS

CH.9 MOTIVATIONS, OBSTACLES AND OPPORTUNITIES

CH.10 DESIGN DIRECTION

Project introduction

Vision from the BUCH

Research question

How can socio-economic initiatives be enabled to connect and support each other and decrease the residual waste in the BUCH?

I. Exploratory research

Literature and field research

The context of circularity and waste is explored and knowledge on starting a circular community is gathered.

II. Design direction

A design direction is defined to guide the design process of this project. A list of design questions and requirements is the result.

Design questions

List of requirements

III. Research through design

Building on the design direction and requirements, a design will be made during a research through design process.

Set-up

Designing the process

Carrying out

pre-phase   1.   2.   3.

Research & Analyse

The process will be analysed and learnings will be implemented in the final design proposal

IV. Final design

Based on the outcome and iterations of the research through design process, a final design is presented

V. Reflect

Finally, a reflection on the project is written

Updated list of requirements

II. Define

CHAPTER 8
Stakeholders

In chapter 7, the respondents on the call for participation were described. This chapter elaborates on those outcomes by grouping them into six stakeholder groups. Every group has their own reason to join the project. Finally, an overview of all stakeholders is created.

From the people who responded to the call for participation at the start of the project, a selection of stakeholders has been formulated that cover the most important participants for the project. This chapter introduces each type of stakeholder and maps them out.

RESIDENTS

The entrepreneurial resident gets the opportunity to participate in this project, because one of the pillars of the vision for a circular centre is facilitating circular entrepreneurship. The residents that are joining have an ambitious drive to work with used materials, and are searching for opportunities to sell or present their work. They are looking for help in setting up their business.

DESIGNERS / CREATORS

Within the BUCH, there are multiple woodworkers that are eager to join the material streams and a circular centre. Small as they are, they are interested in showcasing their work in thrift shops, pop-up stores or through communication channels.

SCHOOLS

Education is one of the pillars of the vision for a circular centre in the BUCH. Therefore, the local schools are invited to participate as well. They see opportunities for students to get apprenticeships or internships in the makerspaces, thrift shops or repair cafés.

Figure 27 (from above) - Entrepreneurial resident with her circular cabinet; A circular woodworker; Children in school learning about circularity.

II. Define

THE SOCIAL DOMAIN

The third pillar for the circular centre is the social domain. The mental health care institutes organise reintegration project for their clients, and see opportunities at the repair café', thrift shops and makerspaces.

REPAIR CAFÉ'S

The repair cafés are already a circular business; therefore the are eager to join the circular network to help thrift shops with broken products.

THRIFT SHOPS

Thrift shops form a big stakeholder in this project. They can be seen as the beating heart of a circular network, where the collaborations with repair cafés, schools, woodworkers and residents come together. Their locations make that they are possible facilitators for pop-up locations.

They are open for opportunities and are looking for more space and employees to keep growing.

Figure 28 (from above, clockwise) - A mentally handicapped boy makes beautiful products, the elderly repair broken products and the cycle sells second-hand products

STAKEHOLDER MAP

Figure 29 displays the various involved parties in this project. The parties are distributed by their role, from indirect to context to direct. Together, these stakeholders can form a circular network of participation, knowledge exchange and facilitation. These interactions will be further explored during the development phase.
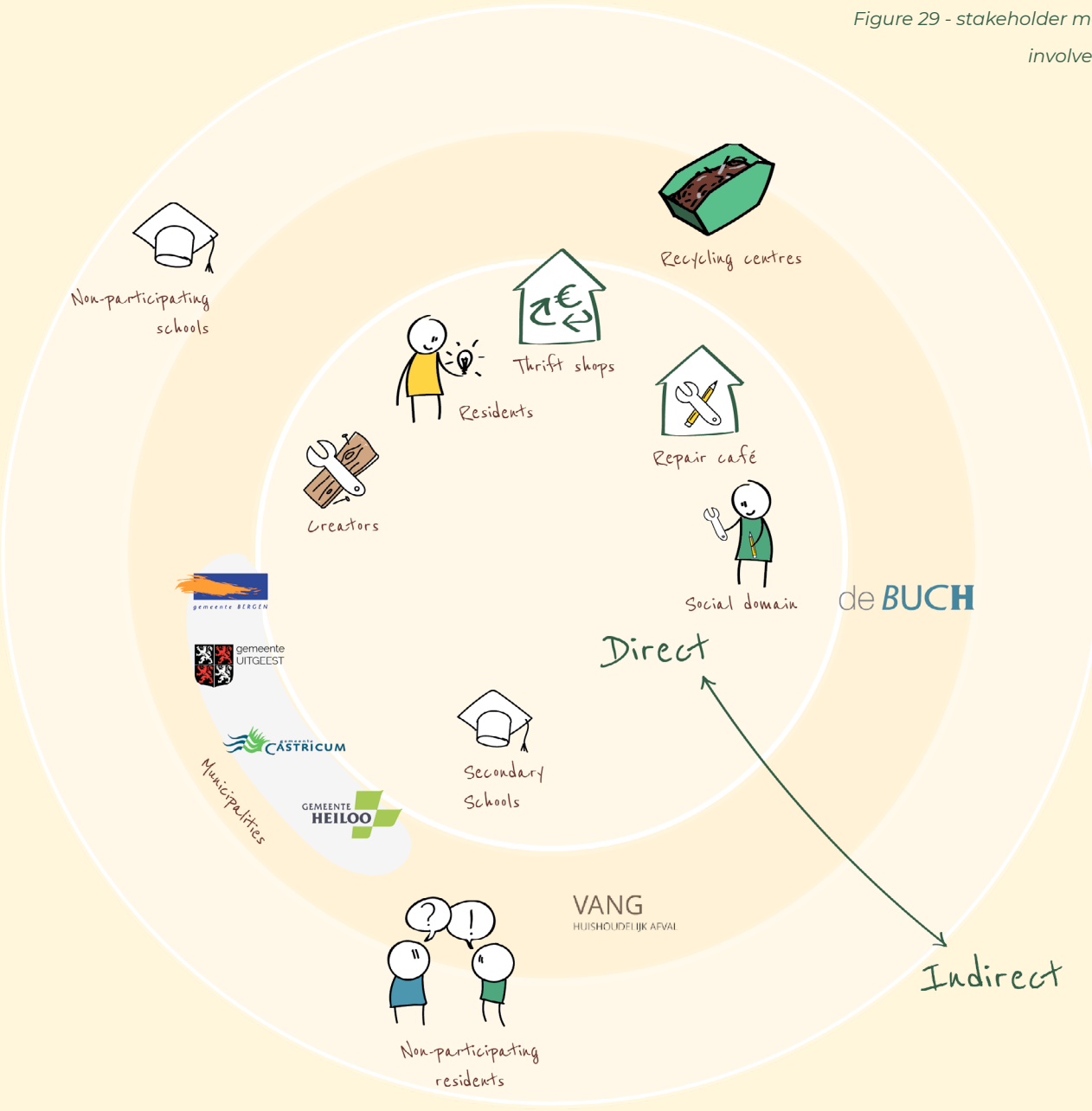
Figure 29 - stakeholder map of the involved parties

II. Define

CHAPTER 9

Motivations, obstacles and opportunities

In the interviews with the stakeholders and experts, the drive to join, the ambitions and obstacles, and the needs were discussed. The most important insights are coverd in insightcards, and can be found in appendix A6. This chapter sets out the different themes that come forth in motivations, the obstacles that are run into and the opportunities that come from those obstacles.

9.1 Motivations

Why do residents and entrepeneurs want to participate in a circular centre?

THE GREATER CAUSE

People who want to join the circular transition believe in the greater cause of reducing the residual waste. There is a shared drive to be part of the transition from a linear to a circular economy.

BUSINESS

Businesses who are already circular active see business opportunities in joining a circular centre. For new businesses or non-circular businesses, it is a pioneering area where there are plenty of opportunities to be the first. These businesses see participation as an opportunity to get support in setting up their circular business.

SOCIAL WORK

Within circular businesses, there is space for reintegration projects to put clients from mental health institutes. Thrift shops are always looking out for these types of 'volunteers', and also in disassembly processes there are opportunities for reintegration.

EDUCATION

Schools identify the need for circular education. They can play a role in teaching the new generations how a circular economy and society work. They see opportunities for practical internships or education in the field.

COLLABORATION

As a summary of the themes above, stakeholders would like to collaborate with other parties to exchange knowledge, manpower and space. The workshops in the previous phase showed how quickly interactions are made and expertise is shared.

II. Define
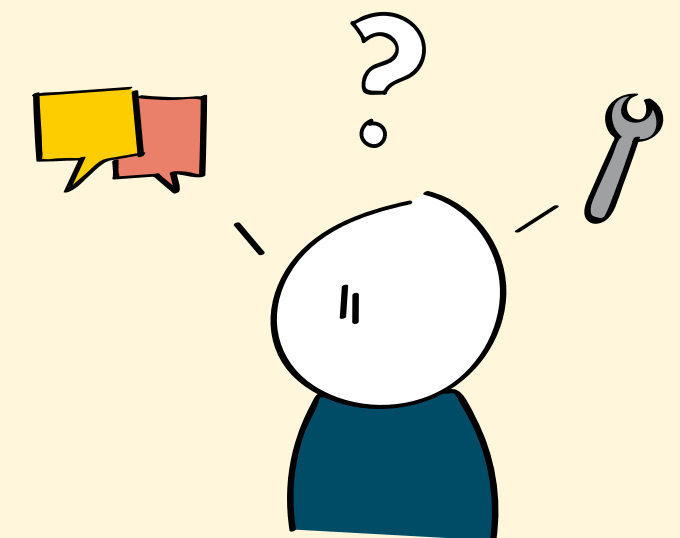
9.2 Obstacles

What obstacles do they run into with their ambitions?

RESOURCE (ACCESS)

Circular material streams tend to fluctuate in quantity and quality. Moreover, currently there is no access to used materials for small businesses. It is unclear how the material streams can be handled, or regulated. How do we make sure that we reuse what can be reused, and repaired what can be repaired?

LOCATIONS AND MANPOWER

For thrift shops there is a shortage in space to expand. For smaller businesses there is a will to sell their products in pop-up stores, but they are not able to arrange that. There is also a shortage on employees, which makes it impossible to grow and start working on better separation and repairing.

AWARENESS AMONGST RESIDENTS

The participants shared that the residents are insufficiently aware of the current circular activity and the need to start acting as a circular economy.
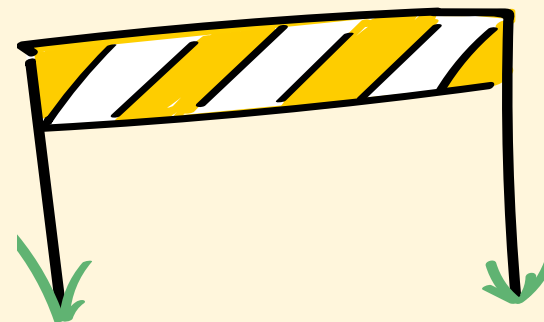
9.3 Opportunities

What opportunities lie ahead for the participants in the context of a circular network?

COMMUNICATION

An important opportunity lies in communication. Through showcasing, circular initiatives can gain in recognition. There can be a clear communication around the material streams: one the one hand to facilitate the businesses in their need to access those materials, on the other hand to create transparency about what can happen to the waste that residents drop off: it might be reused.

FACILITATION

Connected to the opportunity above, there could be a central network that facilitates in circular streams. This same network might facilitate in hosting pop-ups within thrift shops for the smaller businesses, and facilitate collaborations between the different stakeholders.

COLLABORATION

When the network would be rolled out, it would be a place where collaborations can be founded. Collaborations between big and small participants, or between a social domain and an entrepreneur, could overcome the obstacles together.

SUPPLY AND DEMAND

There can be a regulated distribution in the streams between the different businesses. Tools and methods can be shared to make circular activity more accessible.
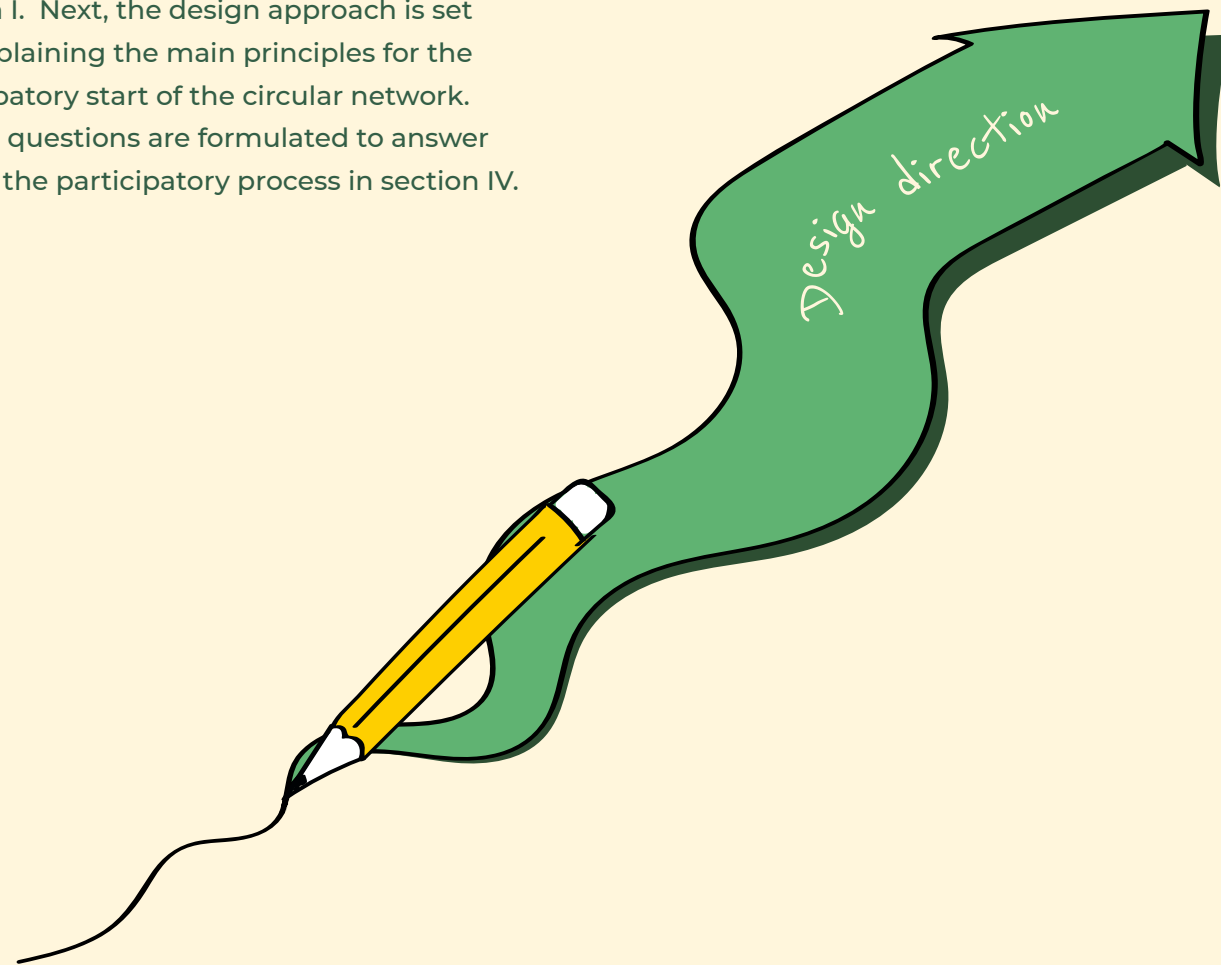
II. Define

CHAPTER 10
Design direction

This chapter describes the design goal as a result of the research outcomes from section I. Next, the design approach is set out, explaining the main principles for the participatory start of the circular network. Design questions are formulated to answer during the participatory process in section IV.

10.1 Design goal

With the initiation of a circular centre in the BUCH, socio-economic initiatives would like to join the transition towards a circular economy. These initiatives are happy to participate in this bottom-up transition, but also ask for top-down facilitation.

There is a shared drive to grow in circular activity and start circular businesses. However, there are multiple obstacles that need to be overcome, such as access to material streams, knowledge gaps, external communication and resources. Therefore, a circular network to be designed should facilitate collaboration and the exchange of knowledge when these initiatives are developing.

The access to the material streams of the BUCH is currently conflicted by policies, which prohibits smaller initiatives to make use of them. In order to make the transition from waste to resource streams, the access to the material streams should be facilitated and communicated as such.

This project explores what tools and methods are required for the socio-economic initiatives to work on their circular ambitions, to become a part of the circular centre and lower the bulky residual waste in the BUCH.

DESIGN GOAL

As the design objective of this project is described in chapter 1 as:

to design a community that connects local socio-economic initiatives from the region to each other and ultimately to the material streams of the BUCH, in order to enable them to reuse those materials and so decrease the residual waste in the region.

For the research through design process, this translates to:

My design goal is to support and connect local socio-economic businesses from the BUCH in their circular ambitions and connect them to the material streams and each other.

II. Define

10.2 Design approach

In the explorative research phase, various approaches for creating change were discussed. This subchapter translates those approaches into design principles that were used as a foundational frame for the research through design phase, as they support the direction and progress of creating change. Next to the design principles, design questions have been formulated to shape the research through design process and guide the designer in designing the network.

DESIGN PRINCIPLES

INVOLVEMENT CREATES ENGAGEMENT.
When the stakeholders are invited to co-create the solution and discuss how they want to get there, they 'own' that solution. Automatically, they are on board with the change. This will support the bottom-up innovation.

EVERYONE HAS A SAY
Everyone that has is affected by the aspired impact is welcome to join the conversation. By involving the people that can immediately join the conversation from that practice, they can point out the difficulties so that they can be dealt with in time.

EMPATHIZE
Empathizing is a design principle that is most important for the facilitator in this project. As a non-local and designer, it is my task to step in the shoes of the participants, understand their drive and be able to design a solution that suits them. Empathy is also about taking the participants with you during the design process, which is also key in this project

OPTIMISM EMBRACES POSSIBILITIES
In the Appreciative Inquiry it already shows: Optimism is the thing that drives you forward. Translating a problem-focused assignment into a chance, allowing the people to share their ambitions. Optimism is also about being happy about small changes. The research phase showed the difficulties around the recycling centres: maybe for not is not possible to connect to their materials. But still, already setting up the network might be the start! Optimism is embracing possibilities.

DESIGN QUESTIONS

Throughout the process of designing, multiple design questions will be researched and answered. These design questions are based on the obstacles and opportunities of chapter 9.

D1 - Shape: How can the design get shape in the BUCH?

    D1a How should the design be visible in the region?

    D1b What touchpoints can be identified?

    D1c What interventions are needed to shape the design?

D2 - Maintenance: How can the network continue after this project and stay vital?

    D2a How can we involve new parties?

    D2b How can we create connections?

    D2c What roles can we define and how do we divide them?

D3 - Collaborate & Facilitate: How can the network operate and serve it's stakeholders?
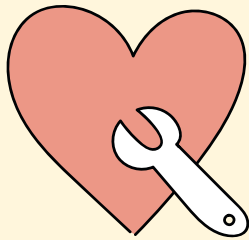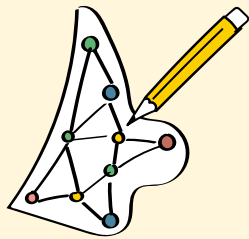
    D3a How can we share knowledge?

    D3b How can we shift from dream to action?

    D3c How can we connect parties that want to work together?

D4 - Create: How do we create interaction between the network and materials?

These design questions are tackled during the research through design process in section IV.

III. DESIGNING A CIRCULAR NETWORK

Section I described the literature and field research that has been executed to answer the research subquestions, followed by Section II, defining a design direction based on the research outcomes. In the design direction, design principles and questions (with design themes) were formulated to guide the process of designing a participatory project.

Now it is time to start setting up the participatory approach, designing the start of a network. Building on the design principles, a list of requirements is formulated to create the network with. In the following chapters, the setup for the approach is explained, after which it is immediately performed. Over the course of the participatory process, the design of the network grows and eventually, after finishing the process, it is evaluated and translated into a final design that includes a roadmap to start a circular network, based on the process of this project, and a design proposal for a circular network in the BUCH.

Project introduction

Vision from the BUCH

Research question

How can socio-economic initiatives be enabled to connect and support each other and decrease the residual waste in the BUCH?

I. Exploratory research

Literature and field research

The context of circularity and waste is explored and knowledge on starting a circular community is gathered.

II. Design direction

A design direction is defined to guide the design process of this project. A list of design questions and requirements is the result.

Design questions

List of requirements

III. Research through design

Building on the design direction and requirements, a design will be made during a research through design process.

Set-up

Designing the process

Carrying out

pre-phase   1.   2.   3.

Research & Analyse

The process will be analysed and learnings will be implemented in the final design proposal

IV. Final design

Based on the outcome and iterations of the research through design process, a final design is presented.

Updated list of requirements

V. Reflect

Finally, a reflection on the project is written.

III. Design

CHAPTER 11
The research through design process

As one of my personal ambitions for this project was to set up a participatory process with the stakeholders, the insights from the research phase were used to create a four staged process of community building. This process is designed and carried out in a collaboration between me and se.lab, who wants to use the workshops as a breeding ground for circular business initiatives.

The goal of this participatory community building process is to reach the design goal: to enable the local socio-economic initiatives to create joint circular action to connect to the material streams and each other. It must be said that the phases of the process were designed between every step, and every prior step gave insights and prospects for the next step. This made me able to adjust the process

to the needs and ambitions of the stakeholders.

Throughout the process, I facilitated all the creative elements that include sticky notes, discussions, as I explored the role of facilitator and whether it could be a civil servant or another stakeholder. One person from se.lab hosted the sessions, welcomed everyone and closed the session as a civil servant would otherwise do. There were civil servants present at the sessions to experience the new type of interaction with participants. Between the sessions, a survey was held to collect the data on how it was experienced by the participants and what could be improved for the next sessions. Every session begins with a recap of the previous steps.

11.1 Defining the participatory approach

Based on the insights from the exploratory research, the following requirements for the participatory approach have been formulated:

1. Participants should be involved from the start

2. Participants should be able to create collaborations by themselves

3. Every party involved should somehow be connected to a socio-economic activity

4. Big and small parties involved should help each other

5. Shared ideology should form the basis for collaboration

6. Someone's interpretation has value

7. The facilitator only has right to connect and inspire, not dominate the conversations with explaining

8. The sessions should create change by generating new meanings to ideas or agreements in collaborations

THREE LEVELS OF DESIGN

The research through design takes place in three levels of design, following the O4C approach (Morelli, e.a., 2019), see figure 30. In the whole process, this levels are connecting in a facilitating or resulting role. The second level, infrastructuring, is a facilitating level that holds tools and methods that facilitate the first level, value in use. In this level, the users and participants are creating value with the help of the formats made by the designer. Finally, the designer uses the input from both levels to design in the third level, ecosystem. In this level, the network becomes visible. The interaction between the levels are discussed in the following chapters, and can be seen in figure 31.

Figure 30 - The three levels of design are indicated by these three icons, fLTR: Value in Use, Infrastructure and Ecosystem

III. Design
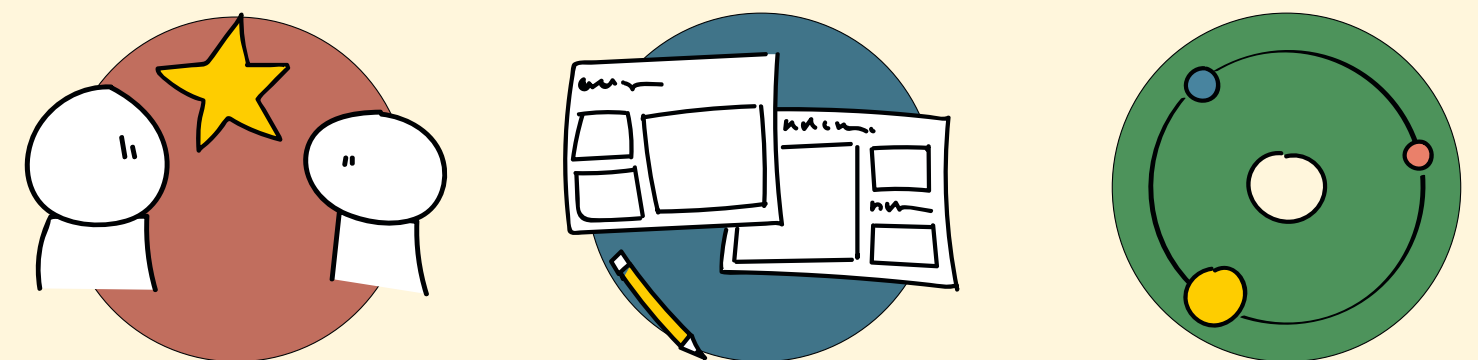
THE OVERALL PROCESS OF THIS SECTION

The four phases that are identified and discussed in the coming chapters are merely the beginning of a sequence of workshops, gatherings and other activities that (will) take place within the community of socio-economic initiatives. As the design goal is to enable the stakeholders to collaborate and connect to each other as well, this is one of the main drives for the workshops. All parties are involved from the start, as in the first phase a call for participation is placed in the

region and other known interesting parties are invited. In this pre-phase, a call for participants, stakeholders are interviewed and brought together in a creative session. The pre-phase took place during the research part of this graduation project. The first phase, the start of a network, a first workshop with all participants is organised to map out the possibilities and influence of the network. In the second phase, Let's get to work, a second workshop explores possible collaborations and in the third phase, the design tools for the community are being defined through a survey and iterated through a discussion group.

MY ROLE AS FACILITATOR IN THE PROCESS

During this project, se.lab and I will facilitate the process. Eventually, it is possible that a civil servant will be included in the design as initiator / supervisor for the designed network. As I am doing this assignment for the municipality, my role as facilitator can

be viewed as a substitute civil servant, or at least, I could be perceived as such by the participants. However, as a designer, I am also an anonymous party that the participants can share their frustrations with as well.

Over the course of the workshops, I will reflect on the role of facilitator and determine if a civil servant could take up that role and how that would look, in the continuation of the project.
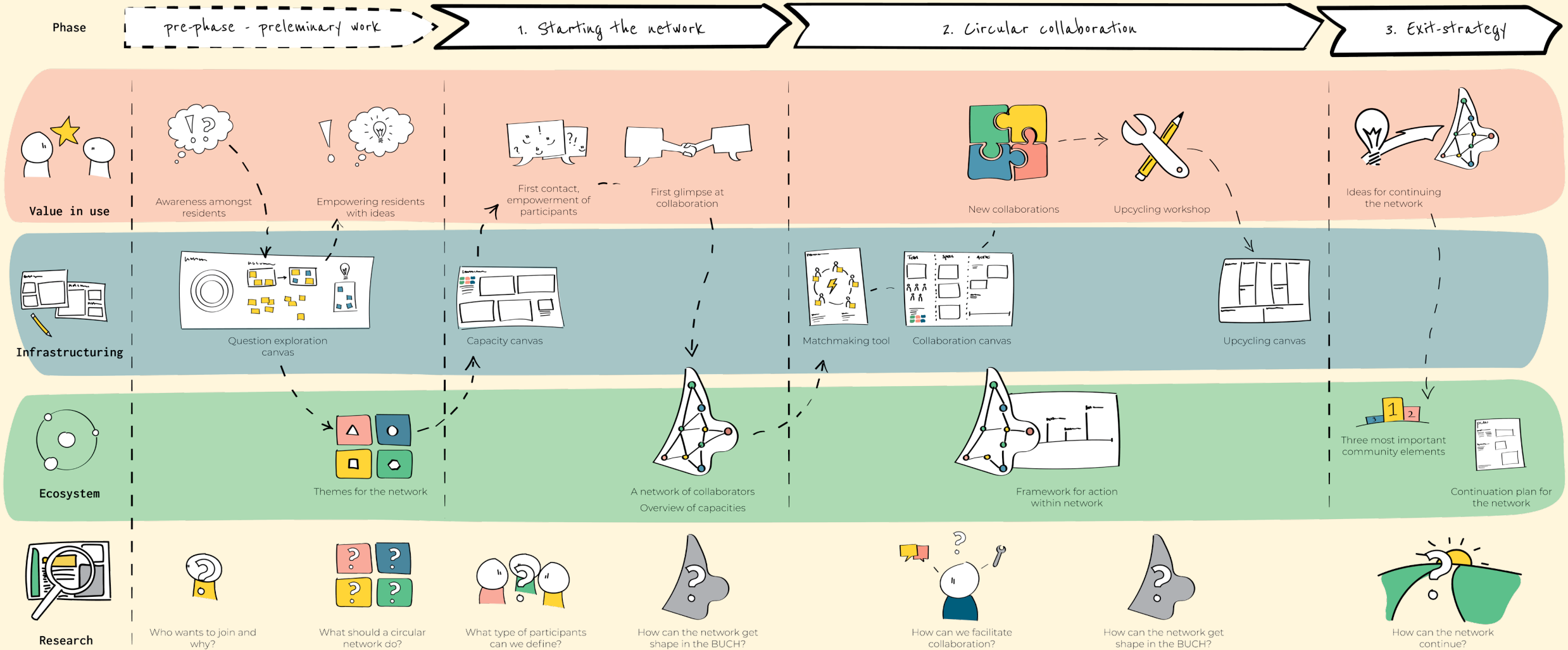

Figure 31 - proces visual of the research through design approach, including the three levels of design.

CHAPTER 12
The prelimary work

III. Design

The pre-phase started off early in the project, in the first weeks where stakeholders and potential participants for the project were mapped. These stakeholders and participants are crucial for starting a community and achieving the goal of decreasing residual waste by creating circular initiatives. Together with the participants, clear themes for the project were identified.

An essential part of the objective of this project is to connect the various potential stakeholders and participants to the material streams. However, one of the key insights in the exploratory research was that merely connecting them to material streams is solving a problem, but connecting to each other creates space for ambition and creativity. Therefore, two questions are raised.

1.   Who wants to join, and why?

2.   What themes should the interaction between the stakeholders be about, what problems do they have that they could tackle together?
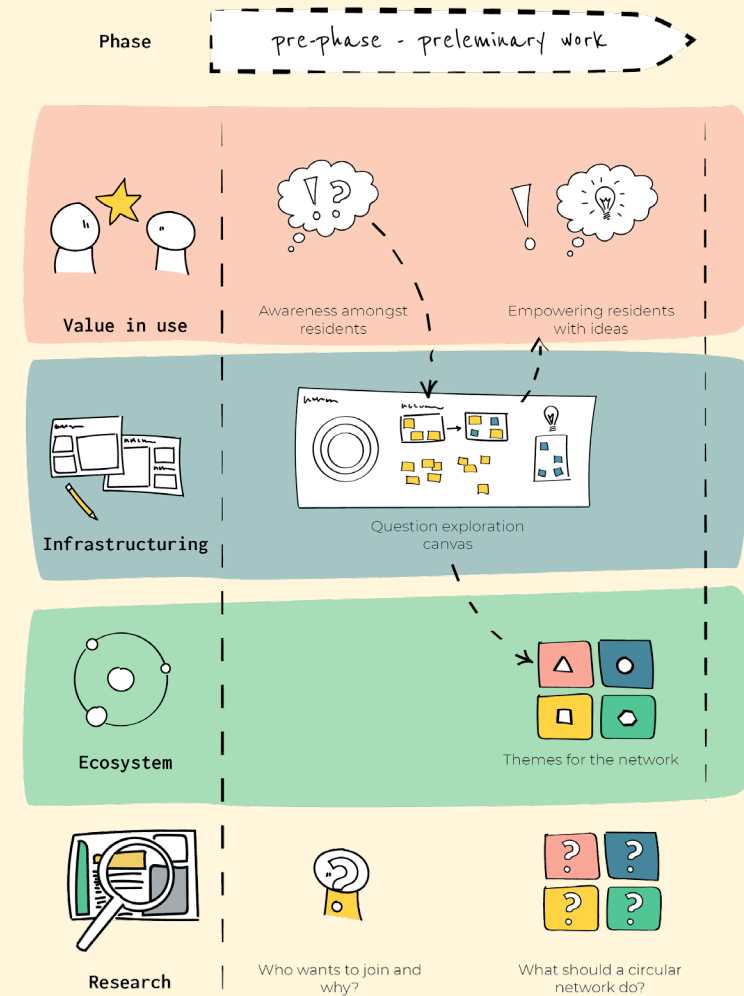
Figure 32 - Overview of the design activities and results in the pre-phase

12.1 Who wants to join a circular network?

The first question finds its answers in two ways. In collaboration with the municipality's communication channels, a call for participants (see appendix A1) was set up, and placed in every local newspaper, and on forums of local institutes. Next to these channels, some stakeholders and parties were already known at the municipality. These parties are approached through direct mailing.

The parties that were already known at the municipality are thrift shops that wanted to participate in the circular transition of the region, schools that are already connected due to the circular education program and a few residents who have shown to think along or want help from the municipality. As from the schools and thrift shops is known that they want to join, they only received an invite for the kick-off session of the project.

SETTING UP AN OPEN CALL

The goal for the open call is to learn who wants to share ideas and visions about circularity in the region, and find new participants for the project. Therefore I did not distinguish yet which party to approach or which respondent

to work with. Every respondent to this call can be interesting for the project. As long as the respondent represented a party that could have a play in (setting-up) a socio-economic (circular) initiative (requirement 3). Following requirement 1 and 5, the open call starts with a question that taps into the ambitions of the reader. The feeling of change is an important feeling that has to be shared by the participants. At the end of the open call, examples are shown of inspiring circular initiatives, to show the aspired possibilities and trigger the reader.

A VARIETY OF RESPONDENTS

A wide variety of residents and entrepreneurs responded on the call. As the call was posted in the local newspapers, multiple residents replied with ideas, such as connecting schools to makerspaces and recycling centres, a platform that facilitates supply and demand in materials and products, to avoid the policies around recycling centres. The enthusiasm of response showed that the residents who really care about the circular transition are active in sharing their ideas and vision in order to boost the transition.

III. Design

ELABORATED CONVERSATIONS

Every respondent was invited for an elaborated conversation where there was more space for in depth sharing of ambitions, ideas and visions. At first, these elaborated conversations were meant as an intake interview for participating in the workgroup, but this plan changed over time as the interviews showed a clear division between residents with interesting ideas and visions, and entrepreneurs that wanted to actively participate in changing. As this insight created a division between the stakeholders that are interested for a potential circular community and regular residents, I set up a Problem Exploration session for the latter group. This session explored the possible themes for the participatory project and will be discussed in the next subchapter.

After all the conversations with respondents, I made an overview of possible stakeholders and their ambitions, needs and thresholds. This overview is discussed in chapter 8 as part of the design direction for the participatory project.

12.2 Exploring the problem situation

As the elaborated conversations showed the distinction between residents with ideas and the will to think along, and (starting) entrepreneurs and initiatives that can join the participatory process, the first group was invited for a creative session that further explored the problem situation. This creative session is already discussed in chapter 7.2, but shows an important role in the theme formation for the further process and is therefore shortly repeated here as well.

DEFINING THEMES FOR THE PARTICIPATORY PROCESS

The goal of the problem exploration was to get the most out of the responding residents, show them that their ideas can be used in the project, and most importantly, to answer the second question of this chapter: What themes should the interaction between the stakeholders be about, what problems do they have that they could tackle together?

The session gave the residents the possibility to air their ideas, share their vision and think along with the project. During the session, we set-up a stakeholder map to have an understanding of the context. A current and desired situation sketch enabled the participants to shape their vision for a circular BUCH region, and finally design challenges were formulated. The session brought out four themes, which are included in the requirements for the participatory project: Communication, transparency around material streams, facilitating collaborations and an equal connection between small and big parties.

Figure 34 - computer setup during the question exploration session.

12.3 Concluding the pre-phase

The pre-phase carries that name as it was a phase that took place before I officially started the participatory process of designing a circular network. However, the activities that took place before said start generated a valuable overview of stakeholders, participants, insights on important themes and created a first glance on the possible activities and touch points for a circular network. The Open Call and the following elaborated conversations learned how to involve new parties, and the creative session gave helpful themes to explore further in the participatory project. After this pre-phase a whole list of participants has been set-up in collaboration with se.lab. With the gathered knowledge and this list, the first phase of setting up a circular network can be organized, onto the next chapter!

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III. Design

CHAPTER 13
Starting a circular network

In phase 1, a group of stakeholders is invited to join the kick-off of the participatory project. In an interactive session they are introduced to the municipality's ambition for a circular centre and a participatory exercise guides the participants in sharing their own capacities and ambitions. In this chapter, the design of the session and its results are shared.

Part of the objective of this project is to map out the various interested parties, what they bring to the table and what they want to get out of it. While the pre-phase touched that lightly, the kick-off session is used entirely to establish this overview of participants. Again, two questions are raised as leading themes for the phase:

1. Who is joining (including the questions what their circular capacities, ambitions, thresholds and needs are)?

2. What touchpoints for a circular network can be defined?

The first question covers the interaction between the various stakeholders that are present in the session. By answering this question, an overview can be created of the possibilities for a circular network in the shape of activities and stakeholders. The second question supports this, by mapping out how the network of participants is spread out over the region. In the next subchapters, the design, results and conclusion of the session will be discussed.
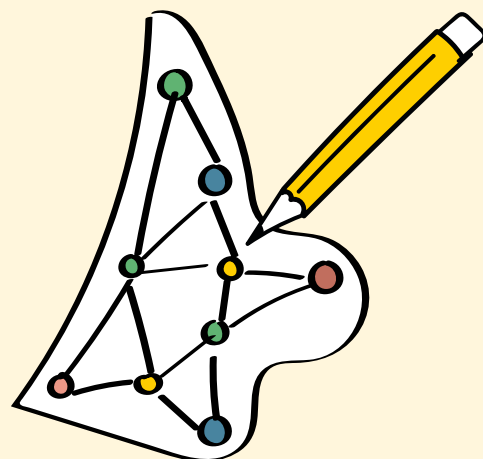
13.1 Design of the phase

At the kick-off session, most of the participants are not known with each other. In order to facilitate a creative and inspiring session, proper tools and preparation is needed. Designing the session starts with setting up a work canvas in which the setup of the session and possible worksheets are created. Next, a script for the session is written, in which the time-slots are defined and every part of the session is explained. Finally, the work canvas is updated based on the script.

SETTING UP A CANVAS
The first step in the preparation is setting up a digital canvas. I used Mural as it is a very simple tool that can be used by most people. Working in a digital canvas stimulates conversation and interaction in digital meetings. However, while creating the canvas it has been in mind that it could be used in regular physical sessions as well.

For setting up the canvas, the design question was: How can we let the participants share their ideas, listen to each other, and support each other in reaching their ambitions? This design question also answers to the question what type of participants are joining, and how the potential network would spread out over the region. As a starting point, the canvas has been divided into three sections:

1. Ambition
2. Capacity
3. Thresholds and needs

These three steps are based on questions from the Road to Success template from Zeewaardig (IMAGE FROM THAT TEMPLATE):

1. What are your current capacities?
2. What is your ambition?
3. What thresholds do you see towards that ambition?
4. What do you need to overcome those?

The idea of walking through these steps is that the participants get to know each other and

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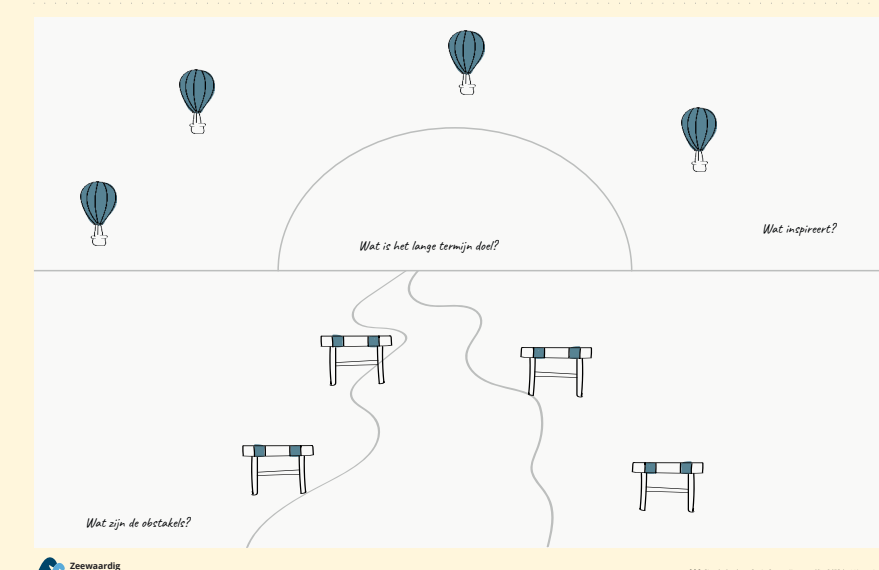
Figure 35 - Success horizon format by Zeewaardig Service Design. Its elements inspired the canvas designed for phase 1.

III. Design

start seeing the opportunities to help each other in their circular ambitions or activities. On the other hand it maps out the circular activity and ambitions throughout the BUCH region. In that way, the design answers, D1a (how should the design be visible in the region), D2c (what roles can we define and how do we divide them) and D3c (how can we connect parties that want to work together) are researched.

WRITING THE SCRIPT

After the first draft is set for the work canvas, a script is set up to further plan the session. In this script, there is space for other facilitators to

comment on how something should go down or if someone wants to present something. The municipality wanted to start with an introduction of their project and ambitions. The expectation was that their would be 20+ participants, and the plan was to have subgroups of about 5 participants from the same region and from different backgrounds. This called for extra facilitators, which were flown in from both the municipality and se.lab. Two days before the session, the script is finalized and walked through with all facilitators and presenters. The complete script can be found in appendix B3.

THREE LEVELS OF DESIGN

The design for this phase can be seen in three levels, according to the Open4Citizens approach (Morelli e.a., 2017). The first design that is created before the session has started is in the second level, Infrastructure. The work canvas has been designed to test in the session and to be improved based on the use during the session. By iterating this way, the canvas can be used immediately by other initiatives that want to start a community or network. The intended result of the canvas is part of the first level, Value in Use. If the canvas works well, the participants will feel part of the group and experience mutual empowerment and a first glimpse at collaborating.

Finally, the ecosystem level of design is embodied in the processing of the results of the session. Based on the insights and discussions from the session, a first overview of the network of collaborators is created as a first design completion for the municipality.

Sharing your circular abilities so people know who to approach for what

Ambitions form the basis for a vision for the network

What do you need from other stakeholders? How can they help you?

What stops you?

Figure 36 - the ability canvas, from sketch to worksheet. Goal and ambition of the group has been added later.
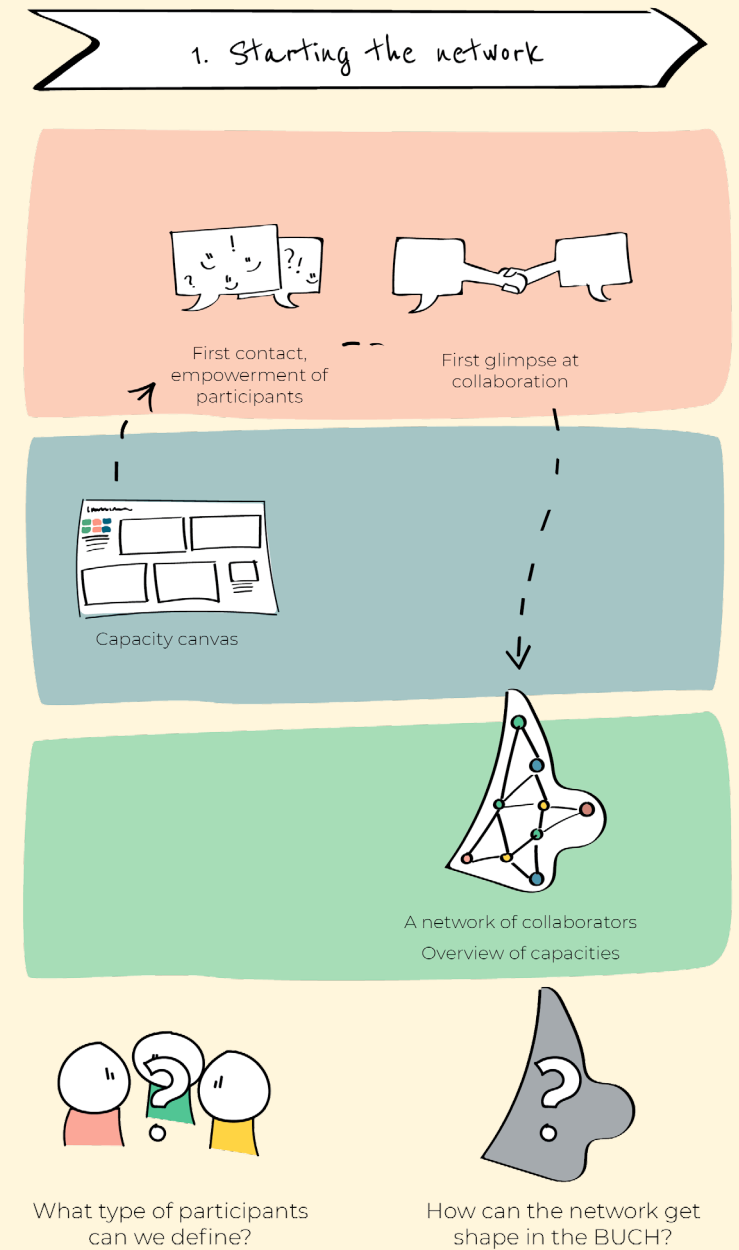
Figure 37 - Overview of the design activities and results in phase 1

13.2 Results from the session

The kick-off session for the circular network took place on the 28th of April and hosted 26 participants. In this subchapter,

A FRESH COMMUNITY

In the first session with the stakeholders, a big variety of parties was involved. From social domain to thoughtful residents, from schools to local craftsmen. The goal for this project is to involve all parties within the BUCH that can contribute to the theme of reusing materials and products in the region. Based on the outcomes of the first workshop, the attendees can be divided in the following sections:

THRIFT SHOPS

Noppes has a workshop, in-store retail, webshop, disassembly possibilities & access to residual flows (their own). Thriftshops like these already have an administrative organization and the necessary locations. They can form a strong basis for hosting or facilitating new smaller businesses in starting or selling their products. Next to Noppes, Muttathara and Reakt (social domain) have stores where they sell old or upcycled products.

SOCIAL DOMAIN

GGZ NHN (Noord-Holland Noord) and Reakt both have workplaces where their clients can follow daytime activities. Both GGZ as Reakt have experience with creating products with their clients, but only Reakt is familiar in working with used materials, as they make furniture from old pallet wood and disassemble old bikes for Roetz.

EDUCATION

High school Inholland is looking for suitable cases for students to offer project-based research and advice.

An idea is to let them create an annual planner/calendar with events in which education and sustainable entrepreneurs share results, form networks. A good educational partner can be agenda-setting and keep the network alive.

Horizon College is another school in Alkmaar that can be a supplier of creative students for the workshops or styling of in-store corners such as in Estafette Leeuwarden (see appendix A4).

SMALLER BUSINESSES AND CREATORS

There are multiple local makers, like Studio Hoed and Neighbourwood, who make products with local wood. What might be interesting is the question whether you could also scale up by teaching other people how to make your products. Could you also learn to use other types of wood? Collaboration with production locations (GGZ, social domain) can be interesting for this type of makers.

Next to these different types of stakeholders, this session also uncovered the type of material streams that are possible for reuse:

Wood – Three local creators are focussing on designing and producing products from reused wood and are open to the possibilities of upscaling this in the network. At Reakt and GGZ they are familiar as well with woodworking and have the facilities to do so.

Textile – One local resident wants to start a business in repairing and upcycling textile products. Two other local residents are familiar with sewing and could join.

SHARING AMBITIONS AND THRESHOLDS

After the collective start of the session with an introduction, the group was split up into four separate groups, based on where they are located: the regions Bergen, Uitgeest, Castricum and Heiloo. In these groups, the ambitions and needs where shared, which gave an interesting overview of the ambition of the network:
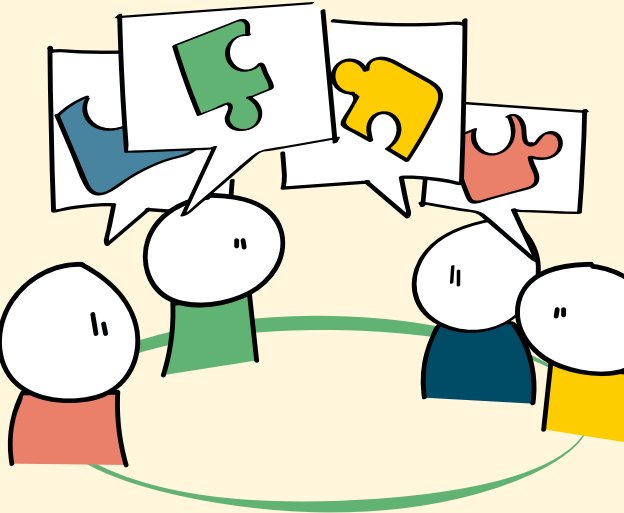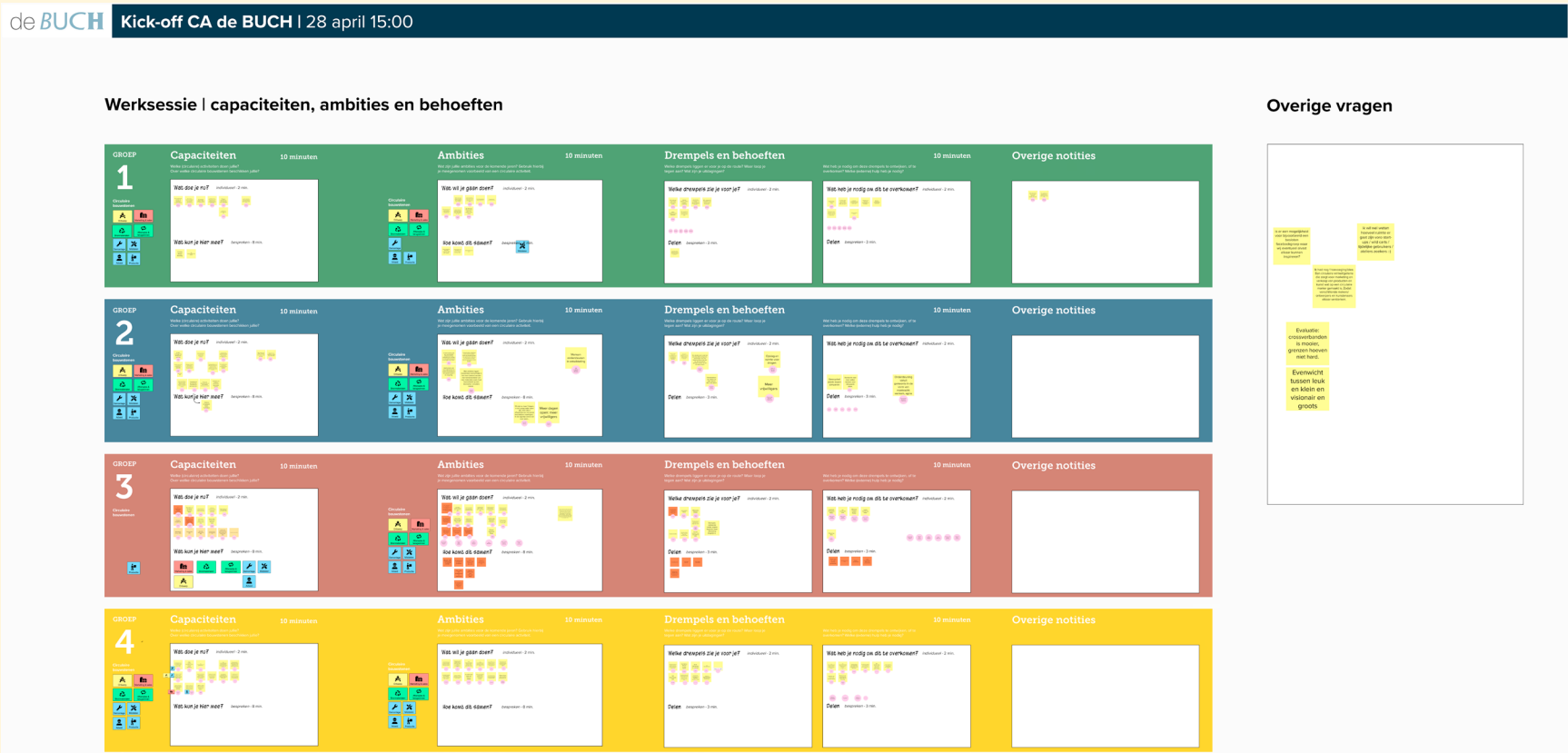

Figure 38 - screenshot of the Mural in which the kick-off session was held. The complete canvas can be viewed in appendix A4.

III. Design

EDUCATION

Schools have a giving and receiving function. They provide knowledge and 'manpower', and receive practical training. They are joining at the start to show their face, but want to be included later in the project to see if their students can fit in the new initiatives.They provide knowledge and 'manpower', and receive practical training. They are

THRIFTSHOPS

Cycles see a central role. They want to comply with this, but are looking for manpower and space.

SOCIAL DOMAIN

The social domain offers manpower in the form of reintegration patients. There is a demand for reintegration places, and a mutual demand for more volunteers.

COLLABORATION

There is a will to work together and inspire, motivate and support each other

Sparring and brainstorming, and forming action points is important.

COMMUNICATION

Promotion of circular activity is important.

There is mainly a demand for this, which could be answered from the network.

MAKE AND REPAIR

Repair cafes can be a learning place for students and consumers. The aim here is to revaluate products.

Various makers (including schools) want to respond to the material flow. For this they want a collaboration with waste processing with logistics around the materials.

MAPPING OUT THE NETWORK'S CIRCULAR CAPACITIES AND AMBITIONS

The circular building blocks that suit the participants' activities and the output from the different groups was analysed after the session to find out how the network is active throughout the BUCH area. This overview is created and can be seen in figure 39. The visual is part of the designs for this phase and can be used by the representative from the municipality to communicate the possibilities of a circular network in the BUCH.

In the weeks after this session, the overview has been used multiple times in the city councils and so proved its worth to the project manager.

Figure 39 (right) - an overview of the networks stakeholders, spread out over the BUCH area with their abilities and ambitions.
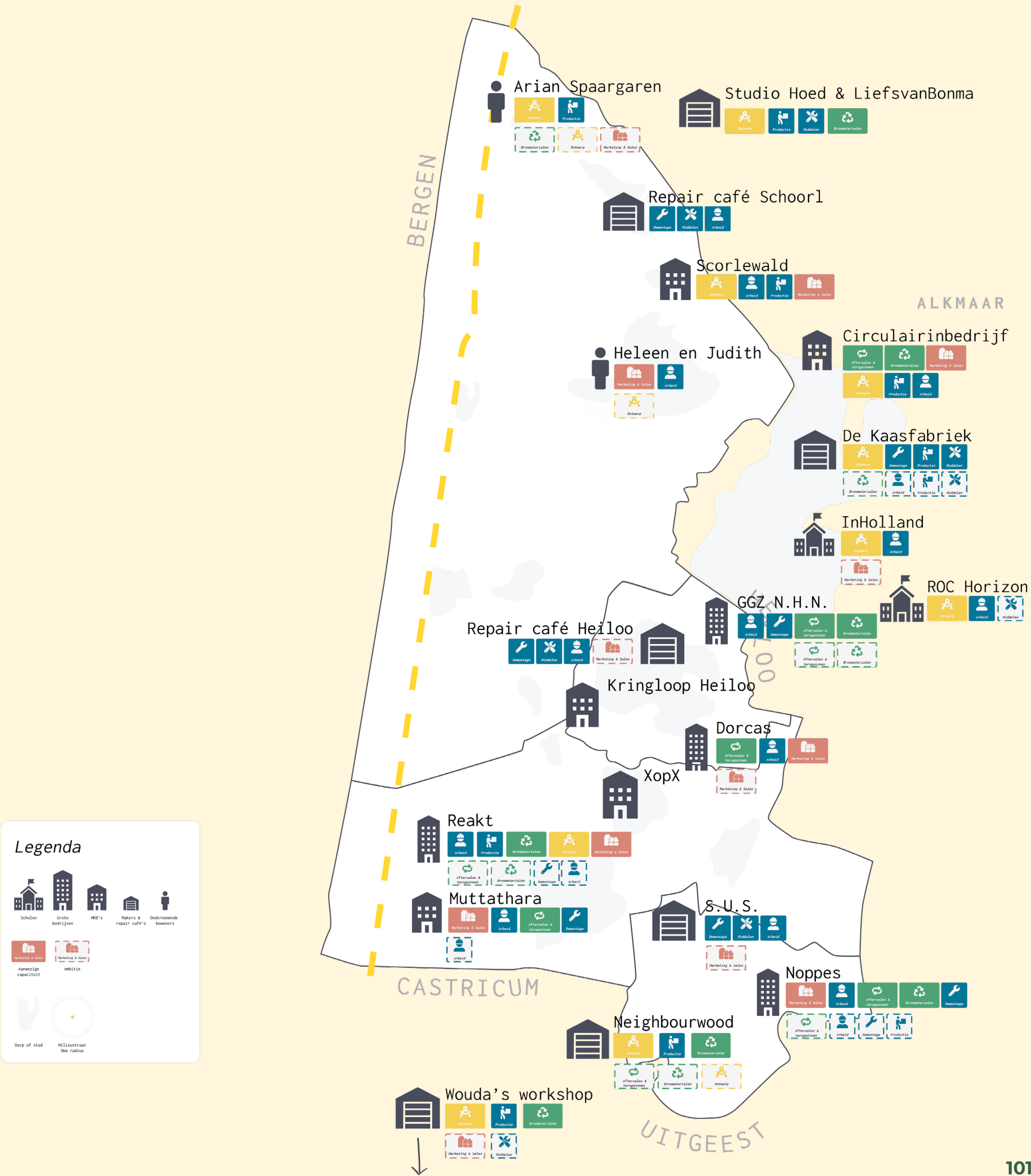
13.3 Concluding phase 1

STARTING THE NETWORK

The group of involved parties is very diverse and shows a unified ambition to be part of a circular movement in the BUCH area. Some of the participants are well established businesses or initiatives, whereas others are just starting their business or only have the ambition. This balance follows requirement 4 and the discussions and insights show potential for collaboration.

There is enough competence for a network that is spread out over the BUCH and there is a need to start acting. A next workshop needs to answer this by creating collaborations and concrete action, in order to keep the project relevant for the participants.

REFLECTING ON THE DESIGN

This phase started with the design of the capacity canvas (andere naam geven?), which served the interaction between the participants, providing them with fruitful discussions and a first glimpse at collaboration. While the canvas was accessory, it was the participants themselves that used that moment for interaction. However, the canvas missed an aspect that turned out to be important: how do the participants view their participation during the project. In retrospective, it turned out that schools for example are not interested in joining the whole process, but want to be invited when there are concrete plans. Their participation is based on deploying students in apprenticeships, and are not able to join the brainstorming about upcycling activity.

Therefore, an iteration on the canvas is to add

an overview of the phases that take place, combined with an explanation of each phase, so that the participants can indicate in which phase they take part. Of course, this might not be a concrete decision immediately, but a point of discussion in the group.

As the session ended with the will to start brainstorming on collaboration, the first thing to design in the next phase are collaboration tools.

First glimpse at collaboration

Ability canvas

First network overview
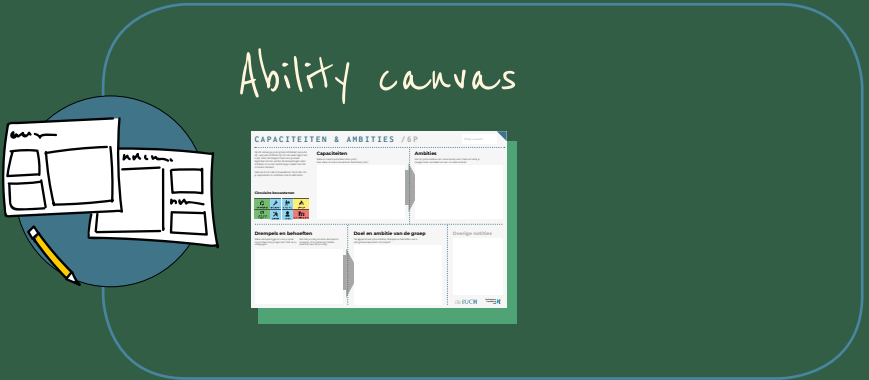
CHAPTER 14
Circular collaboration

Phase 2 turns the will and the ambition from phase 1 into action. During the kick-off session in April, a first glance at collaboration was visible and there was an outspoken drive to start concretize the activity of the network. Therefore, a collaboration worksheet has been designed and used as a tool to create new collaborations. This chapter discusses the designing of the session in the three levels from Open4Citizens (Morelli e.a., 2017).

As a result of the collaboration phase, an upcycling workshop has been facilitated as well, by se.lab. This session is also described in this chapter, including the steps to design for an upcycling session based on the insights from that session.
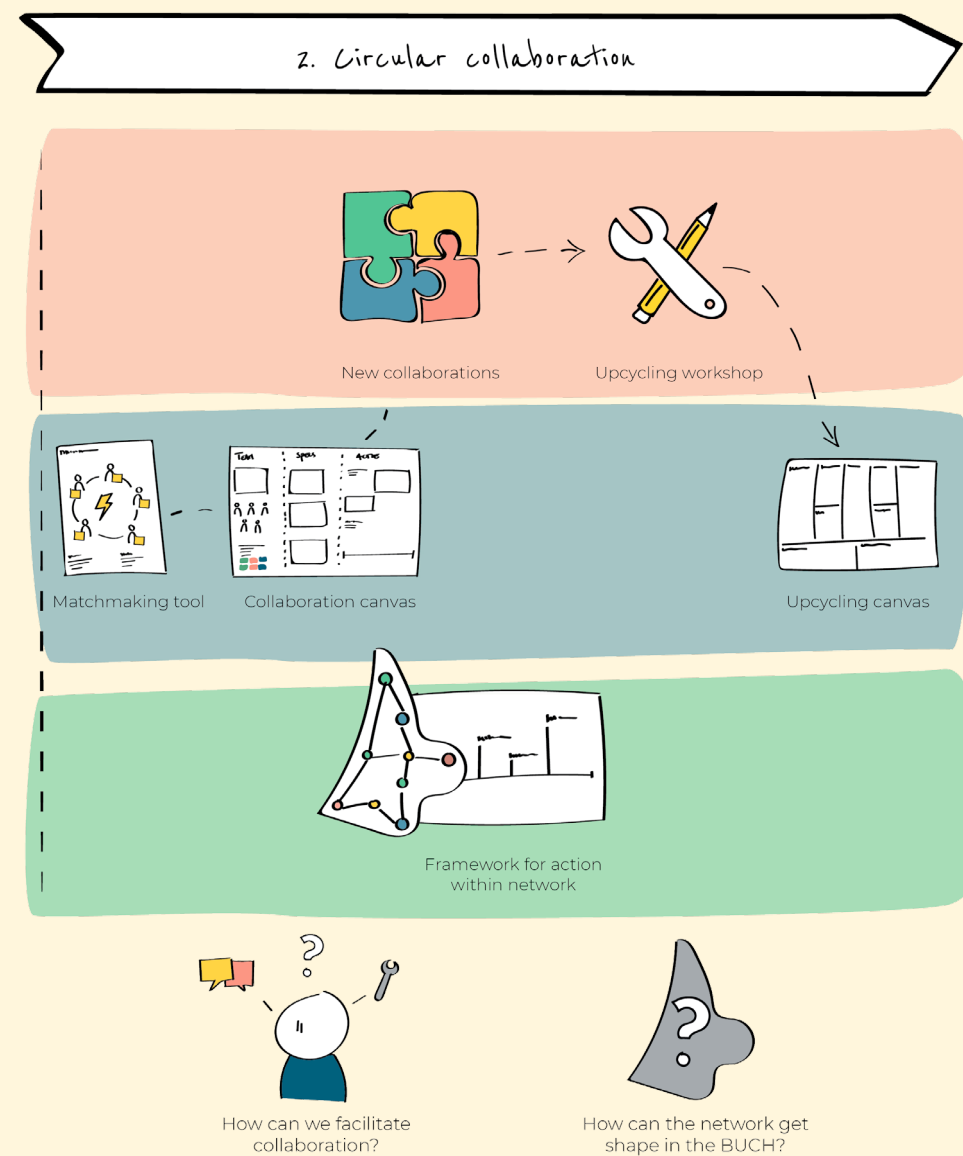
Figure 40 - Overview of the design activities and results in phase 2.

14.1 Designing collaborative tools

The question that drives the design of this phase is how we can facilitate collaboration. In order to answer this question, a collaboration worksheet is developed. The goal of the worksheet is twofold: Testing ideas on answering the question, and creating new circular collaborations within the network.

The collaborations are the second design that come from this session. As the participants will fill in the worksheet, they start to form a collaboration by themselves, thus creating Value in Use. Based on the outcome of collaborations, a framework for action within the network is created.

For the collabs it is first necessary to have matches between participants who can work together. Matches can be made two ways: either by setting them up as facilitator, or by letting them talk together and find out how they can work together. For this session, I chose to work with a combination of both as the first way can be seen as a top-down approach with knowledge from the previous session, and the latter way as a bottom-up approach, guided by own insight. For this combined approach, I designed a matchmaking tool.

ROUND THE CIRCLE!

There are a few requirements for the matchmaking tool:

- Every participant should be able to be part of a match

- Participants should avoid to only go for the obvious

- The conversation should lead to dreaming, then to action

For the first two requirements, the circle shape has been taken as a starting point. With every participant standing on the circle, the first assignment is to think of the person to your right and what collaboration would be possible. This answers the second requirement as it forces to create a match with an appointed partner. The next step is to chose whoever you want on the circle and write possible collaboration ideas for them. This way, the first requirement is answered by creating multiple lines over the circle. After everyone is done writing, the plenary discussion about what is written can be started. This discussion needs a facilitator that guides the topic from matchmaking to collaborating.
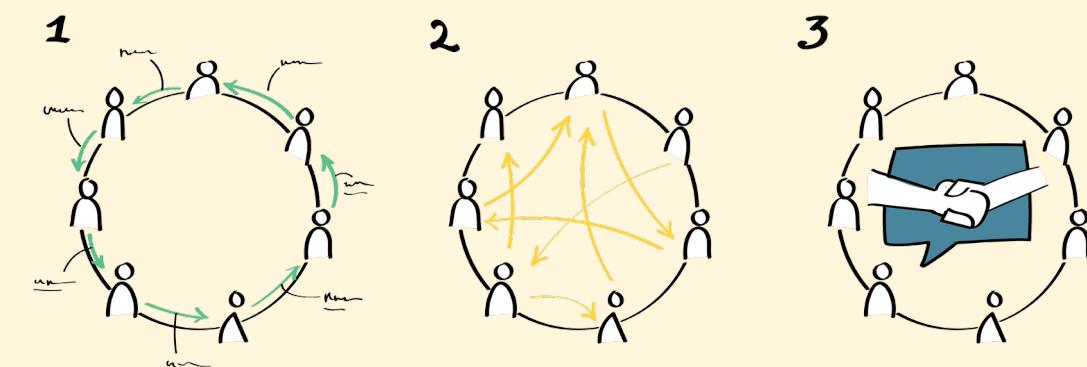

Figure 41 - The three steps of matchmaking in the design for the matchmaking tool

III. Design

THE COLLABORATION MODEL

The next step is to start defining the collaboration. This starts with stating what is known: who is part of the group, what are they capable of and what do they want to achieve. Next, the circular specifications need to be defined, so that it becomes clear to the municipality what type of circular activities are ambitioned in the collaborations of this network. Finally, steps for the coming months should be defined, so that the collaboration would not stop after the session but gets to be continued. These steps create the following structure:

· Team

· Specifics

· Action plan

The team section is very straight forward and includes the members, the goal and the circular capacities of the group. The specifics section guides in formulating the circular activity in forms of materials and how far up the R-ladder it stands. Next to that, locations of activity is mentioned to establish the touchpoints of the network. The action plan starts in a designer's fashion: First the assumptions and questions are drawn up, after which is asked how they would like to answer those questions. Thirdly, they can fill in a timeline of when they will act.

A script was put up for this session as well, which can be found in appendix B6, together with the canvasses. In the session on the 26th of may, the matchmaking and collaboration tools are tested.

Figure 43 - Left: the matchmaking canvas as used in phase 2. Below: the collaboration canvas from phase 2.

Figure 42 - Sketched design for the collaboration canvas

III. Design

14.2 Let's start working together

The network has started, the partners have met each other and ambitions are shared. Continuing after the kick-off session, this phase focused on shifting from ambitions to action plans and let the participants explore the possible collaborations that they can create. Through the matchmaking and collaboration worksheets that were designed for this session, the participants can express their ideas for collaboration and start making plans.

MATCHMAKING

After the introduction of the session, the groups are split up into two subgroups to enhance the conversations. Unfortunately, the attendance was lower than expected, which forced the participants to be part of groups that might not be the best fit. However, in the matchmaking exercise, this challenged the participants to come up with collaborations that might not be obvious, and sparked some interesting ideas for collaborations:

Deploying a mobile repair station at schools

Marije

Textile skills lessons at the schools/ in the studio

Wytske

These ideas stood out, since they are new to this session and haven't been mentioned before. After writing down the ideas, the groups started discussing, and naturally they were guided towards the collaboration canvas to concretize their ideas.

COLLABORATION CANVAS

Since there are two groups, the session outcome was two filled in canvasses. As explained in chapter 12, the facilitators guided the participants through the canvas in order to have a structured conversation with concrete outcomes. The two collaborations that came out of the exercise are:

DE UPCYCLING BROUWERS

The goal of the Upcycling Brouwers is to set up a joint upcycling product line for the BUCH, translating used materials into products with personalized storytelling

MAAKONDERWIJS

Their goal is to increase the awareness around upcycling knowledge and -skills for teachers and students, teaching them to rethink waste into a source of new products.

The completed canvases can be found in appendixes B6 and B7.

ACTION PLAN

The final phase of the canvas, the action plan, was mostly filled in by the first group. They had a clear view on what they wanted to achieve, and were able to formulate concrete steps to go ahead. The second group, education, had more trouble doing so. Their goal was less clear and more broadly scoped. However, the person in charge of circular education from the BUCH was also attending, and she was able to form a new group of participants that like to help in creating new education.

The session ends thus with two exciting directions: enthusiasm and a plan for an upcycling collection, and new personnel and collaborations for circular education.

Figure 44 (left) - Matchmaking canvas filled in. Below - The collaboration canvas filled in by group 1.
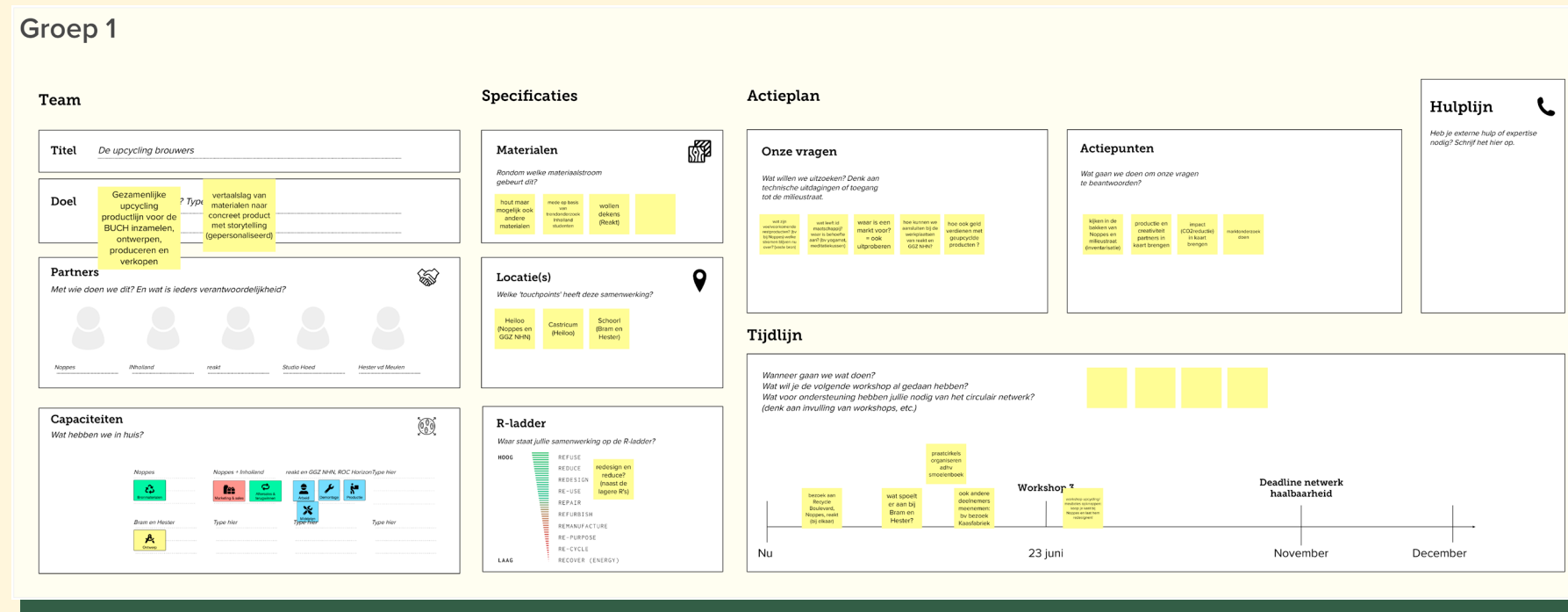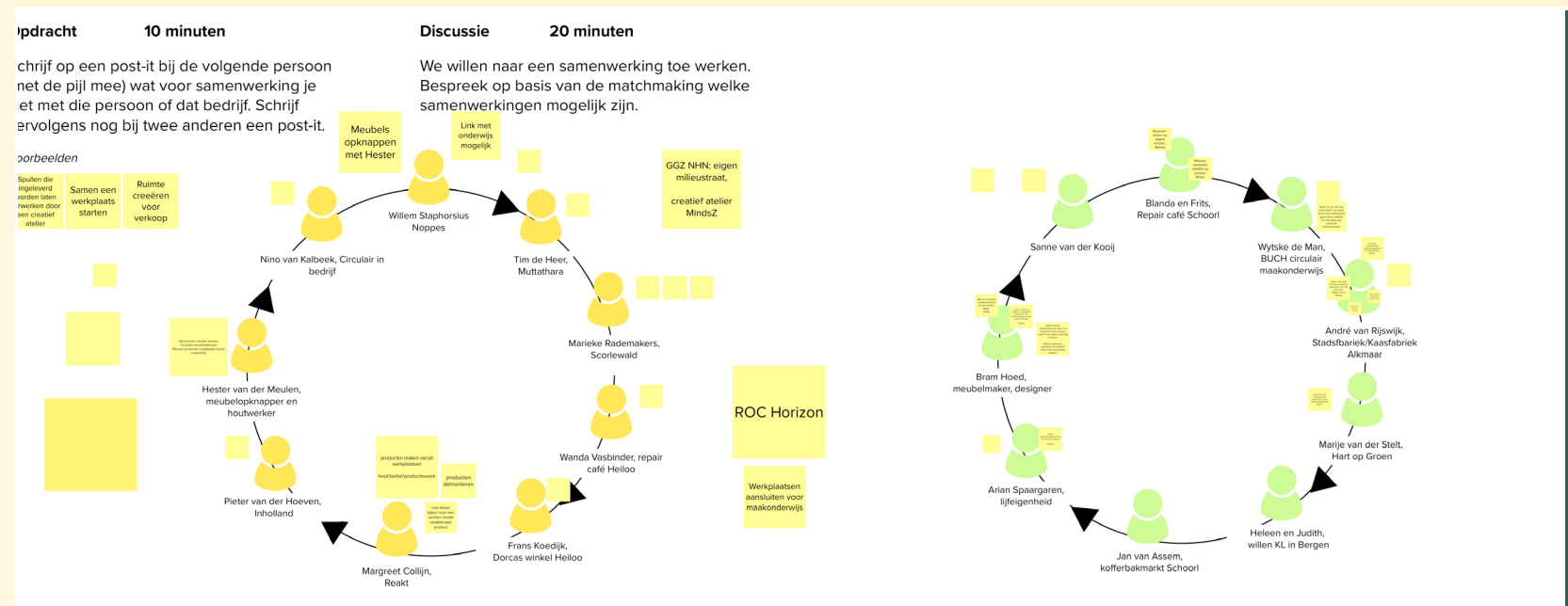
14.3 Upcycling workshop

As mentioned, a few interesting and concrete proposals have been made during the session and afterwards about starting an upcycling collection. This brought up the idea to facilitate an upcycling workshop in July where residual waste from the thrift shops and GGZ, Reakt, can be collected to let the designers try to make products out of them.

As a preparation, the makers could already go by the thrift shops and GGZ to explore the possibilities and select interesting materials. The people from se.lab have experience in organizing these sessions, and they organized the first upcycling workshop. I joined to learn how the participants of the network interact there, and how it might be repeated over the course of the networks' agenda. The upcycling workshop might become part of phase 2 in a final circular network startkit.

GOOD ENERGY, SMALL RESULTS

The workshop took place at GGZ Noord-Holland in Heiloo, and had twelve participants, including myself, se.lab, and the municipality. Se.lab opened the session and gave the word to two designers who guided the rest in designing with the products that the thrift shops brought. A few interesting things were noted here:

- The designers inspired the participants to start with one item and brainstorm and create around that one item.

- Everyone participated: from thrift shop manager to handy resident. This created a friendly environment where there was no difference between big and small.

- A few interesting designs were made (see figure 45), but they lacked circular value as there was no idea of how it could be made in production, or by whom.

- The project manager from the municipality was disappointed by the lack of structure and useful results to continue working with.

To comment briefly on this last point: from the point of view of social circularity, the session was very fruitful. The interactions and vibe between the different types or participants is very valuable and created the opportunity for a entrepreneurial resident to pitch an idea to the manager of the thrift shop. However, I agree that for an upcycling workshop, the session should need more structure to deliver concrete results. Therefore, I will design a worksheet based on the insights I got from this workshop. This design is included in the design proposal in chapter .
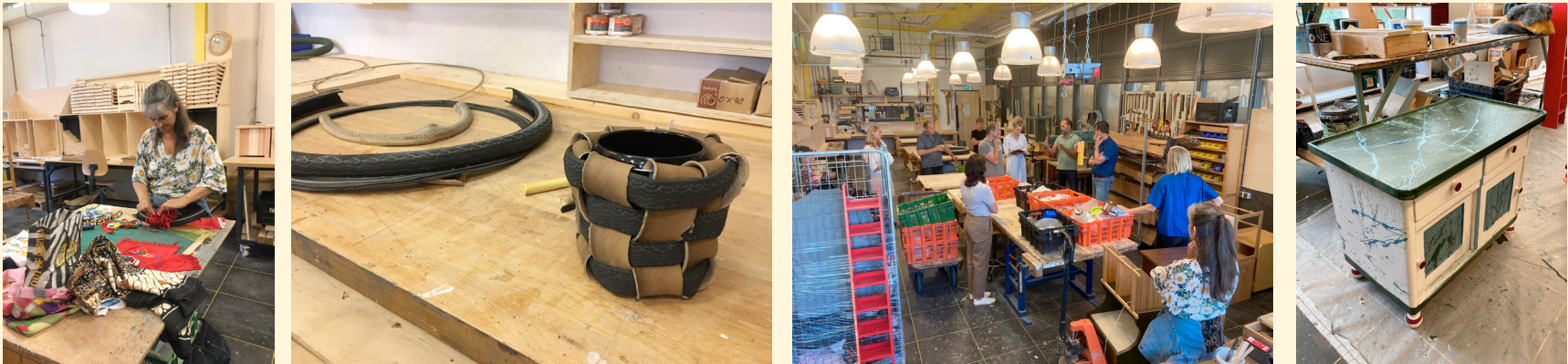
14.4 Concluding phase 2

The second workshop showed how the participants are able to, albeit with some effort, formulate a collaboration and start working together. It stood out that some of the participants are still participating in a passive way, and need help from a facilitator to maintain a constructive conversation.

Besides this participatory struggle, the workshop had a fruitful outcome that gives the network something to look forward to: an upcycling collection. Now that action plans are formulated, it is time to explore what else is needed to construct this community and keep it alive after the graduation project is over.

REFLECTING ON THE DESIGN OF THE SESSIONS

The matchmaking canvas worked really well and provided the groups with plenty of ideas to work with. That is also what was the flaw of the canvas: there was too little time or space to park these ideas. For an iteration, a parking spot for these ideas should be made so that the facilitator can save them and bring them back another time.

The collaboration canvas was quite hard for the participants to fill in by themselves. This probably had to do with the fact that there was no clear role for who leads the group and who should write things down, which would help a group to function. This can be said as the questions were not what was difficult, but more the dynamic of the conversation. Now, a facilitator leaded the group and also filled in the canvasses. As for an iteration, a group division could be made by the team, defining who is in charge of agenda, notating and leading the group. This could help the teams for filling in the canvas.
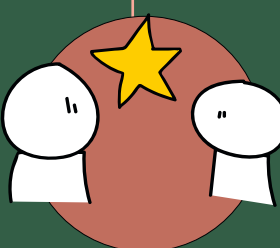
DESIGNING AN UPCYCLING CANVAS

The upcycling workshop that was organized by se.lab and two designers inspired to design a format for upcycling workshops in the future, as being part of phase 2: working together. Important features of this format would be room for creativity, but with structured questions to guide the process into an almost business model like canvas. This design will be worked out in the design proposal.

A visual of the results of this phase can be viewed on the next page.

Figure 45 (previous page) - Impression of the upcycling workshop at the workplace of GGZ Noord-Holland Noord

Results from phase 2

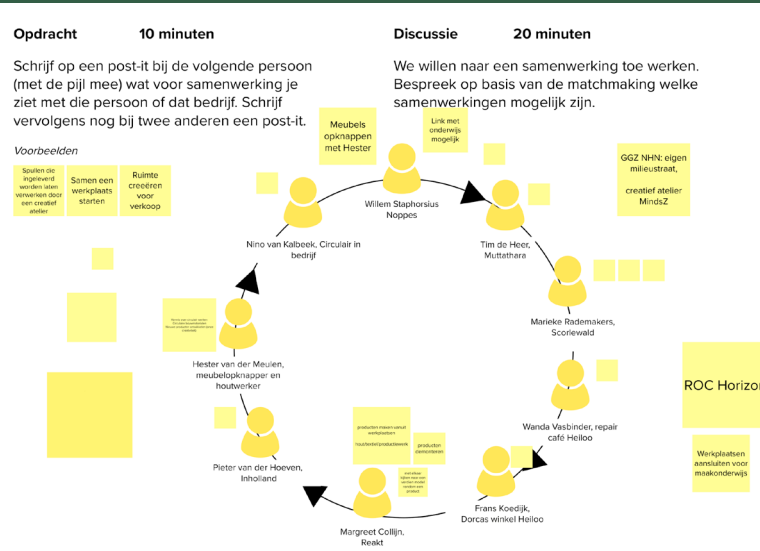## Upcycling workshop

Education collaboration

Matchmaking tool

Collaboration canvas

Framework for action

The framework for action was supposed to be the result of the timeline that was created by the teams. This timeline would guide the network in how to frame the activity in the next months. Due to poor results, this framework could not be created and the upcycling workshop has been launched instead.

III. Design

CHAPTER 15
Exit-strategy

The first two phases have been focussing on the activity and ambitions of the participants, and the question of what they can do as they join the circular network of the BUCH. Meanwhile, the network grows in shape, and it becomes more and more clear how it can manifest in the region. In order to design the network as an impactful community, it needs to have its own tools and plan to continue. In phase 3, the participants are asked how they see the continuation of the network in order to finalize the design of the network in the BUCH, including a few recommendations, and design an exit-strategy for the project so that the network can be continued after this project is finished.
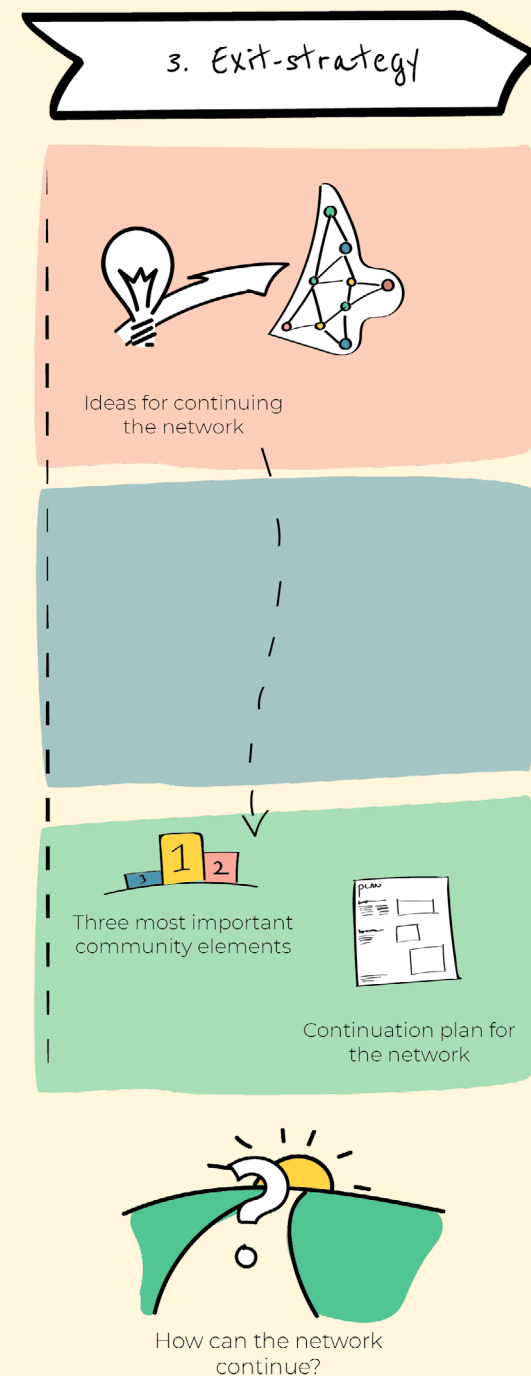

3. Exit-strategy

Ideas for continuing the network

Three most important community elements

Continuation plan for the network

How can the network continue?

Figure 46 - Overview of the design activities and results in phase 3

15.1 Retrospection and looking forward

The network that has been initiated through this project needs to be able to continue without this graduation project running it. Therefore it is important to discuss the tools and continuation with the participants in order to fit the expectations and be able to design a network that has value for its stakeholders.

This knowledge should answer the design question D1/D1a (how should the design be visible), D1c (what interventions are needed to shape the design), D3a (how can we share knowledge). But in order to have a good discussion, a survey was created. This survey looked back on the previous sessions and asked about how the network should be continued.

SURVEY: WHAT DO YOU THINK?

Based on the outcome of the previous sessions, multiple directions and tools for participation and continuation of the network are framed, and these are given back to the participants in the survey. Next to answering questions about the project in general, the participants are asked to indicate how they would like to be part of the network, and what type of activity they need from the network to keep it vital.

Figure 47 - Results of the question which tools would be suited for supporting the network

Welke van onderstaande tools acht u geschikt voor het ondersteunen van het netwerk?
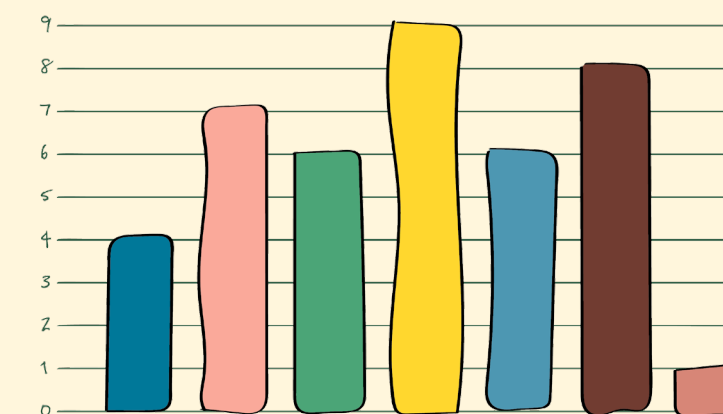
- Informatievoorziening via nieuwsbrief, sociale media, etc.
- Online platform met vraag en aanbod van sociaal economische initiatieven op het gebied van hergebruik van materialen en producten
- Marketing van upcycling initiatieven gericht op inwoners van de BUCH
- Gezamenlijke bijeenkomsten met belanghebbenden (ondernemers, gemeenten, inwoners, onderwijs, zorg)
- Gezamenlijke activiteitenagenda
- Individuele ondersteuning van circulaire ondernemers/makers/ontwerpers
- Andere

III. Design

RESULTS

From the results of the survey, there are three tools to support the network that are chosen by more than 50% of the respondents (see figure 47 for the whole set of answers). Hereunder, these three are stated with explanations from the respondents:

1. JOINT MEETINGS WITH STAKEHOLDERS (ENTREPRENEURS, MUNICIPALITIES, RESIDENTS, EDUCATION, SOCIAL DOMAIN)
   "Because of the age differences within the target groups, communication should take place through as many channels as possible. Communication is key in these kinds of projects, which is why I would like to communicate to the outside world that the municipality is working on this, because everyone I talk to about it is extremely enthusiastic about the idea."

2. SUPPORT FOR CIRCULAR ENTREPRENEURS/CREATORS/DESIGNERS
   "Support would be nice for us because we are starting entrepreneurs."

3. ONLINE PLATFORM WITH SUPPLY AND DEMAND OF SOCIO-ECONOMIC INITIATIVES IN THE FIELD OF REUSE OF MATERIALS AND PRODUCTS
   "Reducing the waste flow (at the front) seems to me to be the most effective solution. To do this, you need to create awareness among the residents. You could use an online platform for this so that people who want to take action can get their information. When these local businesses emerge, you need to support them to make them grow. In addition, meetings and information are needed to increase awareness from, for example, education."

Since these three elements came out as most important, they will be further iterated and detailed for the final design. First however, these elements will be discussed in a final session with participants, in the next subchapter. The complete survey with its results can be found in appendix B9.

Figure 48 - Results of the question how the participants want to be involved in the continuation of the network

Op welke manier wilt uzelf of uw organisatie betrokken blijven bij de continuering van het netwerk?
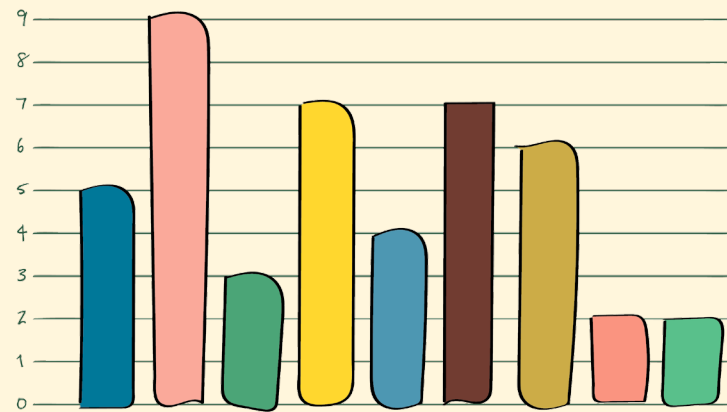
- ■ Door op de hoogte te worden gehouden adhv een nieuwsbrief, social media, etc.
- ■ Door deelname aan gezamenlijke bijeenkomsten (fysiek of online)
- ■ Via een online platform met vraag en aanbod van sociaal economische initatieven op het gebied van hergebruik van materialen en producten
- ■ Door actieve deelname aan een (gezamenlijke) upcycling product lijn in de BUCH
- ■ Door bij te dragen aan de ontwikkeling van circulaire business cases in de BUCH
- ■ Door het produceren van upcycling producten met gebruik van restmaterialen of producten uit de BUCH
- ■ Door een verkoopkanaal te bieden voor upcycling producten uit de BUCH (fysiek danwel online)
- ■ Door bij te dragen aan inzameling van restmaterialen of producten (het logistieke proces)
- ■ Andere

15.2 Discussing the elements of the network

Since the participants form the network, only a survey would not suffice as input. The survey served as input for a discussion with the participants on the continuation. This discussion evolves around the three main elements of the network that come out of the survey as most important.

In the discussion, I wanted to introduce the element as far as I designed it by then, and let it follow up by a free conversation on how this element should be shaped.

Respondents were asked at the end of the survey whether they would like to continue discussing the tools in a third workshop. During this workshop, a first glimpse was given of a design proposal on which the participants could respond. The vibe here was positive, they were happy to see a name coming to 'the network' and to see how it could become an actual 'thing' in the BUCH region.

### JOINT MEETINGS WITH STAKEHOLDERS

After presenting the design, the first discussion topic is introduced: joint meetings. One of the participants immediately asked who would be invited for those meetings, why and when,

which is exactly the kind of insights we hoped to get from them. This made for an interesting discussion, where the thinking levels of the participants were not yet on the same level as from the facilitators. Se.lab explained that the meetings would be for the partners that are on board to explore more possibilities and work together. However, the participant who asked the question was thinking of inviting the residents and other people from the region to inform them on the activities and possibilities.

One of the participants responded that she would like to involve other people like her to explore the possibilities of working together or learning to work. She mentions that in the world of textile, there are plenty of inspirational experts that can be asked to facilitate a session. She prefers qualitative knowledge development over local expertise. On the other hand, a local creator explains that in the joint meetings, things should be able to happen spontaneous: create a space with materials, creative tools, and see what happens. It's meetings like that that inspire him and bring everyone on the same level.

"Dingen mogen ontstaan, dat mag er ook zijn, ik mag er zijn!"

Local designer

III. Design
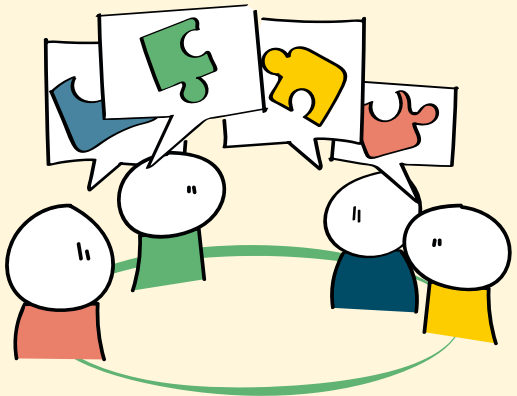
From the discussion it can be concluded that here should be different types of meetings: knowledge sharing, creating, work visits and collaboration sessions. This set of gatherings will be further explained in chapter .

SUPPORT FOR CIRCULAR ENTREPRENEURS

The discussion went automatically from the topic of joint meetings to business support. At a certain point, one of the participants mentioned that she is still looking for ways to connect this project to her company. The fact that it is BUCH-wide makes it a bit more complicated for her to join. She would like to have more support on a local scale. Another participant of the session then joined and mentions that he knows ways for her company to be more connected; through his 'trunk market', a garage sale in Schoorl. This made for an exciting collaborations, immediately ideas were shared about having a stall with swap clothing that she could run for free.

This interaction showcases how support for circular business can also be provided by others
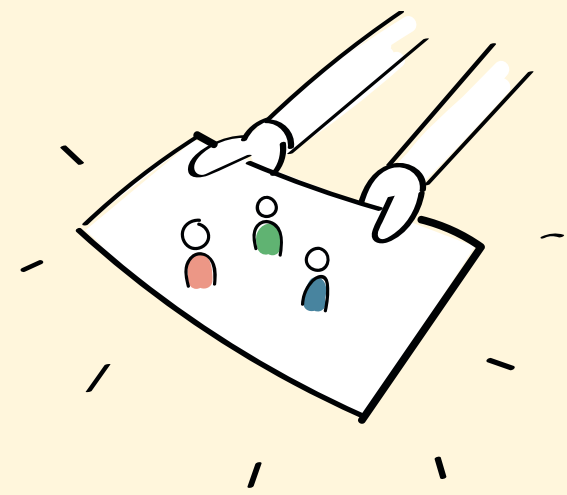
from the network and not necessarily from a party as se.lab. Jan, the owner and initiator of the trunk market, shows his enthusiasm for establishing parts of the network at his market. It has place for activities, and even education can be included by showcasing material re-use and repair of old products on the market.

The conversation about circular business support was not necessarily focussing on calculating business cases or optimizing conditions by collaborating, as was prepared by se.lab, but more on the conversation of how can 'we' help each other? This type of conversation turns out to be vital for the network: throwing ideas in the air and see how others can host, support or collaborate with that idea.

AN ONLINE PLATFORM

As well as the previous discussion point, the conversation around an online platform swiftly changed into the question 'how can we reach all people with our inspiring activities?'. The reason this happened is due to the fact that having an online platform was mostly chosen to be able to share the stories and activities

that are happening in the network, towards the residents of the BUCH. Visibility of the network is very important, and the innovation should get a familiar face for the local municipalities. It should be an invitation to join.

During the conversation, another challenge rose up: how can the municipality set up good communication towards so many different target groups, while the communication is already so hard? The group formulated three different type of residents:

The youth: They are the future, they can be taught and educated on circular lifestyles and product repairment.

The adults: They need to change their attitude and start to grow awareness around waste and recycling.

The elderly: They have the knowledge and experience in repairing and making products by themselves, and could teach the younger generations to fix products themselves.

This is how the idea was born to teach children to fix their own tires again, and to bring old and young together in local repair cafes.
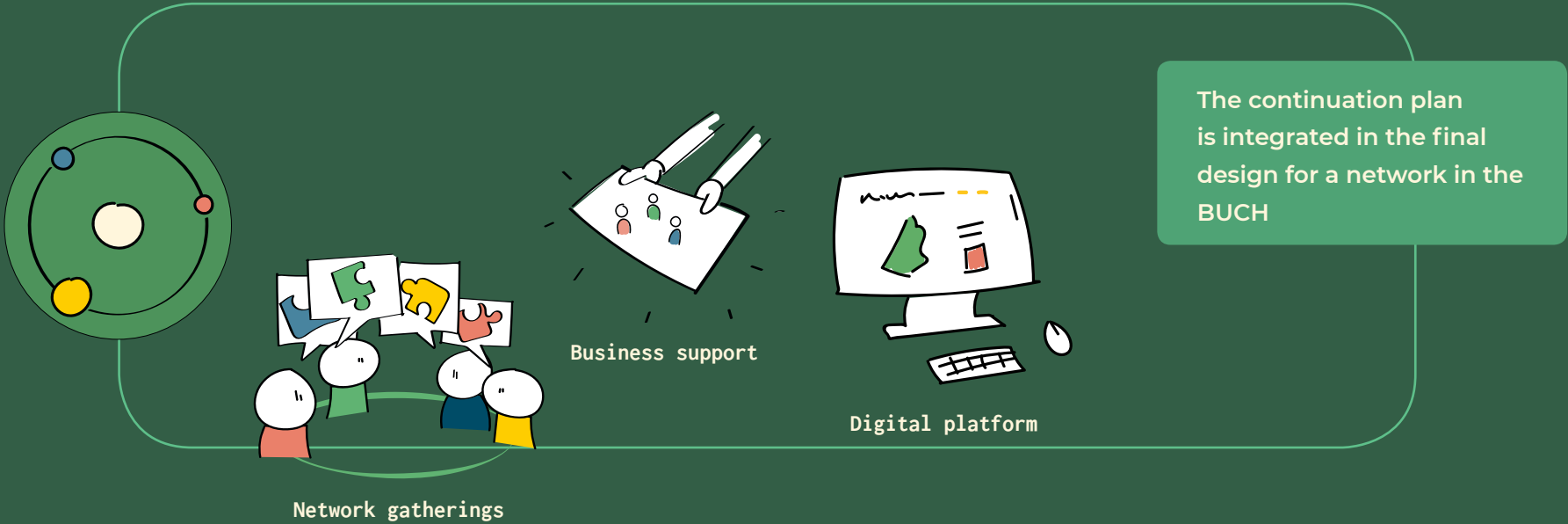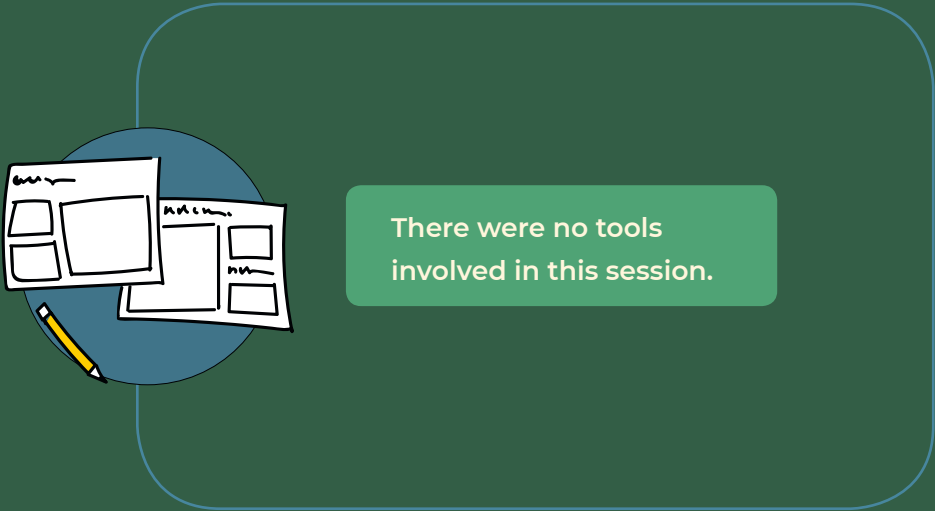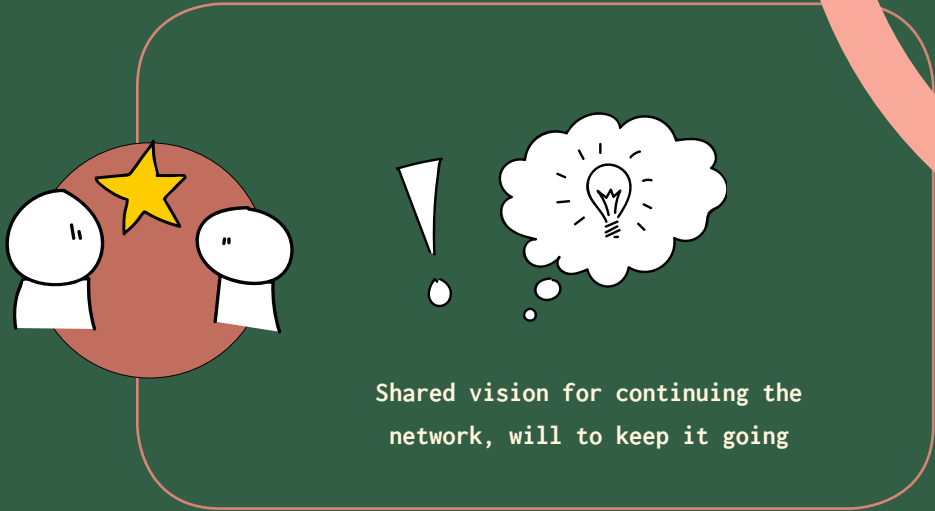
Because the participants had a hard time with good marketing by the municipality, I suggested the idea of doing the marketing ourselves: let's make our own advertisements and then work it out together. This could be part of the network as well: co-creating the branding and advertisements on the website and on the street.

15.3 Concluding phase 3

Phase 3 was, compared to phase 1 and 2, fairly informal and more discussion based. Yet, the session showed that without any sensitizing beforehand, it is hard for participants to get to the same level as the facilitator and share ideas. Instead, critical questions were asked towards the ideas that were stated by the facilitator. However, after a few questions from the participants, the designers were able to come up with new ideas and the discussion got a healthy vibe of sharing ideas.

From the three main tools that were selected from the survey: meetings, support and a platform, the discussions went very broadly and gave birth to multiple good ideas. This shows that for a constructive discussion on one topic, you need 1) a sensitizing activity to get everyone on the same page and 2) discussion statements that keep everyone sharp. However, this phase gave plenty of insights on the shape and continuation of the network, and surely adds to the design proposal as presented in chapter .

Shared vision for continuing the network, will to keep it going

There were no tools involved in this session.

The continuation plan is integrated in the final design for a network in the BUCH

Business support

Digital platform

Network gatherings

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III. Design

15.4 Looking back at all phases

In the pre-phase, the call for participants was set out in the BUCH region. A wide variety of interested parties responded, and quickly a creative session took place with residents that would like to share their ideas. From the insights of interviews and the creative session, the start of the network was designed and initiated in phase 1: The start of a network. In this phase, the network grew shape and the capacities and ambitions were explored. These ambitions became actions in phase 2, where

collaborations were created between various participants. In phase 3, the network was asked how they would like to see the network continue, of which the outcome is discussed in a final session. Most essential insight here is that gatherings within the network, but also externally, are crucial for the existence of the network.

The sessions with the network were always vibrant and inspiring, and even led to the

organizing of a physical upcycling workshop in July. It can be stated that the design objective is partly achieved, as the network forms a community of socio-economic initiatives that want to work together in creating circular activities. Yet, these activities still have to become reality, although the energy and

enthusiasm amongst the participants show that that is the ultimate goal for them as well. The design goal will be further answered in the design proposal in chapter , after analysing the research of the process.

Figure 49 - Overview of the design activities and results throughout all phases, and how they relate to each other

III. Design
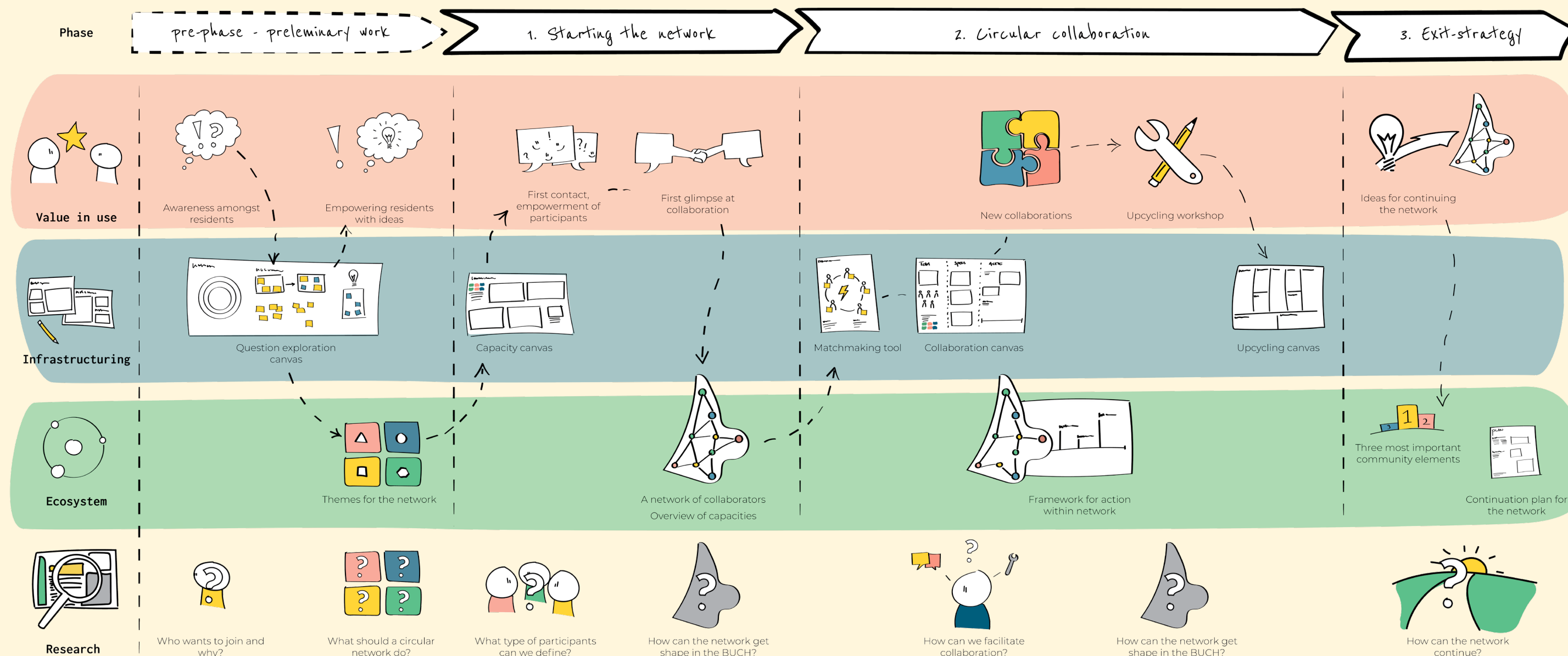
CHAPTER 16
Analysis and evaluation

In the previous chapters, the process of starting a circular network, facilitating collaboration and defining the exit-strategy has been carried out. The setup and design of those phases are based on the list of requirements and thus on the principles that were formulated in the design direction.

This chapter reflects on the process and zooms in on the various aspects of the project. How did the participants connect to the project? Could a project like this be facilitated by a civil servant?

The analysis and evaluation of these aspects are concluded in the an updated list of requirements that forms a recommendation for future iterations.

16.1 Participation

Over the whole participatory approach, various types of participatory techniques were applied. These techniques provoke creativity, collaboration and of course participation. What can be said about participation during the start of the network?

CONTACT IN-BETWEEN SESSIONS

Where the three digital workshops that were organized were very interactive, some participants mentioned that they would like to stay in touch in between the sessions. During the project, the time between sessions was about one month.

"It would be nice to have some contact between the meetings so that the participants who do not belong to the organization feel more involved"

Entrepreneurial resident

In order to do so, a LinkedIn page and a Facebook page have been initiated, yet there is very little activity on those platforms. Due to the fact that the group is so big (20+ participants), it is hard for them to connect with each other. This might be improved by having physical meetings in the future.

FEELING CONNECTED TO THE PROJECT

Most of the participants that started at the beginning of the project were enthusiastic and

kept attending all the workshops. Over the course of the project, even new participants joined. However, for some initiatives or participants, it was not a suitable project.

"I don't know yet if we can apply this project at our Repair Café."

Repair Café Heiloo

The repair café's are mostly run by seniors who had trouble keeping up with the digital collaboration. In addition to that, as the quote above implies, it was hard for them to connect to the project. One of the managers of a Repair café shared that she believes in the project, but would like to connect later on in the process, when it is more clear what type of activities can be organized.

PARTICIPATING IN AN IDEAL

What made participation easier in this project is the fact that most of the participants have shared ideals: to contribute to waste reduction and increase sustainability. This shared ideal inspired creativity and enthusiasm amongst the participants and it might as well be the driving force of the network.

I really enjoyed seeing faces and initiatives, so I was pleasantly surprised what is going on in my area. I liked the division of roles during the session.

III. Design

16.2 Facilitation

A major part of the participatory approach is the facilitation. As requirement 7 mentions, the facilitator is the initiator of the creative energy. How did the facilitation went, and what can be learnt?

NEVER HAD A SESSION LIKE THIS BEFORE!

For most participants, the sessions were open-minded and fresh, especially during the lockdown. Since a lot of meetings happen online, the workshops have been facilitated in such way that there was plenty of energy and interaction.

"Well prepared and guided, great energy!"

Studio Hoed

BEHIND-THE-SCREENS FEELING

Although most participants are very content with the way the sessions are organized, some feedback mentioned that there was a feeling of action behind the screens that dominated the process. This would conflict with requirement 7: the facilitator should only inspire and connect, not dominate.

This may be related to the approach from se.lab and the municipality, who both have a more top-down approach in their way of work. Phase 1 opened with a presentation by the municipality, communicating its challenge with waste and how this project is the solution. However, this is typical us/them behaviour, which is destructive for creative bottom-up energy.

For the continuation of the project, this should be considered when preparing meetings with a civil servant: keep the ball at the participants, they have their own ideals that will drive them to achieve the shared goal of reducing waste.

COULD IT BE DONE BY A CIVIL SERVANT?

Then the question pops up, how would a civil servant pick this project up in the coming year? This has not been a full focus for me in the project, but I believe that the role of facilitating can be done perfectly by a civil servant as Esther Keijser, who is very open to listen to participants and has an eye for opportunities. However, in the future, it is more likely that network gatherings will be hosted by the social domain or thrift shops, and they might become the driving force, such as in the WaardeRing in Zwolle.
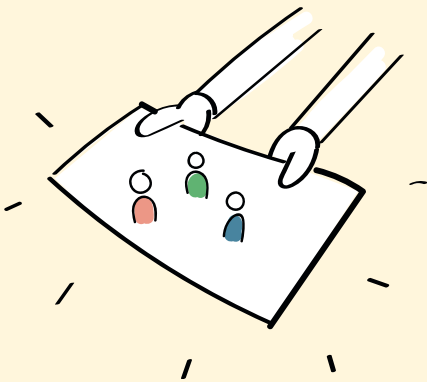
16.3 Collaboration

As part of the design objective, the participants were put together to support and perhaps collaborate in circular activity. How did this go in the sessions, and went wrong?

DIGITAL COLLABORATION

Over the course of the workshops, we were forced to organize them online. Even though this was organized in a professional way, it still lacks the human energy of talking face to face. For a collaboration, participants need to know each other better than they were able to online.

"Well organized, but I'm just not very fond of brainstorming/developing sessions digitally. I prefer to do that face to face. I find it difficult to coordinate digitally if you really don't know each other yet and already have to build something new together. That doesn't work for me."

Educational creator

UNFORESEEN COLLABS

In phase 2, the participants were set into two groups to enhance the matchmaking process. These groups were put together based on their ambitions and capacities. However, due to last minute cancellations, the groups grew small and were therefore less fruitful for collaborating.
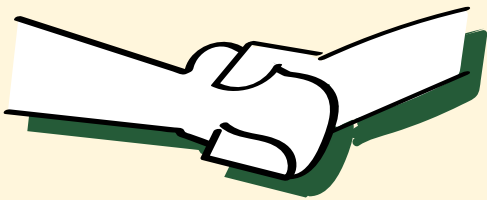
This had two results. On the one hand, participants were unhappy with their group and the limited opportunities to collaborate, as can be seen in the quote hereunder (which shows that the participants are serious in their ambition to collaborate). On the other hand, it created collaborations that were not anticipated. This is also what the quote hereunder describes, but the interesting part is that this specific participant was in fact very interested in the collaboration that came up in that meeting.

"I understand that you want to work in small groups, but you are very limited and determined by the composition of the groups. The results were completely different than I had expected and hoped. I like the fact that I can participate in the educational process. That's really all this session brought me."

Entrepreneurial resident

I believe that this is part of the design of a network as well; sometimes you have unforeseen interactions or collaborations that open a new source of creativity and inspiring ideas. The quote below endorses this as well.

Well organized and great team! Differing interests among participants in sub-session.

Education creator

III. Design

BIG VERSUS SMALL

In the co-creation session in the pre-phase, one of the points of attention for this network was the balance between big and small initiatives. That same session also explored possible solutions to let them exist next to each other. Mapping them out, letting them collaborate, having one sales channel. These ideas were integrated in the phases, and we have seen that thrift shops are interested in small upcycling products to sell, that everyone has an open attitude towards other participants and that there is no 'you are small' discrimination.
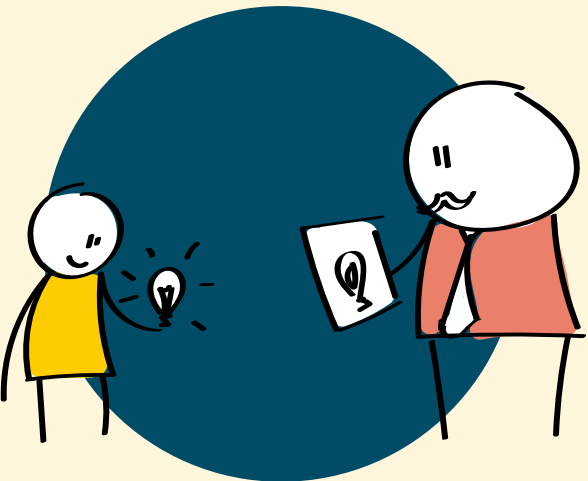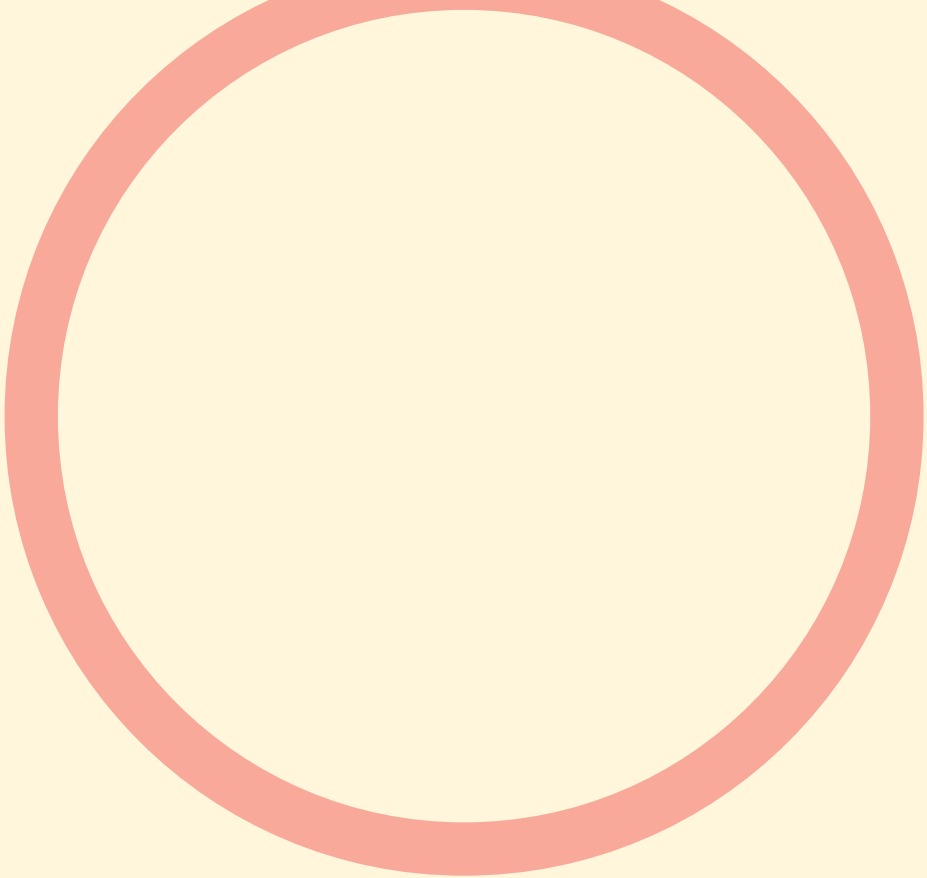

Figure 50 - Big and small parties go really well together

16.4 Starting and maintaining a network

In phase 2 and 3, the network was initiated and the question arose how to maintain the network. This subchapter covers the development of (the feeling of) a network, and how the project can continue after the graduation project.

THE NETWORK IS BORN

From the moment that all the capacities and ambitions of the participants were mapped out, the circular network in the BUCH was a fact. The atmosphere of sharing, conversing, dreaming together in phase 1 gave the participants as well a feeling of being part of a new network. As mentioned in chapter 15, a pilot with Facebook and LinkedIn has been tried, but without success. The network is more active around physical meetings, as is shown as well in the survey from phase 3. It is inspiring to see that the participants that have access to locations are willing to host the network there.

We can help building the network and content together with collaboration partners

Education party

The trunk market is an excellent extension or a supplier of materials.

Entrepreneurial resident

I think it would be nice to practice designing and making with students in a mobile circular manufacturing area at schools, to work towards making real products and to learn about circular business cases with secondary school students.

Maker / Education

I really enjoy working with partners and with the schools on how we can provide the BUCH students with the knowledge and skills for a circular municipality.

Education

THE POWER OF INCOMPLETENESS

As the network starts growing and continuing, the question comes up how it can continue after the graduation project is done. What helps is that a few collaborations have started and will continue also with the help of se.lab. After the physical upcycling workshop in July, I expect that the creators, social domain and thrift shops will continue working out a first upcycling collection.

That is the power of incompleteness. We have established a group of enthusiastic early adopters that have shared ideals and want to create results, which we can expect in one or

III. Design
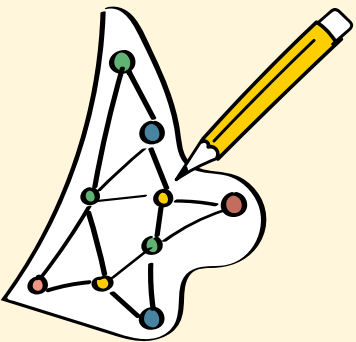
two years. Thereafter, the early majority can follow and join the community. Creating new projects can be the drive for continuation, as they need to be finished and before they are finished, new ideas can arise. Geert Smolders from se.lab mentioned that schools can also be the continuous power supply for the network, since they have a educational calendar and are always looking for new apprenticeships and opportunities. However, the schools have let us know that they prefer to work on demand:

.. the network/municipality may indicate what they think they need. We will of course question critically: the size, depth and running time of the assignment, level of education....but it is not convenient to start too early. Just assume that what the municipality wants, can be poured into education by us.

Education party

Anyhow, the project will continue with the support of se.lab for the coming months. With a civil servant at the top as being a quartermaster, gatherings can continue to take place and the solution space will continue to be explored.

FINDING YOUR PART

As a final note on the continuation of the network, it is important to let the participants define their role in the network. In the survey in phase 3, the participants were asked how they want to stay active in the network, which gave an overview of the roles in the network (can NOT YET be found in the design proposal, chapter 18). In the discussion that took place after the survey, it turned out that it is still hard to talk about what the participants can bring in: For the knowledge exchange, they prefer external knowledge from other initiatives there.

I am not an expert, let the knowledge come from external experts to achieve qualitative knowledge development.

Entrepreneurial resident during the third phase

But the local stories are also important and should be told towards the local residents!

Designer/maker in phase 3

In order to get the participants to present or facilitate parts of the community gatherings, it should be asked beforehand to the participants: who wants to share some inspiration?
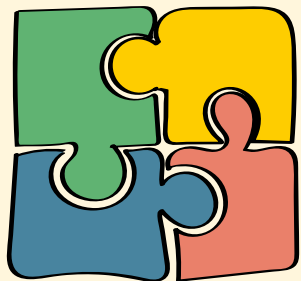
16.5 Conclusion

The start of the circular network as a participatory process has generated a number of value insights on designing a network. As the network grew, participants wants to have more qualitative contact with each other, which was hindered by the digital approach. What is so strong about the network is the shared ideals of the participants.
The current network exists of early-adopters that believe in contributing to a sustainable society. This shared ideal drives them in working together. For a next session or new network, it might be worth to try formulate an ideal together as a network, instead of a municipality that dominates with their ultimate goal.

This resonates with the facilitation. In the research phase of this project, bottom-up versus top-down has been explored, but still it shows to be a complicated topic in practice. Again, with the BUCH's goals for the network, the participants grew a feeling of 'behind-the-screens' dominance. This can be prohibited if the municipality puts its own agenda aside, and participates as an equal party in the network, possibly as a facilitator, but then truly without dominance in policy or knowledge.

The network can provide you with the right collaboration for you, but it also has possible collaborations that you might not expect. The first are achieved on auto-drive. The latter is especially interesting, since it sparkles creativity and inspiring ideas. By putting random people together in sub-groups now and then, the network can become even richer in its activities. Almost the same counts for small and big initiatives within the network. By putting those two together, there will be no gap between them.

Finally, the circular network in the BUCH can be continued! The activities that are currently being set up (an upcycling collection and circular education) will keep the network moving, with the help of se.lab. A civil servant should check-in with the network now and then to organize network wide sessions and facilitate knowledge sharing. The continuation of these sessions is vital for the network, as every session will arouse new ideas among the participants.

For the future of the network, it can be a valuable bottom-up addition if the participants could formulate their own vision and goal for the network, and within that vision also formulate their own part.

16.6 Updated list of requirements

As this chapter closes the research through design phase, the list of requirements as setup at the beginning is revised to use as guidance for designing the proposal for the BUCH municipalities. Hereunder, the added or changed requirements are typed in bold.

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1. Participants should be involved from the start

2. Participants should be able to create collaborations by themselves

3. **The ideals and goal should be formulated by the participants**

4. Every party involved should somehow be connected to a socio-economic activity

5. Big and small parties involved should help each other

6. **Now and then the workgroups should be** random, to enhance unforeseen collabs

7. Shared ideology should form the basis for collaboration

8. Someone's interpretation has value

9. The facilitator only has right to connect and inspire, not dominate the conversations with explaining

10. **The municipalities' agenda is not leading the network**

11. The sessions should create change by generating new meanings to ideas or agreements in collaborations

12. **Running projects in the network should overlap so there is a continuation in activities**

IV. PRESENTING THE DESIGN

In the third section, a design has been developed in a research through design trajectory, involving the stakeholders in a direct way to get suitable results. In this trajectory, a network has been set up to connect the stakeholders and let them support each other in starting circular activities.

As a result of this participatory approach, two designs were further developed. In this section, the reader can first view the design of a potential network elaboration, including a concept journey and future vision. Secondly, a Circular Community Startkit can be read, a set of canvases, iterated from the research through design phases.

Project introduction

Vision from the BUCH

Research question

How can socio-economic initiatives be enabled to connect and support each other and decrease the residual waste in the BUCH?

I. Exploratory research

Literature and field research

The context of circularity and waste is explored and knowledge on starting a circular community is gathered.

II. Design direction

A design direction is defined to guide the design process of this project. A list of design questions and requirements is the result.

Design questions

List of requirements

Updated list of requirements

III. Research through design

Building on the design direction and requirements, a design will be made during a research through design process.

Set-up

Designing the process

Carrying out

pre-phase   1.   2.   3.

Research & Analyse

The process will be analysed and learnings will be implemented in the final design proposal

IV. Final design

Based on the outcome and iterations of the research through design process, a final design is presented.

2030

V. Reflect

Finally, a reflection on the project is written.

IV. Present

CHAPTER 17
Het MagErZijn

The first part of the final design is the vision for a circular network in the BUCH area that complements the plans for a circular craftscentre as envisioned by the municipality.

This chapter forms a combination of knowing and dreaming; it starts with an explanation of the current situation in the region and then shares the vision for a circular network, based on the outcomes and insights of this project.

Figure 51 - Two examples of demonstrations of a circular network in the BUCH

17.1 Situation overview

WASTE

The BUCH has an average of 26 kg bulky residual waste per citizen, and wants to minimize it to 5kg by 2030.

Waste at waste deposit centres is not freely available for reuse by businesses.

REQUEST FROM THE BUCH:
Connect all interested partners to collaborate and facilitate in the upcycling goal.

PEOPLE

Local initiatives/individuals would like to start using used materials or -products but:

.. have trouble accessing those materials or products

.. don't have the possibilities to sell the products

.. don't have the location to produce products

.. don't have the connections to start a business

Thriftshops are commercialized. This leaves them with bigger waste streams that contain products and materials that are perfectly fine for reuse or repair.

Schools want to participate in circular activities, and need to collaborate with local initiatives to make that work. They offer opportunities for applying knowledge, and can gain from more workplaces.

Figure 52 - The average waste has to go from 26kg to 5gk by 2030.

Figure 53 - Policies prevent entrepreneurs and residents from getting materials from the recycling centre.
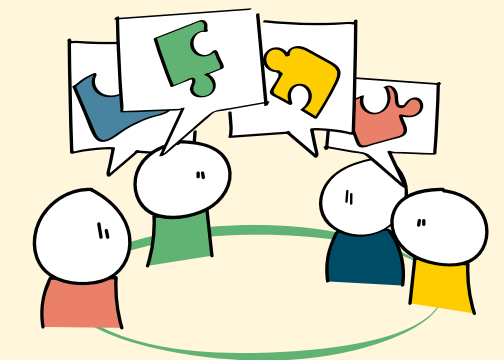
Figure 54 - The BUCH wants to connect all interested partners to start collaborating in circular activities.

17.2 Final design

HET MAG ER ZIJN

Figure 55 - Network overview of het MagErZijn

A fresh community of designers, creators, thriftshops, repair café's and schools that collaborates to achieve the goal to decrease the residual bulky waste in the region.

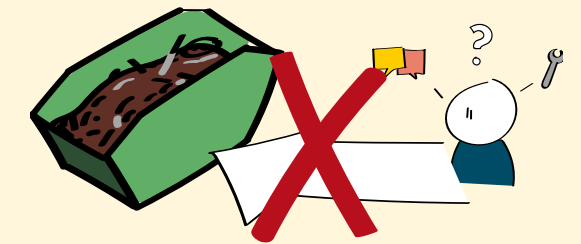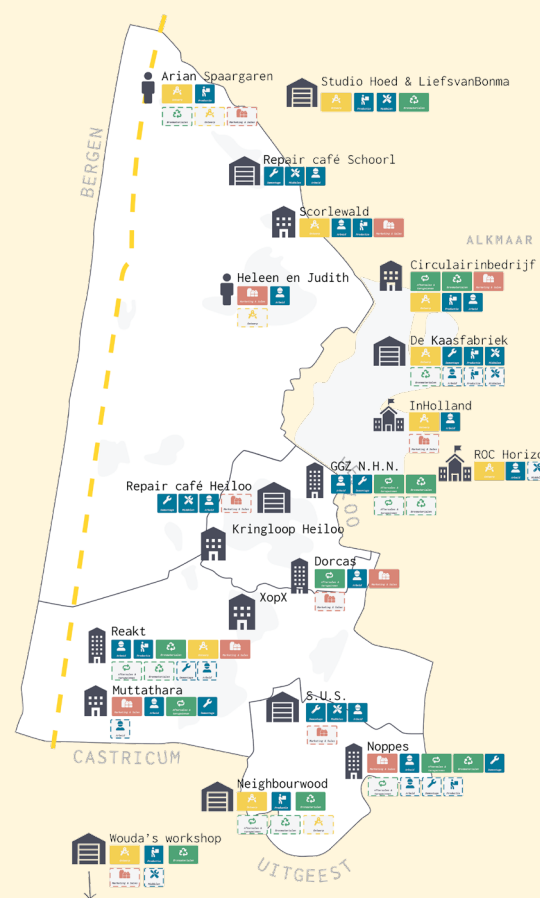Het Mag-Er-Zijn makes use of the resources that its partners bring to the table, and so creates a valuable collaboration where every partner can give and receive.

MAG-ER-ZIJN

The name Mag-Er-Zijn finds it origins in the dutch word for warehouse: magazijn. By replacing the middle *a* for *er*, it says 'may be there', as a reference to transitioning waste into materials.

The name has been designed as a catchy title for the participants to refer to this project, and is specifically designed for them. In this subchapter, the various ways of living this out are shown and explained as if it is already there.

LOCAL CIRCULAR ACTIVITY

For local creators and designers, Het Mag-Er-Zijn offers collaborations with thriftshops to resell their upcycled products, while for thriftshops this means new revenue streams and opportunities to grow.

Local designers and artists can explore the possible upcycling products that can be made from the residual waste from the thrift shops. Together with the participants from the GGZ and Reakt, upcycling collections can be created.

All with the sole purpose to decrease the residual waste.

HET MAGERZIJN OFFERS:

AN UPCYCLING COLLECTION
100% created from residual waste from the BUCH municipalities. Designed by local creators, built by local social businesses.

SPARKLING GATHERINGS
Filled with creativity and concrete action. Joining these sessions means contributing to the activities of the Mag-Er-Zijn community.

BUSINESS SUPPORT
Need help with your circular business idea? Get support in setting up a circular business model by InHolland students.

LOCATIONS
The partners of Het Mag-Er-Zijn open up their workshops, stores and buildings to work together and create sales points for the upcycled products.

MARKETING SUPPORT
The BUCH needs to know about its circular activities. Het Mag-Er-Zijn facilitates marketing and showcasing of the projects that it hosts.

17.3 Future vision

As the concept of het Mag-Er-Zijn is a vision and is yet to be fold out in the BUCH area, a future vision for the network is drawn out. This vision can be used to explain the future impact of building up a network as such.

LONG TERM EFFECTS:

MINIMIZING RESIDUAL WASTE IN THE BUCH

.. and start using it. Closing the material streams on a local scale through participative action and facilitation from the municipality, schools and thriftshops.

CONNECTING ALL THE BUCH MUNICIPALITIES TO ONE CIRCULAR CRAFTSCENTRE

The plans for a circular craftscentre are there, and this community forms the start of that centre. The power of the community spreads out over all four municipalities.

REDEFINING LOCAL AND SUSTAINABLE

The terms local and sustainable will become more known and recognized in the BUCH by promoting it.

2030

2021
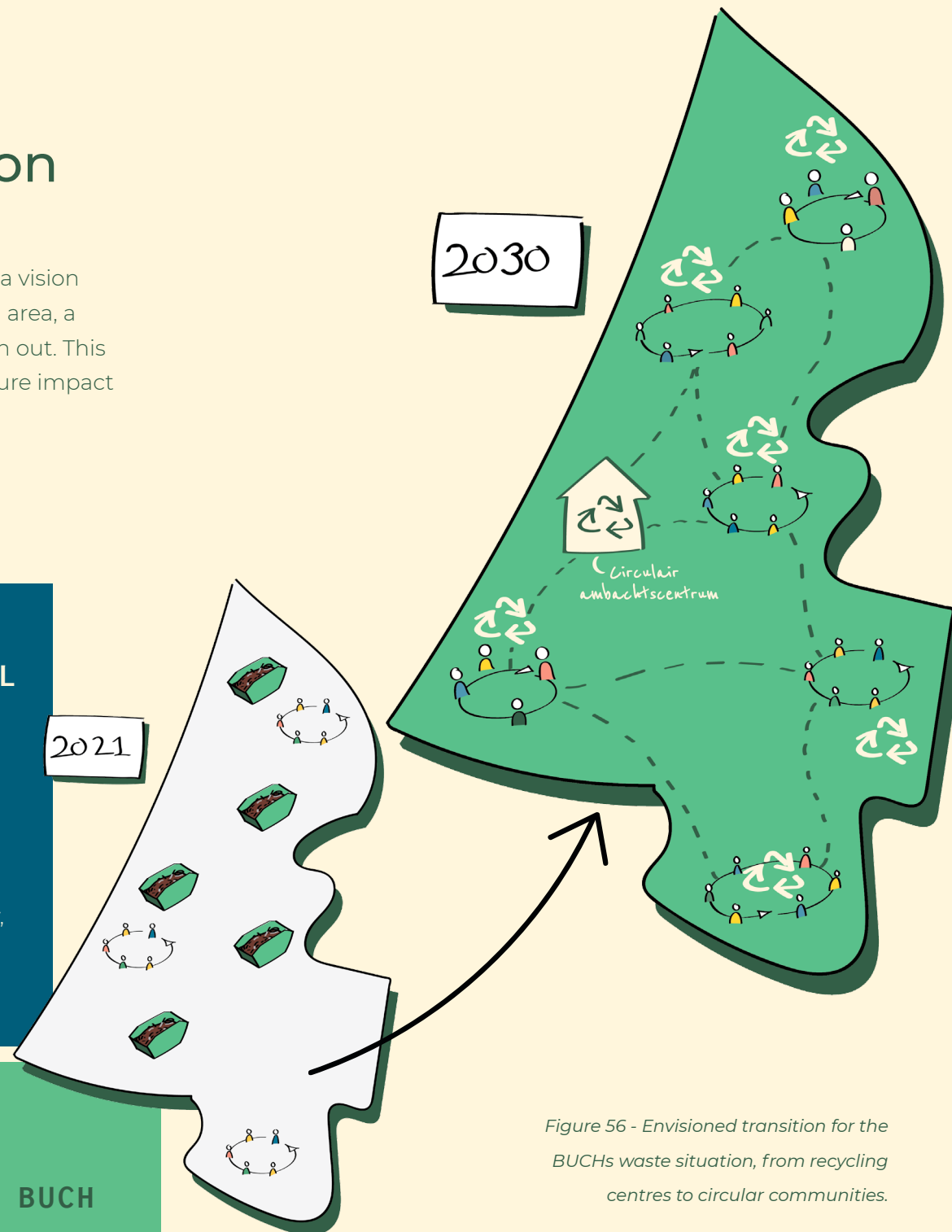
Figure 56 - Envisioned transition for the BUCHs waste situation, from recycling centres to circular communities.

17.4 The community: an overview

The process of creating the MagErZijn community has already been started during the graduation project, and will continue to do so as follows:

1. Call for stakeholders
2. Stakeholders define the concrete goal and actions of the community
3. Gatherings to explore and create upcycling possibilities
4. Stakeholders become MagErZijn locations
5. The Mag-Er-Zijn is a fact

The tools for starting up the circular community is the second part of the design, chapter 18.

For participants, it will look like this (see also figure 61 on page 144):

1. Hears about the community and its circular opportunities
2. Joins the conversation about what is possible with this community
3. Joins the upcycling workshop and explores what upcycling activity he/she can do.
4. Starts own circular activity together with other participants within the Mag-Er-Zijn.
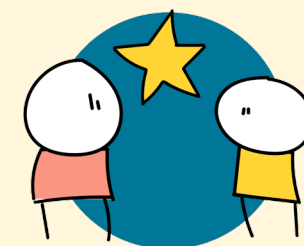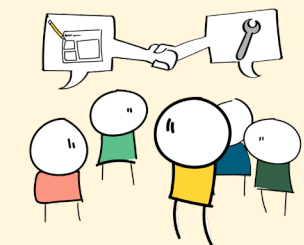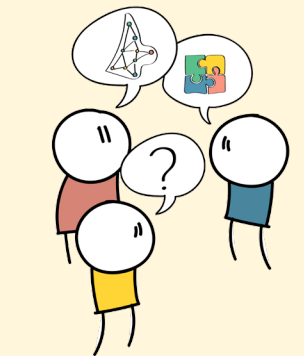
Figure 57 - The four steps of participating in the circular community

17.5 Touchpoints

So far, the design of a network has been quite vague. When this network would take shape in the BUCH area, there are various locations in which it would be visible, based on the insights from the startup process:

SALESPOINTS IN CITIES

Spread out over the cities in the BUCH, small salespoints could be placed. Thrift shops, libraries and small local shops can sell the MagErZijn labeled products. They can call themselves het MagErZijn Winkeltje.

SCHOOLS

As schools participate in both education and apprenticeships, the community is well represented in the schools. Initiatives from the community could make use of the schools resources, whilst sharing their knowledge with the students.

REPAIR CAFÉ'S

The repair café's that are spread out over the area can also be a touchpoint for the community, where residents can go to fix their products. This would empower the repair café's and answer their need for more awareness around their existence. Their brandname could be 'Het MagEr(weer)Zijn': It can be again.

MARKETING

Finally, the community and the corresponding activities and touchpoints should be communicated towards the residents. Throughout the region, marketing on the possibilities of the community for the residents should be communicated. Figure shows an example of a marketing demonstration.

Figure 58 - Various touchpoints for the network.

Figure 59 (top) - Example of public marketing for MagErZijn, inviting everyone to shop at its locations and bring their old products there.

Figure 60 (left) - Example of an advertisement in the local newspaper, informing the local residents about what MagErZijn offers.

IV. Present

17.6 Concept and journey

BEING THE CIRCULAR COMMUNITY

A community of designers, creators, thriftshops, repair café's and schools that collaborates to achieve the goal to decrease the residual bulky waste in the region. In order to make that work, participants would own part of that community: by initating activity and maintaining the started network.

The process described is similar to the design of the circular network startkit that is presented in chapter 18. The process starts when a participant becomes part of the community and is involved in defining the themes of the community.

After the kick-off, the first collaborations are created in a session of meeting.

Being part of the community means that you explore circular possibilities, and ultimately start a circular activity with anyone else in the community.

In the process, the participants learn a lot that they can share. To share that knowledge, specific sessions can be organized.

Finally, when one participants circular iniative is over or running smoothly, he or she can organize one of the sessions above to maintain the community's activity.

Define themes — Create a shared goal for the network.

Search partners — Start forming the first collaborations, activate other participants.

Gain knowledge *Can take place everywhere in this timeline* — Visit other initiatives or invite experts to learn from them.

Explore upcycling — Start creating: what can you do? Space to explore.

Start circular activity — Together with partners, start your circular initiative

Share learnings — Good or bad: share your experiences with others so they can learn.

Maintain network — Time to maintain the network. Repeat one of the earlier steps.

Figure 61 - Concept and journey of being part of the circular community.

SIX TYPES OF PARTICIPANTS

The journey on the previous page looks as if the journey would be similar to every participant. However, the process of this project showed that there is a significant difference in how the project is experienced by various participants.

Het MagErZijn exists of six types of participants. The most active ones are the residents, creators, thrift shops and social domain. These participants are fully invested in sharing ideas and visions, but with different reasons. These reasons are all integrated in the participant cards (figure 62) and can be found in appendix C1.

The less invested participants are schools and repair café's. Both parties want to be involved at the beginning and end of the cycle, as they like to be part of the community but are not looking for activation within, but for external activity that might be interested for them. Repair café's like to join the community for more recognition in the region, and schools for apprenticeships for their students.
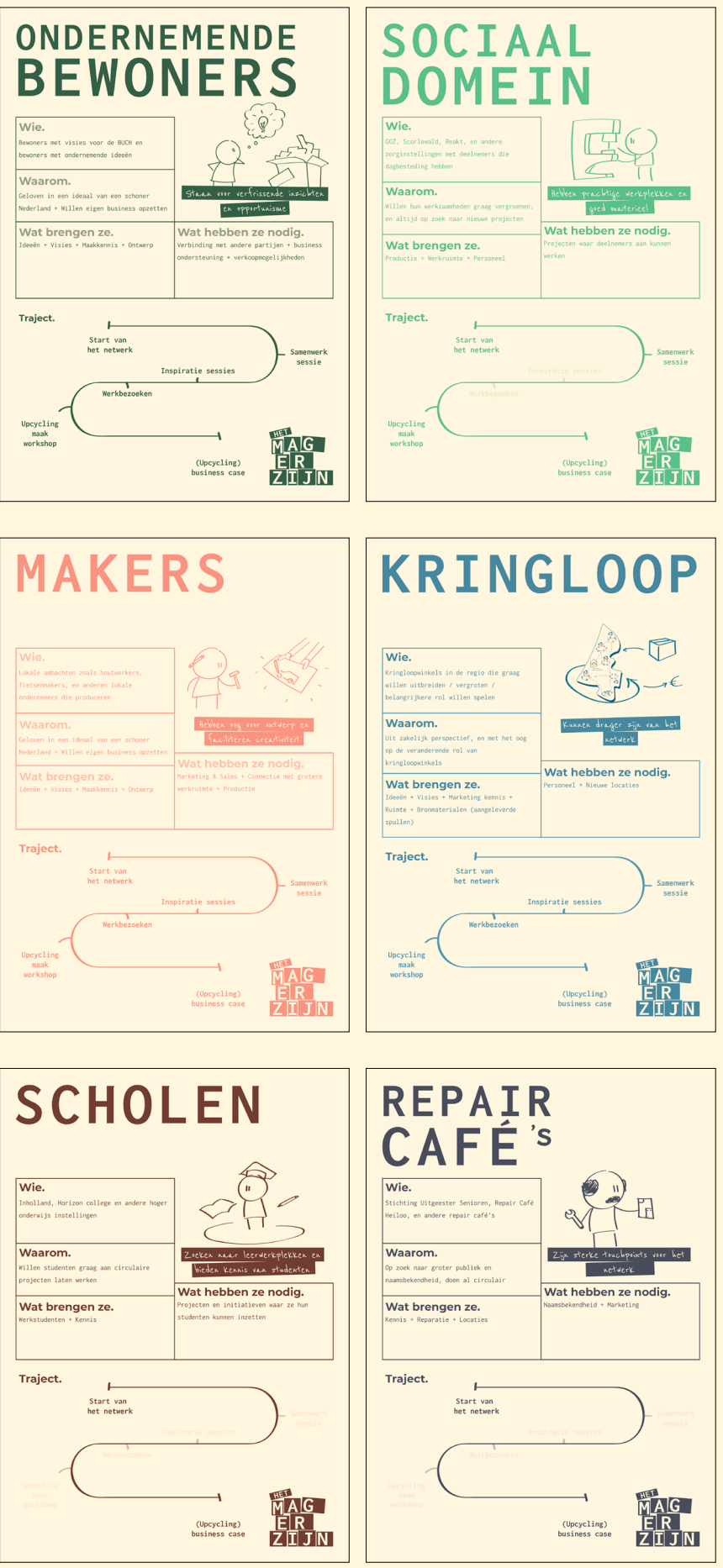
Figure 62 - 6 types of participants with their drive, their needs and how they will participate

Figure 63 - Overview of the landingpage for MagErZIjn.

BUSINESS SUPPORT

In the coming year, the business cases that arise from the community will be supported by se.lab. After that, the participants can support each other and share their new experiences.

A DIGITAL PLATFORM

A landingpage has been designed to show how the community could communicate its activities to the residents.

It can be viewed at https://tinyurl.com/MagErZIjn and in appendix C10.

17.7 Solving the problem

The MagErZijn community tackles the excess in residual waste in the BUCH by tapping into those material streams and improving the reuse and repair of materials and products, instead of being brought to the waste deposit centre. The MagErZijn community transforms responsibility into opportunity, by providing a chance to create new businesses from scratch.

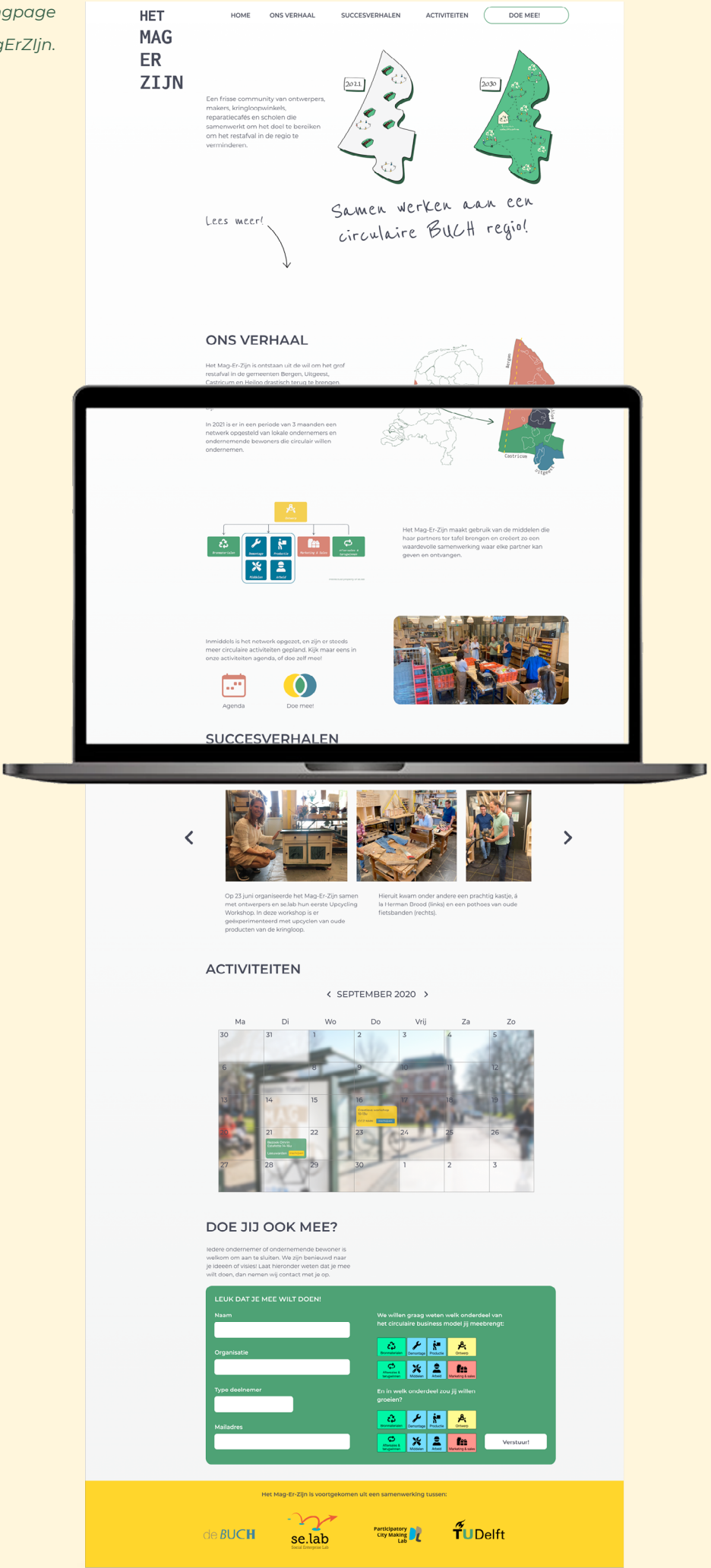The community is not a forced vision from the BUCH that is projected on the local initiatives but truly a community that thrives on the vision of its own participants. It really connects the socio-economic initiatives to each other and has potential to influence other companies to join the circular movement.

17.8 Recommendation

During the process of starting up the circular network in the BUCH region, the progress showed how hard it is to achieve circular activity in a short time span. In order to finish this project properly, a few recommendations are done to help building up this circular network.

communities. Use the tools of this kit to keep creating circular activities in and around the BUCH region, to achieve the goal of establishing concrete circular business cases.

Figure 64 - Framework of the partners from MagErZijn. Can be viewed in appendix A2 in full size.

OWNERSHIP

Explore the possibilities of ownership amongst participants. The guidance of the municipality can sometimes feel as a top-down approach, which stops the creative and enthusiastic energy from the participants. At the end of this project, there was enthusiasm about owning the name MagErZijn for the current activities. However, since this project is done for the municipality, they own the name.

For a constructive continuation of this project it is recommended to sit with the thrift shops and other participants to see how they can carry this community, together with its brand and marketing.

MUNICIPALITY AS A PARTNER

Participate as a partner. As the ownership over the community would be transferred to the participants, the municipality should stay connected as a facilitating partner. This could be embodied in an official that thinks along and sees how the municipality can facilitate in various activities.

TOOLKIT

Together with the design for MagErZijn, this project also delivers the startkit for circular

CHAPTER 18
Circular community startpack

The second part of the design and outcome of the project is a circular community startpack. During the project, a variety of tools and methods has been applied to start the network in the BUCH area. Based on those steps, the learnings and the iterations, a startpack of canvases and tools is designed that can applied in other regions as well.

Parts of this design has not been tested, as they are developed based on insights from the process. These parts are highlighted as not tested.

Figure 65 - Overview of the startkit with the six worksheets

18.1 The complete startkit

The complete startkit comes with an overview of all the steps that care part of starting a network. Together with the overview comes a set of six worksheets that can be used in the four phases.

FOUR PHASES

The startkit exists of four phases with all their own goals and tools. These phases are based on the steps that are taken in this thesis to set up a circular network in the BUCH area. The first phase is a bit unofficial, as it takes place prior to the network and is used a preperation before starting the network. Phase 1 then starts the network, where phase 2 is all about setting up circular initiatives. Phase 2 can be repeated for as long as needed; and phase 3 is used to formulate a plan for continuing the network under the guidance of the participants. Thus, an exit-strategy for the facilitators.

THREE LEVELS OF ACTIVITY

The process of starting a circular network operates in three levels of activity. The first level is the immediate value that is created between the participants. The second level is the toolset that is delivered with the startkit, and the third level is the networklevel, where themes, overviews and frameworks are created by the facilitator. This also comes naturally from the worksheets.

Figure 66 - The general sheet of the Circular Community Startkit, explaining the whole process.
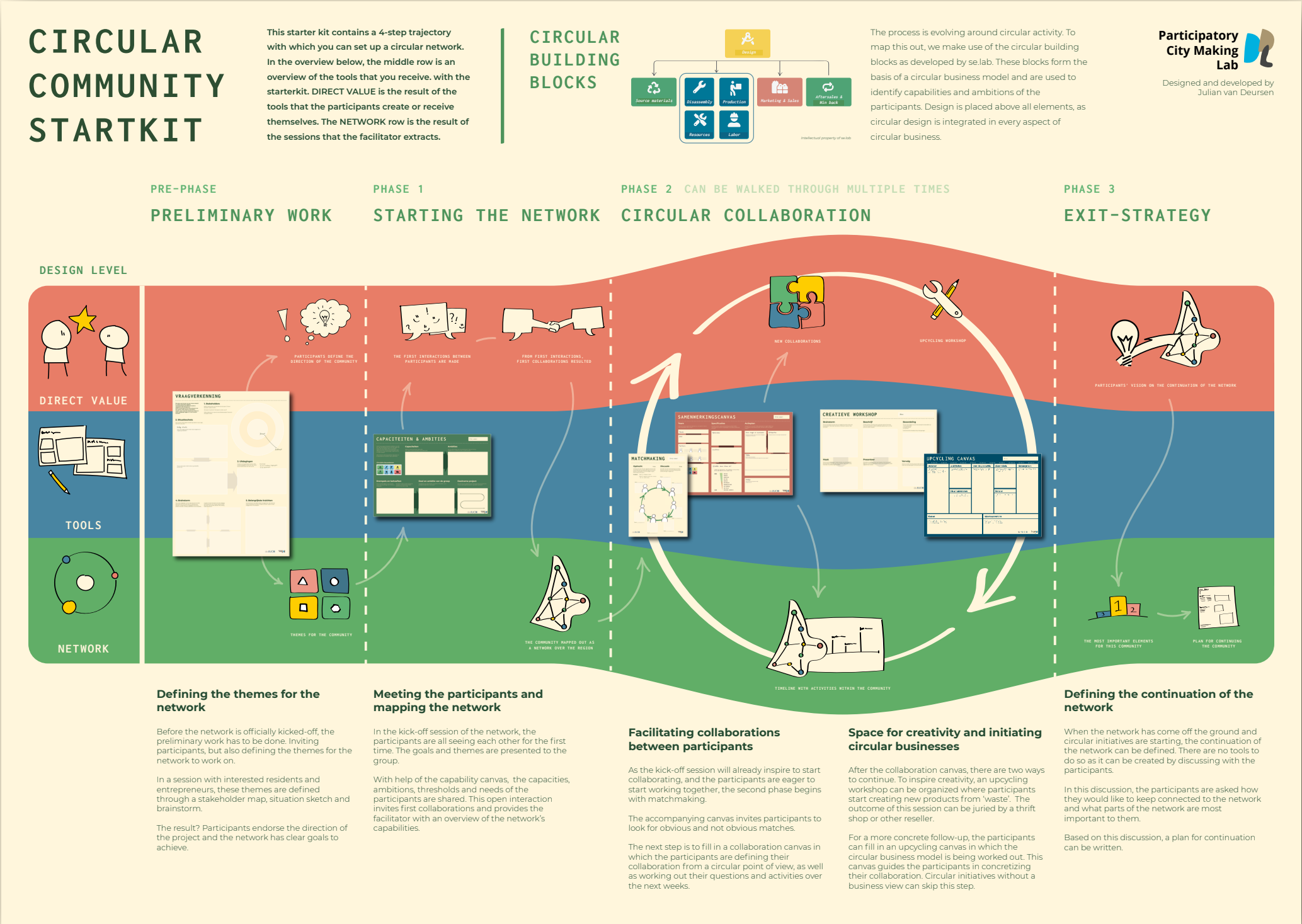
CIRCULAR BUILDING BLOCKS

An important asset for the startkit are the circular building blocks, developed by se.lab for this project. These building blocks are lend their origin to the business model, whereas all the blocks together form a circular business.

In the startkit, these building blocks are used as a tool for identifying abilities and ambitions from the participants. The blocks can help to bring together various types of participants and easily set up new circular initiatives. They are used in phase 1 for the introduction and in phase 2 for constructing the circular collaborations.

THE FLOW OF THE PROCESS

In the startkit, a clear flow of process can be identified. It shows how there is a reoccurring wave through the middle level to the top, then to the bottom. This is the toolkit at work, as the worksheets facilitate creativity and collaboration, which creates immediate value between the participants, which in turn is the network at work.

In phase 2, a big circular flow can be seen, as phase 2 can be repeated as long as wanted in a circular community, and phase 3 stands alone as it can be executed whenever the facilitator of the community wants to pass the baton to the participants.

THE THEME EXPLORATION CANVAS

The pre-phase is all about preparing for starting the network. In this phase, stakeholders are invited to define the themes for the network, in order to shape the rest of the process. This can be a session with all types of participants.

STAKEHOLDERS

The session starts with a stakeholder map, to help the facilitator learn which other participants can be invited for the network. It also shows the type of context in which the current stakeholders want to be active.

SITUATION SKETCH

A situation sketch is drawn to learn about the transition that is wished in the region. How do they see the current situation in circularity, and how do they wish to see it?

CHALLENGES AND BRAINSTORM

Based on the circular transition from the situation sketch, challenges are formulated that can be answered by the network. In step 4, the participants are going to brainstorm about these challenges to come up with themes and insights for the network.

These themes and insights are a first milestone in the process, as they can define the direction of this circular network. Together with the stakeholder map, the invites can go out and the the kick-off of the network can be organized.
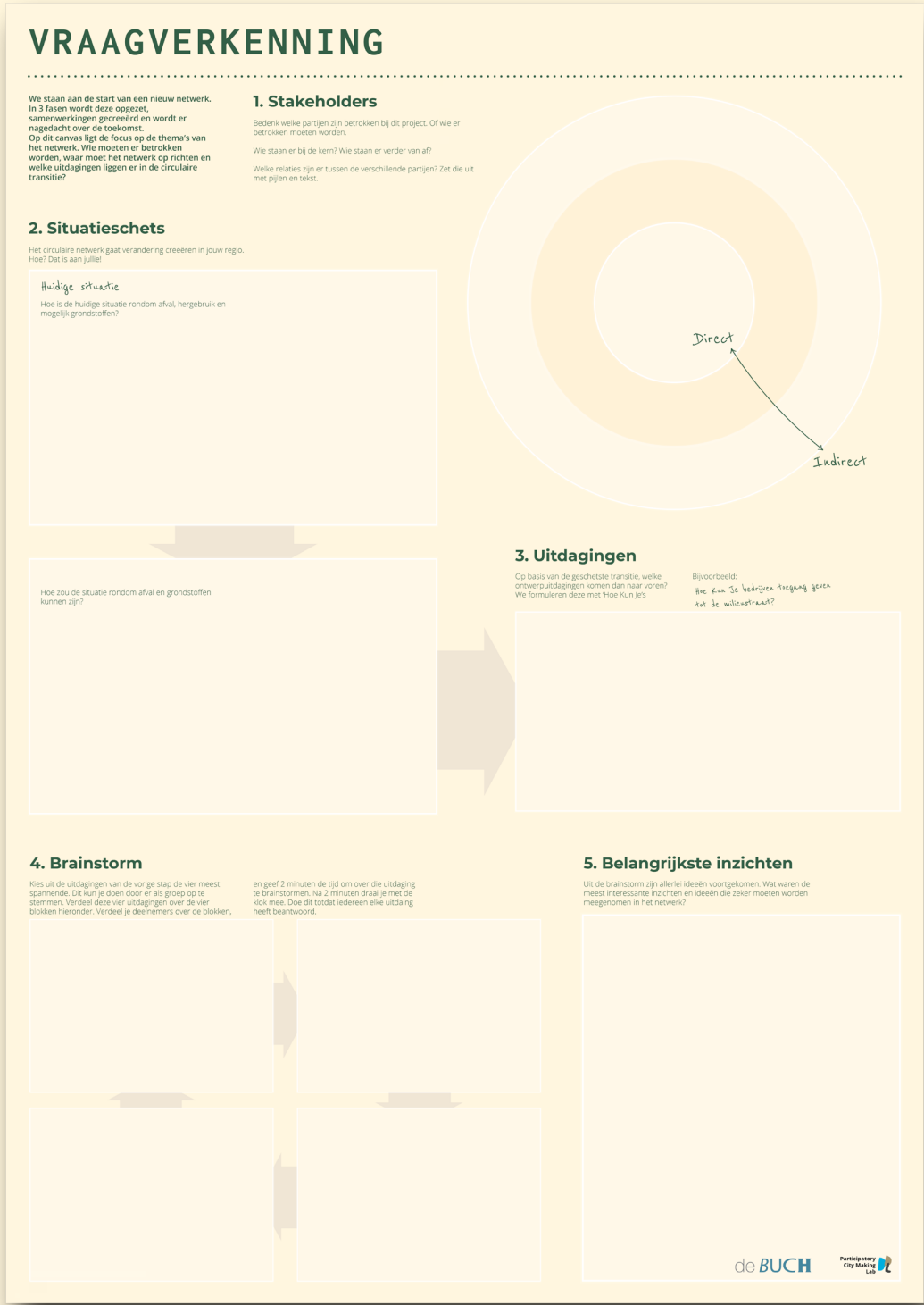
Figure 67 - The theme exploration canvas

ABILITIES AND AMBITIONS

Phase 1 invites the participants to introduce themselves in terms of abilities, ambitions, thresholds and needs. Ultimately, this creates an open conversation with a first glimpse at collaboration.

ABILITIES AND AMBITIONS

The first level of this canvas covers abilities and ambitions, and helps the participants to share why they participate and what the bring to the table.

THRESHOLDS AND NEEDS

The second level starts with thresholds and needs, which brings some vulnerability to the table and stimulates the participants to think of how they can help each other fulfill their ambitions, or overcome their thresholds. This is where the first collaborations can start.

GOALS AND AMBITIONS OF THE GROUP

As the subgroup shared their ambitions, they can formulate a shared ambition that they can present to the complete group. This forms microgoals for the network.

PARTICIPATION

Some participants are not interested in parttaking throughout the whole process of the network. Therefore, the participants can say where in the process they want to be parttaking in the final step of this canvas.

RESULTS

As a result, the facilitator can create a map of the region in which all participants are pointed out with their ambitions and abilities. This overview forms the first network wide result.

Figure 68 - The ability and ambition canvas

IV. Present

FROM MATCH TO COLLABORATION

In the second phase, circular collaborations and ultimately circular business cases are created. For these results, the following tools are designed.

MATCHMAKING

The matchmaking canvas helps the participants to share their ideal collaboration, but they are also forced to think of the non-obvious choices. From the discussion that arises after sharing these ideas, the collaboration canvas can be used.

COLLABORATION CANVAS

In the collaboration canvas, the participants are asked to formulate a teamname and -goal. Of course, this can also be done after filling in the rest, as it can be hard to come up with a strong name and goal. After that, the team is further formulated with circular building blocks.

Then, the circular specifics are mentioned, to get a clear view of the circular value of this collaboration. Finally, a plan for action is formulated in which questions and assumptions are tackled. This plan also forms the basis for a framework of action for the network.

CREATIVE WORKSHOP

Next to these collaborations, a creative workshop can be organized to inspire the participants with circular opportunities. In this workshop, participants can design a new product from 'waste'. They can present it and a reseller (like a thrift shop) can grade the outcome. This workshop is merely as inspiration, but can result in interesting upcycling products.
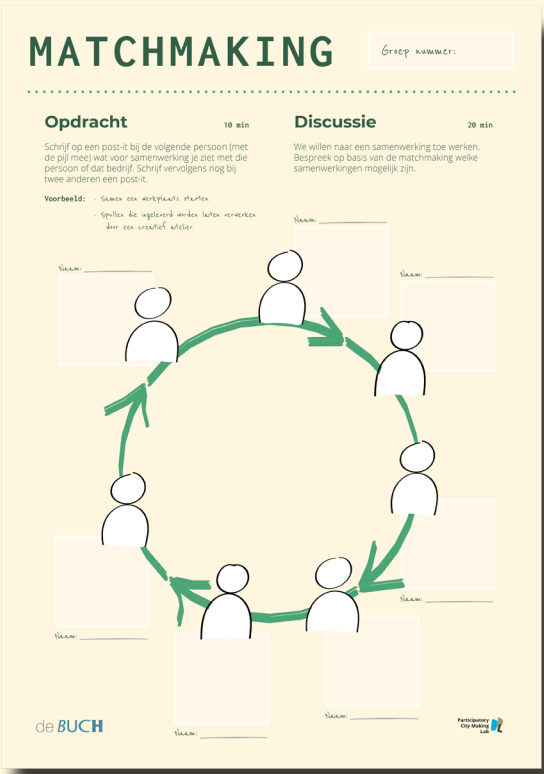
Figure 69 - From top to bottom: The Matchmaking canvas; The Collaboration canvas; and the Creative workshop canvas
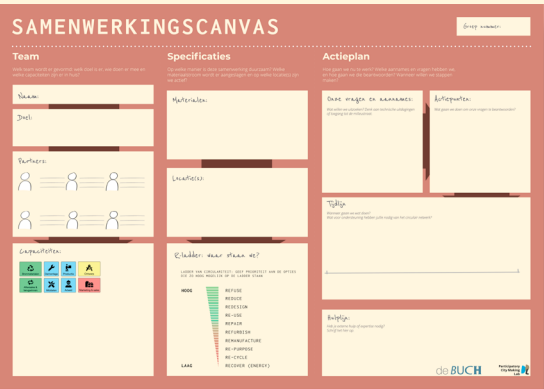
UPCYCLING CANVAS

As some collaborations are becoming more serious, they can fill in the upcycling canvas. This canvas finds it origin in the business model, but questions the circular value proposition of the business case.

This canvas helps the participants to formulate their circular business case. It is a crucial step for the network to become a network of circular businesses.

Figure 70 - The Upcycling canvas, based on the business model canvas

Design based on the upcycling workshop. Has not been tested.

EXIT STRATEGY

The Circular Community Startkit ends with an exit-phase, in which the facilitator hands the baton to the participants. For this phase, there are no canvases, as it asks for the facilitator to start an open discussion on how they want to continue the network.

This can be done by first sharing a survey to collect insights, and then facilitate a discussion on those insights in the form of statements.

INTEGRATION IN YOUR REGION

The final question is: how to integrate this in your region. The first answer to that is to identify the possible stakeholders that you have in your region, and invite them for the pre-phase. Through the exporation session, it becomes clear how you can fill in the rest of this process in your region.

Design based on the upcycling workshop. Has not been tested.

IV. Present

18.2 Recommendation

The Circular Community Startkit is based on the process that has been completed for the BUCH municipalities. Its results there have been promising, yet small on a concrete circular activity base. In order to further iterate on the startkit and create the best results, the following recommendations are done.

FACILITATION

At the start of the process, it can be wise to have intake conversations with your participants to see if any of them are capable of being a second facilitator next to you. This can come in handy in multiple ways. Most importantly, it shows your mindset of creating a network that belongs to its stakeholders. They can be the facilitator themselves!

Secondly, it gives you space to oversee the progress of your participants. As a facilitator, it can be hard to monitor the progress in your group. Being a observant helps you to understand your participants better, which will turn into better results of your network.

AFTER THE STARTKIT

There is life after the startkit. Even better, that is when it has to happen! After the startkit is 'used', the network has been initiated and the participants are collaborating. However, some parts of the startkit can still be used: phase 2 is designed to be reused. So reuse it if you can!

But more importantly: iterate on the tools. Make sure that after every session you sit down with your team and reflect on the session. What went well, want went wrong, and how can it be improved for a next time?

The context of the BUCH can differ a lot from your region, so you might have a very different approach to collaborating. Act, learn, adapt, and keep improving this startkit.

BROWN PAPER

The startkit exists of a set of canvases. These can be printed and used, but it can be better to copy them onto brown paper. Brown paper is a large piece of paper on which you can draw the canvas. With the help of post-it's, your participants can fill in the worksheet.

This is mainly useful for your iterations: if you learn that something should be different in the canvas, you can change it yourself on the brown paper. Next to that, it also works really well in groups if you have the format drawn very large on a piece of paper, instead of printing them out on A3.

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CHAPTER 19
Discussion

This chapter discusses the process of this project in retrospective and the consequent designs of the circular network in the BUCH and the Circular Community Startkit. It looks at limitations of the approach, answers the design questions that were asked in the Design Direction and finally answers the research question of this thesis: How can a network of socio-economic initiatives enable its stakeholders to connect and support each other?

19.1 Discussion

The BUCH aims to connect the local businesses to the material streams, and thus create circular activity and decrease the bulky residual waste. This goal evolves around the concept of the circular centre by Rijkswaterstaat. These circular centres are hotspots of material streams where upcycling products are made and second-hand or refurbished products can be bought.

THE PROCESS

This project explored how a community of socio-economic businesses can be created that set up circular initiatives with the existing material streams. A community as such would be co-existent to the circular centre that the BUCH envisions, and would even strenghten the image of a circular centre in the region.

In order to explore this idea, a participatory process has been designed to start a circular network. Based on the Open4Citizens approach (Morelli et al., 2017), this process is viewed in three levels of design activity: 1) Direct value for the participants, 2) Tools for supporting the first level and 3) Defining the network.

A list of requirements has been made for the process, based on participation theories from the essay Participation within the Government (Dorst & Schaminée, 2021), in which the space for creating change was listed and requirements around bottom-up versus bottom-down.

During the research of this project, the fist steps were taken towards starting a network by calling for participants and exploring the themes for the network. In this phase, mostly residents responded. This was interesting for their point of view and their visions, but for

repetition this can better be done with the stakeholders that are joining.

The start of the network followed and brought together all the stakeholders. In this session the circular possibilities of such a network became clear, and resulted in an overview of the abilities of this network in the BUCH region.

During that session, the will to become concrete showed and thus the second session was organized. In this session, the participants were put together for matchmaking. This was not ideal as there were very little participants due to scheduling problems. However, it did bring an education collaboration and one for an upcycling collection. The latter initiated an upcycling workshop to explore the possibilities with thrift shop leftovers.

The upcycling workshop on itself was only a success in terms of social circularity: it brought minds together and created new relations. The outcome of upcycling products was scarce, but the setup did inspire for the Creative Workshop canvas, which helps to concretize upcycling ideas. The Upcycling canvas is also designed to further iterate on the upcycling ideas and make a business out of it.

Finally, the project needed an end; How to keep this network going when my project is finished. For this part, the participants filled in a survey on how they like to see it continued, and based on that, the idea for MagErZijn is designed.

As a whole, this process lends itself to be reproduced in other regions, or even repeated in the BUCH area. Hence the Startkit. Reflecting on the flaws of the process, the tools have been updated and the order of the process has been

iterated on. However, there are still a number of limitations on this project I like to share, as they illustrate how this project is dependend on its facilitator. These are listed at the end of this subchapter.

SOCIAL CIRCULARITY VERSUS PRODUCT CIRCULARITY

The report starts by saying that circularity is not merely a technical challenge, but also a social one. Social circularity is a growing concept in the circular economy and also the goal for this project.

Over the course of this project, there has not been big circular activities as a result of the sessions. Instead, the circular outcome in the sense of physical products is very small.

However, the goal for this project was to establish the interaction and relation between local businesses and the material streams, and to let them explore their own possibilities. This is what has been achieved and can be called the social aspect of circular economy. If this community as it has been started can continue to become a part of business in the BUCH area, a circular BUCH is not far away.

STAKEHOLDERS

There are still a few stakeholders for which I think it might be interesting to join, but whom I have not contacted early in the project.

In the sense of the social aspect of circular economy, places like libraries and neighbourhood houses are very interesting to involve for their social impact. They are

able to facilitate locations for workshops and gatherings, and can be used as a selling point for upcycling collections.

The local recycling centres also haven't been involved as the boundary for using their materials is so big. However, in the future they should be involved to explore how they can start the transition themselves.

LIMITATIONS

- This research focused on bringing together all interested parties that want to initiate circular activities. However, it depended on the known parties and the respondents to the call. There are probably still some parties left in the BUCH area that are suitable for this community. These should be approached when continuing the project.

- As the participatory kick-off of this network took place in over three months, the scheduling was relatively late for many participants. Because of this late announcing for the sessions, some of the participants were not able to attend all sessions. This limited the project as their input was missing in those sessions.

- The approach of the project is limited in a sense that there has only been one full cycle with insights, that has been translated into a final design. The new design should be executed to further iterate on it.

19.2 Conclusion

This final part of the design section answers the design questions from chapter 10. Finally, it also answers to the research question of this thesis.

D1 - SHAPE: HOW CAN THE DESIGN GET SHAPE IN THE BUCH?

The design of a circular network is embodied in its stakeholders throughout the region. In phase 1 and 2 the participants shared their abilities and ambitions, and worked out collaborations. This gave an insight on what happens where. When the collaborations lead to upcycling activity in the region, those places are the touchpoints for the designed network.

Next to that, the design of the network is also incorporated in marketing throughout the region. By creating touchpoints such as small shops, libraries, thrift shops and others, the network becomes part of the BUCH.

D2 - MAINTENANCE: HOW CAN THE NETWORK CONTINUE AFTER THIS PROJECT AND STAY VITAL?

The network needs to be transferred to its participants and the municipality should join as a partner. By being independent, the wait and see attitude makes place for action. A few months after this project, the business cases will be worked out by se.lab and new projects will be set up. This will continue the project.

The municipality can always reuse the tools that are created for this project to bring up new collaborations and circular initiatives, to keep the network vital.

D3 - COLLABORATE & FACILITATE: HOW CAN THE NETWORK OPERATE AND SERVE IT'S STAKEHOLDERS?

The most essential part of the network is social gatherings where the participants can meet each other and share ideas. It is those sessions that facilitate collaboration and create space for connecting to each other(s material streams).

D4 - CREATE: HOW DO WE CREATE INTERACTION BETWEEN THE NETWORK AND MATERIALS?

In the beginning of the project, the vision was that there should be a link between the businesses and the material streams of the BUCH. Later, this shifted due to the policies around recycling centres. Instead, there is more focus on the material streams that are at hand within the network. For example, the thrift shop has a lot of residual waste that they cannot sell. Like that, every company has their own waste that might be reusable. For now, the interaction with those streams is created through the gatherings and collaborations within the network.

In the future, an interaction with the recycling centre can be created by involving them in the network.

RQ - HOW CAN A NETWORK OF SOCIO-ECONOMIC INITIATIVES ENABLE ITS STAKEHOLDERS TO CONNECT AND SUPPORT EACH OTHER?

A circular network or community exists out of its own participants, the socio-economic initiatives. Therefore, the enabling of these stakeholders can be enabled by bringing the network together and facilitate conversations between them.

The process showed that it is very important to let the stakeholders formulate their own goal, in order to enable them to connect with the network and each other.

The first phase already facilitates mutual support as the participants mention their thresholds and needs.

Therefore, it can be said that a network of socio-economic initiatives enables its stakeholders to connect through a mutual goal and ambition, and that mutual support is resulting from that as well, when the participants name their needs.

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IV. REFLECT

1. PROJECT REFLECTION

2. PERSONAL REFLECTION

Figure 70 - Reflection in a wallpiece at the Recycling Boulevard Leeuwarden

1. Project reflection

This graduation project has been one of a relatively new kind, completely focussing on participation, almost touching service design. In this project reflection I share a few takeaways that can come in handy for students who graduate on a similar topic.

EMPATHIZE AND THINK ALONG

In a participatory project with the municipality, there are a lot of people that you interact with. On the one hand, you have the municipality: officials with busy schedules and hard to reach. They are your client, but you don't work solely for them. On the other hand you have your participants, who can be very diverse. From unemployed residents with big dreams to big companies with little room to move.

For you as a designer it is key to get along with all these parties. Not completely, but enough to have fruitful conversations and possibly collaborations.

To achieve this, you need to empathize and think along. This goes for both officials and participants. Both of them have their own world in which they think, and you need to show them that you understand that. By thinking along, you can show that you want to help them with your project.

For me, this happened in my contact with the client in the early stages. I showed my interest, I kept an open mind and made space for what she wanted. The same goes for participants. However, this does not mean that you just follow. This brings me to the next takeaway.

BE BOLD

It is important to be empathizing and thinking along, but as a designer you also need to cross some lines and go against the stream.

When it comes to working for the municipality, they show a narrow-minded view on what the outcome should be. As a designer you want to keep options open, dream, envision! That creates an interesting balance between you and your client, where you listen, empathize, and in your interaction you also show bold ideas. Important is that you also can prove why that is crucial for a design project.

GET A FACILITATOR

If you are facilitating a participatory project over the course of 3 months, it can be nice to add a facilitator to your 'workteam'. In this project, I was lucky to work together with se.lab, who have experience in facilitating. Together with them I facilitated the sessions, which gave me space to observe and support. This ultimately gave me the opportunity to make the right improvements on the process.

With a facilitator, it can be that he or she has no experience with creative sessions. In that case, walk through a session together and teach them the method you want to use for that session.

V. Reflect

2. Personal reflection

BALANCE TOP-DOWN/BOTTOM-UP

Throughout this project, I often stumbled on a top-down approach. Since a few years now, the government (institutes) are required to involve participation in their decision making process. However, intensive participation is not that normal yet.

In the first session, the municipality wanted start by introducing their goal for this project and what they are already doing. An introduction like that can take up to half an hour. In the second session, this happened again but shortened, also almost 15 minutes.

For a project like this, where the municipality wants to stimulate local businesses and entrepreneurs to start work together on a circular initiative, their should be more coming from the participants: what is their goal for participating, and how do they want to achieve that?

This is a challenge that needs confidence from the side of the municipality. Of course, if a project comes from the municipality, they should be able to introduce their reasons for the project. But make sure that the project starts to feel like it is owned by its participants, in order to create valuable participation.

Even though the faculty tells otherwise, this design project felt like the capstone to my development at the master Design for Interaction. Over the past years, I learned that I am interested in participation, the public sector and designing for the city. This started in the elective Design and the City, and further developed in my internship at Zeewaardig. I was looking for a graduation opportunity where I could show my newly learned skills, and also further develop myself. This project for the BUCH checked all the boxes.

As a designer, I already was aware of sustainability, but this project gave it a whole new dimension. Over the course of this project I became more and more passionate about the circular economy and sustainability.

As I grew more passionately about sustainability, my passion for participation also increased. My goal for this project was to get as many people as possible involved to think along with me, and I ended up with a circular network that is enthusiastic about what we are doing and is even sad to see me go. That is likewise.

However, the project as it is layed out has not been a straight line. There has been a lot of insecurity, stress and sometimes mistakes that turned out not to be that bad. Insecure about how to continue, stress about time left before a new session.

At the start of this project, I was planning on designing a digital platform that would support the socio-economic initiatives. I would invite the stakeholders to join a creative process in which we would define the important themes to work out. Eventually, through all conversations with the client, se.lab and participants, it turned out that there was something way more valuable possible to design: a network, instead of a platform.

This turning point has been of great significance for my design, as it transformed the creative process into a participatory process in which we immediately set up a network!

This teached me not to think small when I start a project. I tend to be leaning into one idea, as I am often insecure about the dark areas around that one idea, but in this case that dark area was much richer.

The participatory process was lots of fun to do, and the interaction with the participants was very energizing. It gave the participants a destiny, and it created a hands-on result for the BUCH. Designing the network as we went might not have been perfect, but it was educational, fruitful and concrete.

All in all, I am glad that I was able to manage a project that involves participation, abstract thinking and concrete doing. Designing with the municipality might be hard, but it is rewarding as well. If I could do such a project again in the future, I would!

Cheers,

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DESIGN FOR A CIRCULAR NETWORK

SUPPORTING SOCIO-ECONOMIC INITIATIVES IN A LOCAL CIRCULAR COMMUNITY

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