UNIVERSITY OF APPLIED SCIENCES UTRECHT

An exploration of circular value propositions in the context of coworking spaces

Bachelor Thesis / Graduation Project

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“Those who initiate change will have a better opportunity to manage the change that is inevitable.”

– William Pollard

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List of Abbreviations

CE	Circular Economy
CWS(s)	Coworking Space(s)
BMI	Business Model Innovation
CBM	Circular Business Model Innovation
VP(s)	Value Proposition(s)
CVP(s)	Customer Value Proposition(s)

Executive Summary

Given that the linear economic model is reaching its physical limits, the alternative concept of the CE has gained prominence in recent years. However, understanding is lacking regarding how the adoption of circular principles generates value for specific industries, such as the Coworking space sector.

Qualitative research was undertaken to investigate how circularity translates into added customer and environmental value propositions and how they capture economic value for the CWS. The insights elicited in this research contribute to the current body of knowledge by (1) framing CE so that it is more inclusive of consumer values (2) promoting the extension of the value proposition to include environmental aspects and (3) communicating financial benefits inherent in the CE. The findings form the foundation of the 'Circular Value Mapping Canvas'. The tool is designed to assist the client in his efforts to support Coworking spaces in their transition towards circularity.

1. Introduction

Today's economy is powered by a linear framework that rapidly depletes the planet's natural resources (Ellen MacArthur Foundation, 2015). To combat the resulting climate crisis, a fundamental shift is required in the way the economy functions and creates value. It entails moving away from today's 'take-make-waste' linear model towards a circular economy (CE) that is restorative and regenerative by design (Ellen MacArthur Foundation, 2017). The CE's overall objective is to find ways to decouple economic growth from resource consumption (Scheel, Aguiñaga, & Bello, 2020).

Given that the linear model is reaching its physical limits, the alternative concept of CE has gained a great deal of popularity. However, most literature regarding business model innovation (BMI) for a circular economy is predominantly focusing on technical innovations (Prendeville & Lofthouse, 2017). Moreover, existing research indicates a lack of understanding regarding what circularity means for specific industries, such as the coworking space (CWS) sector (Velzing, Van der Meijden, Vreeswijk, & Vrijhoef, 2019). Hence, CWSs are struggling to recognize and capture the abundance of value opportunities inherent in the CE. This indicates the need for a tool to identify potential value propositions (VPs) in the context of CE. Thus, showing how (1) circularity translates into superior customer and environmental VPs compared to competing firms operating in a linear manner and (2) how these VPs capture economic value for the CWS.

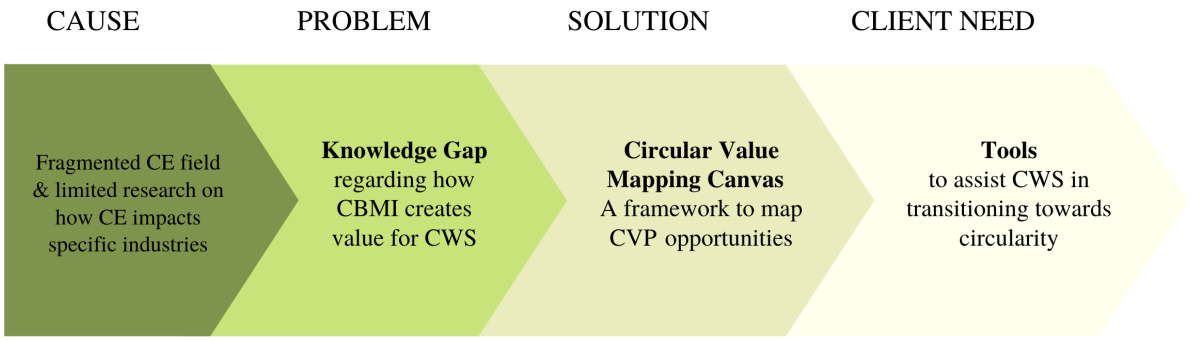

Figure 1 Research Overview

This thesis is undertaken in collaboration with the researcher Evert-Jan Velzing, who is involved in a project at the Werkspoorkwartier, a business area aiming to become a creative circular hub (Gemeente Utrecht, 2012). The area hosts several CWSs, which can be defined as shared workplaces utilized by knowledge professionals (Moriset, 2017). The client is aiming

to assist CWSs, such as those residing at the Werkspoorkwartier, in their transition towards circularity. Therefore, this paper examines CE-driven Coworking spaces by utilizing the fundamental business model component, namely, value proposition. Ultimately, gained insights are translated into a 'Circular Value Mapping Canvas'. The proposed tool meets the client's needs, as it supports him in his efforts to guide CWSs in their transition towards circularity.

2. Current Knowledge

Businesses are gradually attempting to transition to circular business models (CBMs) to tap into the new opportunities for value that arise from such a shift (Ellen MacArthur Foundation, 2015). Coworking spaces (CWSs) are emerging as a distinctive example in this context. Their business model is already built on the sharing principle and a more efficient use of underutilized resources (Cheah & Ho, 2019). However, many analyses on the circular economy are still rather abstract as there is no commonly accepted definition of CE (Kirchherr et al., 2017). This leads to a knowledge gap regarding the value of circularity for specific industries (Velzing et al., 2019). Hence, CWSs are struggling to understand how the adaptation of circular principles creates added value.

Managing the transition towards circularity requires companies to engage in the process of CBMI (Bocken, Strupeit, Whalen, & Nußholz, 2019). A foundational element of the CBMI is the process of changing the VP (Bocken, Short, Rana, & Evans, 2014). Conventionally, VP refers to the value a company promises to deliver to its consumer, which in turn results in monetary value captured by the firm (Comes, Berniker, 2008). Consequently, value is commonly understood as monetary value, whereas the value of nature is rarely ever represented (NEF, 2013). The CE, however, explicitly perceives the environment as a stakeholder in that it aims for economic prosperity in concert with environmental quality (Kirchherr, Reike, & Hekkert, 2017). Hence, a more comprehensive view of VPs is required.

Literature only reveals several generic tools for BMI (Osterwalder, Pigneur, & Tucci, 2005), which have a narrow view of VP by focusing only on the customer. While a few frameworks for sustainable BMI exist (Varadarajan, 2015), there is little availability of tools which are tailored for mapping the different value dimensions in CBMs. Therefore, comprehensive knowledge on VPs in the context of CE is needed, in order to develop tools to assist CWSs in mapping VPs opportunities arising from the shift towards circularity.

2.1. Customer VP

Customer value propositions (CVPs) articulate how firms aim to provide value to their customers (Payne, Frow, & Eggert, 2017). While CVP is a well-defined concept, it has been mostly developed in the context of the linear economy, where CVPs tend to highlight unique product features and monetary benefits (Ranta et al., 2019). In the CE, however, CVPs hold the promise for additional functional and experiential gains. Functional value is concerned with the extent to which a service is useful to the customer to complete a specific task or solve a specific problem (Calvo-Porral & Faina, 2015). Experimental value is defined as the extent to which a service creates experiences and emotions for the customer (Osterwalder et al., 2005).

2.2. Environmental VP

The usual definition of a value proposition is flawed when considering this environmental angle. Manninen et al. (2018) argue that an environmental VP requires a more comprehensive view of value by encompassing the promise of positive environmental benefits. The Ellen MacArthur Foundation (2015) put forth circular economy principles, firstly preserve natural systems and, secondly, regenerate natural systems. These dimensions were used to classify manifestations of environmental value further. Protection of natural systems refers to keeping natural systems safe from harm and further destruction, whereas regeneration represents the act of bringing new and more vigorous life to natural systems (Ellen MacArthur Foundation, 2015).

2.3. Economic Value

Given that the circular economy model is still in its infancy (EEA, 2019), a number of questions regarding how circular VPs translate into profit opportunities remain to be addressed. Schaltegger et al. (2012) agree that one of the challenges is to enable firms to capture economic value for themselves by delivering environmental benefits. This presents strong evidence for the need for economic sense-making, as the acknowledged CE expert Chris Rudolph (C. Rudolph, personal communication, 19 March 2020) frames it. Hence the customer and environmental VP dimension will be investigated in the context of how they translate into offering economic value. According to Schenkel et al. (2015), economic value can be divided into (1) cost reduction and (2) additional revenue generation.

3. Research Questions

Based on the theoretical framework the research questions addressed in his paper are as follows:

RQ: How does circular business model innovation lead to added value in the context of Coworking spaces in the Netherlands in 2020?

SQ 1: What are the functional and experiential customer value propositions offered by circular Coworking spaces in the Netherlands in 2020?

SQ 2: To what extent are Coworking spaces proposing environmental value propositions when operating in a circular manner?

SQ 3: How can Coworking spaces extend their delivery of economic value by applying circularity in the Netherlands in 2020?

4. Research Procedure

As illustrated in Figure 2, this paper is structured in four parts, conducting different methodical steps.

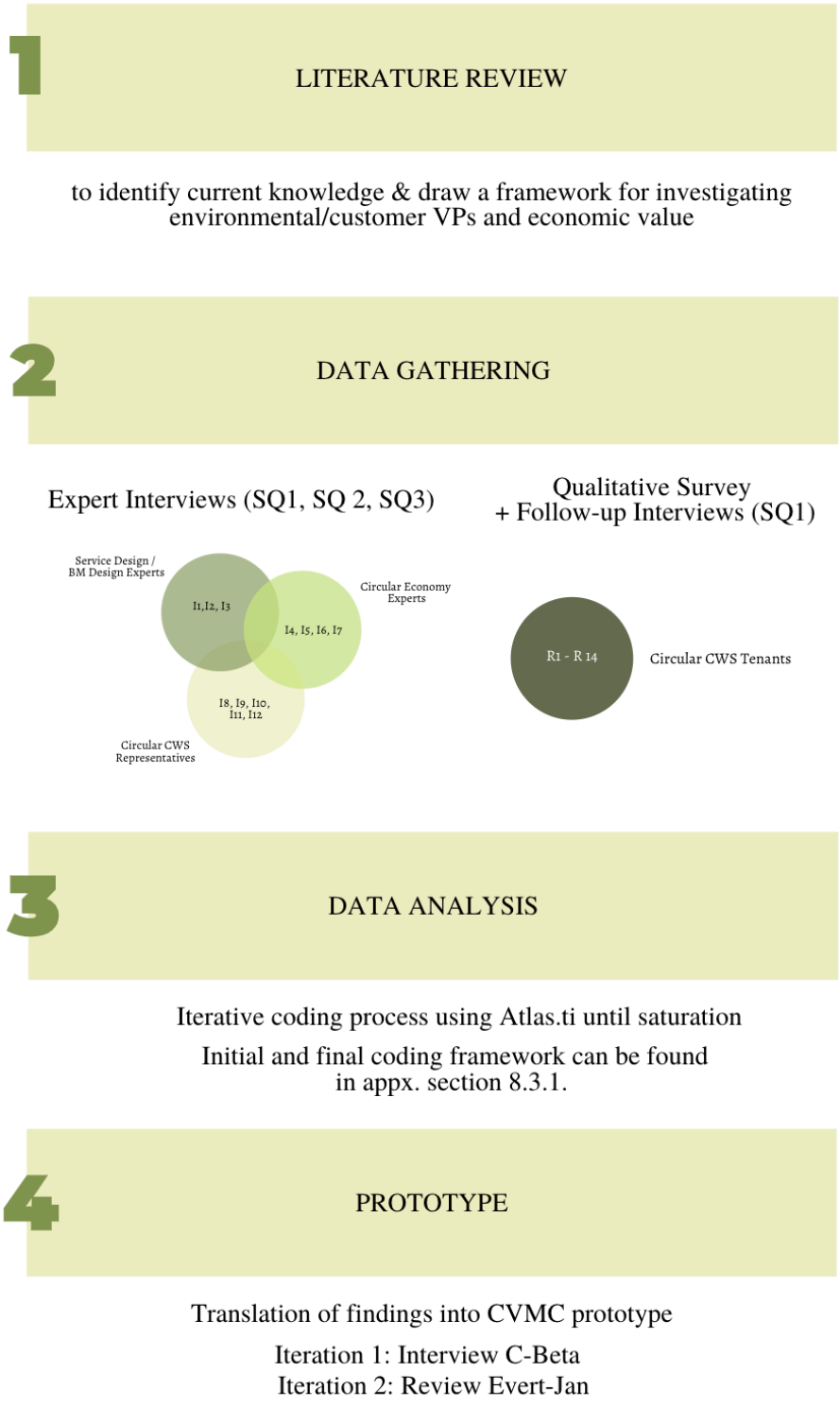

Figure 2 Research Procedure Overview

Considering that circular VP design is a relatively unexplored area, an exploratory and qualitative research design has been adopted. This approach is particularly suitable for identifying emerging topics (Corbin & Strauss, 2014). A qualitative strategy allows for eliciting holistic insights on multi-layered issues (Kumar, 2014), such as the concept of VPs in the context of CE. Triangulation is achieved by using a multimethod approach in undertaking this study, namely expert interviews and qualitative surveys.

4.1. Expert Interviews

Experts interviews were conducted to allow for a qualitative exploration of the elicited research concepts with knowledgeable experts. The concepts, along with their dimensions, were used to develop an interview guide (appx. 8.3.1.) to ensure consistency during the data collection phase. A semi-structured approach was adopted. Hence the formalized list of questions was only loosely followed to allow for flexibility in diving deeper into subjects deemed necessary by the interviewee. Experts interviews were conducted until a repetition of the respondents' key elements was found, hence it was assumed that the saturation point had been reached. (Saunders et al., 2017). This stage determined the sample size of n=12.

#	Position
I1	Managing Partner
I2	Service Designer
I3	User Experience Expert
I4	Founder, CE Expert
I5	Marketing, CE Expert
I6	Project Manager, CE Expert
I7	Sustainable Design Expert
I8	Management
I9	WSK Project Manager
I10	Management
I11	Management
I12	Management

Table 1 Overview of Interview Participants

The participants for the interviews were chosen using judgemental sampling. This method has presented itself as most effective, because it increases the relevance of the chosen sample. Hence, experts who are best positioned to provide the information needed for the study were selected (Kumar, 2014). The sample showed a diversity of expertise, namely the sectors of service-, and BM design, CE, and the circular CWS domain. Two CWS, namely Hof van Cartesius and Stadstuin, where chosen to ensure applicability to the clients' project at the WSK, while three additional circular CWS in the Utrecht area where chosen based on accessibility. In order to counteract the main disadvantage of judgemental sampling, namely researcher bias, there were at least two additional interviewees per background category. The triangulation of experts is illustrated in Figure 3.

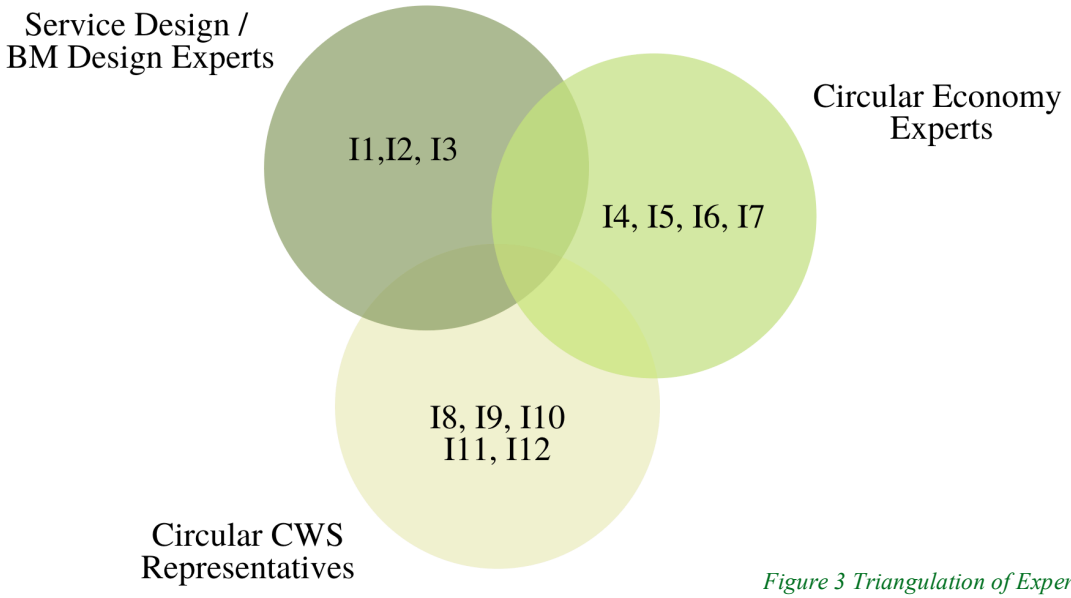

Figure 3 Triangulation of Experts

4.2. Qualitative Surveys

In an attempt to investigate customer VPs, surveys with tenants of the selected circular CWS's were conducted. Surveys were a means to gather qualitative data on functional and experiential customer values. This method was adopted based on I11's (2020) recommendation that reaching tenants would be most effective through a survey requiring little time. Literature also recognizes the minimal time involvement as a main advantage of surveys (Tracy, 2019). The survey's open questions were based on the theoretical framework and insights from interviews with representatives of CWSs. All survey respondents were tenants drawn from the member

base of the circular CWSs, gathered through the process of judgmental sampling. This sampling strategy was chosen to select respondents whose perspectives would be most relevant to the topic under investigation. Given the limited number of circular CWSs, the survey was created in collaboration with a research team member. The joint approach increased the reach of respondents while avoiding that tenants would be contacted multiple times. After reviewing the answers, follow-up interviews were applied in two instances, as the survey answers required further exploration. The analysis of the interviews and surveys was done using Atlas.ti.

SQ	Concept	Dimension	Method
1	Customer Value	Experiential VP	Qualitative Survey
		Functional VP	Expert Interview
2	Environmental Value	Preserve natural systems	Expert interview
		Regenerate natural systems	
3	Economic Value	Cost reduction	Expert interview
		Revenue generation	

Table 2 Operationalisation

5. Results

The following section lists the key insights elicited during primary research, whereas section 8.4. represents a complete account of all findings.

5.1. SQ 1

The literature review uncovered a techno-centric narrative in circular BMI (Ellen MacArthur Foundation, 2013). This stands in contrast to the shared recognition by the interviewees, who have repeatedly voiced the need for a more customer-centric approach. For instance, I1 (2020) stated: "We have to focus on […] the aspects that make circular services superior to linear ones. And not necessarily from an ecological perspective but from a user value creation point of view". While the existing VP of a CWS, namely offering shared spaces and office services for knowledge professionals, remains intact, the circular operation of a CWS allows for a number of added user values.

5.1.1. Functional value

There is a common recognition by respondents that associating oneself with a circular CWS results in added functional value for tenants. A circular branding advantage has been mentioned by respondents such as R12 (2020): "The CWS's circular image instantaneously rubs onto my image or my company's brand." Additionally, curating a community of circular tenants offers added value in terms of collaboration and knowledge sharing on the particular topic of CE (I3, 2020; R8, 2020). This notion of co-creation can be further extended by forming a collective that operates under a set of jointly-agreed CE principles (I8, 2020). Thus, combining the tenant's qualities to co-create projects. Additionally, added customer value is proposed by offering tenants an umbrella permit, which allows them to develop circular activities without having to apply for separate permits, thus reducing administrative hassles (R13, 2020).

5.1.2. Experiential value

In terms of experiential user value, a majority of those surveyed indicated that the healthy working environment positively impacts their wellbeing and health. R12 (2020) states: "(…) natural light, trees, and plants inside, improved air-quality all those things are good for me". Respondents such as R2 (2020) also expressed a sense of purpose and fulfilment, which arises due to them working in a circular pioneering CWS: "It makes me feel good and fulfilled to be part of a place that tries to make a difference". Additionally, the circular operation aligns with

tenants' values and it heightens the tenant's awareness: "It brings sustainable matters front of mind every single day and drives me to do what I do" (R6, 2020).

5.2. SQ 2

While the concept of an environmental value proposition is not a widely acknowledged concept yet (Manninen et al., 2018), the findings derived from expert interviews underline its importance. I4 (2020) claims that framing circular ambitions in terms of environmental VPs has the potential to make a CWS's environmental agenda very concrete as it allows for clear communication and differentiation by answering the question: "Why would anyone buy your service on the grounds of environmental benefits?". Moreover, I11 (2020) emphasizes that besides other VPs, CWSs need to communicate the environmental benefits that their offering delivers increasingly.

5.2.1. Preservation of natural systems

In terms of preservation of natural value, the physical resource flows, namely material and energy and water, are leveraged. More specifically, a positive contribution to the environment is mainly promised through (1) cycling materials at a continuous high value, (2) basing all energy on renewable sources, and (3) by cycling water resources. Material value is predominantly cycled via collaborations with third parties offering leasing schemes (I8, 2020). Renewable energy is either produced on-site (I9, 2020) or accessed via a sustainable energy provider (I12, 2020). Additionally, a majority of interviewees indicated that a reduced consumption across all physical resource flows is proposed, such as reduced virgin material consumption, reduced generation of waste volumes, reduced energy usage, and reduced water consumption (I8, 2020; I9 2020; I10, 2020).

5.2.2. Regeneration of natural system

Regenerative natural value for the environment is proposed in terms of the improvement of land productivity and soil health and biodiversity-regenerative measures. CWSs are stimulating local biodiversity by adding green spaces and a community garden to the industrial area (I9, 2020). Additionally, a circular CWS located on a former shipyard states the regeneration of land and soil productivity as one environmental VPs. Based on this promise of environmental improvement, the polluted site is cleaned through phytoremediation. At the same time, nutrients from food-, animal-, and human waste are being recovered and returned to the soil to gradually restore its health (I12, 2020).

5.3. SQ 3

Among other interviewees, I4 (2020) recognizes the cost of not acting circular. As such, linear CWSs may not be economically viable in a world increasingly characterized by tightening regulations, scarce natural resources, and shifting consumer demands (I12, 2020). I4 (2020) frames this economic outlook for the CE by stating: "We are moving towards a moment in time when it will no longer make economic sense for business as usual, and the circular economy will allow firms to tap into new profit opportunities." Therefore, findings suggest that economic sense-making, namely, how circularity can allow CWSs to capture economic value, is most effective when adopting a time-perspective. The investigated CWSs demonstrate that the CE principles provide short-term cost benefits and significant long-term profit opportunities as well as new profit pools in the future.

5.3.1. Cost reduction

Regarding short term cost reductions, I9 (2020), points out that circular operation can lower material costs: "Used materials will take more time to process, but result in fewer material costs." Additionally, lower energy consumption costs were mentioned (I10,2020). I1 (2020) highlights that waste is a double financial loss in the form of resource loss and waste management costs. As such, waste reduction measures hold financial gains because CWSs can "reduce the cost of waste handling and retain the value of those materials that are already in place." (I1, 2020). Lastly, circular CWSs are better equipped to manage uncertainties like rising resource prices (I4, 2020).

5.3.2. Revenue generation

In terms of long-term profit opportunities, interviewees agree that a CWS's image and reputation is enhanced through a circular operation. I8 (2020) adds that the added brand value, which results from such circular stewardship bears the potential for premium pricing. Moreover, circular CWS can tap into additional revenue streams, such as guided tours and academic offerings (I10, 2020). Circular CWSs become a magnet for new business and talent, hence delivering faster growth. For instance, Hof van Cartesius is currently expanding by 60%, a business expansion propelled by its focus on a circular program and operation to meet the rising demand for sustainable leadership. Another long-term business benefit is presented in terms of increased employee performance by more than 10% because of a healthy and non-toxic environment R8 (2020).

6. Conclusion

To enable CWS's transition towards CE, it is crucial to investigate the fundamental business model component, namely the value proposition. Thus, overcoming the knowledge gap regarding how CE creates added value in the context of CWS. This research suggests that a circular branding advantage, a sense of purpose, and improved well-being were among the most relevant added customer values (SQ1). Environmental improvement is mostly promised in terms of preserving physical resource flows and regenerating biodiversity and soil health (SQ2). Lastly, circular operation results in a reduction of material, waste, energy costs and additional revenue streams such as guided tours or premium pricing (SQ3).

The findings derived from this research were made actionable by translating them into the 'Circular Value Mapping Canvas' (CVMC) prototype. (Access prototype: https://appelmalou.wixsite.com/circulartransitions/vaue-mapping) The tool is designed to support CWS in identifying how the integration of circularity holds a promise of value for the environment, the consumers, and the business itself. Hence, it relates to the client's need as it can be used as a framework to identify added values for CWSs in transitioning towards circularity.

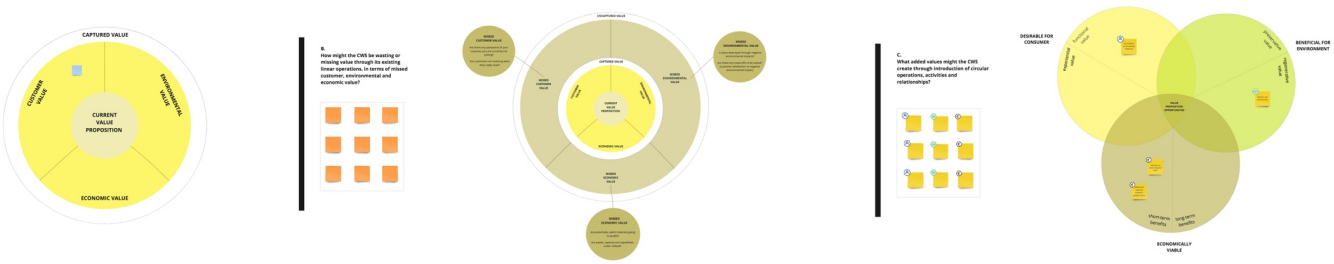

Figure 4 Prototype Overview

6.1. Rationale for tool development

Research suggests that CWSs engaging in CBMI, struggle due to a misalignment of the teams' interpretation of CE. Therefore, the tool provides a visual framework and a common language to collaboratively strategize value proposition opportunities. The first section provides an assessment tool which was introduced as part of the first iterative cycle (appx. 8.5.). The second canvas exists to map circular value proposition opportunities. In order to enable a comprehensive view on VPs the canvas consists of three sections, based on the following considerations: (1) Literature indicates that CBMI primarily focuses on technological aspects.

This appears distinct from the research findings, which suggest the need for seeking customer-centric value propositions. Hence, a perceived strength of the CVMC is its focus on how circular CVPs can be superior to linear ones, not only from an environmental perspective but also from a user-value perspective. (2) Findings suggest adding the environmental dimension to the CVMC, as it provides CWS a tool to consider their operation from an environmental perspective and guides them to set focus points accordingly. (3) This research concludes that economic sense-making is crucial to convince CWS of the benefits of circularity. Hence, the tool highlights cost benefits and new profit pools to demonstrate how the adoption of circular principles can readily translate into economic benefits.

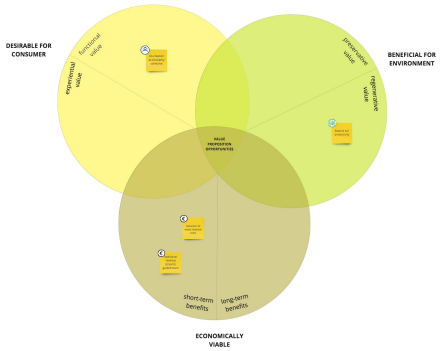

Figure 5 Prototype Detailed

6.2. Recommendations

The tool is designed to enable collaboration and is, therefore, most fruitful, when applied in a workshop setting. It requires some facilitation, hence a step-by-step guide for the client can be found in the section 8.6.

While the CE is very focused on environmental impacts, the social value is barely mentioned, and only implicitly included (Murray et al., 2005; Geissdoerfer et al., 2017). Therefore, the social value was excluded in this research, which resulted in the absence of the social dimension in the prototype. However, experts sporadically expressed social values such as placemaking (I9, 2020) and contributing to the diversity and livability of an area (I5, 2020), which are currently not acknowledged in the tool. Therefore, the researcher advises to investigate the social dimension thoroughly in order to add social VPs to the CVMC.

By bringing the individual parts of the research group (appx. 8.1.) together, the client receives a toolbox with five modular tools that can be independently used but also link together in a number of ways. To further develop the collective toolbox, further research regarding the measurement of circularity KPIs is recommended.

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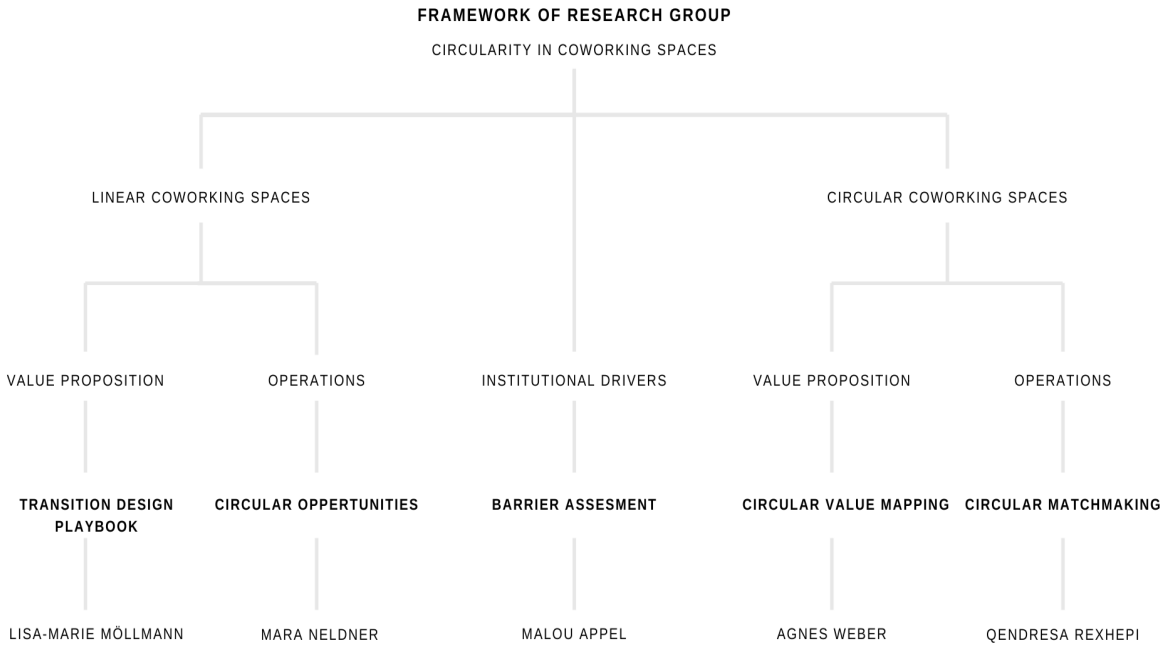
8. Appendix

8.1. Group Research Framework

This research is part of a research group consisting of the following students: Qendresa Rexhepi 1710281; Agnes Weber 1699083; Malou Appel 1702896; Mara Neldner 1711199; Lisa-Marie Möllman 1676208.

The five individual research papers are based on the following framework:

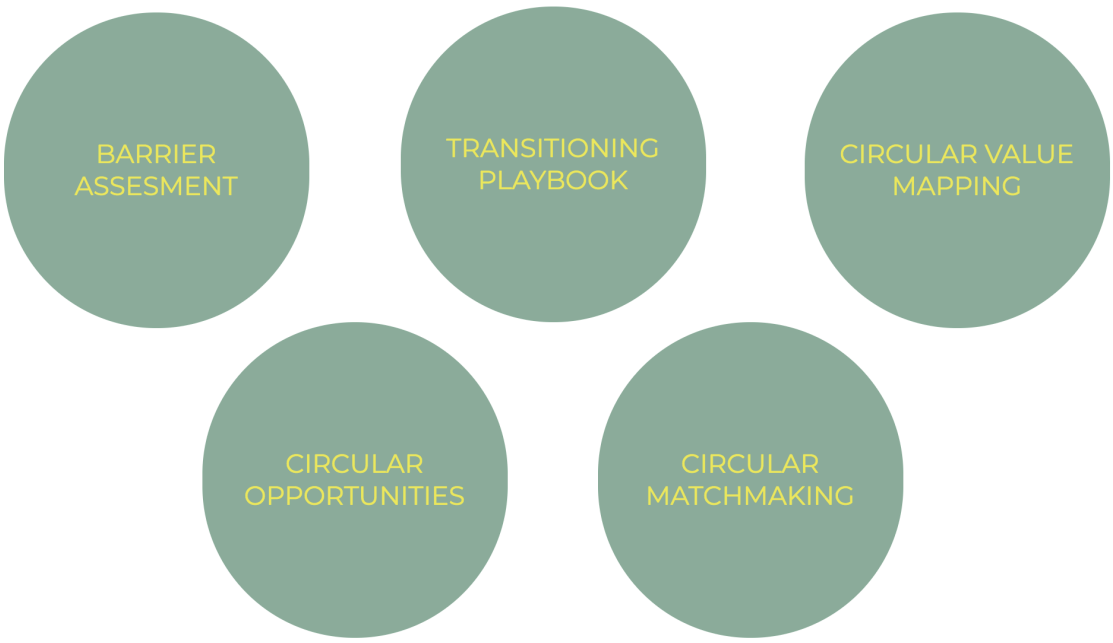


The joint effort of the research team led to the design of a toolbox, which consists of five modular prototypes. These can be used independently but also link together in a number of ways. Therefore, solving the client's need for knowledge and tools to assist Coworking spaces in their transition towards circularity.

After all, achieving circularity is a collective effort, strengthened by the expertise of many, and always evolving. This toolbox is not so different.

Access the toolbox here: https://appelmalou.wixsite.com/circulartransitions

The transition towards a circular economy is a step-by-step process. It is often best stimulated through a series of projects used as stepping stones towards the goal of circularity:



8.2. Data collection - Interview

8.2.1. Interview guide

The interview guide for conducting semi-structured interviews with representatives of Coworking spaces can be found here:

INTERVIEW GUIDE

INTRODUCTION

I want to explore how value proposition design needs to be adjusted to drive circular economy in the context of Coworking spaces. So this interview is to get your opinion on how the adoption of circular practises translates into new forms of customer, environmental or financial value?

Practicalities: ask for permission to record and explain that name and company will be anonymised

Section 1: Customer value proposition

Goal of section 1: Evaluate the "fit" between the value you create and the expectations your customers have

1. Who is the main customers/user type of your Coworking space? Is it mainly used by professionals involved in the circular economy/sustainability sector?
2. What are the most prominent pain points of your customers you are aiming to solve with your service?
3. What are the 3 main benefits for people who are choosing to work or host events here?

Section 2: Environmental value proposition

Goal of section 2: *Evaluate the goals and ambitions in relation to having a positive impact on the ecological systems.*

1. What environmental goals/values are you working towards? UN's sustainability goals?
2. What goals did C-Beta set itself with regards to energy consumption, water consumption, material sourcing, Co2 Emissions, waste management)
3. What are negative environmental impacts of your business (that you are trying to tackle right now?)

Section 3: Economic value capture

Goal of section 3: Evaluate how profitable is it to run your business this circular way

1. Did a circular construction/operation result in any cost reduction (such as waste disposal costs, substituting primary material with lower-priced secondary materials)
2. Did applying circularity translate into a means for revenue generation? Economic benefit/monetary gains?
3. *Do you experience circularity as differentiator for potential employees? Attract top talent?*
4. *What do you think are new profit opportunities you would like to tap into?*

The interview guide for conducting semi-structured interviews with CE and BMI experts can be found here:

INTERVIEW GUIDE

INTRODUCTION
I want to explore how value proposition design needs to be adjusted to drive circular economy in the context of Coworking spaces.

Practicalities: ask for permission to record and explained that name and company will be anonymised

GENERAL
Tell me a bit more about your role at [Codify] & as a [circular business model designer]?
How do you define circular economy?

CIRCULAR BMI TOOLS

• Is the value proposition canvas used in consulting practises?
• When helping organisations transition to a circular BM, what role does the VP play? Is it the starting or ending point? Is it mostly about adding something to a specific VP/service or redesign the entire BM?
• How do you think the value proposition canvas needs to change in order to drive circular economy?
• In the field of sustainable business modelling, lots of tools that redesign the VP Canvas in the name of sustainability, have you noticed the same for circularity?
• Do you think a tool that help business think in terms of what value they are missing, wasting destroying could be useful?

VALUE DIMENSIONS

• Do circular business models improve customer relationships?
• What's your opinion on how profitable it is to do business in a circular way?
• Have you witnessed business model innovations for circularity which were not economically viable at the start (e.g. as in the time when the first hybrid car was introduced) but may become so in the future due to regulatory or other changes?
• Are things like reduced waste disposal costs or substituting primary material with lower-priced secondary material financial motivations for businesses to go circular?

8.2.2. Interview transcripts and recordings

8.2. Data Collection – Survey

Coworking Space	Survey
DeCeuvel	https://docs.google.com/forms/d/e/1FAIpQLSftC5piCz8M33EuqMvX9RcyW4g1KkXq92QW7JKEUEFeQdJtHQ/viewform?usp=sf_link
Hof van Cartesius	https://docs.google.com/forms/d/e/1FAIpQLSftC5piCz8M33EuqMvX9RcyW4g1KkXq92QW7JKEUEFeQdJtHQ/viewform?usp=sf_link
UCo	https://docs.google.com/forms/d/e/1FAIpQLSeOCTViZmEzVnPszISB-JvEaHkaZao_JOA3o_kPQtemSzwbCA/viewform?usp=sf_link
C-Beta	https://docs.google.com/forms/d/1cv59Qr--5ARW0S4TurnKK1FWHaEFYRU1s5nTMaWtKc0/edit#responses

8.3. Atlas.ti Codes, Code Groups, Networks, Quotations

8.3.1. Coding Framework

The following represents the initial coding framework:

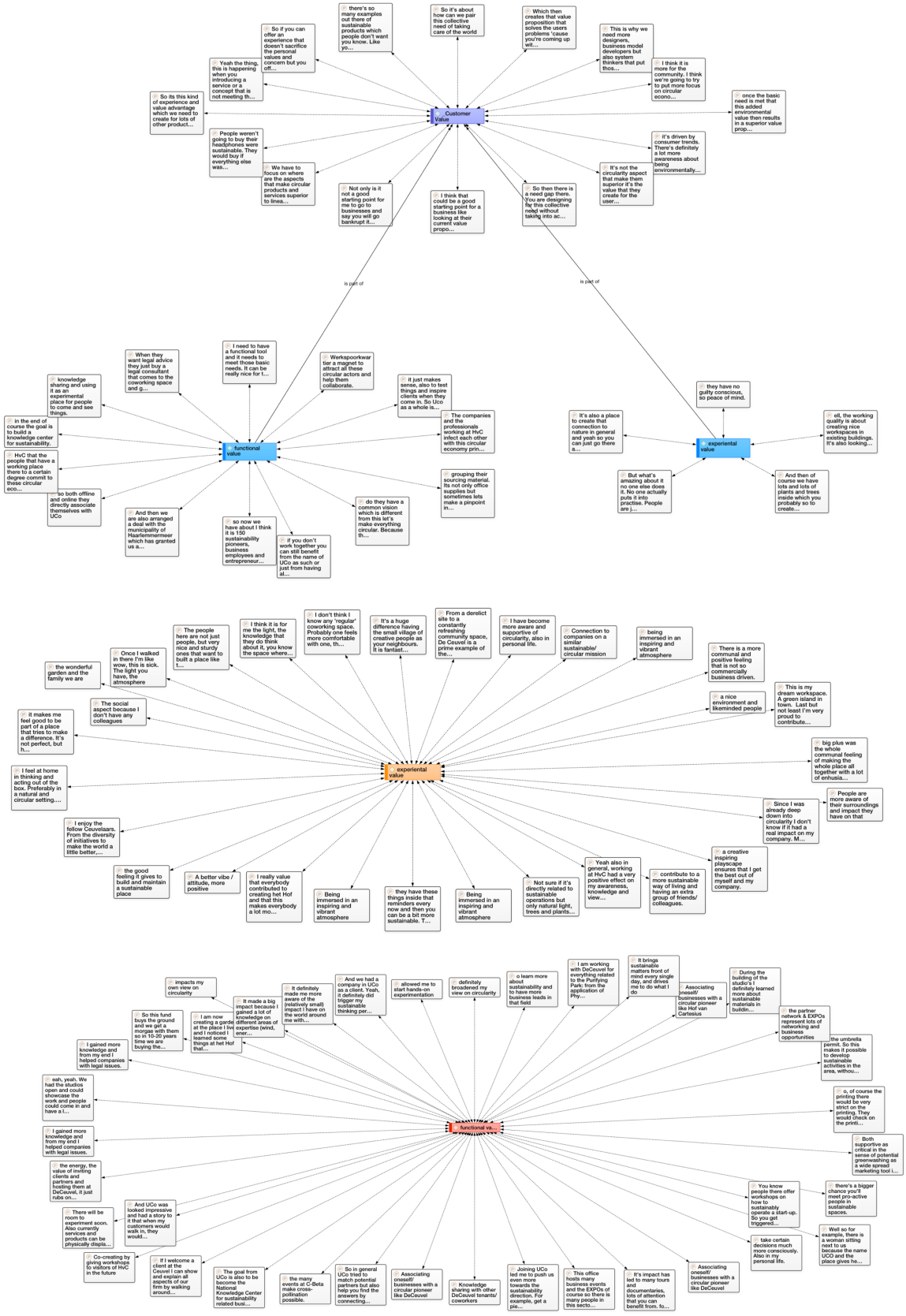
Name			Groups	
CE (6)				
adoption of CE	13	0	CE	1
arguments for circular economy (ineffic...	13	0	CE	1
circularity players	14	0	CE	1
dark side of CE	13	0	CE	1
definition CE	14	0	CE	1
motivations for CE	16	0	CE	1
misc (4)				
Corona	14	0	misc	1
expert's background	20	0	misc	1
intro/outro	13	0	misc	1
research context	13	0	misc	1
tools + VP (4)				
BMI tools	16	0	tools + VP	1
collective VP	16	0	tools + VP	1
time perspective	15	0	tools + VP	1
VPC point of view	12	0	tools + VP	1
values (4)				
economic value	23	0	values	1
environmental value	16	0	values	1
social value	21	0	values	1
user/customer value	29	0	values	1
No code group				
archetypes	16	0		0
change/transition aspects	13	0		0
circular vs linear CWS	12	0		0
CWS propells CE	13	0		0
government	14	0		0
placemaking	15	0		0
stakeholders	14	0		0
user motivations	13	0		0
WSK tension	15	0		0
WSK vision	13	0		0
Result: 28 of 28 Code(s)				

The coding of data, was done in an iterative manner, ultimately arriving at the final coding framework which was used to label and organize the qualitative data. It follows a hierarchical frame to organize codes based on how they relate to one another.

Name			Groups
CBMI (4)			
CBMI time perspective	14	2	CBMI
CBMI tools	18	2	CBMI
CBMI transition aspects	20	2	CBMI
CMBI status	13	2	CBMI
Customer Value (3)			
_Customer Value	24	2	Customer Value
experiental value	16	1	Customer Value
functional value	25	1	Customer Value
Economic Value (3)			
_Economic value	18	2	Economic Value
cost reduction	25	1	Economic Value
revenue generation	24	1	Economic Value
Environmental Value (3)			
_Environmental value	12	2	Environmental V...
preserve natural systems	30	1	Environmental V...
regenerative natural systems	28	1	Environmental V...
No code group			
co-creation	9	0	
CWS Catalyst	12	0	
placemaking	15	0	
social value	3	0	
Result: 17 of 17 Code(s)			

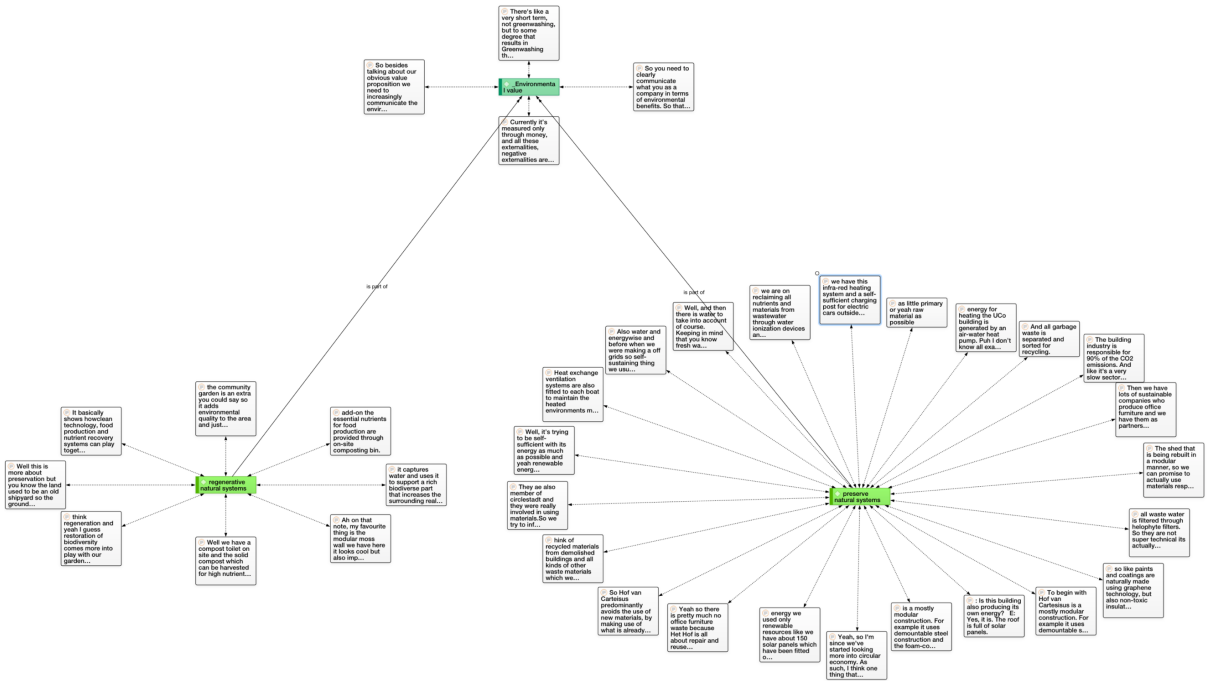
8.3.2. Customer Value

The following represents a visual depiction of all categorized quotations in the dimension of Customer Value.



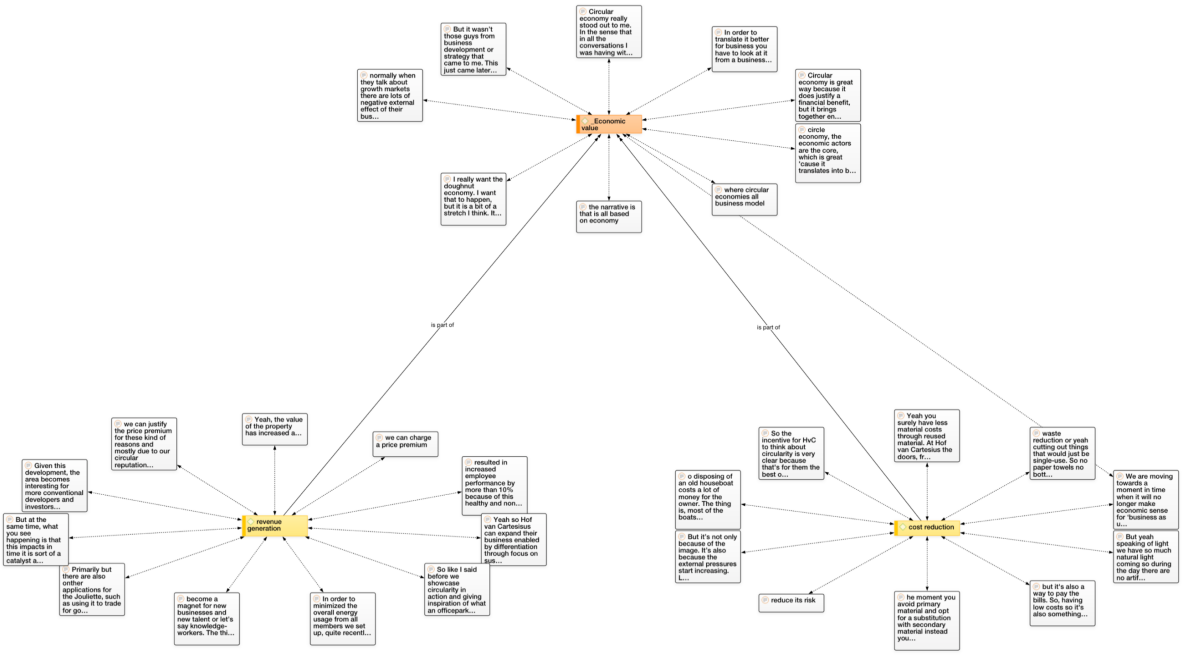
8.3.3. Environmental Value

The following represents a visual depiction of all categorized quotations in the dimension of Environmental Value.



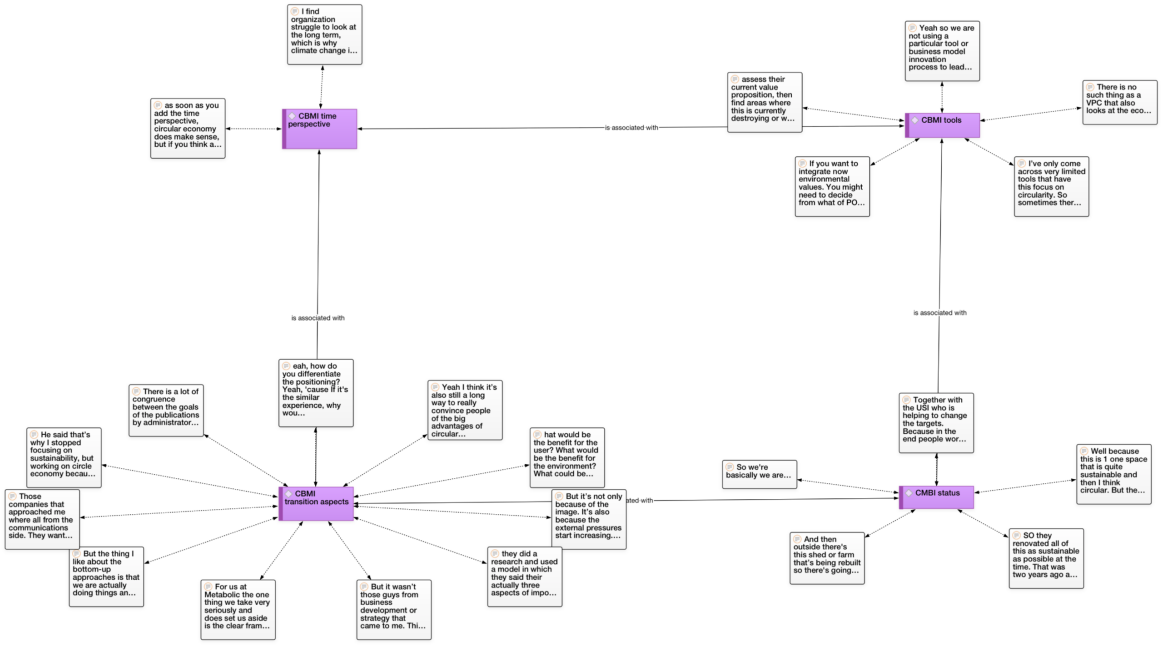
8.3.4. Economic Value

The following represents a visual depiction of all categorized quotations in the dimension of Economic Value.



8.3.5. CMBI Tools

The following represents a visual depiction of all categorized quotations in the dimension of CBMI tools.



A complete account of all quotations per code group can be accessed here: https://drive.google.com/drive/folders/1Hv5ncJF74bJdz307OwZj8CjMRwDyiZFc?usp=sharing

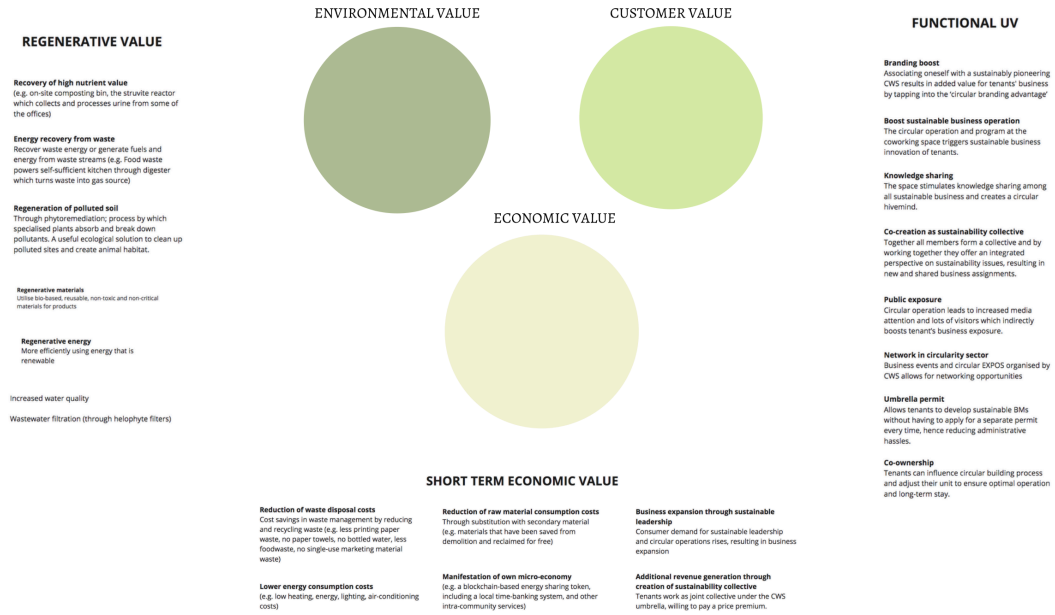
8.4. Prototype Iterations

Prototype Iterations

In order to reinforce the validity of my prototype, the design process was split in two iterative cycles. The proposed 'Circular Value Mapping Canvas' was tested, analysed, and refined based on the following criteria:

FEASABILITY	Can you follow the steps of the tool?
USABILITY	Is it easy to use the tool?
UTILITY	Is the tool helpful for you?

1. **Prototype Version 1 – Printable Canvas**



User Feedback C-Beta; 22.05.2020
Feasibility: I can follow the steps based on your explanation but if you are not there I would need some sort of guide to give context and break down the steps.

Usability: Make sure it lives in online environment. Not just a paper canvas. Preferably not Google Docs but a platform that allows for good online collaboration. Covid-19 has shown the importance of online access and collaboration.

Utility: Yes, better starting point if there would be a first brainstorm to assess the current state. This sets the ground and I think would make for a better mapping afterwards.

Based on the results of the first testing round, the tool was adapted accordingly:

- Canvas was re-designed in a virtual setting using mirror.com
- A facilitation guide outlining step-by-step instructions was added
- An assessment phase in form or an additional canvas was added to identify wasted and missed value opportunities of the current system

Prototype Version 2 – Virtual Canvas

Feedback Evert-Jan; 03.06.2020

Feasibility: Yes, guide makes it easy to approach CWS with it.

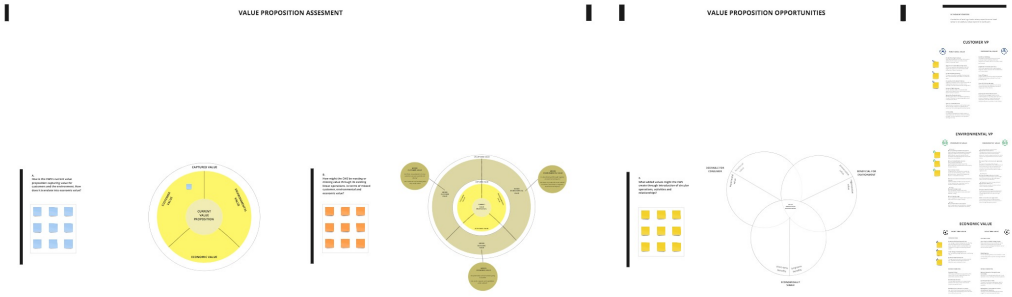
Usability: Can the assessment canvas be split into two sections. Would enhance the ease of moving through the different brainstorm sections.

Utility: Yes, interactivity and online setting is a plus, added request: Does it allow for added input? Can others add to it? Usually research or tools like that are sometimes quite limited, in that they allow for little modification or comments. Is there a way users can contribute to thought starters?

Based on the results of the testing round with the client, the most recent **iteration** of the design was made. The most significant changes and refinements are listed below:

- Assessment canvas was split into two sections while clearly indicating its connectivity
- The canvas was made open-source; hence it allows for users to contribute to the thought starter section. Additionally, the comment function was enabled to allow for additional remarks across all sections.
- The tool was designed to make it applicable to a wider range of service models such as a CWS; the thought-starter section remains tailored to the CWS sector

Final version of the CVMC tool: https://miro.com/app/board/o9J_krk-xP0=/



8.5. Facilitation Guide

The online version can be accessed here:
https://docs.google.com/document/d/1qg3s8bTYgny7uUFETuRnd-pmiDlcNCNIBcZe-y4wDHM/edit

CIRCULAR VALUE MAPPING CANVAS
Facilitation Guide

Step 1
Start by presenting the Circular Value Mapping Canvas and its different sections (Need a quick refresher? See terminology cheat sheet below.)

Step 2
In order to enable richer conversations about value propositions mapping, start by introducing the concepts of customer and environmental VP in the context of circularity and its potential for generating economic gains. This introduction will provide a common language for all workshop participants.

Step 3
The first canvas provides an assessment tool for Coworking spaces (CWS) to identify how their current VP is capturing and wasting value. Each ring in the diagram represents a different brainstorm.

Brainstorm 1: VALUE CAPTURED
How is the current value proposition capturing value for customers, the environment, and how does it translate into economic value?
Brainstorm 3: VALUE UNCAPTURED
How might the CWS be wasting or missing value through its existing linear operations. in terms of missed customer, environmental and economic value.

Step 4
Based on the considerations of all uncaptured and captured types of value, the second canvas exists to identify the value proposition opportunities a CWS might create through introduction of circular operation, activities and relationships? Each circle represents a different stakeholder.

Using the second canvas, go through the series of questions to help you find untapped circular value proposition opportunities:
Circle 1: CUSTOMER (functional vs experiental value) How could existing value created be enhanced further? How could circular innovation improve the customer experience?
Circle 2: ENVIRONMENT (decreased negative value vs regenerative value) How could destroyed value be eliminated or regenerated?
Circle 3: ECONOMIC (cost reduction, growth generation) How could missed circular opportunities be converted into new avenues for economic value capture?

Step 5
Given that the circular economy is still in its infancy, the mental barrier towards circular innovation can be high at times. Therefore, the array of existing circular value propositions which have been uncovered in this research are listed in the thought-starter section. This collection of existing knowledge shall be used as a stepping stone to build upon.

Optional Step 6:
In order to move from ideation to implementation the VP opportunity mapping may be followed up by feeding the findings into the Business Model Canvas by Osterwalder and Pigneur. The adapted version of the strategy canvas is included.