Reframing from Complicated to Complex Contexts

A Framework to Assist Consultancies in Leveraging Systemic Design in Private Sector Projects

Joyce van Weverwijk
Master Thesis
Strategic Product Design
Delft University of Technology

Master Thesis
Joyce van Weverwijk
4278984

Msc Strategic Product Design
Faculty of Industrial Design Engineering
Delft University of Technology

Supervisory Team
Nynke Tromp
Bart Bluemink

Company Mentors Halogen
Abel Crawford
Natalia Agudelo

— Acknowledgements

I would like to express my heartfelt gratitude to the individuals and organizations who played a pivotal role in the successful completion of this thesis. Their unwavering support, guidance, and encouragement have been instrumental in shaping the outcome of this research.

First and foremost, I extend my sincere appreciation to my esteemed supervisors at TU Delft. Your wisdom, expertise, and dedication to academic excellence have been a constant source of inspiration. Your guidance throughout this journey, even during the most challenging moments, has been invaluable.

I would also like to extend my profound thanks to the mentors at Halogen, the renowned design consultancy. Their guidance, constructive feedback, and willingness to share their wealth of knowledge greatly enriched my research. The path to this achievement has not always been easy, but their unwavering support and mentorship have been a guiding light.

A warm acknowledgment goes out to all the employees at Halogen for their warm welcome and open collaboration. Being welcomed into the Halogen family has been a privilege, and I am deeply grateful for the camaraderie and shared experiences that enriched this research.

Special recognition is due to the Systems Studio team at Halogen for allowing me to become a part of their dynamic and innovative team. Their insights and collaborative spirit added immense value to my work.

Furthermore, I want to express my gratitude to everyone who participated in my research, generously sharing their time and insights. Your contributions have been invaluable in shaping the findings of this thesis.

Lastly, I extend my heartfelt thanks to Lies Fliervoet and Robin Vermathen for their exceptional support in the writing process of this report. Their dedication to ensuring clarity and coherence in this document has been truly remarkable.

In closing, this journey has been challenging, but the support and encouragement I have received from all these individuals and organizations have made it a rewarding and transformative experience. I am deeply grateful for their contributions, and I look forward to carrying the knowledge and insights gained here into future endeavors.

Thank you all.

Joyce van Weverwijk

Executive Summary

In a world increasingly faced with complexity, systemic design is growing in popularity as a knowledge field to target such complex contexts. However, it is yet to be applied in organizations and projects. This thesis aims to bridge the existing knowledge and practice gap between transitioning, or 'reframing', from traditional problem-solving methods used for complicated problems and the use of systemic design for complex contexts that characterize challenges that modern-day society faces. The research is an innovative exploration into the transition to-, and practical application of systemic design within organizational project settings, particularly focusing on the design consultancy Halogen, which is already bridging this gap. Employing a multi-faceted research methodology that includes case studies, interviews, and document analysis, the study analyzes Halogen's existing operational practices on the organization's expertise and challenges in transitioning towards applying systemic design in projects, delivering final designs that combine both into practical guides in reframing.

The key findings reveal a significant gap between traditional approaches and systemic design in literature, mainly when dealing with complex problems. Interestingly, the challenges in reframing for the organization Halogen are not so much in the actual reframing and project execution itself but more in the processes supporting the projects' pre-execution phase. It was observed that reframing practices occur naturally among skilled designers and business developers, but processes and misalignment within the organization limit Halogen from executing more systemic projects. Therefore, additional suggestions were made in the designs proposed in this thesis to align transitioning practices with needed foundations within an organization. Doing so bridges the earlier mentioned gap by introducing such practices organization-wide for people newly introduced to these practices and making it more applicable for other consultancies.

The thesis introduces a reframing framework, canvas, and accompanying information booklet inspired by improvement points and best practices, where empirical insights and research through design generated this knowledge. The insights showed that experienced designers automatically followed through the practices of spotting opportunities, aligning critical factors in projects, and accommodating them so a reframe could happen. However, this practice came from years of experience and is less evident to the novice systemic designer, indicating a need for help. This canvas and framework facilitate the transition from traditional to systemic design approaches by giving an easy-to-understand structure of the reframing practice and providing apt questions on how to do so— making designers able to target pressing complex problems. It outlines reframing tactics, critical factors, and foundations that organizations should consider for successful systemic design implementation. Besides offering value to Halogen as an organization, this thesis aimed for the designs delivered to achieve more systemic projects and impact for other organizations, focusing on the adaptability of the canvas and framework beyond Halogen. The research concludes that adopting a systemic and impact-focused viewpoint is not merely an option but a necessity for organizations aiming for sustainable impact and continuous improvement in the field of systemic design.

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1. Context

Context

This part of the thesis report explains what complexity, as opposed to complicatedness, is and how systemic design deals with complex contexts. Whereas complicatedness or complicated contexts deal with problems that have a clear cause and effect structure, can be broken down and managed in different parts through careful analysis and planning, and are very bound towards the silo they act in, complexity or complex contexts deal with non-linear relationships and emergent properties that are often considered unpredictable. In that context, systemic design is an interdisciplinary field combined with systems thinking and design thinking. It is brought into the world to design and understand complex systems, considering their interconnectedness, emergent properties, and the holistic view of how parts interact to create a whole. It involves looking at the relationships and interactions between components rather than focusing solely on individual elements. This thesis further explains the main challenge of systemic design. Namely, plenty of literature and theory exists on executing systemic design but not on integrating it into projects and organizations that, unbeknownst to them, deal with complexity in a complicated matter. This thesis, therefore, researches in an empirical way how systemic design is applied in practice. In order to research this phenomenon in real-life practice, a consultancy is chosen that claims to apply systemic design practices in projects as the topic of study. The insights of this research have been taken and synthesized in a framework and canvas that lead to a first step in potentially helping other organizations navigate the steps of implementing systemic design in projects.

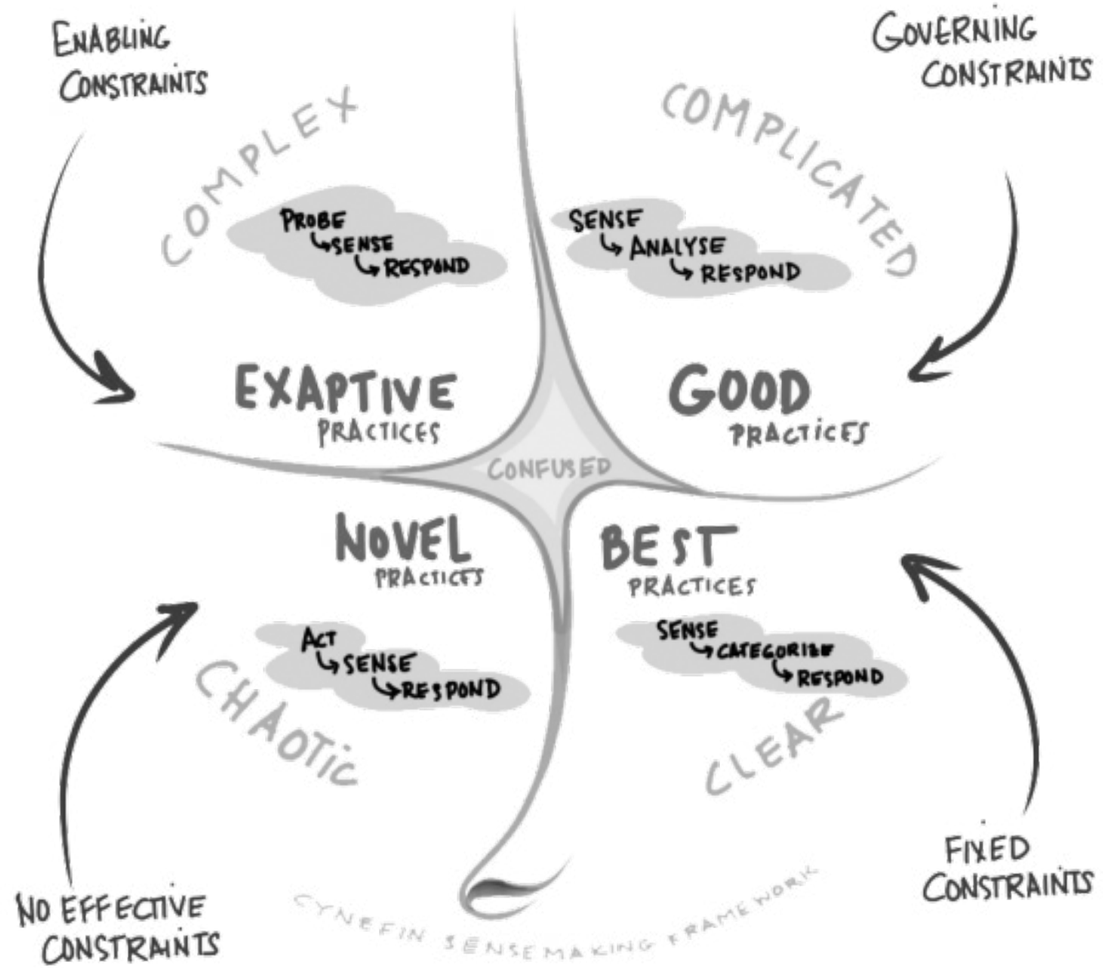


Figure 1.1 The Cynefin framework as adapted from Snowden & Boone, 2007. Source: The Cynefin Co.

Context

Inspiration of this Graduation: Personal Experience in (sytemic) design

This graduation project is based on a personal interest, frustration, and curiosity combined with an ambition to help future consultancies and consultants out. As a prior design consultant working in innovation, I experienced that consultancies or companies do not want to work on big, complex problems. Privatized companies and organizations frequently prefer short-term, monetarily focused projects and goals with as few risks as possible. The underlying problem might be known but is quickly addressed as something outside their power to fix. Resulting in symptom treatment rather than tackling the main problem. It is like using a bandaid on a wound that will not heal and calling it a “problem solver.”

I hypothesized that the problem lies with the designers/ design consultancies, that they need to learn how to approach complex problems or what methods/tools/ mindsets to use. I was convinced that more knowledge on targeting complex problems was necessary. However, during my working period as a design consultant, I learned that there are indeed methods and tools to challenge these problems: they belong to a field called systemic design. However, this field needs more guidance on how to apply these methods/tools/ mindsets in projects that deal with complexity but target it as a complicated problem.

Context

Systemic Design & Complexity

Methods and tools to combat symptom treatment, as is done in complicated contexts and target complex contexts, come from systemic design. First, a discrepancy between complex and complicated contexts must be made to know how to target complex problems.

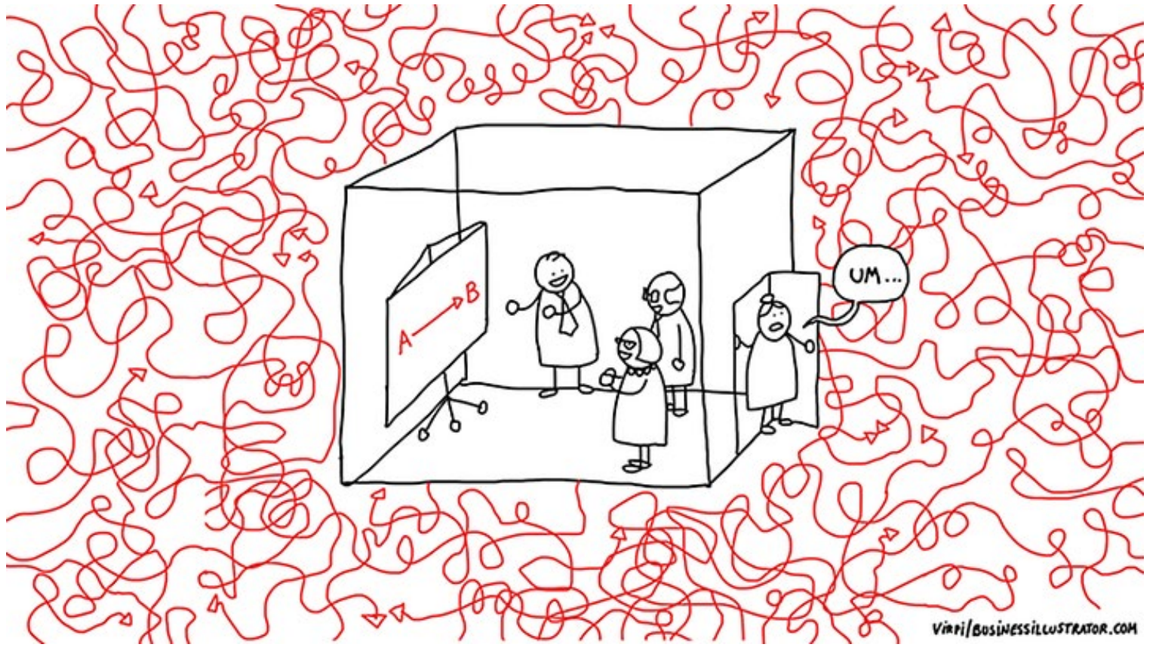


Figure 1.2. Dealing with complexity in a complicated manner (Businessillustrator & Oinonen, 2016; Lowe, 2023).

The Cynefin framework divides the type of contexts that could exist between 4 areas: simple/clear, complicated, complex, and chaotic, as can be seen in Figure 1.1 (Snowden & Boone, 2007). In general, these four contexts have two different approaches to deal with the problems occurring in these contexts. Either to sense, analyze/categorize, and respond, or to probe/act, sense, and respond. Because of the way these problems are approached, we divide, for the ease of this report, the four problem contexts into two categories: simple and complicated contexts and complex/chaotic ones, where we focus mainly on complexity, as chaotic contexts are hard to restrain and to influence. We will discuss both those categories now.

Complicated and simple contexts should be approached with best practices and known working methods. It deals with known factors and relations, or where there is awareness that these are unknown, where cause and effect relationships are evident, linear, and discoverable. Complex contexts, as opposed to simple or complicated ones, hold a different dynamic that cannot be approached in a complicated matter, as illustrated in Figure 1.2. Complex and chaotic problems are characterized by large size, high interconnectedness, and dynamic and intransparent nature; where there are many competing ideas and no correct answers (Snowden & Boone, 2007). These problems hold a high interrelational characteristic and are harder to target and solve as many coercive powers could be at play, making change almost impossible to foster. Complicated problems, on the other hand, can have multiple possible solutions, and although not as straightforward as simple problems, they have a clear relationship between cause and effect.

Nowadays, the most pressing problems are the ones that are complex (Kees Dorst, 2014; Kolko, 2012). Unfortunately, people tend to approach these types of problems all in the same complicated context: trying to find a one-size-fits-all approach to solving a problem and applying this over and over again due to the way we are being educated in approaching problems in a complicated manner (K. Dorst, 2014; Jones, 2018). Doing so simplifies them to their core, leaving out factors that connect them to their context. Due to the characteristics of complex contexts, being dynamic and unique, best practices cannot vouch for the success of such an approach. When simplified, it can lead to symptom treatment instead of targeting the problem to its core. Problems are then solved to create a short-term solution, often aimed solemnly at capital revenue.

This simplification and symptom treating causes the main issue to persist and keeps creating problems in the first place, with the chance of such systems overflowing and worsening things. Examples of this are an economic stock market crash or unreversible climate change effects causing mass climate refugees.
Systemic design is an inter-discipline that integrates systems thinking and design (thinking) practices (Bijl-Brouwer & Malcolm, 2020; Sevaldson & Jones, 2019). In practice, it is also associated with including practices from change management (Improconsult, n.d.). The reason that systemic design can combat this symptom-treating is due to its ability to see a problem and its causes not as a singular phenomenon but as an element connected in a system of factors and other problems, being able to target the right factors that hold the complex problem in place (Bijl-Brouwer & Malcolm, 2020; Norman & Stappers, 2015; Sevaldson & Jones, 2019). The holistic approach of systemic design is characteristic of its domain and helps to combat complex contexts.

Systemic design has been gaining traction since the ‘90s, with knowledge emerging on frameworks, modes of practice, principles, methods, processes, and tools, and how to execute them can be found in literature and are increasing in popularity (Bijl-Brouwer & Malcolm, 2020; Drew, 2023; Jones & van Ael, 2022; Sevaldson, 2022; The Design Council (UK), n.d.). Yet, design practitioners are generally unaware of the difference between complicated and complex problems and the different approaches between these two contexts, with systemic design being a domain able to challenge these complex problems. Generally, people are taught a more traditional approach to problem-solving in life associated with complicated problems. Therefore, there is a gap between traditional approaches applied to complex contexts and the rightful application of systemic design. This gap threatens the successful application of systemic design, emphasizing the need for practices that help the transition to paradigms like systemic design.

As this might be the case, a bigger looming problem could follow up on this awareness problem. Since systemic design is an established practice, new knowledge keeps on developing. However, this will not guarantee its use. Just as design thinking back in its time had trouble with being applied in projects and organizational contexts, it can be expected that the same is accountable for systemic design once it enters a more established phase as a domain (Dunne, 2018). It is another problem added to this gap in achieving successful systemic design applications. If and when knowledge is established on what systemic design is, how to come to the point that it can be successfully integrated and applied within projects where stakeholders who are involved are not aware of such practices and mindsets? Educating this mindset and convincing other stakeholders to use such paradigms could be an answer. Therefore, the critical challenge in transitioning to systemic design could be ensuring stakeholder buy-in for these ‘new’ methodologies. There needs to be more knowledge or practice on how to achieve this.

So, if the knowledge of systemic design is there, the question becomes, why is there a gap between the knowledge and the application of it? Therefore, this thesis aims to research how to close this gap between the traditional application of methods in complex contexts, with theory on systemic design being there, and applying systemic design in projects that should be systemic in the first place.

Context
Halogen

As described in the introduction, gathering knowledge and data from practice is essential to find a solution to closing the gap between knowledge on systemic design and the actual application of it. Luckily, some organizations are able to apply systemic design. The consultancy chosen as the topic of this research study is Halogen. Halogen is a design consultancy with 20 years of experience, focusing on complexity within its projects (Halogen, n.d.). Their knowledge and understanding of systemic design shows through their expertise through employees educating the Systems Oriented Design course (for students and masterclasses) within the Oslo School of Architecture and Design. Their online showcased projects highlight how they target complex matters in their work—addressing themes such as systems complexity and going beyond simple solutions (Halogen, n.d.). With their experience in applying systemic design in projects, the question relevant to this thesis became: How can we learn from their practical experience of implementing systemic design in projects and make it applicable to other designers?

About Halogen

Recently, Halogen launched a new studio called Systems Studio, which focuses on systems change and transformative innovation with Systemic Design as a professional backbone. Already, work has been done in the Systems Studio on how to develop a more systemic (and regenerative) way of working within Halogen, as they want to increase the number of systemic projects within Halogen to generate more impact and keep their head position in the market as a consultancy able to deal with complexity. The work that already had been done involved looking at how to assess business, social, and ecological impact together with feasibility to identify projects that find the sweet spot between what the world needs, what Halogen’s designers are passionate about, what Halogen as a business is competent in doing, and importantly, what is economically valuable for Halogen. So far, the internal project at Systems Studio is focused on providing support tools and process changes that support a proactive approach to business development, in which Halogen itself goes after leads. However, additional work could be delivered on supporting the reactive approach to business development for more Systemic projects, where the company reframes the brief from simple and complicated problems to have a more systemic and complex focus.

Halogen’s interest in this thesis

The research of this thesis builds upon a started but unfinished attempt from Halogen to bring into the picture the current way of working within Halogen on reactive briefs and how to improve this. Halogen itself already focused on a proactive approach, where Halogen goes after the project leads themselves rather than a reactive approach. Halogen started analyzing the reactive approach, where they reframe briefs, but this work still needed to be completed. The reactive approach could use more visualization and a closer-knit analysis, as some phases were left to be explored. Therefore, when the proposition of this graduation study came up, Halogen eagerly showed interest- hoping they could execute more systemic projects by receiving insights into what elements within their process they could improve to do so.
This graduation project would build on previous work by Halogen of initial steps to encapture and improve this reactive approach to project briefs, focusing on reshaping a project brief in a reactive rather than a proactive approach dedicated to bringing insight into a general way of executing systemic projects.
It continues to build on current ways of working and what improvement points or leverage areas could be suggested to let Halogen achieve its goals in creating more systemic projects where deemed relevant so that Halogen can maintain its head position in the market. Therefore, this graduation project fits well with the goals set by Halogen to get a central view of how to do so, as the project wants to analyze best practices and improvement points in general that other consultancies

could adapt. It was deemed that the specific skills and knowledge of Halogen could still deliver the head position of Halogen even though this knowledge was widely adaptable. Together with that, they were also interested in showing their expertise to the outside world, aligning this thesis's research goal with the internal motivation of Halogen to offer inspiration to any company that would want to look into it.

The world deals with complex problems that can only be targeted with approaches in this context, such as systemic design. Unfortunately, people generally apply a complicated approach to a complex context. Therefore, there is a gap between the faulty application of complicated problem-solving on complex problems and the rightful application of systemic design. This thesis thus aims to make systemic design better adopted and executed by design consultancies in their projects to create more systemic projects and, consequently, address projects and their problems in their rightful context. Creating a higher chance of solving root cause problems instead of symptoms, thus generating a more positive impact in general, as opposed to a complicated approach. The aim is to give guidance on how to navigate the transitioning process from a traditional approach to a systemic one. To attempt to provide guidance on transitioning, we will first conduct empirical research at Halogen to understand their way of working and synthesize how they approach the transitioning of complicated approaches in projects into complex ones, creating a usable template for project application, and analyzing the points where they could improve to update that way of working and improve it. Furthermore, the result will be iterated upon and tested to finalize a proposition for a first draft framework presented to solve the initially stated purpose: to make systemic design better adopted and executed by design consultancies in their projects through a framework and canvas. However, to understand why this gap is happening in the first place and what problems this causes, we must first address some of the previously discussed relevant themes in detail.

2. The Complexity of Complexity

The relevance of this project: the complexity of complexity

In order to understand why it is essential to make systemic design better adopted and executed, we must dive further into what complexity and systemic design are, as discussed before. This chapter will discuss what complexity is, why it is crucial to deal with complexity and complex issues, how systemic design does that, and what obstructs systemic design from being implemented. It will also discuss how traditional paradigms often used in design practice cannot target complexity as it is.

The Complexity of Complexity
The World is Complex

Throughout the years, we, as humanity, have built systems that made us prosper and make us thrive as a community. These systems have rules, exceptions, consequences, and interdependencies. The world is becoming more interconnected (Kees Dorst, 2014). With more connections comes more links come more complexity, as can be seen in Figure 2.1. There are clear benefits of this connectedness in systems. These systems support the world as we know it today, making it able to uphold and make significant progress as humanity. More connectedness nowadays delivers a more efficient way of working, where communication worldwide is increasingly accessible, and knowledge can be accessed faster than ever before.

However, besides these systems thriving for us, it also brings highly complex problems. Complexity, in its essence, signifies a web of interdependencies where components are entwined in intricate ways. It is the realm of uncertainty, where cause and effect might not have straightforward connections. Factors that might not be known also have unknown relations and, therefore, an invisible cause and effect to other (unknown) factors. When factors and relations are unknown, they are also referred to as unknown unknowns (Snowden & Boone, 2007). According to Dörner et al. (1983), The complex problem is, then: "A problem where elements relevant to the solution process are large (complexity), highly interconnected (connectivity), and dynamically changing over time (dynamics), with neither structure nor dynamics are disclosed (transparency)" (Dörner et al., 1983; Funke, 2010; Schmid et al., 2011).

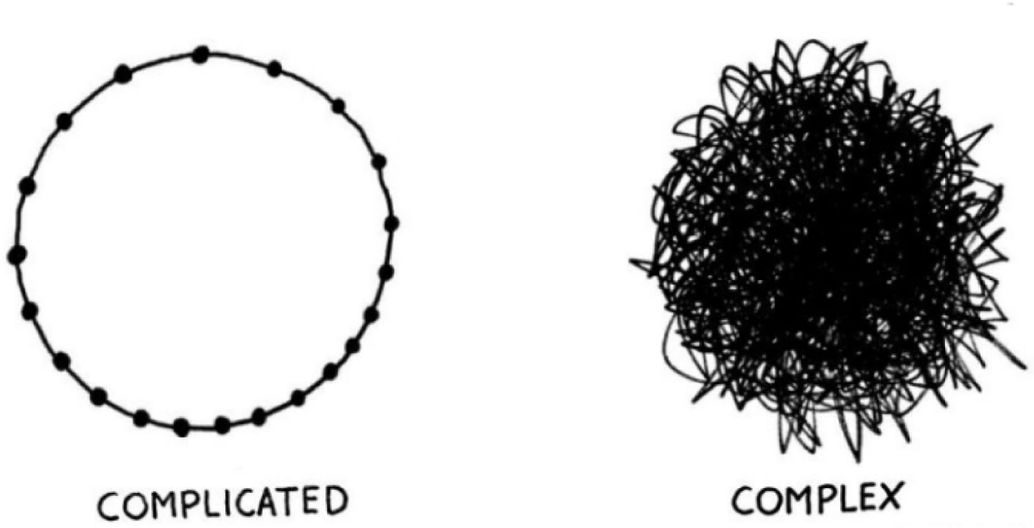


Figure 2.1. The difference between complicated and complex. Adapted from Hughes, 2018.

To highlight the complexity of such problems, we take as an example the highly interconnected character of complex problems. If more ties are made, a more sturdy, resilient structure gets built, and the harder it is to change it. Human-made systems of complex nature are prone to incorporate mistakes and, over time, might fail to adapt to the world around them, making them outdated and producing more problems, often seen as symptoms of such a system (Hassan et al., 2020). Poverty is an example of the intertwinedness and complexity of such problems, as seen in Figure 2.2. Poverty can be linked with education, nutrition with poverty, the economy with nutrition, and so on (Kolko, 2012; Sarkar & Kotler, 2019). Although poverty or the lack of access to education is not something wished upon others, many factors keep it in place. Many of these factors depend on different and opposing interests. In the case of poverty, it is mainly done by exploitation of the common folk through profit maximization by unequal pay and low wages, which is opposed in interest with the richer few that are coercing their power to generate more wealth, trying to push revenue for companies and stakeholders in dire times, as could be seen during the corona pandemic (Oxfam International, 2022). These connecting factors could be linked to the more extensive economic system of capitalism, which is pushing for a constant growth mindset, disregarding the issue of obsolete resources (Kluiters & Klomp, 2022). Unfortunately, these rules of the system are so significant and widely accepted that most hold the same mindset and acceptance of the system that it is direly hard to change or adapt (Meadows, 1999). This example merely illustrates one

of the many problems that are currently happening. It can also be seen that many of these issues touch the social domain, where other 'capitals' of impact are largely ignored, although slightly mentioned, as they are correlated with poverty as well. Such as pollution and climate events (Wealthworks, 2022). Problems on such a macro level that influence the whole world are so prominent in structure that they are often associated with chaotic or wicked problems deemed almost impossible to target (Kolko, 2012; Sarkar & Kotler, 2019; Snowden & Boone, 2007).

As can be seen by the example illustrated above, the problems discussed that are complex, chaotic, or wicked of nature are often pressing problems, as its demands have been emphasized in literature as well (Dorst, 2015; Kolko, 2012; Jones, 2018; Rittel & Webber, 1973). Therefore, these problems hold a high importance of being addressed. Unfortunately, these problems persist, as complex problems are inevitable in a dynamic world, depending on systems (man-made or not). At the same time, they are hard to address and often addressed wrongly. More factors play a crucial role in why this is happening.

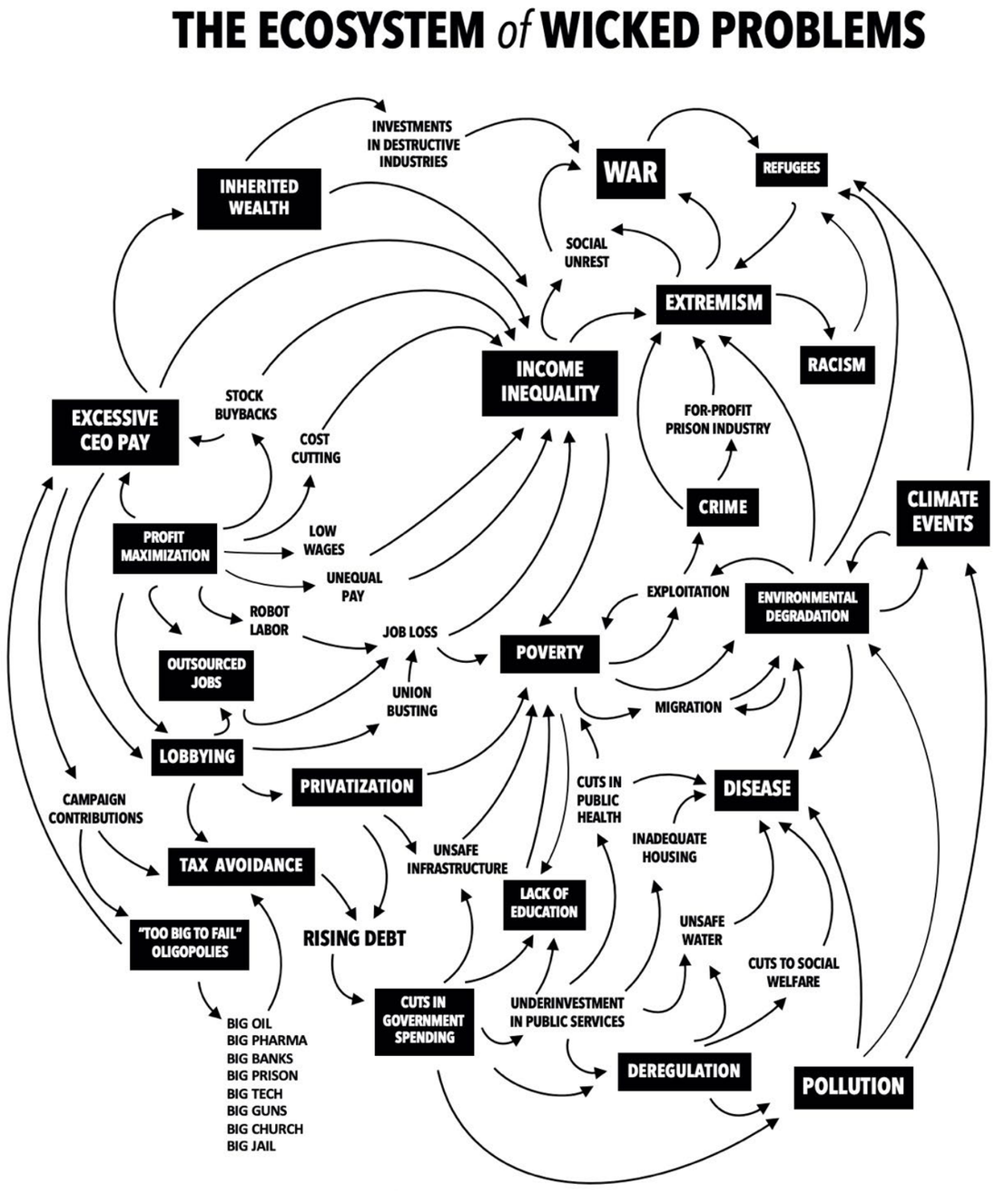


Figure 2.2. The Ecosystem of Wicked Problems (Sarkar & Kotler, 2019).

The Complexity of Complexity

Complexity vs. Complicatedness: A Cynefin Framework Perspective

The pressing problems discussed earlier are often not dealt with as complex problems but as complicated ones. Previously, we discussed what the difference is between those two. To understand why wrongful problem treatment happens, we will explore the differences between complicated and complex problems.

Where complex and chaotic problems are characterized by large size, high interconnectedness, dynamic and intransparent nature, with many competing ideas and no correct answers, complicated problems act differently (Snowden & Boone, 2007). Complicated problems can have multiple possible solutions, and although not as straightforward as simple problems, they have a clear relationship between cause and effect. They can, therefore, be approached linearly. Instead of no correct answers, as with complex problems, complicated problems can have multiple correct answers. Complex contexts are characterized by many nonlinear interacting elements, where minor changes can produce significant consequences. Complex contexts involve numerous interwoven factors that evolve over time and require adaptive responses. Where complicated contexts are primarily static, complex ones are dynamic and ever-moving, influenced by agents that allow and constrain each other over time, making cause-and-effect relationships blurry, vague, and dynamic. Related to factors that might be unknown or unpredictable, making the whole system hard to predict in general, and therefore, the behavior of a part is not representable for the whole (Snowden & Boone, 2007). Due to its different nature compared to complicated and simple contexts, the way it should be approached is with trial and error and is often affiliated with action research (Cassell & Johnson, 2006). Though a clear relationship exists between cause and effect in complicated problems, not everyone can always see it. However, it can be uncovered. (Snowden & Boone, 2007; Kamensky,

2011) Therefore, factors and relationships in simple and complicated contexts are also known as known knowns or known unknowns, as opposed to unknown unknowns in complex contexts and unknowables in chaotic contexts (Snowden & Boone, 2007). These problems are often confronted through a linear, broken down, best practice or a one-solution-fits-all approach. Once such a problem is solved, it can be solved repeatedly in the same way.

This way of challenging problems comes from the Cynefin framework, as shown in Figure 1.1. The Cynefin framework classifies problems into four categories, each having its best approach. Where clear/simple and complicated problems have the same approach where they should first be sensed/observed, analyzed, or categorized and then receive a response, complex and chaotic problems need an actionable first step. The follow-up step is to perceive or sense what happened and to respond afterward. The approach described in complex and chaotic problems draws many similarities with the action research approach within qualitative research methods (Cassell & Johnson, 2006).

The Cynefin framework presents a clear separation between the four contexts. Nevertheless, because complex and chaotic problems draw more similarities regarding the type of problems, they are often conjoined in literature as complex, wicked, or chaotic, differing mainly in their size and scale and needed leverages (Meadows, 1999; Suoheimo et al., 2020). Since they have a similar approach and characteristics compared to complicated and clear/simple problems, for ease of explanation, we combine these into two groups: complex and complicated problems, where the main focus of the complex problems will lie on complex problems, and less on wicked or chaotic problems.

A Misfit in Problem-Solving: Challenging the Status-Quo

In summary, pressing problems are often complex rather than just complicated. Yet, our education and career encourage us to approach them as the latter. We are taught to break them down, analyze the components, and apply established methodologies to arrive at solutions. This traditional problem-solving method—breaking down issues, analyzing components, and applying established techniques—works well for complicated challenges but falls short for complex ones like climate change and global health crises. This approach tends to isolate problems from their larger context, yielding solutions that don't hold up in real life. Thus, treating these challenges as merely complicated leads us to isolated, oversimplified, misdiagnosed, and ultimately inadequately applied solutions, which aligns more with symptom treatment where the core issue often remains (Suoheimo et al., 2020). Therefore, to start targeting these pressing problems to prevent them in the first place and keep them from worsening, people should acknowledge that there is a difference between complicated and complex contexts. They should start treating the problems they are trying to solve with the appropriate approaches.

A Call for a New Approach

The Flaws in Design Thinking

One such approach claimed to be able to "solve" complexity is design thinking. In this chapter, those claims will be challenged, and Design Thinking, by itself, will be exposed as merely addressing problems in a complicated context. While design thinking is a paradigm that can solve many significant challenges, it still lacks some basic principles that can target complex problems. We will shortly discuss what these are.

Design thinking was introduced mainly by Herbert Simons, and made popular in businesses through IDEO (Dam & Siang, 2022; IDEO, n.d.). IDEO simplified the approach and made it broadly applicable to many other companies that did not have a design background. In its simplified version, design thinking, in essence, is associated with the five-step process of empathizing, defining, ideating, prototyping, and testing (Interaction Design Foundation, n.d.). Those steps are often interpreted as linear, but literature emphasizes the dynamics between the different steps, having feedback and feedforward loops. Important to understand is the continuously iterative nature of the field of design thinking. Design thinking broadened its application beyond traditional design spheres, reshaping perceptions of design beyond aesthetics. There is a good reason design thinking is popular. Design-driven companies have outperformed the S&P Index by 219% over ten years (Harmer, 2015; Gerber, 2020). Design thinking is a proven, repeatable, and reliable problem-solving process any business or profession can use to achieve great results. The critical element is thinking and ideating a solution to solve a problem or a need. Companies often miss investing the time to truly understand the problem, iterate the solution, think about implementation, and then measure the result (Gerber, 2020).
Nonetheless, as Ackermann (2023) points out, the oversimplified version of design thinking, tailored for swift adoption, inadvertently contributed to its eventual drawbacks. As we will further explain, design thinking, initially celebrated for enhancing the role of design and challenging wicked problems, ultimately encountered challenges due to its misinterpretation within commercial settings and capitalist contexts. It fails to challenge complexity through challenges in empathy vs. user-centricity, simplification, and isolation.

Wes Taylor, a professor at Virginia Commonwealth University, highlights the connection between design thinking and capitalist values, leading to what he terms "profit-centered design" (Ackermann, 2023). This "profit-centered design" is argued to be a short-sighted fix to superficial problems that do not match the need for long-term change in complex problems (Ackermann, 2023). While design driven by profit is not inherently harmful, it warrants consideration amidst changing societal priorities. Kluiters and Klomp (2022) underscore the mismatch between capitalism's pursuit of endless growth and the Earth's finite resources, prompting a reevaluation of design's purpose beyond economic gains. This misalignment sets the stage for rethinking the sustainability of profit-centered design.

A central critique of design thinking revolves around the tension between its emphasized user-centric approach and the risk of sidelining users' perspectives, where designers honed sense of empathy is being put at the center of both problem and solution (Ackermann, 2023; Kimbell, 2011). Ackermann (2023) observes that designers' empathy, while valuable, might unintentionally frame insights from the designers' viewpoint, overshadowing users' actual needs. This focus may lead to solutions that align with the designer's frame rather than users' realities. Ideas based on these frames will produce concepts that have little support from the community, and even though it may create support for the urgency of a problem, it will not solve the problem at its core. The solution is then mainly created to gain revenue and solve symptoms of the problem instead of trying to understand the whole system and prevent the problem from happening.

Design thinking excels in generating ideas but fails when assessing real-world implementation. The focus

on ideation often sidelines the intricate dynamics beyond the conceptual phase (Goldenberg & Saris, 2023). Design thinking's scope rarely extends beyond concept development into implementation, undermining its ability to consider external factors, such as implementation challenges, network complexities, and strategic industry dynamics. As design thinking emerges from a generalized framework with an ideation bias, it underestimates the complex workings of specific strategic plans in industries, fostering a surface-level understanding of problems (Malbon, 2016; Gerber, 2020). Design thinking's inclination towards generating novel solutions can overlook the difficulties present in complex problems. Malbon (2016) and Gerber (2020) emphasize the importance of comprehensively understanding complex challenges. However, design thinking's preference for generating ideas rather than understanding constraints might result in superficial solutions. Sometimes, the primary missing element that a project needs is scaling opportunities and projects that are already being executed by the actors that are part of the problematic system, as "It is about recognizing that the expertise is much more in the hands of the user of the system than the designer of the system" (Ackermann, 2023). The importance of the user's expertise also argues for continuously including the stakeholder in the design process, compared to a mere empathized frame of their understanding. This is one of the many factors overlooked within design thinking. In its eagerness to solve, design thinking overlooks other factors such as team dynamics, change management, and broader socio-cultural influences, critical components that dictate project success or failure (Fortune & White, 2006; Malbon, 2016; Gerber, 2020).

Even though these arguments continue, design thinking is often associated with its possibility to confront complex and wicked problems. The previous argumentations clearly show that design thinking encounters difficulties in approaching problems in a complex context, as it aligns more with a traditional, complicated approach. While conducive to tackling simple and complicated problems, the approach struggles with the multifaceted nature of complex problems. Dorst (2014) and von Thienen et al. (2013) argue for accurate problem framing as a prerequisite for effective solutions. Unfortunately, design thinking often propels a singular, siloed approach, generating one solution for a singular problem. Yet, complexity necessitates acknowledging the interconnected web of factors and multiple interventions required to address complex systems effectively. This approach is misaligned with design thinking's predominant methodology, which emphasizes sensing, analysis, and response—better suited to simpler problems according to the Cynefin framework (Snowden & Boone, 2007).

The overview to the right highlights the pros and cons of design thinking.

In conclusion, design thinking's limitations encompass its connection to capitalism, its struggle to balance empathy and user-centricity, its short-sighted implementation, and its inadequate approach to complexity. Design thinking is exceptionally able at its core to ideate, prototype, and observe, with a questionable user-centric focus. However, it is lacking in its scope, being very siloed in its approach together with the aspects that come before and after it: the uncovering of underlying problems of the system, the dealing of implementation of the solution, and its complexity. While it has merits, particularly in idea generation and prototype testing, its shortcomings have prompted researchers to question its applicability to complex problems. However, an additional approach may be preferable rather than dismissing design thinking entirely. Acknowledging its strengths and weaknesses, a hybrid methodology combining design thinking with systems thinking could offer a more comprehensive toolkit for addressing the multifaceted challenges that persist in our complex world.

Pros & Cons of Design Thinking

What design thinking does well:

- It incorporates different views (partially because it depends on the frame of the designer, not the collective)
- It is good for thinking and ideating a solution to solve a problem or a need
- Framing a new problem view (partially because its focus is on a singular problem)
- Communicating a story around the problem and communicating the urgency
- Iteration with feedback and prototyping implemented
- Bring action toward analysis

It is unable to solve complex problems due to:

- Its approach to problems focuses on a method that deals with simple and complicated problems, not complex ones.
- Design thinking siloes out the problem of its context, and problem reframing focuses on a singular problem, which you cannot do with complex problems.
- It understands different worldviews but does not fully incorporate them, only from the designer's view. There is empathy, but just as a human cannot imagine how it is to be a bat, only to imagine how it is to be a human imagining a bat, a designer cannot fully understand the actors' perspective (Nagel, 1974).
- Disregarding social complexity and its constraints where the generated ideas should manifest.
- Therefore, it does not focus on and consider the implementation phase of the generated ideas and does not design with the social complevxity in mind for better implementation.
- Short-sightedness instead of long-term focus (of implementation)

Additionally, design thinking lacks in the aspects that:

- It focuses on new ideas instead of trying to develop what is already out there in the system it is trying to design for

Systems Thinking

Systems thinking is a research approach developed and employed to address complex, multistakeholder, real-world problems (Jones, 2014; Junior et al., 2019). Systems thinking as a mindset comes from systems science, an interdisciplinary field that studies simple to complex systems in nature and society. Systems thinking is an approach to problem handling that considers the parts of larger systems as intertwined components rather than independent entities. Systems thinking helps to gain an understanding of the relations and interactions between a system's various components, making it perfect and highly relevant for complex problems (Junior et al., 2019).

A system is defined as a relationship of parts that work together in an organized manner to accomplish a common purpose, as seen in Figure 2.3 (Buchanan, 2019). In the context of design, a system can be defined as an emergent or designed network of interconnected functions that fulfill an intended unit of satisfaction (system outcome) (Jones, 2014; Junior et al., 2019). Additionally, systems are described as a holistic, embodied way of thinking about reality (Junior et al., 2019; Nelson, 2008a;). It can be seen as a way of designing and an object of design (Junior et al., 2019).

Systems thinking is underpinned by three central claims (Jones & van Ael, 2022):

- First, systems thinking is a problem-solving approach capable of handling the inherent complexity of societal problems
- Second, it allows designers to adopt a holistic perspective through a specific set of assumptions, premises, and axioms
- Third, systems thinking has the potential to incorporate differing world views.

Systems thinking can be reduced to hard, soft, and critical systems thinking. Table 2.1 provides an overview. A short introduction of the three, according to the paper by Junior et al. (2019), will follow.

Hard Systems Thinking
Hard systems thinking assumes that a problem situation is best addressed by optimizing the system's performance to achieve clearly defined objectives and goals. Therefore, the system in hard systems thinking is also clearly defined. It understands systems as an objective aspect of reality, compromised of relatively hard (immutable), observable, and real objects.

The mentioned limitation of hard systems thinking is that it does not consider social complexity. This concern

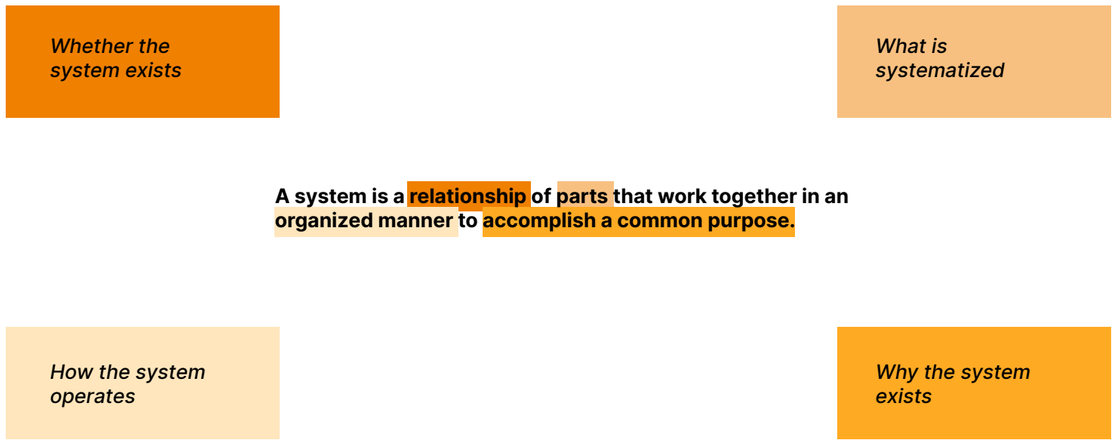


Figure 2.3. The definition of a system from Buchanan (2019).

Participants

Systems	Unitary	Pluralist	Coercive
Simple	Hard Systems thinking	Soft Systems Approaches	Emancipatory Systems Thinking
Complex	System Dynamics Organizational Cybernetics Complexity Theory		Postmodern Systems Thinking

Table 2.1. A system of systems methodologies (Jackson, 2003; Reynolds, 2011).

suggests that very few real-world problems manifest in systems with clearly defined goals and objectives. It also assumes clearly defined goals and objectives, which contradicts complex problems, which often are ill-defined.

Soft Systems Thinking
Soft systems thinking focuses on ill-defined problems and assumes that problem situations must be handled rather than solved. Soft systems thinking adopts a 'subjectivist' perspective to systems thinking, in which the problem situations reflect a social world of subjective meaning and intention.

The interpretative assumptions underlying soft systems thinking constrain the ability of soft system methodologies to ensure a fair debate among stakeholders in many problem situations. The co-participative debate key to the success of soft systems thinking cannot be achieved when coercive relationships dominate problem situations.

Critical Systems Thinking or Postmodern Systems Thinking
Critical systems thinking emerged as a response to the limitations of hard and soft systems thinking and is often the systems thinking approach referred to when talking about systems thinking in combination with design. Critical systems methodologies aim to prevent technical and social (political) influences in communication, which can interfere with achieving an open and accessible debate during the design and implementation of a system. Critical systems thinking is about putting all the different systems approaches to work, according to their strengths and weaknesses and the social conditions prevailing', to result in a more general emancipatory design.

Critical theory follows two major approaches: critical research in information systems and critical theory of technology. Like Critical Systems Thinking, these approaches aim to reveal the social structure of power, control, domination, and oppression, thereby promoting emancipatory social practices.

To represent the most accurate picture of reality, although a model can never represent reality, we will lead the example by critical systems thinking associated with coercive participants and simple and complex systems (Reynolds, 2011). We combine this with postmodern systems thinking, which is more focused on complex systems, but for the ease of this thesis, call it both critical systems thinking (M. Jackson, 2003; M. C. Jackson, 2007; Reynolds, 2011).

Critical Systems thinking is generally appraised for several reasons. Essentially, it strives to include stakeholders throughout the process (M. Jackson, 2003; M. C. Jackson, 2007; Reynolds, 2011). Academics have previously discussed the purposeful design of human social systems and the capacity of problem solvers to empower individuals, groups, and organizations to participate in the design of the system in which they live and work (Junior et al., 2019). Therefore, it complements and adds to the user-centered focus of design thinking and even extends that by making it more inclusive.
Also, when looking at critical systems thinking, it even considers coercive participants, which resembles reality better. We therefore continue with this definition of systems thinking, as highlighted in Table 2.1.
Additionally, (critical) systems thinking considers problems as (complex) problem situations, not reducing a problem to a siloed singular focus point but keeping the whole into account. Even when following the methodology of hard systems thinking, its reductionist approach still considers the technical aspect of the whole system.
Lastly, as soft systems thinking and critical systems thinking take into account not only the technical complexity of a problem situation but also the social one, it fends for better implementation along the process of designing. Instead of delivering a concept to a client and "throwing it over the fence" (Goldenberg & Saris, 2023), it can consider the social complexity while an idea is designed when combined with design thinking. The aspect of critique mentioned within systems thinking is the way it is often too analytical without synthesis and practical results, something that design thinking compensates for. Due to the continuous failure to address societal problems in general and systems thinking's many promising aspects, a new interest in this approach has emerged in the context of design. A systems approach to design can help address complex problems and compromises for the aspects design thinking lacks, and vice versa (Jones, 2014; Junior et al., 2019; Sevaldson et al., 2010).

In the end, systems thinking and design thinking are two paradigms that each miss aspects. They complement each other to target complex problems. Systems thinking misses an actionable approach, whereas design thinking misses a systems approach toward understanding and analyzing the problems it deals with. Enter systemic design—a method specifically designed to tackle complexity head-on by combining systems thinking and design thinking.

Systems Thinking Key Takeaways

- Systems thinking is an approach to problem handling that considers the parts of larger systems as intertwined components rather than independent entities and helps to understand the system's different relations and interactions.
- A system is defined as a relationship of parts that work together in an organized manner to accomplish a common purpose.
- Systems thinking can add to design thinking through a holistic approach, focusing on the inclusion of stakeholders and considering technical and social complexities, making it more apt for implementation. Additionally, design thinking adds to the lack of synthesis and putting things into practice in systems thinking.

Systemic Design: The Answer in Addressing Complexity

Systemic design becomes a navigational compass, aiding in deciphering the hidden patterns and emergent behaviors that underlie complex challenges. By treating complexity as a system with interlinked variables, systemic design provides a platform to uncover deeper insights. It can bring this understanding of the system and the interlinked problems into actionable steps and interventions, combining design thinking and systems thinking practices.

This is, however, not a novel insight. Systems thinkers have been arguing the purposeful design of human social systems and the capacity of problem solvers to empower individuals, groups, and organizations to take part in the design of the system in which they live and work (Junior et al., 2019; Metcalf, 2014). It has been argued in literature that design thinking and systems thinking could be promising together. However, systems thinking is a relatively new field. The symposium of Relating Systems Thinking and Design (RSD), initially started by Birger Sevaldson, stems only from 2012, with the earliest literature dating back to the 90s. As the adoption of concepts in literature can be slow-paced, this indicates the lack of awareness that is currently a problem regarding systemic design.

Let us look back at the characteristics of complex problems. Systemic design is a premise to deal with contexts characterized by complexity, uniqueness, changing dynamics, intransparent nature, value conflict, and ambiguity over objectives and goals. It differs from traditional design approaches in scale, social complexity, and integration.
Where design thinking, as mentioned before, focuses on a singular siloed problem, systems thinking focuses on the system of problems and its connections between factors that can explain certain phenomena, while knowing a system is everchanging and can never be fully represented due to its complexity and dynamic nature. It recognizes that similar factors can identify complex contexts. However, many other different ones make each problem unique and give no set way of approaching it. It considers social complexity, such as value conflict or coercion, as one of the problem factors and does not intend to leave it out. Therefore, it also focuses on including multiple essential actors and stakeholders throughout the whole design process instead of merely inquiring about them as often proposed within design thinking.

Systemic design as an interdisciplinary is well fit to deal with complexity, as opposed to design thinking and systems thinking, taking a refreshing deviation from the one-size-fits-all problem-solving approaches. However promising systemic design may be, its full integration into problem-solving landscapes remains a puzzle. There is an emerging knowledge and awareness of systemic design and an interest in dealing with ever-complex problems. So, if systemic design is the answer to address complex problems, why is it not being implemented yet?

The Complexity of Complexity

A Puzzling Problem: Why isn't Systemic Design Fully Integrated Yet?

There appears to be a gap between traditional design approaches and executing systemic design within projects. The first part of this gap has been paved by frameworks, methods, and tools that have been developed, educating us on how to execute systemic design practices. However, as mentioned, not everyone has this awareness and knowledge of systemic design yet. Many decision-makers and practitioners may not be familiar with systemic design, its mindset, or its benefits, leading to a default reliance on conventional problem-solving methods. Raising awareness by itself might not turn out to be beneficial (Christiano & Neimand, 2017) since most educational systems and organizational ways of working still prioritize compartmentalized knowledge and linear thinking, which hinder the adoption of systemic approaches, as it goes against a well-embedded mindset in people their way of working. Another problem that enters this aspect is that change in this mindset and approach is often met with resistance, especially in established industries where familiar routines are favored over untested methodologies. The drawback of these industries is that they are capitalistically focused, as discussed earlier in this chapter, covering design thinking and its flaws. This capitalistic viewpoint causes organizations to be primarily short-term focused on monetary value instead of other capital worth investing in, such as natural or societal. Due to this drive on monetary value, organizations often refrain from risks, as risk can cause a loss of this type of value. However, complex problems carry inherent uncertainty, making some organizations hesitant to deviate from tried-and-true approaches. So, to change organizations and focus on complex problems requires some change management: reallocating resources and putting more resources in one area, often seen as an upfront investment without a certain or even a direct return. Making dealing with complex problems directly a high-risk, unfavorable option while dealing with its symptoms is easier for organizations.

When design thinking was introduced into the context of organizations as a central approach rather than something done within a workshop, it was also met with friction. Design thinking was incrementalized, dumbed down, hard to implement (in projects, as well as in the whole organization), misunderstood, isolated, and assimilated (Dunne, 2018). Nevertheless, as previously mentioned, systemic design could make the change needed in this world. It can even deal with these problems if approached in a systemic matter. Therefore, it is believed in this thesis that the things that stand in the way of executing projects in a systemic way (as opposed to traditional) are the mindset of creating the right amount of impact and a way of transitioning projects that deal with a traditional approach, towards a systemic one. Therefore, this thesis aims to make systemic design better adopted and executed by design consultancies in their projects that do not inherently have a systemic focus but are dealing with complex cases. This goal embodies to give form to a transition that needs to happen. In order to give context to what this transition entails from a theoretical point of view, we will look at how transitions are observed in design literature through reframing.

The Complexity of Complexity

Reframing

What is Reframing?

As explained by Kees Dorst, a "frame" is the combination of the "how" and "outcome". "How" Explains the patterns of relationship between elements (also named the "what"), whereas the outcome is the observed phenomenon, as seen in Figure 2.4. A better definition of a frame is a (new) way of looking at the problem situation and a (new) way of acting within it (Dorst, 2015). It takes ground in how a frame is used as an object, a frame to capture a moment and choose to focus on the aspects of that moment and leave the other details out of the "picture frame". Within systems thinking, this is also called boundary critique.

Reframing is often used as a new way to look at the problem, causing novel insights into how a problem is structured and, therefore, coming up with a new solution by not iterating on the outcome but rather the way people see the 'what'.
However, this thesis uses the word frame, or reframing, slightly differently. The focus of reframing comes not only on the how (the approach) and the way of looking at the problem situation (the problem and problem scope) but also on the outcome, which Kees Dorst also includes in his explanation of a frame, but describes as a part of the problem situation. Therefore, to make a more apparent distinction and make it more relevant to the context of projects, the 'how' is still seen as the approach taken in a project process. The outcome will be seen as the deliverable. The problem situation will be split up into the problem as how it is understood at that moment, and the scope, or boundary, as called in systemic design (Sevaldson, 2022), indicating the size of the frame.

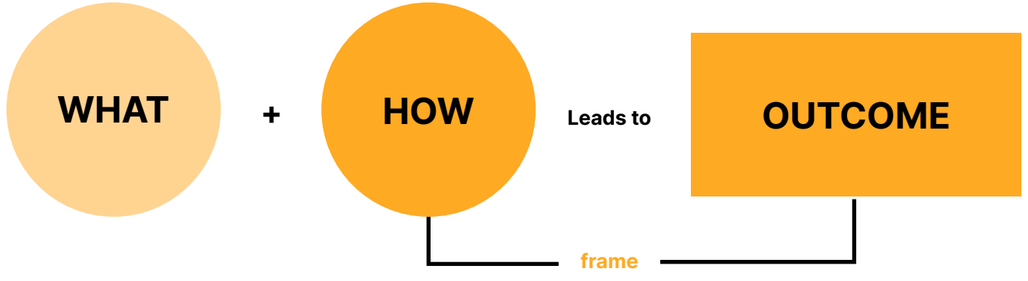


Figure 2.4. Kees Dorst on design abduction and induction, creating a 'frame'.

The need of Reframing

We have established in Chapters 1 and 2 that the world's problems are complex, yet current methods like design thinking are ill-suited for solving them. This inadequacy stems from two main issues: 1) popular methods are not designed to tackle long-term, complex challenges, and 2) the system within which designers and companies operate is not geared for such tasks. While there is growing interest in merging design thinking with systems thinking to create "systemic design," the lack of awareness of complex vs. complicated contexts, systemic design, and the persistence of a flawed system in which systemic design should operate hampers its effective execution.

The growth in systemic design in the academic and design community shows that many methods can deal with complex problems. However, it does not seem that these methods are applied in practice yet, even though projects deal with complexity. This graduation assumes it is because 1) designers and companies must still learn about the differences between complicated and complex contexts and the different approaches needed, and 2) learn about the mindset, knowledge, methodologies, and skills characteristic of systemic design. Additionally to point two, a huge element of it is applying this systemic mindset within the designers and the company/consultancy they work for and applying this mindset in projects. Ideally, systemic design can be applied directly to projects. However, clients, in-house employees, or even other designers might not fully agree with the approach without a broad understanding of what it is.

So, even though there is a rise in literature on systemic practices, this will not get a team to the point of being able to apply it. Therefore, it is necessary to focus on bringing reframing practices in place in form of framework and tools, so that systemic practices can be adopted in a project. Therefore, this graduation project focuses on executing a transition or reframe, shifting from a traditional approach used in a complex context to a systemic one (See Figure 2.5). It is essential to emphasize that reframing from complicated to complex contexts is important because traditional approaches are now used in projects that deal with complexity instead of systemic practices, which should be used. However, no such a transition goes without any effort. Despite its popularity, it took many years even for design thinking to apply it in many different businesses. Even now, not all businesses have design thinking as its core in the organization or apply it to their projects. The risk of businesses being unable to reframe to systemic projects is the endless targeting of symptoms and the avoidance and postponing of addressing the core problems in complex contexts, waiting for a catastrophe to happen once these problems pile up and create a (permanent) disbalance in the world.
It then becomes important to know what is needed for a systemic project to flourish, where to reframe, and what is needed to transition or reframe to start using systemic design in projects that aim to deal with complexity. That is precisely what this thesis focuses on: creating a framework and canvas that deal with the problems mentioned in subchapter “A Puzzling Problem: Why Isn’t Systemic Design Fully Integrated Yet?”. This thesis focuses on why systemic design cannot be implemented by reframing to bridge the gap between traditional project approaches and executing systemic design. By achieving this, it is assumed that more impact can be achieved regarding long-term positive, sustainable results for different capitals within the company, but also most certainly beyond the company’s scope.

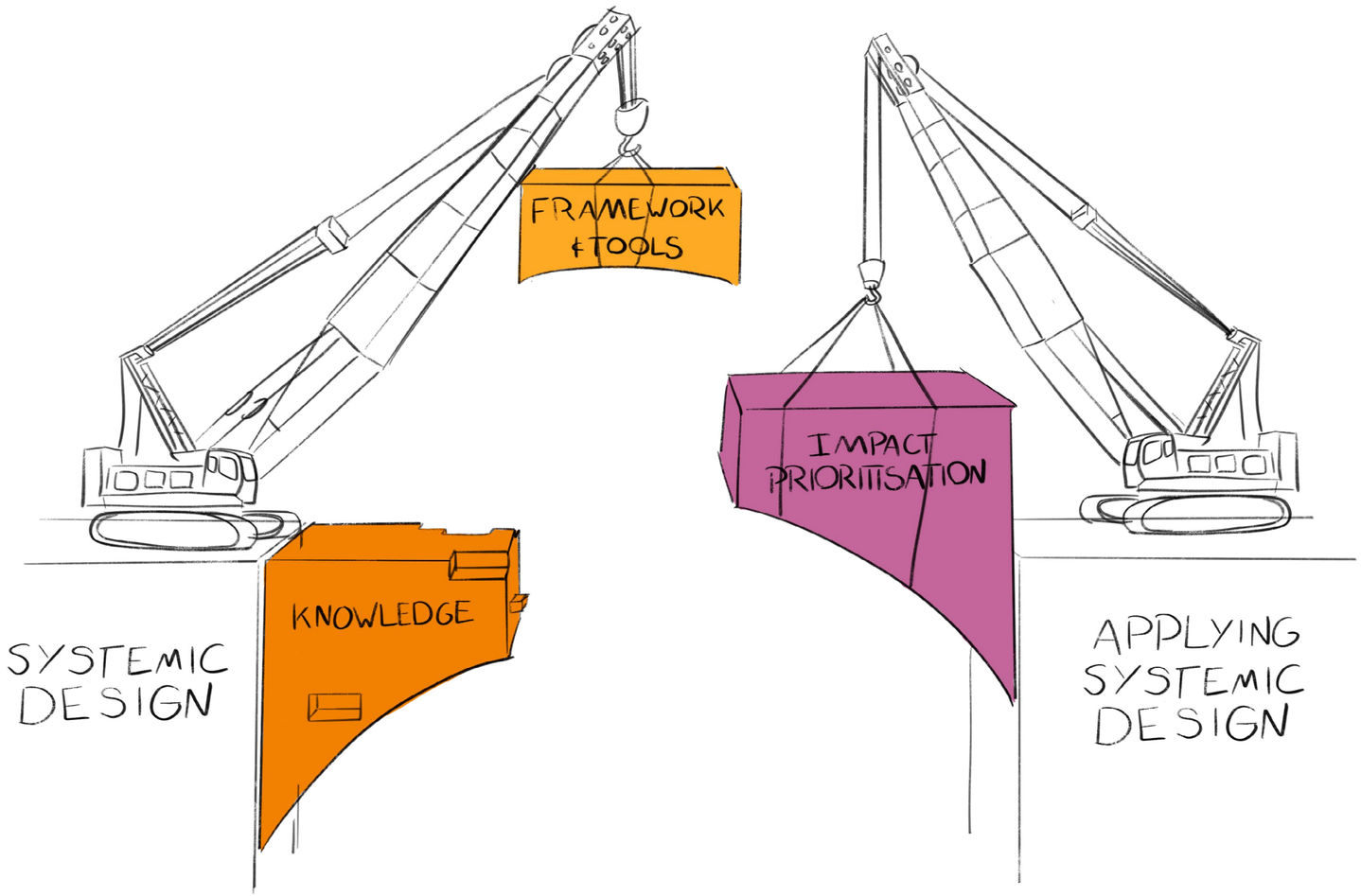


Figure 2.5. Bridging the gap between Systemic Design as a principle and the possibility to apply Systemic Design successfully in projects.

3. Project Scope

Project Scope

This part of the report explains the setup of the methodologies applied to achieve the objective of this thesis: to make systemic design better adopted and executed by design consultancies in their project. Literature research provides information about the application of systemic design through frameworks, principles, methods, and tools. However, it needs to deliver more on how to adapt and implement it in a project setting. As described in Chapter 1, Halogen is a company that already applies systemic design in projects, where initially, a project was suggested to be approached traditionally. Therefore, a qualitative approach in this thesis is chosen to generate knowledge from empirical research and form it into theory, as theory currently lacks how this transition from traditional to systemic approaches is done. This qualitative approach will be taken by research that involves analyzing the design consultancy's way of working, successful and unsuccessful systemic design case studies where reframes have been applied, and company observations. Applying an abductive approach will establish research in the design process, where it will become evident which elements and relationship patterns led to a successful or unsuccessful reframe. This, later on, will transform into a research-by-design approach that follows a process fit for tool, technique, and method development (Dorst, 2015; Stappers & Giaccardi, 2014).

Project Scope
The Goal of This Project

Systemic design has gained traction as a knowledge field. However, its integration into projects and organizations remains limited due to prevailing short-term, profit-driven perspectives and a lack of societal awareness. Rather than reinventing or expanding on existing systemic design knowledge, this thesis addresses the (currently unaddressed) challenge of bridging the gap between traditional approaches used in projects and systemic design within design consultancies. Therefore, the goal of this thesis is:

"to make systemic design easier and better adopted in projects (that do not inherently have a systemic focus) by design consultancies that are new or developing in implementing Systemic design in their organization, such as Halogen."

The goal is to create a framework for reframing a project to be more systemic, with the aim that these projects will positively impact society and the world. This thesis aims to guide how to navigate the reframing process by offering resources that can help the designer assess if a systemic approach is the right way to go and how to get to a point where systemic design methods can be applied in a project. As previously mentioned, systemic design is not yet an adopted practice but has been gaining traction in recent years due to its possibility to approach complexity. Therefore, the hypothesis in this thesis is as follows: When systemic design becomes more of an acknowledged practice, design consultancies will have a massive advantage by executing this way of working and applying this knowledge in projects where necessary, as these types of problems are the most pressing ones currently, as discussed in Chapter 1 and 2, gaining more traction and urgency. This also emphasizes the wish for Halogen to create more systemic projects.

Project Scope
The Research Question

In order to reach this project goal of making systemic design to be better adopted and executed by design consultancies in their projects, the following questions and sub questions have been set up:

I. How does a design consultancy that holds systemic knowledge reframe projects to be more systemic?
   a. How do they convince the client to do a reframe
      i. How do they reframe the brief
      ii. How do they convince to create a bigger impact on society, and come to an agreement on what is meaningful?
   b. How do they deliver results that are systemic, yet make the client happy
   c. How do systemic methodologies get applied, and how does that differ from theory
II. How can a design consultancy that holds systemic knowledge improve this reframing process?
III. How does this reframing create more meaningful impact beyond company profits?
   a. Why or why not does reframing to systemic projects create more positive impact on society?

How do these questions answer the project goal?

Knowing how a design consultancy with systemic knowledge reframes a project to be more systemic, I can understand what practices they apply to execute the reframe. Most interesting would be to see if there is an approach to the reframing they execute that can be generalized and captured into a framework or canvas to make this knowledge more largely applicable for more design consultancies to use.
Additionally, I hypothesize that it is challenging to generate something that makes the client happy but also generates an impact beyond the client's profit. Therefore, questions 1a and 1b are added. Lastly, I wonder if something in this reframing differs from the theory on systemic design methods and tools. Therefore, adding a specific focus on what tools get

used once the reframe is completed or during the reframe.

Then, to create value for Halogen, I want to know how Halogen, a design consultancy with systemic knowledge to reframe projects to be more systemic, can improve their practices to generate more systemic projects. Additionally, this knowledge can be used to improve their current practices to reframe. Then, this thesis will focus on generating knowledge for other consultancies on reframing.

Lastly, this thesis sees systemic design as an answer to solve complex challenges to generate a positive impact. The last question is how this reframing is used to generate a more positive impact and how it does that to see if this knowledge can be made into a guideline for other consultancies.

Project Scope

Method/Approach

The problem, as defined in this thesis in Chapter 1 and 2, is a gap in literature between executing traditional approaches for handling complicated problems and implementing systemic design in projects that deal with complex issues and a lack of methods and tools for doing so. Therefore, knowing how to implement systemic design in projects cannot be found in theoretical research. However, as discussed before, some companies, in this case Halogen, are already executing systemic design projects, while the project did not start systemic. It is, therefore, that this thesis tries to gain knowledge from empirical research through the following topics:

Analyzing the way of working in Halogen
analyzing case studies
and observations

The insights obtained from this empirical research research will be synthesized and visualized as an intermediate step to transition from a research for design towards a research through design approach (Stappers & Giaccardi, 2014). The synthesis and visualization will be done according to Gigamapping practices of depicting the findings in a gigamap canvas and the iceberg mapping methods where improvement points will be interlinked, submerging a cause-and-effect structure. Both are popular tools within systemic design (Sevaldson, 2011; Suoheimo et al., 2020). These will then be used for the research through design approach, where user-testing, co-creation sessions, and sense-making sessions will take place to create a final design (Jones, 2018; Sanders & Stappers, 2008; Sevaldson, 2022; Virzi et al., 1993).

Halo way of working

Before case studies could be conducted, the context of the case studies was essential to understand. That is the design consultancy Halogen in which these cases took place. Therefore, the first step was understanding the business development and set-up process, project set-up, execution, and eventual project follow-up. Additionally, it was critical to understand how these cases link back to Halogen's broader vision and strategy and what impact they want to achieve. Lastly, these case studies were used to get a feeling of the work culture of Halogen and to find which case studies needed to be selected.

An analysis of the Quality Management System (QMS) and strategy document will be conducted to research the way of working in Halogen. A part of the QMS depicts how project processes in Halogen are set up and executed, mainly focusing on business development and project set-up. An expert interview was conducted with the project developer, knowledgeable about the company's internal workings to understand better Halogen's way of working. This person was selected through purposive sampling, intentionally selecting participants with specific expertise or experience relevant to the research topic (Patton, 2014). The expert was responsible for setting up the QMS in Halogen and, therefore, deemed a suitable fit for the interview on the ways of working in Halogen.
Alongside this expert interview, three other individuals in Halogen who hold high systemic knowledge were interviewed for their perspectives on the way of working within the company. Therefore, a purposive sampling method was employed. These three individuals were two Systemic Design experts within the company and one business developer. All three were selected due to their high seniority within the field and 10+ years of experience of work within the field. The two systemic designers show their experience within the field by being actively involved in the Norwegian community of Systemic Design, interacting with organizations and institutes dealing with systemic design outside of Halogen, and giving (guest) lectures at AHO in the field of systems-oriented design, or interact with institutes such as DOGA that adopt systemic approaches themselves and hold open lectures on these and related topics in the field of systemic design (DOGA, n.d.).
The experienced business developer was selected as they are experienced in project management and train employees to manage projects independently. Therefore, they are highly knowledgeable in the more procedural ways of working within Halogen.
The expert interviews involve engaging with individuals with a high level of knowledge and experience in a particular field, making them well-equipped to provide in-depth information (Fontana & Frey, 2005). Given the focus on understanding the quality management system (QMS) development within the chosen consultancy and the knowledge of how systemic design gets executed in the organization, this method was deemed suitable to target the individual directly involved in creating and implementing the system, alongside the perspective of four experienced systemic designers.

Additionally, a document analysis was employed as a complementary method to further enhance the study's comprehensiveness. This method involves examining written materials, such as the QMS itself and the strategy document of Halogen, to extract relevant information and insights (Bowen, 2009). By scrutinizing these documents, I aimed to uncover additional perspectives on the consultancy's approach to monitoring and managing quality and how this adheres to their strategic planning, enriching the understanding of the organization's practices.

Case studies

Once the context of Halogen's way of working is understood, the main research will focus on the case studies. The in-depth case studies were aimed at unraveling the intricacies of project reframing. This approach involved expert interviews and examination of documents, or document analysis, related to the selected cases. Expert interviews provided rich insights into the experiences, perspectives, and decision-making processes of individuals directly involved in the reframing process to understand how systemic design is applied in practicum. This approach aligns with and is inspired by case study research principles, which seek to contextualize complex phenomena within their real-world settings (Yin, 2009). Document related to specific cases will also be analyzed to increase the understanding of the content discussed within the

interviews. Examples of such documents could be Miro boards and project briefs. By analyzing documents, relevant information and insights were aimed to be abstracted to see if these align with points discussed in the case study interviews.
In this study, a purposive and confirming and disconfirming cases sampling method was applied to select cases that align with specific criteria to achieve a comprehensive understanding of reframing projects to be systemic (Patton, 2014). The confirming cases focused on cases that were successfully reframed, whereas disconfirming cases focused on those that were not, as aligned with deliberately chosen predefined characteristics:

- Projects had to be reactive instead of proactive, whereas Halogen reacted on a brief, as proactive systemic briefs are easier to achieve.
- Projects had to be from private sector organizations, as opposed to public sector projects, as public sector organizations are more inclined to be systemic.
- Projects had to achieve impact beyond the client organization's scope.
- Projects had to be started from a traditional approach, where a systemic approach was not yet implemented or planned to be implemented.
- Around 50% of the cases had to contain a "successful" reframe, whereas the other 50% had to be "unsuccessful". Meaning, that the client was happy with the result, and systemic approaches were implemented. Therefore, unsuccessful means that the client was unhappy with the result or the project was aborted before the planned end date; systemic approaches could not be (fully) implemented.

This sampling approach facilitated the selection of cases that best represented the targeted phenomenon and allowed for in-depth exploration of the process of reframing.

Eventually, five cases were analyzed, of which four were fully taken into account, as the fifth one was eventually emitted since it was considerably more related to the public sector than private sector. The latter case is referred to in Secured Appendix D as Case 5. For an overview of all the case considerations, refer to the Secured Appendix B. All the other cases are referred to as Cases 1 through 4. The first two cases focus on a reframe that was unsuccessful; the project results delivered were not well received (Case 1), or the project was preliminary terminated (Case 2). The latter two cases were successfully reframed: the client joined in with the reframe, and results were delivered where the client was happy.
Based on where the reframe happened within the process, defined who was interviewed. If the reframe happened in the pre-execution phase of the project, only the Business Developer of the Project was interviewed. In all cases, the Case's Designer is interviewed. If the reframe happened pre-execution, the Business Developer was also interviewed. Since Case 5 was terminated from the case studies earlier, the Designer has not been interviewed. However, valuable insights have been gathered from this case. Therefore, it will not be included in the case study comparisons but will be presented when introducing novel insights. The interviews were semi-structured but mainly followed an unstructured path along chronological lines of the Halo way of working, depicted from earlier empirical research. All interviews lasted from 1 to 2 hours, where four Designers were interviewed and two Business Developers (Three business Developers and one previous client when considered Case 5).

The data obtained from interviews and documents were subjected to a systematic analysis using two distinct methods: the Data-Information-Knowledge-Wisdom (DIKW) analysis (Ackoff, 1989; Stappers & Sanders, 2019) and the zoom-idea-problem-potential (ZIPP) method proposed by Birger Sevaldson (2011). The DIKW analysis framework, together with the ZIPP analysis, facilitated the organization and transformation of raw data into meaningful patterns, providing a structured pathway to derive insights and knowledge from the collected information in a clear pathway, or causal system, of information that flowed out of the results (Rowley, 2007). To see the result of these analyses, please refer to the Secured Appendix E and C3.

Observations

In order to holistically assess the alignment between empirical insights from case studies, the analysis of the way of working, and the actual company culture within the consultancy, a participant observation method was employed (Hammersley & Atkinson, 2007). This method allowed for immersive engagement within the organization, enabling the researcher to become an active participant while concurrently conducting the research. Ethnographic principles were integrated into this approach, facilitating a nuanced exploration of the company culture by "being there" and experiencing the daily practices, interactions, and dynamics firsthand (Maanen, 2011). The immersive nature of participant observation facilitated the identification of patterns and behaviors that might not be readily apparent through traditional research methods.

Research for Design & through Design

A 'research for design' methodology will be applied to synthesize the knowledge from the qualitative research, resulting in a design solution (Stappers & Giaccardi, 2014). These design solutions will entail maps or canvasses of best practices and improvement points, visualized through practices inspired by Gigamapping for the best practices and 'iceberg' mapping, in order to connect the problems and extract improvement points (Sevaldson, 2011; Suoheimo et al., 2020). The insights gained from the qualitative exploration will be used to shape these designs, focusing mainly on synthesizing and conveying information. Subsequently, the 'research through design' approach will be applied, wherein the resultant design becomes the subject of inquiry (Stappers & Giaccardi, 2014). This iterative process involves testing, refining, and reshaping the design, generating additional insights into its utility, applicability, and effectiveness. The design will undergo iterative refinements, guided by the research for design ethos and responsive to the insights gathered through the 'research through design' phase. This symbiotic interplay will ensure that the design co-evolves with its intended purpose and the demands of its contextual environment. The iterative nature of design, in combination with 'research for' and '-through design', will facilitate a nuanced exploration of the design medium and test the practicality of the task it is supposed to achieve. It will generate an innovative and functional design solution while maintaining a solid connection with the research insights derived earlier. Three methods will be used to condone this research through design approach: user-testing, sense-making sessions, and co-creation sessions (Jones, 2018; Sanders & Stappers, 2008; Sevaldson, 2022; Virzi et al., 1993).

User-Testing
User tests will be conducted with the target group of the final design. That is, novice systemic designers, new to the practice of reframing. It will be done so by either user-testing the designs in a way that the final design will be put in a trial stage to use it as intended for an hour, also called scenario-based testing as a form of performance testing (Virzi et al., 1993), or through presenting the design to them, doing usability tests together with thinking aloud protocols, also taking an hour (Olmsted-Hawala et al., 2010; Virzi et al., 1993). The latter approach will also be conducted with design experts earlier involved in this thesis. Participants will be gathered through convenience sampling (Patton, 2014).

Sense-making and Co-creation Sessions
Additionally, research through design was conducted through sense-making and co-creation sessions (Jones, 2018; Sanders & Stappers, 2008; Sevaldson, 2022). These sessions will validate and check information with experts through back-checking, sense-making, and sense-sharing sessions (Sevaldson, 2022). Additionally, Very Rapid Learning Processes (VRLP) will be facilitated to co-create designs together, with as an additional result that implementation and adoption of the designs become easier, as the ownership of the creation of the tools lies in the participants whom it was co-created with. The back-checking and sense-making will be done by sense-sharing information back to Halogen employees and experts outside of Halogen in sessions varying in length (depending on the information and group size) to assess if the knowledge created aligns with systemic design experts. Co-creation will be done one-on-one with employees of Halogen experienced in systemic design, chosen through purposive sampling within the organization (Patton, 2014).

Theory

Emperical

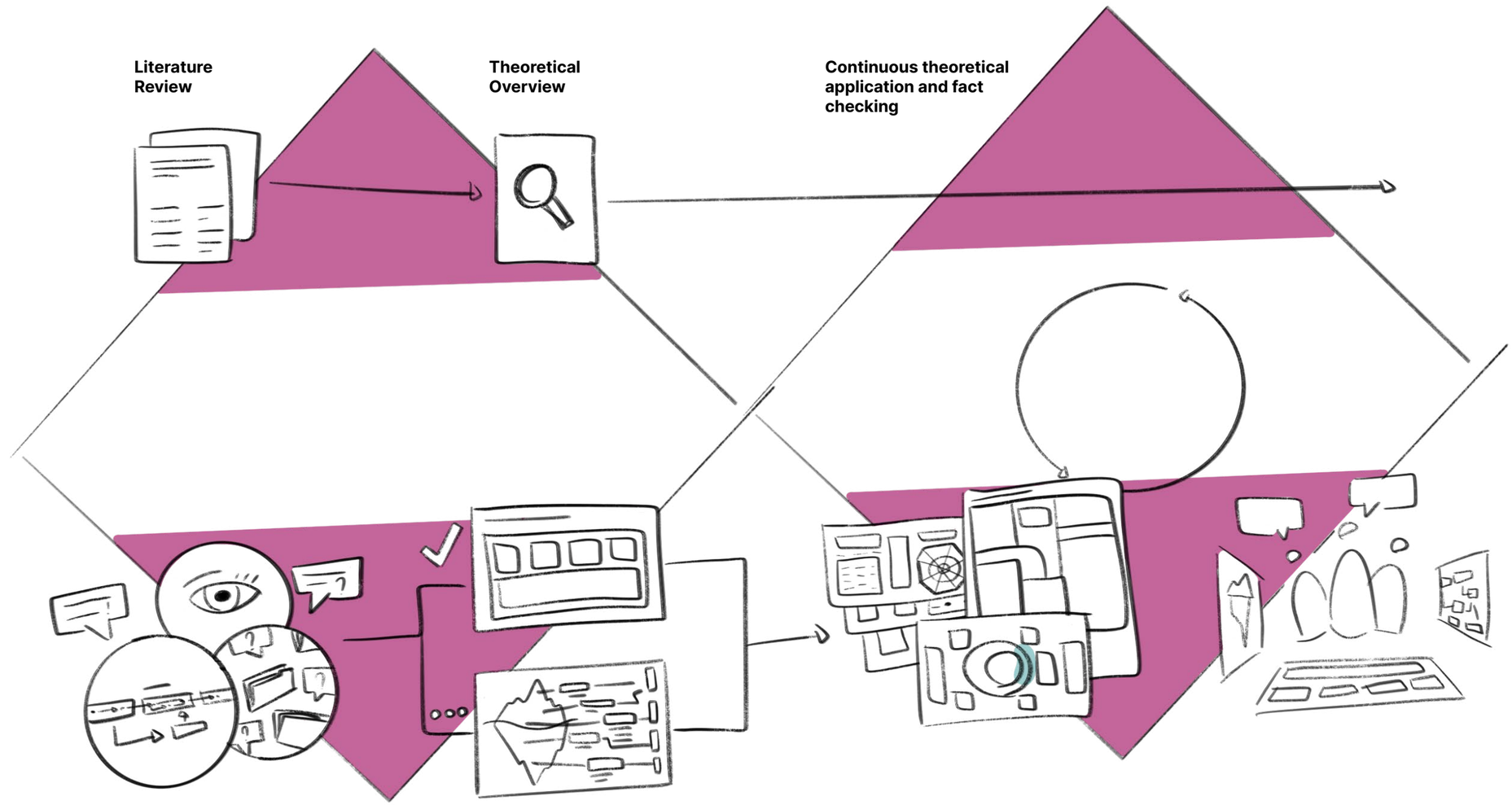


Figure 3.1. Visualization of the Project Approach

4. Empirical Research

Empirical Research

This chapter provides an overview of the empirical research that formed the basis for the proposed canvas designs. First, we will review the different empirical research topics conducted: The Halo way of working, the case studies, and the observations made in Halogen. Per topic, we will cover the insights generated in the empirical research. The chapter will conclude with a summary of the findings. The next chapter will discuss how these insights were synthesized in visuals: one canvas mainly explaining the insights on the best practices and one canvas depicting improvement points for Halogen.

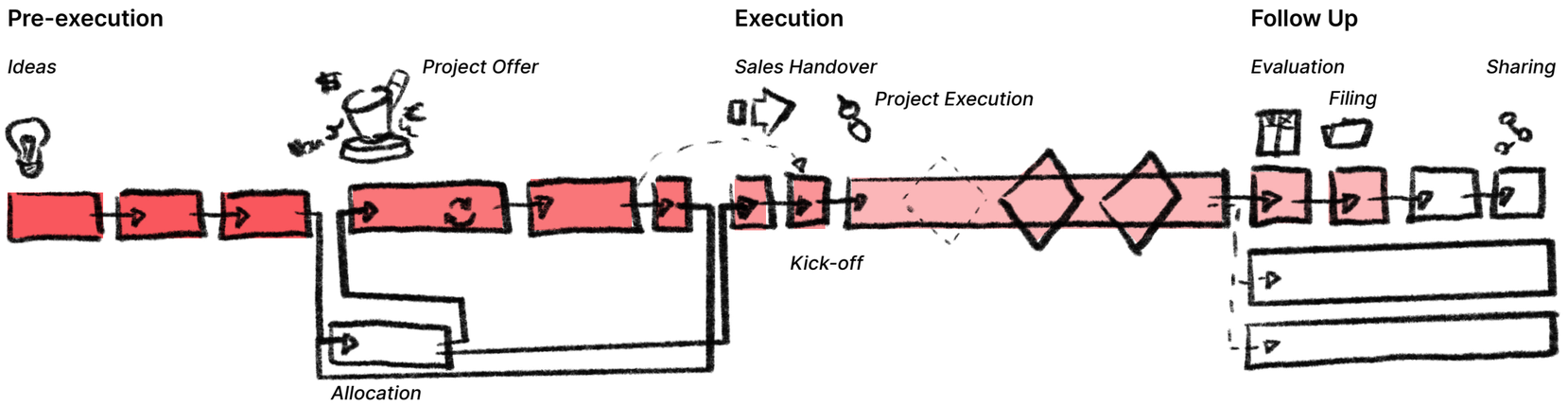


Figure 4.1. Abstract version of the Visualized Halo Way of Working

Empirical Research
Halo Way of Working

To understand the context in which the case studies took place, it was first essential to look at the way of working within Halogen. The case studies will be the main focal point of this thesis as best practice and improvement points will be drawn from it, as discussed in the next chapter, used to generate knowledge on how to approach the transition from a traditional design approach towards one that can deal with complexity. So, the way of working in Halogen is first studied to understand the context in which these case studies occurred. The analysis will include the Quality Management System (QMS) and Strategy Document and interviews on the Halo way of working. The purpose of the QMS is to support the various roles required for an ideal project setup. Later, these insights will be compared to the case studies and observations to see how they (do not) draw share similarities.

As discussed in Chapter 3, the insights on the Halo way of working were conducted with a Project Developer, included in creating the QMS, a business developer experienced in project management, and two senior Systemic Designers with 10+ years of experience in the field. These interviewees were chosen based on purposive sampling through their instrumental role in developing the quality management system. They offered new perspectives on the system's implementation processes, challenges, and outcomes. The semi-structured interviews were oriented on people's perspectives on the "Halo way of working". The interview guide and interview transcripts can be found in the Secured Appendix C.

Together with the creator of the QMS, a general image was created of how a project process is generally run through. This image is not shared in this thesis due to involving confidential information but is shared within the password-secured Appendix C4. An abstraction of this image is shown in Figure 4.1. Eventually, this was sense-checked with the information provided in the initial QMS interview and the expert Business Developer who confirmed the steps in the process. It was found that the project process consists of multiple sequential stages:

Pre-execution

- Ideas for business are generated, selected, and refined in the sales and bid process and brought to a pre-qualification stage.
- In the allocation phase, business developers and/or designers are allocated to develop an offer on the project idea.
- In the bidding process, project offers are written, negotiated with the client, and then it is decided if there is an agreement.
- Another allocation phase, where (new) designers will be allocated to the actual project execution

Execution

- The execution phase starts with the sales handover (if applicable), where the new designers are updated on the project's scope, approach and deliverable.
- Following up, the Kick-off of the project is where expectations and understanding of the scope are aligned.
- Lastly, in the Execution stage, the project is executed according to the designed brief.

Project follow up

- Project evaluation internally and with the client, storing and filing data, and further client development are part of these final steps to ensure project follow-up and completion.

After understanding the sequential process of how projects were set up through the QMS, the Project Developer who created the QMS, and the Expert Business Developer were inquired about the roles employees generally hold in the project process. For example, the Business Developer or Project developer is generally more involved in the pre-execution and project follow-up stages. In contrast, the designer is sometimes involved in pre-execution but mainly in execution, whereas the Project Developer or Business Developer is not. They are both not continuously involved, mainly due to their lack of time on projects or being allocated to another project. Team leads, studio leads, business developers, and project developers are generally involved in many meetings in the pre-execution phase for allocation purposes. Even though the project process consists of many more roles and meetings with important stakeholders within the company, for the ease of this thesis, we will slim them down to the three roles that get executed within projects: The Designers, who execute the project; the Business Developer, who often is the one framing and selling the brief; and the Project Developer, who designs the project plan, estimates hours, administers hours, and allocates designers to the project. Sometimes, it could also be the project developer who takes on the role of a business developer.

The newly generated knowledge on these steps was used for the inquiry about the case study as a guide to run through the interviews and see where moments of reframing happened. Also, the case studies were used to verify the way of working within Halogen. Having a frame of reference helped to understand where certain reframes, meetings, or tasks took place when referred to in the case studies and could then be aligned with this process described in the QMS. For my understanding and peruse of the case studies, a visualization was made of the whole project process. This image is can be found in Figure 4.1 and in more detail in the Secured Appendix C. We will now discuss some of the insights gained from the interviews concerning the Halo way of Working.

Insight 1: Strategy on impact areas, but unclear means to achieve it

Within the strategy document of Halogen, three main areas are envisioned where Halogen wants to create impact: A regenerative green shift, the safety of people, companies, societies, and nations, and democracy and quality of life. There may be other details on how to achieve this impact. However, neither the QMS nor the Strategy document details how to achieve this. However, upon studying the document further, there is no means to how they want to achieve this.
This information is relevant as the third research question wonders how reframing creates more impact beyond company profits, but these steps are also not described in company practices. Therefore, further research was conducted on how Halogen achieves impact through projects in the case studies.

Insight 2: Many different people involved in the project processes, slowing down processes

Many people are involved throughout the pre-execution and the execution stage of the project. More so in the pre-execution stage, where many meetings were dependent on studio leads, team leads, and business owners, often in a sequential manner.
Besides this, even within the pre-execution stage of the project and the execution stage of the project, different people were often involved, from writing the brief to executing the project.

> *"We really need to work on to make [the pre-execution process] more efficient because yeah, we spend way too many hours often because too many people are maybe involved."*
> - Expert Business Developer

The involvement of many different people might indicate difficulties in conveying information to each other. As seen in the quote below, the involvement of different (inexperienced) bid writers might lead to missed opportunities in reframing due to potentially needing a systemic alignment with the rest of their colleagues, causing them to miss specific critical questions to ask. Alternatively, no designers are involved in writing the bids, causing a lack of knowledge of design methods while writing the bid. Later on in Insight 3 and Insight 18, we will build upon this point and discuss why the involvement of many different people is problematic and, therefore, relevant to address.

> *"One of the issues here is that the bid team is who has available time. That's the person that we assigned to do the bids. And who has available time is not always who is experienced in writing bids. (...) I think we should, could have some more tools ready. Where do you start when you're going to, the first time you discuss them, the tender: what questions should you ask in the team to find out how, how to approach it?"*
> - Expert Business Developer

Insight 3: Linear execution of the project process might endanger systemic design execution

As discussed above, how projects were set up in Halogen could be generalized in three areas: pre-project execution, project execution, and project follow-up.
The QMS gave an idea of the ideal way of running projects, whereas the interviewees of the Halo way of working gave an idea of how things go in reality. The purpose of the QMS is to support the various roles required for an ideal project setup. The QMS mainly focused on the process of project setup to support designers to understand which meetings and officialities needed to be executed but did not yet include details on how to execute design projects. Being aimed at mostly designers who suddenly needed to write a project bid, this made sense. Also, the QMS was primarily set up for proactive project approaches, where bids and potential bids were often saved in ideas. Therefore, projects roughly followed the steps of the QMS and were also quite sequential. The main difference would be in the time spent or sometimes when a discussion with the client would occur. However, all steps were represented in the reactive project briefs, with some steps not occurring as they were bid-specific but still following essentially the sequential steps of the QMS.

It stood out that the process for setting up projects was as defined as possible, highly linear, sequential, and had many interdependencies. The pre-execution phase has a lot of linear interdependencies on different people and meetings, as discussed in Insight 2, which could hinder setting up a project quickly.
This linear way of working in the pre-execution phase of the project does not fully accommodate the characteristics that come with complex contexts that often come into setting up a project and the iterative nature embodied in design projects. Therefore, the pre-execution phase of a project might need accommodation to sustain more systemic projects to be set up sooner or more flexibly.
Something else that stood out was that the organization did not have a different process for systemic projects, which was initially expected. In literature, as discussed in Chapter 2, it is explained that the execution of a systemic project and a project dealing with a complicated context is different. Therefore, the way these processes would be set up was expected to be different, too. Expected was a process, perhaps more dynamic with fewer interdependencies, that would cater to a systemic project, focused more on executing systemic design or on a different approach than, for example, the double diamond. Both were yet not present as the QMS observed was the first of many versions to be made.
As discussed in Chapter 2, complex contexts have the connotation of being unpredictable and dynamic, and complicated contexts align with linearity and staticness. Therefore, a static sequential project process is expected to hinder the systemic setup and execution of a project. This could prove problematic for Halogen if not adapted or altered, whereas Insight 2 already

proves this claim because the project process has many interdependencies.

Insight 4: Reframing can happen, continuously, in every part of the project
While talking with the experts on their view on the Halogen way of working, it became clear that reframing is not something that gets done once but is a practice embodied throughout the whole project process, also outside of project execution. It was interesting to see how such an iterative practice could also be applied in different stages, repeatedly throughout such a linear process as, for example, the pre-execution of a project.

> *"[the way of working] is about facilitating processes of learning, concept development, or some kind of framing and reframing. Basically. It's about sense-making."*
> - Expert Systemic Designer 1

This quote indicates that the whole way of working in Halogen, so throughout the whole process of the project, these same "principles" are applied, therefore showing a reframe always happens. This indicated the importance of always being able to do a reframe.

Now that a central understanding of the project process is built, this thesis continues with the execution of the case studies. The case studies will discuss different projects executed between Halogen and a client. These cases all held some form of a reframe, according to the employees of Halogen. Here, either project problem, scope, and/or deliverable was reframed so that a more systemic approach had to be used, and where the project's impact became potentially different.

Empirical Research
Case Studies

The case studies conducted for this thesis focused on reframing from a complicated or traditional context to a complex context or systemic approach. The case studies function as a foundation to know how to reframe projects to be more systemic so inspiration can be drawn from them. Ultimately, the insights of the case studies were used to create guidelines for the final design, which was aimed at supporting other designers or consultancies in how to do such a reframe.
As described, 1 or 2 Employees of Halogen who either set up or executed the project have been interviewed. For all cases, a Designer has been interviewed, and when necessary, a Business Developer. Additional documents have also been analyzed relevant to the case studies. The first two case studies entailed two projects that were seen as unsuccessful reframes and the latter two that were successful. The unsuccessfulness was assessed by how well the client and the employees of Halogen evaluated the project, through either the project being discontinued or negative feedback received from the client.

First, we will discuss how the case studies relate to the criteria set in Chapter 3. Then, the case studies will be discussed in more depth. Then, we will discuss the general insights gained from these case studies and from which case studies these conclusions were drawn. Due to the sensitivity of the information in the cases, the names of the client organizations have been anonymized.

As seen from Table 4.1, most cases did not live up to create an impact beyond the client's organization, which will be discussed later in this chapter. Therefore, this criteria was taken into account less strictly. Additionally, Case 5 was left out as it did not focus on the private sector, and there was no reframing. It was rather systemic from the beginning due to the broad involvement of many stakeholders and partners. Case 5 is not discussed but can be found in the Secured Appendix D, as well as the other case's transcriptions and the interview guide. We will continue discussing the cases.

	Reactive	*Private Sector*	*Perceived Impact Beyond Client Organization's Scope*	*Started from traditional Approach*	*Successful or Unsuccessful*
Case 1	Yes	Yes	No	Yes	Unsuccessful
Case 2	Yes	Yes	Yes, but not achieved	Yes	Unsuccessful
Case 3	Yes	Yes	No	Yes	Successful
Case 4	Partially, as it was an open challenge where Halogen Actively responded, and won	Yes, but working mainly for Public Sector	Yes, but because they had to	Not Really, as a frame agreement is not considered a traditional approach	Successful
Case 5	Yes	No	Yes	Partially, but there was no systemic reframe	Successful

Table 4.1. The comparison between Case Studies and Inclusion Criteria

Case 1

The first case revolved around a collaboration between private sector partners and academic stakeholders. The goal was to add a human-centered approach to a data-sharing platform so that private sector and academic stakeholders would collaborate, as the initial problem was that stakeholders and partners were not collaborating in the essence of sharing data effectively.

The reframing happened early in the project during discussions within the project bidding process between Halogen and the client. It was done by highlighting assumptions in the solution to the problem. The reframe was executed by putting into question the phrasing of the details on how the deliverable would solve the problem. Therefore, a new deliverable was formulated and decided upon in the internal team and presented to the partner, also changing the approach towards this deliverable and creating a new hypothesis on why this problem was occurring.

However, The new solution proposed was also assumption-oriented and needed to be iteratively tested to see if this deliverable would meet the user's needs.

It was assumed that a common benefit would motivate all stakeholders to share more; therefore, the user's need was also assumed. Nevertheless, in the end, it was found that this would not work. What also did not help is that the academic stakeholders were not entirely on board with this focus, having their skepticism towards this approach. Mainly the project leader.
Another problem was within this process that Halogen eagerly wanted to test out their systemic playbook, a guide that explains methods, tools, and processes relevant to systemic design. This made the process too force-fitted. The case study's designer mentions that the project's reframe came too soon without having the proper insights from the partners involved, where clear information on the problem was lacking. Additionally, the designer explained that the offer already set the project approach in stone, making it difficult to stray from this approach and reframe it later. Eventually, there needed to be more understanding of what Halogen tried to accomplish throughout the project. Ultimately, the problem still needed to be solved, and the client was unhappy.

> *"I don't think there was a lot of openness. Openness was lacking because there was pressure to get people on board. And maybe kind of a, maybe a different culture.*
>
> *Project team was also part of the issue. They were pretty much resonating the opinion of the project leader. And they were also on a lot of pressure to deliver things. And they had their own priorities of what was important to deliver."*
> - Designer Case 2
>
> *5*

> *"They were not going to allow us to engage with any of the stakeholders. They wanted to keep that relationship to themselves because they were concerned about that the message was not - they wanted to direct the message."*
> - Designer Case 2
>
> *2*

> *"I think they were kind of maybe experiencing like, some political competition inside of the organization maybe."*
> - Designer Case 2
>
> *3 & 4*

> *"It's very hard to have a discussion on what is actually nature positive, what is actually going to be beneficial, because you are always making a calculation of how much is that going, going to impact our ability to generate revenue."*
> - Designer Case 2
>
> *3 & 4*

> *"What is your plan for engagement? How do you plan to make sure that this tool actually works? How is your infrastructure going to be set up in order to make it, cause it is a data platform. It's you know, data coming from all kinds of places. And yeah. These kinds of questions and also questions of, for example, even more taking a more systemic approach when they talked about being regenerative. Like, but do you think that this is a good approach? What do you think about this? And what is your stance around that? And they didn't have answers."*
> - Designer Case 2 on their critical questions asked
>
> *1*

Case 2

The second case revolved around creating buy-in from different organizational departments to be on board with the climate-neutral and nature-positive future scenarios. The goal was to design a process for getting internal stakeholders on board and a tool for realizing this eyed-upon goal. The deliverable should entail a plan on how to execute and, through those means, get stakeholders on board with a tool that could realize this plan by providing, enabling, and catalyzing elements to support the client organization's transformation.

The reframe intended by Halogen was not to create a tool immediately but a shift in the process that could leave the end-deliverable open. This reframe was meant to happen due to indications in the project that a tool might already be too restricting as a deliverable and too farfetched as a project goal with the current resources. It was attempted by critically questioning[1] the tool and the underlying problem, but the client's project leader shut it down.

The project needed to be cut off sooner than expected because the client was focused on the initial communication deliverable that was supposed to get stakeholders on board. Besides that, Halogen was not allowed to communicate with important stakeholders[2], creating a barrier between Halogen and the stakeholders involved. Continuous reiterations were done, and project goals needed to be met in time. Additionally, it did not help that the client's project leader was not on board with the agreed-upon plan, as they were absent when the project plan was made. During execution, this meant that the signed project brief was frowned upon and was met with resistance; it could not be executed[3]. Furthermore, the client's project leader was not in the right place of the hierarchy in the organization to implement such a tool. As they suddenly needed to go against the KPIs[4] that assessed them. This caused internal conflict at the client's organization; it seemed they needed help managing this organizational change. Additionally, managing the change[5] in the project was a struggle for Halogen and the client's team. Where the reframe was supposed to go from a complicated to a complex context, the client was insistent on, instead, oversimplifying it.

> *I think that we always go in with the idea that there might be more than what the customer wants initially or what they think they want. It's very difficult that they come with one request, and then that request is kind of mysterious to us. It's often a solution that's jumped into to a problem that they really don't know, or that they think they have one problem, but the problem is basically fuzzy. So they haven't really described the problem. When they come with a very obvious request, or a very concrete request, it's almost always because they jump to conclusions.*
>
> *They were quite open on possibilities in their strategy*
> - Designer Case 3

1

Case 3

The third case was a successful project initially oriented to be a customer journey for a lead generator tool but ended up being a roadmap for the whole organization.

The reframe was in the project's deliverable. Instead of focusing on only the customer journey of a lead generator, a small part of the organization, the project reframed to looking at the customer journey of the whole organization. The designer and business developer saw potential in this project to be more systemic due to how the project was formulated, assuming that when a client knows the solution, they probably are not sure what problem they are trying to fix[1]. They could reframe the project by critically questioning the deliverables and problems and through negotiations[2]. This reframe was possible due to an insight within project execution where the main pain point for the client's customer was at the end of the whole customer journey. They found that a negative imprint was left on the customer at the end of the client's sales, affecting word-of-mouth sales. Therefore, a roadmap was created with multiple interventions to create a better customer journey and increase word-of-mouth sales. The project became more systemic as they started to link different data points together, targeting their problem (not as many leads as they wanted) with different factors, creating multiple interventions to target this problem that lay in customer satisfaction.

What helped within this project were intermediate design visualizations presented early on to convince higher-ups[3] to accept this reframe, together with some design maturity within their organization. Additionally, the project was already executed high within the organization's hierarchy, making it easier to convince higher-ups due to direct contact, and the people that were higher up being open to new or different approaches, and having the right mindset. Lastly, other data in the organization were effortlessly shared with Halogen, and additional requests for data visualizations were asked for, reframing the orientation of the project here and there when needed, indicating the flexible nature of the client's organization and the project itself.

> *[The client] had the conviction already and he had been witnessing the impact that [design] can have. But then there were always people in the organization who were against using design and didn't understand talking to customers. But then, thanks to my colleagues who are very good at visualizing, they really helped in making the organization understand what we were doing and why we were doing it.*
> - Business Developer Case 3

3

> *To reframe was not so much the brief, because it wasn't that clear, but reframe their perspective of their work, which opened up to work in completely new ways. I think it will have lots of ripple effects in the future.*
> - Designer Case 4

1

> *We had like an educational program about being regenerative and systemic. we had some exercises and with them in parallel that sort of matured them.*
> - Designer Case 4

1

Case 4

The last case was a successful project that helped a private sector client create a new building for their client, the public sector. A private sector client who creates public sector buildings struggled with the different requirements asked from the public sector, such as longevity and the impact this building has on its environment. The building should also fulfill its tasks in a field, working with the public sector and academics, where this field will change throughout the years.

The project was initially a frame agreement oriented on a different matter, meaning they would work together for a longer time on this project, but not with a bounded contract on what approach and deliverables per se. These were only to be defined further down in the process, where the involvement of Halogen was available when the client needed it. The reframe happened because Halogen was already on board, and their client was able to address this new problem they found, as presented above. Halogen already showed effort in acting in the client's best interest, building trust. When presented with this new problem, Halogen came up with an offer to try a new approach where they would do future visioning in a project to which this building could adhere. The reframe, therefore, came more from the client's side, focusing on a new problem introduced in this agreement, where Halogen had time to think about a proposal on their behalf and reframe the scope and approach in the frame agreement accordingly. From Halogen's side, the reframe came in trying to shift their mindset through education and systemic exercises[1].

Elements in the execution of this case that could have caused potential dangers were the low trust the client had in the process and their low design maturity. Luckily, alongside the project problem and approach, there was also a reframe during the execution of the project in the mindset of the client, where the client started to understand the reason why this approach helped them to reach their goal and the goal beyond the project by accepting a more systemic approach. The client could see the bigger picture of how these elements connected to a higher goal.

> *We had that talk with them and then we discussed internally, but the right way to do this would be this. Then we talked with the client and said, we are going to offer, not only this, but we are going to offer you approach where we look at the whole customer journey till end. And I remember they said, but it's only the initial place we were willing to pay for. And we said, but it won't actually cost you more. We're doing interviews and we will document how we're doing things. So you'll actually get the whole process for the same. We just wanted to verify that. And then we presented that and we won the project.*
> - Business Developer Case 3

2

Insights

The cases we just discussed presented the core information used to build up upcoming iterations discussed in Chapters 5 and 7, where they inspired the best practices of Halogen but also were essential towards the Assessment for Halogen, where improvement points for Halogen were highlighted. It also laid the foundation for the design criteria discussed in Chapter 6. To know what these design criteria were and how they relate to the cases, we will now discuss the insights in more detail. Afterward, we will briefly discuss how these insights were reflected or opposed in the observations before continuing to Chapter 5, where the insights are used to build the first design iterations and synthesis maps of this information, translating insights to design and improvement points for Halogen.

Insight 5a: The earlier the reframe, the better: allowing for flexibility in project (pre-)execution

The case studies clearly emphasize the need for setting up projects to be systemic as early as possible, as delays in reframing during project execution can waste time and resources. Preferably, such reframes would be set up in the pre-execution phase of a project, where business development and project setup are still ongoing[5a]. Once a contract is signed or a project brief agreed upon, it becomes challenging to make significant changes, like adjusting the approach and deliverables. This inflexibility often leads to friction internally, as spending time on changing a project might seem wasteful to a client and does not align with current project objectives. However, it might have benefited the project and involved stakeholders better in the long run.

Examples of this are the approach and the deliverable, where the approach often aligns with where hours will be spent, and the deliverable at the end of the project to know if objectives have been met. Unfortunately, there is a high chance objectives need to change in projects, especially systemic ones. And therefore, the approach towards these deliverables as well. All case studies embody an example of this, where the first two case studies failed in their reframing, as the approach and deliverable were too set in stone, and the latter two allowed for more flexibility, succeeding in a reframe and shift of focus, adapting to newly found problems.

> *"Sales and bid, basically the pipeline of all opportunities."*
> - QMS Expert
>
> *5a*

However, as Case Study 1 shows, a reframe early on in the project can also cause the adaptation of assumptions that are not yet well embodied within generated insights in the project, causing a reframe to be tricky and lead to potential failure. Therefore, accurate insights must also be gathered early in the project.
Another problem with reframing early on, like in the project's pre-execution phase, is that the effort (and therefore resources from the providing consultancy) is put into the part of the project that generates the least profit. Thus, reframing is often left to be done within project execution. As Case Study 1 showed, this causes friction within reframing. Through interviews, it became apparent that early project process reframing cannot be executed due to the minimum profit generated. Therefore, project setup is a phase that should generally be executed as quickly as possible.
Another factor that plays a massive role in this, as discussed in Insight 3, is that systemic projects are generally constructed the same way as projects that deal with a complicated context, which might not fit these more complex contexts that systemic design deals with.
The result of these factors is that the project setup phase generally needs to be hurried through, with many interdependencies. Still, going in-depth into the project from the start is challenging, as many people are involved in the project processes, where no one can be held mainly accountable for what happens in a project, as discussed in Insight 2. It makes it more challenging to create space for critical questioning to open a reframe, spot systemic potentials, and generate insights in the pre-execution phase of the project.

This indicates that the solution might not lie in an early reframe, as has been suggested, but in setting up projects differently so reframing can be accommodated throughout the whole project. For example, being more flexible within the approach and deliverable, as is displayed by Case Studies 3 & 4.
Reframing in project execution can lead to efforts and resources being directed toward tasks less high on the priority list for the client. At the same time, early reframing causes a loss of profit for Halogen. Therefore, integrating flexibility from the start is the best solution for both. Still, if flexibility is not possible, systemic projects should prioritize early-stage reframing, even if it initially generates minimal profit, so later on, conflict is mitigated. This highlights the need to streamline the project setup phase to accommodate a way of working where generating insights early on in the projects is encouraged instead of frowned upon.

Halogen's project pre-execution phase, while linear, as explained in Insight 3, did not hinder setting up a systemic project in the project execution phase, as seen in Case 3. Instead, it revealed the value of a designer's skills in accommodating reframes even after the project execution had begun.

> *"So there was a hunch based on the way that the problem was described and the solution and the order. Because when they come with an order, that's also, ah, okay, so you are ordering this, but why?*
>
> *I think that we always go in with the idea that there might be more than what the customer wants initially or what they think they want. It's very difficult that they come with one request, and then that request is kind of mysterious to us. It's often a solution that's jumped into to a problem that they really don't know, or that they think they have one problem, but the problem is basically fuzzy. So they haven't really described the problem. When they come with a very obvious request, or a very concrete request, it's almost always because they jump to conclusions."*
> - Designer Case 3

Insight 6: The (unacknowledged) skill of an experienced employee to spot systemic potential and execute reframes

Reframing during project execution can be hard to achieve, as discussed in Insight 5. It requires experienced designers and/or business developers to see that a project could be systemic and implement the right tactics to reframe the project to be systemic.

> *"I think that there's a lot of emphasis on process and methodologies and so on. But not so much the skills of the designer. So I think that, The analysis skills of the designer come in, and also the creative skills when you're in the Business development phase. It's something that we don't really emphasize that much."*
> - Designer Case 3

The case study interviews mention that besides being able to trigger a reframe in the right way, a big part of spotting factors that could make a project systemic comes with experience in asking the right critical questions or spotting what factors make a project systemic. With limited knowledge of the project problem and scope, harnessing and including such a skill in projects is essential to optimize the possibility of reframing more projects. Spotting such opportunities could be a challenge for inexperienced designers new to systemic design and, therefore, should become a skill that needs to be trained.

> *"The innovative solutions are based on these [unknown unknown] problems, or the most definitive ones. So when we start doing insights, this is what we do. We map what they know that they know. We map what they don't know that they know or know that they don't know. And then we also try mapping what they don't know that they don't know. That's why we use qualitative explorative methods in our insights because They are the methods that are most likely to find answers to these questions."*
> - Designer Case 3

Insight 7: Different alignment and knowledge of systemic design causing miscommunication and faulty project execution.

Within the case studies, it became clear that people responsible for the project pre-execution phase, or partially for project execution, did not always have knowledge of systemic design and how to execute such projects[7]. Often, the same Business developers were responsible for an early reframe. As mentioned in the analysis of the Halo way of working, the Business developers are often responsible for setting up the brief, and the designers are responsible for executing, while often not being involved in the brief writing, as explained by Insight 2. Furthermore, it was mentioned that sometimes the designer finds out a brief should have been set up differently or the project should have been reframed before starting. However, the business developer could improve their systemic insight to spot this problem, as their background is often outside design. This could lead to a problem with project execution. Therefore, knowledge of systemic design or including skilled systemic designers in the bid and brief writing could prevent these problems, as partially discussed in Insight 6. Otherwise, opportunities for spotting a systemic project are missed, and reframes are not executed soon enough or in an enclosed environment, as discussed in Insight 5. It is, therefore, important to strive for alignment on what systemic design is within the organization of Halogen. The same language should be created around systemic design terms and the definition of these terms. Another option is to create a space where skilled systemic designers can be included in projects more efficiently. In that way, there are more opportunities for indicators for systemic projects to be spotted. Although it is hard to achieve both, it is essential if Halogen wants to achieve more systemic projects. Additionally, people should be able to tap into knowledge of what systemic design is for the company and what different processes, methods, and tools are used internally in the providing organization.

> *"When I see designers come in and work with projects, we take pride in being neutral and facilitate others knowledge, experiences, collect, find them. Designers not being trained on being normative designers, trained to facilitate other people, and in a transformation we have to be very clear from the first time, from the everything we write, till we meet the clients the first time and say, okay, you are starting a transformation journey. We have to be advisors. We have to tell them what, how we have to work together in order to get this."*
>
> - Designer Case 3
>
> *7*

> *"Do people have the same goals? Do people have the same understanding of purpose? Do people understand the situation is critical and we need to have more pointed action towards things. Do people understand their own personal responsibility in face of these big challenges? Understanding you have to do certain things but it will also be a pain in the ass. and you have to also understand understand that when issues are so complex that you cannot just provide easy solutions? Do you understand that the interconnectedness of different factors, right? because if not there is a high risk of it going it wrong or not going forward."*
>
> - Designer Case 2 about the internal knowledge document
>
> *7 & 8.1*

> *"Reframing carries a risk because you could lose the project going back to the client and say, this is what you should do. Or, when you have almost solved it or you have [a reframe]. The client says, no, you do that. We might have an internal risk that we have created expectations internally [that do not align with reality]."*
>
> *Sometimes we can't be reframing. We have learned as well is that sometimes you scared off the customer if you do the reframing. Before we win the process. So sometimes we just do what they ask."*
>
> - Business developer Case 3
>
> *8.2*

Insight 8: Every project could be made systemic, but reframing comes at a risk.

Something that became apparent in Case 2, and from mentions within interviews, is that it is not always the question of whether or not a project can be systemic but whether it should. It was explained that the scope and boundaries of a project can always be expanded to include different factors, making it more systemic. However, that does not mean a project has to be more systemic. Upon hearing the why behind what they are asking in the project, it can be understood that a systemic approach can be more satisfactory for their underlying needs or the needs of other involved actors and stakeholders.

As will be explained later in User Test Finding 8, a project can have more impact if the scope of the project is smaller and more easily executable. Because more significant systemic projects can be harder to steer, implement, and execute. Therefore, trying to make every project systemic can also have side effects and risks attached to a reframe, making it riskier to execute[8.1]. A client could turn down the collaboration altogether because working in a systemic way might seem too daunting. Or like in Case 2, where working together became more difficult due to a different approach—canceling a collaboration while a project has already been signed. This could lead to potentially losing clients[8.2]. Besides, a project sometimes does not have the right resources or factors in place to execute a reframe. This point will be further discussed in the next insight.

Insight 9: Lack of awareness on Critical Factors being present or absent in a project that leads to the failure or success of a reframe.

All case studies overlapped in mentioning factors critical to reframing and the systemic project's success. These factors seemed all to build up to making or breaking a project and fell into place once aligned with the paper of Fortune & White on Critical Success Factors for project success (Fortune & White, 2006). Many of these factors correspond, where a few needed to be added. One of the most important findings of this case study is that these factors should be either present during reframing or be accommodated to execute and finalize a systemic project.

Many factors mentioned in the case studies corresponded with the previously mentioned paper. Cases 1 and 2 demonstrated that support throughout the company is an important element, especially regarding support from the client's project manager. Case 2 also shows clear communication on internal plans, the client's involvement, mandate, and client ownership are important. Case 4, however, debunks that support from the team lead is necessary as the reframe was successful, but not full support and trust were shown throughout the process. Trust is another factor mentioned within the paper and comes back in Cases 1 through 4, where all cases exhibit that little trust caused some tension within the reframe, either making it fail or succeed in the end regardless, as seen in Case 4, due to other critical factors being present. Case 3 exhibits high levels of trust, which can be attributed to their success in the reframe by exhibiting a high level of design skill through earlier created visualizations helpful to the client.

Regarding change management, the internal change management of Case 2 contributes to the project's factor, and the project could not continue organization-wise. This also had to do with another factor mentioned in the paper, namely the execution of the project within the right hierarchy of the client's organization, as the client's project manager had seemingly little say in executing a project that would go against company KPI's, causing a disturbance for her role. Case 3 was executed high in the hierarchy of the client's organization, making the reframe easier to execute[9.1]. Furthermore, another factor mentioned throughout all interviews, whether concerning the case or not, was the right resources to execute a reframe. Resources were seen in the paper as a combination of having the right amount of time and money[9.2].

Besides those mentioned in the paper, other critical factors were added to add relevance to systemic projects. These factors included the knowledge of systemic design within the providing organization, as seen in Insight 7, design[9.3] and systemic maturity within the client[9.4], and the right mindset[9.5]. The latter two address the success of Case 4 eventually being able to reframe, together with the openness or flexibility within the approach, causing to outbalance the critical factors not being in place as discussed above. Additionally, Case Study 2 showed signs of low design maturity from the client by having designers focusing only on the aesthetics of the communication, which is typically associated with low design maturity (DesignBetter by Invision, n.d.; Whicher et al., 2011; The Danish Design Centre, 2001; Nielsen Norman Group, 2021).

These factors were mentioned multiple times by interviewees from the case studies but were always mentioned to be seen in hindsight or came forward as an insight once interviewed. Therefore indicating a lack of shared awareness on the factors that heavily influence the success of a project reframe.

> *"But if we are gonna entering in a transformation, we really have to help and advise the clients in the journey. [We have to look at] who is in the room, because usually people get picked to be in projects based on what they have done earlier in life, and that that might be something completely different and they might not have the right mindset, and they might think it's very difficult to work in, in a systemic way or in a transformational way."*
> - Designer Case 3
>
> *9.4 & 9.5*

> *"We are four consultancies working together. And out of those four, it's only two of us. That have a systemic mindset and work systemically. If we don't work together as a team That will start be frustrating and have frictions once we start working with a client."*
> - Designer Case 3
>
> *9.5*

> *"[The reframe] needs to be [with] the clients that are capable or where it's possible to change or they need to make a decision on getting something else. They can say, okay, if you think that's what, let's do that. But it is also about culture. And as well a bit about the framing around the project. If, if the client has just a limited amount of money or the client is in a decision where this is her task with delivering something that's kind of beyond the responsibility of the time."*
> - Business Developer Case 3
>
> *9.1 & 9.2*

> *"Q: what made it so easy to convince them to change approach?*
> *A: It was the sales manager [who was in top management], He had the conviction [of design] already and he had been witnessing the effect, the impact that [design] can have. He was a very well educated client."*
> - Designer Case 3
>
> *9.1 & 9.3*

> *"One of the things that we really should talk about is financing. If you're gonna work transformative over long period of time, financing is the barrier here.*
>
> *Usually we don't have time or money or to set the consortium right, and have time to make sure that everybody has a mindset and understand and don't get stressed of working in this way. So, so that is also a big obstacle."*
> - Designer Case 4
>
> *9.2 & 9.5*

> *We had that talk with them and then we discussed internally, but the right way to do this would be, and then we talked with the client and said, we are going to offer, not only this, the sales process of the contract, but we are going to offer you approach where we look at the whole customer journey till end of guarantee. And I remember they said, but it's only the initial place we were willing to pay for. And we said, but it won't actually cost you more. We're doing interviews and we will document how we're doing things. So you'll actually get the whole process for the same. We just wanted to verify that. And, and then we presented we were in competition and we won the project.*
>
> - Business Developer Case 3 on offering more for the same price

10.2

> *There is a potential to give them something that makes it possible to deal with the system and then, figure out a bit how to do that before we decide on what kind of services there should be.*
>
> - Business Developer Case 3 on educating the client

10.6

> *Like a phase zero, where you actually figure out what you're supposed to do. Saying that if we get a little bit of time, like a hundred hours, we can get an understanding of this and then we make the design. So then our way of working started shifting. That was a really important thing because in the phase zero that was where systemic design really grew as practice that we made, the maps that we got, the systemic understanding that we managed to sort of get this. The line that went through was then a more a double diamond oriented way of working because then at this point [after the initial phase] the clients were now ready to talk about this, from this to this to more of this [indicating the insights they gained during phase 0]. And that's when we got to a point where it was not a design contribution, but it was a design driven process.*
>
> - Design Expert 2

10.3

Insight 10: Case Specific Tactics are used to Reframe projects.

Another significant finding from the case studies was that when talking about reframing, there was not necessarily a general way designers or business developers approached this task. It was expected that tactics for complex cases would be highly case-specific to what and how to reframe. Every case dealt with its own limitations, connected to other (critical) factors that limit or allow a reframe from happening. For example, in Cases 3 and 4, it could be found that the client originally lacked trust. However, trust could be built because the Business Developer reframed on their behalf or tried to generate trust by doing smaller projects first in Case 4[10.1]. Case 3 offered more for the same price in order to gain trust[10.2]. Additionally, sometimes tactics are used to deviate from problems within project setups. As indicated in Insight 4, projects sometimes struggle with balancing a reframe and taking action on the insights from the project. That is deviated by the tactic of splitting up the project process[10.3], where an initial design research phase is used to decide what actions need to be taken, similar to what Case 4 was as a project. Cases 3, 4 and 5 on the other hand showed how mapping tactics, such as mapping out data[10.4], future visioning or even employee's fears, could get used to bring new insights to the client, developing a more understanding mindset.
Additionally, in almost all cases, critical questioning[10.5] was used to reframe the problem or deliverable within the project. These were just some of the tactics mentioned in cases, but many more were presented outside of the cases as well, such as the tactic of splitting up projects.

The different strategies or tactics mentioned in the interviews, whether related to the case or not, varied greatly and could not be summarized into one specific way. However, they all had in common that they tried to alter the context or content of the project while building towards some form of systemicness. This added to the belief that reframing is a very case-specific and varied task to execute, where different elements, such as the project's content (problem, scope, approach, deliverable), should be aligned. At the same time, the context (mostly related to the critical factors) should be brought into place. It became clear that the act of reframing itself is so specific that there is no clear answer to how to do it.
Moreover, the steps and elements around reframing were important in order to make the reframe itself succeed. The case studies made it clear that these reframing tactics were mostly about either changing the brief structure and setup or making the client understand the (too) narrow scope and problem view of the project. These tactics were seen as asking (critical) questions, educating[10.6], or activities that could be conducted with the client to generate a better insight into the project's complexity, therefore framing it from a traditional and complicated context towards a complex context and following up with a (more) systemic approach.

> *They established a frame agreement, but actually they established the frame based on kind of digital and technology. And then we started doing these assignments, competing. [We were] doing these small assignments, and we had ambition on their behalf. [We said] let's collaborate with the other agencies. So we have had an agenda on maturing [the client's] use of service design. And so we have become very trusted [with the client].*
>
> - Business Developer Case 4 on gaining the client's trust

10.1

> *What is your plan for engagement? How do you plan to make sure that this tool actually works? How is your infrastructure going to be set up in order to make it, cause it is a data platform. It's you know, data coming from all kinds of places. And yeah. These kinds of questions and also questions of, for example, even more taking a more systemic approach when they talked about being regenerative. Like, but do you think that this is a good approach? What do you think about this? And what is your stance around that? And they didn't have answers.*
>
> - Designer Case 2 on critical questions

10.5

> *We tried different tools for prioritization. And none of them actually worked. So someone's intuition was much more trying to map the different concepts in different diagrams and try to make sense of it that way. We were meeting with the management group and we had our discussions with the management group. That's the strategic turn where we convinced them. We actually showed this map and told the management group about that map where they said wow, we should really make the customer journey our center.*
>
> - Designer Case 3

10.4

Insight 11: Reframes often get done Implicitly, compared to explicit Reframing, which can have its drawbacks

In one case study interview, the question came forward when a project is systemic. The interviewee posed the question, since you can apply methods and tools from other disciplines, such as service design, stating that would not affect how systemic a project is[11.1]. Additionally, they mentioned it did not matter whether or not such a project is sold as a systemic project or not, as long as the designer knows what is done.

> "It's not a differentiation around is this service design or systemic design or system oriented design. It's more like this is an opportunity for us as designers to Contributes in a way. So we have our mission to be in a different way, and we want to of course, answer their problems and sort of deliver on and contribute to what they want to achieve. In this project, we didn't have very complete reflections. Are we systemic? Are we product or are we services? What are we looking at? It's more like we believe we can help this organization. With the capacity building of design thinking and seeing yourself as part of a bigger whole."
> - Business Developer Case 5
>
> *11.1*

Expected was that all projects were reframed with the client knowing they would do a systemic project, called an explicit reframe, where there is clear communication of a different approach and/or scope within systemic design, so that both parties speak the same language on what is being worked towards to within the reframe. Instead, it looked like many projects in Halogen also consisted of an implicit reframe. Implicit reframing then stands for the reframe to a systemic project that gets done awarely by the designer, to touch on more complex material, but where the client does not hold full awareness of the systemic elements within the project. All cases held some form of implicit reframing, where communication on what was being done was not immediately shared with the client. As mentioned in Insight 8, this might cause the client to get scared by the idea of a new approach. However, in Cases 3 and 4, due to the way of collaborating, there was eventually some way of bringing the reframe from implicit to explicit[11.2] by slowly educating the client through ways of working and communicating with them more on how this way of working was.

> "There was someone there to follow up and to coach people, the important people in [the project]. Coach on what they should do, how they should see it, how they should, basically, what they should do.
>
> We are four consultancies working together. And out of those four, it's only two of us that have a systemic mindset and work systemically. If we don't work together as a team, that will start be frustrating and have frictions once we start working with a client."
> - Designer Case 3
>
> *11.2 & 11.3*

> "So it's kind of a tactical assessment from our side that if we can co-create this, this systemic understanding, maybe we could get a client that are really development focused.
> There is a potential to give them something that makes it possible to deal with the system and then, figure out a bit how to do that before we decide on what kind of services should be with and let them deal with what kind of system."
> - Business Developer Case 3
>
> *11.2 & 11.3*

As the Business Developer in Case 3 and the Designer in Case 4 in the interviews indicated, a common form of design language and way of working must be formed to collaborate[11.3]. However, it is uncertain if both cases had a full systemic understanding. The client may have grasped some sense of its totality, but the systemic language was perhaps not fully spoken by then due to not fully encapsulating a systems thinking mindset. Of course, this is understandable as it is a slow, transformative process. In most cases, implicit reframing is used with some forms of being explicit here and there, making the client aware of what systemic design is. However, Halogen does not seem to educate its clients on these practices fully. At the same time, this could be beneficial for Halogen, as mentioned by Case 3's Designer, due to the possibility to easily communicate and make decisions in the project, as the same mindset and language are shared. This indicates that there needs to be a focus on more explicit reframing and educating the client a systems thinking mindset.

> "When I see designers come in and work with projects, we take pride in being neutral and facilitate others knowledge, experiences, collect, find them. Designers not being trained on being normative designers, trained to facilitate other people, and in a transformation we have to be very clear from the first time, from the everything we write, till we meet the clients the first time and say, okay, you are starting a transformation journey. We have to be advisors. We have to tell them what, how we have to work together in order to get this."
> - Designer Case 4
>
> *11.2 & 11.3*

Insight 12: Little impact created solemnly through private sector organizations

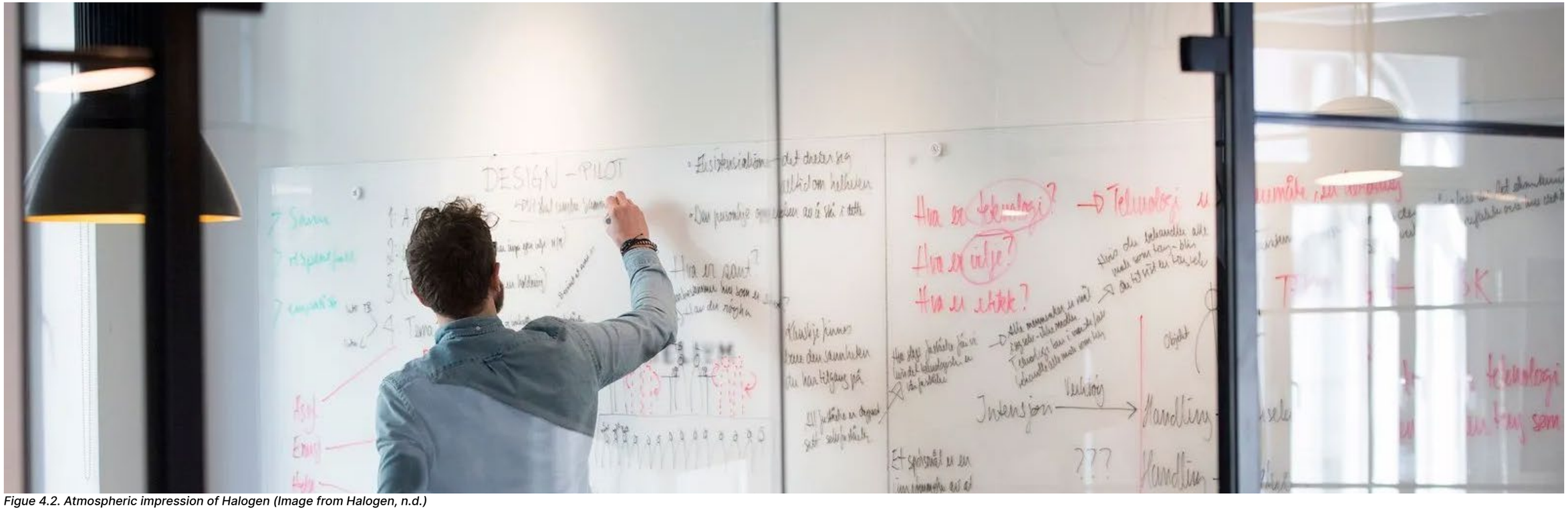
Throughout the case studies, one thing occurred that was not expected. Within the selection of case studies, it became clear that it was tough to find private sector cases reframed to create impact beyond the client. At the start of this thesis, the assumption was that any systemic project automatically had a positive or regenerative impact beyond the client's organization. This, however, did not appear to be true. The Cases that remotely checked this criterion, Cases 1, 2, and 4, could also create more impact in hindsight. Unfortunately, Cases 1 and 2 were not successful. In hindsight, the business developer of Case 4 wished he had strived for more regenerative impact beyond the client's goal[12].

> "So if we had this focus, being regenerative, there would be a different kind of nudging. We would have maybe shown that foresight could be about something that was closer to the operation. We could maybe do it in the next project."
> - Business Developer Case 4
>
> *12*

Insight 13: Collaboration could lead to more impact beyond the client's organization

Additionally, to the previous insight, it turned out that during the case selection and case studies, private sector companies are harder to reframe to obtain systemic impact than public sector companies. Namely, the public sector aims to strive for impact or benefits for the common good. It became clear that the public sector is more inclined to obtain impact in areas such as societal or natural capital due to benefit realization[13] in projects (Wealthwork, n.d.). This makes it more attractive for the private and public sectors to work together due to this concept of benefit realization, where the private sector must generate value beyond monetarily capital. This is why the client in Case 4 successfully generated an impact beyond its organization.

> "When it comes to benefit realization, it is very important since you do something with governmental money. [Benefit realization] could be economic benefit, it could be culture benefit, it could be societal benefits. So it's sort of, you have to have it and it's more or less economical today. For example the finance department ministry would be very interested in to see how is the benefit realization plan for this building? How when we invest this much this money into building, what benefits will the kids give the local society, Norway, the world, and so on."
> - Designer Case 4
>
> *9.2 & 9.5*



Figue 4.2. Atmospheric impression of Halogen (Image from Halogen, n.d.)

Empirical Research

Observations

Besides focusing on case studies and the way of working, observations on Halogen were made throughout the endurance of this thesis. By becoming an embedded designer and dedicating substantial time within the consultancy, an understanding of the organization's ethos, communication patterns, and work dynamics was gained. This approach leveraged the researcher's dual role as both an observer and a participant, offering valuable insights into how the company culture manifested within the context. The following insights relevant to the design iterations or final design were gained. These insights either hold new information on previously named insights or conflict with them and have been highlighted in this subparagraph.

Insight 14: Experimental in their way of working, which is good for systemic design.
Throughout the way of working of Halogen and the case studies, it was not necessarily mentioned that Halogen works experimentally throughout their projects. However, by exploring the cases while selecting the case studies, it became clear that some approaches to complex problems were formed as a way to experiment with the context. The employees of Halogen also approached their client with a way of working they had not done before in Case Study 4. During pre-selecting case studies, some cases arose as well where they agreed with clients to try new ways of working, where clients happily agreed, and the projects were successful. This way of working aligns with the probe, sense, and response approach in complex problem-solving (Snowden & Boone, 2007). This insight underlines the rigor and validity of Halogen being a consultancy that can deal with systemic projects well and helps to understand their working approach better, as discussed in Chapter 3. It underlines the flexibility and experimental approach that is needed within the rest of the project process, such as the pre-execution phase as mentioned in Insight 5.

Insight 15: Continuous improvement in Halogen to create better systemic design practices
Halogen takes a clear interest in continuously improving themselves. This thesis is an example, as Halogen mainly wanted to know where they could improve reframing reactive project briefs. Besides, many internal events are organized to improve employees' skills and knowledge. Some of those are talks on change management or a full-day organization-wide workshop on what impact should mean for Halogen. Lastly, at the end of this thesis, a working document was created to explain the "Systems Studio" (the systemic design-focused team within Halogen), what methods and tools are dedicated to working systemically, and a working definition of systemic design. It is, therefore, clear that Halogen makes an effort organization-wide to improve its competencies. Systemic related, but also in general. This effort can be seen within their practices as they try to improve and align their work with the organization. This contradicts Insight 7, which vouches for more internal alignment. As is seen, input is already given to create better internal alignment. However, the previously mentioned sessions are also often a one-time event and do not host continuous learning and adaptation of the knowledge.
Additionally, These improvements could be fastened up or prioritized. The previously mentioned explainer of the systems studio and its practices comes 1.5 years after its emergence. Besides, there is already a document on how to execute systemic design called the Playbook on Systemic Innovation, which was never finished due to the hours not given for internal improvement to the employees to wrap it up, which was estimated by employees to come down to an estimated of 200 hours.

Insight 16: Striving for multi-capital impact, but maintaining a mono-capital (financial) focus
Halogen is continuously working on what impact means for them, as discussed in the previous insight point, and has a strategy document on which areas they want to impact. However, it can still be seen in the projects that have been picked for the case studies that often, these projects turn out to be about increasing monetary value for the client or some form of impact directly within the client's organization. Case 3 was mainly focused on having an impact to generate more leads into the organization by a systemic approach. Additionally, as discussed in Insight 12, more regenerative impact could have been created as well, as the project mainly focused on creating benefits for different areas as it was demanded for them. Therefore, it can be concluded that projects often do not hold that positive systemic impact unless the government is involved or employees wish they would have pushed for a more positive or regenerative impact. In weekly meetings with the systems studio, some employees in the organization strive to include models or measurement points that allow them to work in ways that impact is achieved in areas beyond the client. However, it has not been seen that these methods or tools have actually been implemented and are therefore left as suggestions. Additionally, not much time seems to be freed up to explore or include such practices, as also discussed in Insight 15. Although the company seems to omit a great interest in creating an impact to improve the world, it shows signs of struggle when trying to actually execute this within projects.

Insight 17: No finished or agreed upon knowledge document causing misalignment in systemic design
As Insights 6 & 7 mentioned, systemic design was often not a skill aligned with everyone in Halogen, yet it is essential for spotting a systemic project or executing a reframe. However, besides people knowing systemic design or not, there was also a difference among those with more knowledge of it and what this could mean. Even though a working document recently has been created on the Systems Studio, systemic design, and its practices, besides the current Playbook they already had on systemic design, there still seemed to be a difference in opinions on systemic design, and sometimes even its methods, tools, and goals. The Playbook was never finished due to some misalignments (but primarily due to not getting the hours chance to finish it). Throughout different interviews, multiple views on systemic design were shown. This did not mean, however, that these views were opposing each other in what systemic design is, per se. Opposing views on a certain topic are not necessarily bad and can spark an interesting discussion. However, these discussions were given little time to be held so far. Again, due to the lack of hours to spend on this. This causes the continuous misalignment in systemic design and what it is supposed to bring to the organization and projects. Even though there is a continuous effort to improve alignment on systemic design internally, as discussed in Insight 15, it can be argued if Halogen is on its way to creating this alignment. As discussed in the same insight, these adaptations can be fastened up.

Insight 18: Project learnings are not acted upon as information is getting lost
Throughout the execution of the empirical research, it became noticeable that the knowledge stored in previous projects, although explained in the Halo Way of Working as a step in project follow-up, was often hard to find. Deliverables, methods, and tools were not explicitly stored in specific folders, and often, employees needed help finding all relevant data, although the maps were generally well structured. With the information presented in some of the monthly meetings that enhanced knowledge or skill, these slides were often put away in drives and folders, eventually left to be rarely accessed. Keeping information relevant remains challenging, especially if no leading actor enforces this.

This contradicts with Insight 15. Where there are some glimmers in continuous improvement, some actions are delayed or yet to be taken. As discussed in Insight 14, the advantage of Halogen is that they are not rigid and are open to new ways of doing. However, they could be better, learning and reapplying from what works and stopping what does not. Unfortunately, there seems to be no way that learnings of projects seem to flow back into the organization.

5. Design Synthesis: Iterations and Validation

Design Synthesis: Iterations and Validation

In the previous chapter, we discussed the empirical research's insights. This chapter will cover how the insights of the empirical research lead to the first design iteration, which is simultaneously also the synthesis of the best practice information. Besides the best practices, another canvas has been generated: a synthesis of the improvement points for Halogen, which shows the synthesis of the main findings in the project and functions as advice for Halogen on where they could improve. The synthesis canvasses have been generated into two separate ones for practical reasons. Later in this chapter, it will be discussed how a broader view will be taken and those two synthesis canvasses combined in a second iteration: the framework. Throughout the chapter, but mainly at the end, we will cover how these two designs and improvement point canvas were used in sense-making and co-creation sessions. New insights have been developed throughout generating these synthesis canvasses, the second design iteration of the framework, and user testing, sense-making, and co-creation sessions. These insights will be discussed and taken into the next chapter, where they will be combined with the insights of the empirical research into design objectives for the final design.

Design Synthesis

Synthesis: Iteration 1 - Canvas

After the theoretical and empirical research was conducted, the findings on the best reframing practices were synthesized in a visual. This visual became the first draft of the end deliverable. The first iteration can be viewed in more detail in Figure 5.1 and the Open Appendix A. While working on the first iteration of the canvas, many iterations went before, mostly concerned with different design elements but the same content. Since these iterations primarily focused on presenting information for personal understanding and are not final, these iterations are left out of the report. They are presented in the Open Appendix A as well.
We will elaborate on the finalized first iteration of the canvas, where all insights from empirical and literature research previously discussed are summarized. Furthermore, we will explore what design elements were included and why. Eventually, more information was received by user-testing the canvas with a Halogen employee and a systemic design student. This was done because the canvas was to be made relevant for Halogen and outside the organization. The user test was conducted by letting them go through the canvas and see if the content was understandable while giving remarks on the canvas. These user tests lasted about an hour. The most important insights were taken and put in the final iteration of the canvas. The first iteration of the canvas was also reviewed in the sense-making and co-creation session alongside the framework. The insights from the sense-making and co-creation sessions will be presented later in this chapter.

The goal of the canvas
The canvas was not necessarily meant to be the first draft of a usable product. More than that, it was a way to summarize the empirical and literature research information. Both in a transactional manner, the canvas inspired some questions while research was going on and triggered to think about how this could be correlated with literature research. When the canvas was finished, the idea emerged to use it in a setting where the project goal could be achieved: to make systemic design better adopted and executed by design consultancies in their projects that do not inherently have that focus.

Design of the canvas
The canvas was the first element that popped up as a format because many steps are correlated, as seen in the case studies. It seemed to make more sense to follow that order than other instructional formats. It was seen that:

- First, indicators were spotted (Insight 6),
- Critical factors were assessed (Insight 9), and following up,
- They were put into place while aligning the rest of the project (Insights 10 & 11).

This could be due to the linear way projects are often set up. However, as the reframes of the case studies were executed in the pre-execution phase and the project execution phase, this is unlikely. The idea was that this canvas could be actionable and informational, with the hope that it could be easy to fill in, so the use of it would be easier, too. The goal was to guide and inform users simultaneously, and therefore, the first iteration formed into a tool, more than an informational summary for myself.

Step 1: Indicators
The first step was the easiest, as interviewers always felt there was a hunch or an indicator that could guide the reframing of a project, as discussed in Insight 6. Therefore, this was summarized in an informational list in this canvas iteration to educate people new to systemic design.

Step 2: Critical Factors
Then, there were always factors that could predict in hindsight why implementing systemic design in a project worked or not, as described in Insight 9. Although most critical factors were only spotted in hindsight, some were seen to be put into place or assessed first.
For example, in Case 3, the Business Developer was reframing the project and looked at whether such a reframe was possible by looking at critical factors such as resources, culture, change management, and the acceptance of the project managers on the client's

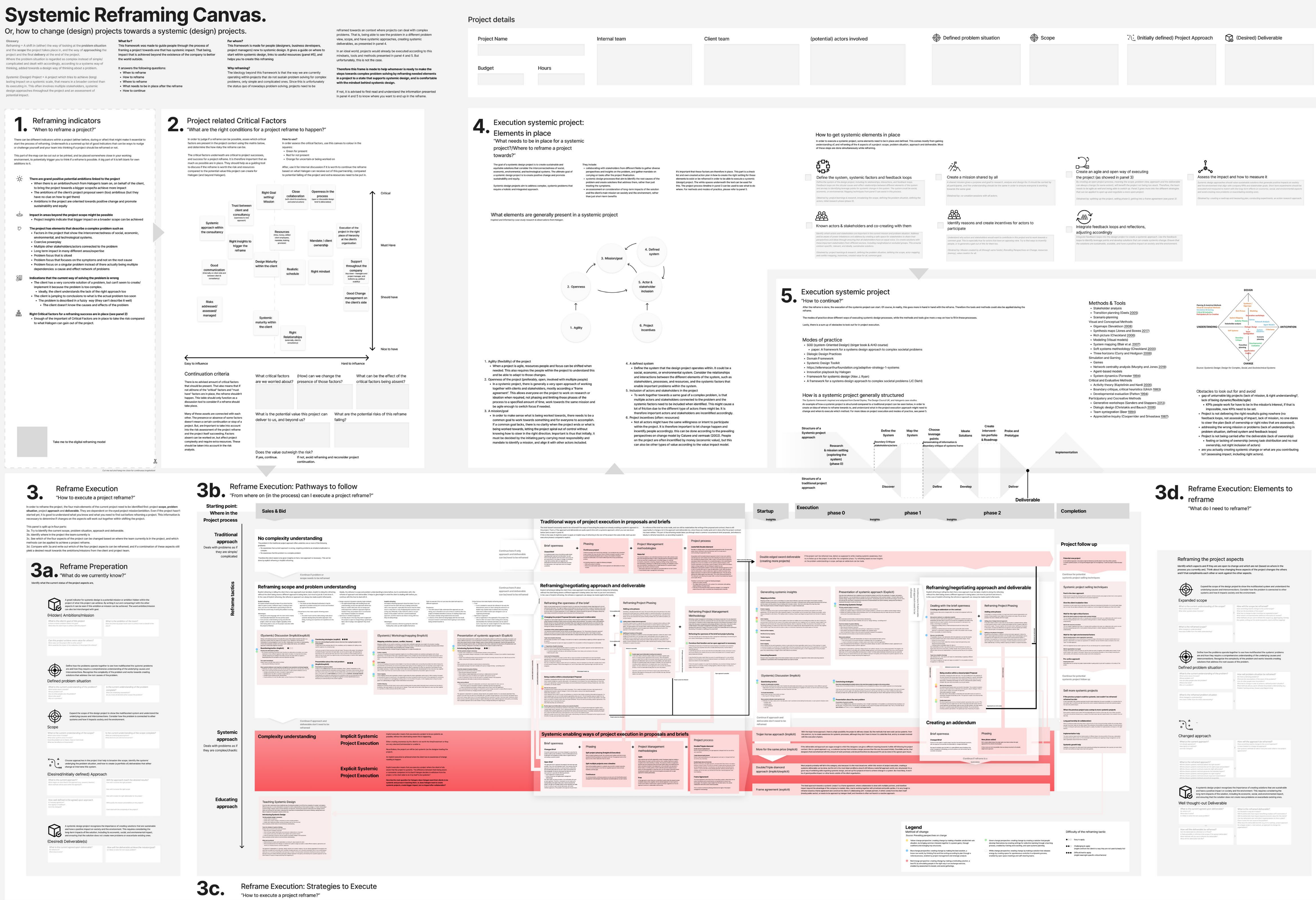


Figure 5.1. The first iteration of the canvas. A synthesis of best practices found throughout the case studies, Halo way of working and observations.

side. Although, admittedly, this was more awarely done in hindsight, they had a hunch at the beginning of the project.

> *"[The reframe] needs to be [with] the clients that are capable or where it is possible to, to change or they need to make a decision on getting something else. They can say, okay, if you think that's what, let's do that. But it is also about culture. And as well a bit about the framing around the project. If the client has just a limited amount of money or the client is in a decision where this is her task with delivering something that's kind of beyond the responsibility of the time."*
> - Business Developer Case 3

Additionally, they decided a reframe was necessary for the mindset and systemic knowledge of the client.

> *"There was someone there to follow up and to coach people, the important people in [the project]. Coach on what they should do, how they should see it, how they should, basically, what they should do."*
> - Designer Case 3

As these characteristics were always spotted in hindsight, some of these projects failed to reframe. Analyzing these characteristics was put between spotting systemic indicators and executing a reframe for this reason. These characteristics became known as the critical factors. These became the first three steps of the canvas, which hold related to the last design, much similarity. These steps could be generalized out of the way projects were reframed and considered successful practices within the reframing. With, as mentioned, a minor improvement in the critical factors spotted in hindsight.

Step 3: Reframing
Finally, the most essential part of the canvas was step 3, which needed to embody what needed to be reframed and express this through implicit and explicit reframing. This was done by picking where the "user" of the canvas was in the project. Then, to reframe the content, it needed to be aligned with what part of the content needed to be reframed, either the problem and scope or approach and deliverable (or both). Then a tactic could be picked out or combined, and you could continue further down in the project within the execution. Something similar could be seen in Case 3, where they aligned different strategies, as presented in Insight 10.

The first iteration of the canvas initially also included questions besides the information to help understand why certain steps must be made and why it was important. This could be seen in both steps 2 and 3. However, it was mostly heavy on the information, as it was still gathering information that came up during the case studies.

> *"We had that talk with the client and then we discussed internally, and said, we are going to offer, not only this, the sales process of the contract, but we are going to offer you an approach where we look at the whole customer journey till the end. And I remember they said, but it's only the initial place we were willing to pay for. And we said, but it won't actually cost you more. We're doing interviews and we will document how we're doing things. So you'll actually get the whole process for the same. We just wanted to verify that."*
> - Business Developer Case 3

Where later on the designer admitted:

> *"We tried different tools for prioritization. And none of them actually worked. So someone's intuition was much more trying to map the different concepts in different diagrams and try to make sense of it that way. We were meeting with the management group and we had our discussions with the management group. That's the strategic turn where we convinced them. We actually showed this map and told the management group about that map where they said wow, we should really make the customer journey our center."*
> - Designer Case 3

Therefore, showing that two tactics over time, as explained later on in the final explanation booklet, including more for the same price and creating and presenting the maps, convinced the higher-ups, gaining their trust. Therefore confining the reframe. This is one example of the many that have been heard, but it shows that this canvas summarized all case study insights.

Step 4 & 5: Bringing systemic design in place and executing the project
Eventually, the fourth and the fifth step resulted from what was then done in the project: the continuation of it. As there was no clear indication in the case studies projects where this eventually led to, as it was different per case, it was hard to generate a step out of empirical research since every project needs to be reframed to some unique set of elements present and then be continued. Therefore, only principles were set up that were mentioned and deemed important within reframing in the empirical research. The canvas initially aimed to guide and inform new designers to (apply) systemic design. Therefore, the importance of which elements needed to be in place for designers to know where they could reframe was considered an important step. The final step of this first iteration also concluded the continuation, or here called, execution of the systemic project. It compares the traditional double diamond on typical project processes with a similar approach taught at AHO in the course Systems Oriented Design and practices discussed by systemic practitioners (Ospina, 2019). Additionally, information on methods, tools, and modes of practice was given based on literature from Jones et al. (Jones, 2014, 2018; Jones & van Ael, 2022).

By creating the canvas, an additional insight occurred, confirming prior believes of Insight 5. We will now shortly discuss this.

Insight 5b: The earlier the reframe the better: more tactics for a reframe
Adding to Insight 5a of the previous chapter, it became apparent while making the canvas that more tactics were possible during the pre-execution phase of the project. This was mostly due to the project brief needing to be set in stone, causing the project to be more flexible in approach and deliverable. This connects well with Insights 2 and 3, and confirms Insight 5, where the flexibility of reframing tactics is lost due to how a project is set up. This indicates that this process needs to be changed, as discussed.

As discussed in the intro, the finalization of the canvas meant that it needed to be tested on how this combination of a working canvas and information was perceived. Therefore, a user-test was conducted, which we will discuss now.

User Test

After creating the first canvas, a user test was set up. The goal was to know if users thought the steps of the canvas were logical and if it resonated with the interviewees. Two people were scouted, one within Halogen and one systemic design student from AHO. A systemic design employee was scouted due to their experience in the field to sense-check the information and assess the usability and quality of the content of the canvas. The student was scouted for the same reasons to see if the steps made sense for them to reframe. The setup of the test was with either a physical or digital canvas, where they were prompted with a coaching protocol on thinking aloud going through the canvas, asking to think aloud, and where direct questions about specific elements were made without steering the participants on what they had to do (Olmsted-Hawala et al., 2010). Not in a using setting, but scanning it through if it would make sense to them, as the canvas was initially meant to be scanned through first. The duration of the tests lasted for about 1 to 1.5 hours. Initially, the plan was to conduct more user tests (Nielsen, 2000). However, after receiving the insights, the results were so precise that revision was needed and more in-depth user tests were deemed unnecessary and instead to be conducted on the next version. For the full notes on the user tests, please refer to Secured Appendix F. The insights of the user test will now be discussed shortly.

User Test Finding 1: Too much, overwhelming, information making the canvas unusable

The first point of feedback was that the canvas was intensely dense in information. In order to read all the text, more than 2.5 hours were needed to go through all the content attentively. As the canvas was intended to educate, therefore, to be read and understood first and then to be filled in, likely more time would be spent on it by a user actively using it. Due to the high time necessary for this canvas to read, it was deemed not user-friendly and unusable. The canvas was so dense in its information because it was associated more with a gigamap than with a practical canvas, as people would use in practice. Therefore, the information was considered appropriate to be dense. But understandably so, not fit for use. If the canvas were made to be used, drastic changes needed to be made.

Eventually, it was decided that this canvas was not a means to teach about systemic design, as many sources already significantly do, as discussed in the literature review in Chapter 2.

User Test Finding 2: Confusing design elements causing misuse of the canvas

Since the canvas was so information-dense, the way the information was presented was not always clear. For example, the reframing indicators were mentioned to be dry in information, and the way the tactics in the section for reframing were presented was not understandable. We will cover both shortly. The systemic indicators, which should give glimmers of signs that a project could be systemic, were a list of indicators. The feedback was that scenario sketches would better accompany the first step to make the canvas more visual, but it was later deemed irrelevant due to what was discussed in User Test Finding 1. Step 3 had the most confusing design elements. First of all, it was not sure where the user should start in the reframing process, as both participants did it wrong and expressed their confusion while going over the canvas. The top bar was supposed to represent the process but was often overlooked. People went straight into the tactics and needed clarification on the decision tree element that could guide them to the next steps in reframing. They did not follow the decision tree, as the lines were often represented differently throughout the steps. Altogether, the decision tree and alignment of the tactics in the project process were highly confusing.

User Test Finding 3: Right content

Even though the information was a lot and overwhelming, both interviewees mentioned that the content of the information was appropriate, corresponded with their knowledge, and seemed to follow a logical path of steps. Most of the feedback they gave was considering the design elements of the information, as previously discussed.

Design Synthesis
Synthesis: Improvement Points

This chapter explains which overall insights were gained from the assessment of Halogen and which insights occurred during the creation of it. The assessment of Halogen was based on observations made from working there, an analysis of the Halo(gen) way of working, and the different case studies conducted. The sense-check session, as the name suggests, was used to evaluate the conclusions made during the assessment of Halogen and fact-checked it with the consultancy in one of the sense-making sessions, which will be discussed later in this chapter.

Parallel to the creation and synthesis of the first iteration canvas, was the synthesis of the improvement points. Another name of this synthesis was the assessment of Halogen. Where the synthesis of the first iteration canvas was a synthesis of all best practices combined, the synthesis of the improvement points was a summary of the insights discussed in Chapter 4, where Halogen could improve. Since the improvement points draw many similarities with the insights discussed in Chapter 4, these improvement points will not be discussed in detail in the report but presented as general insights. The assessment of Halogen and insight points were shared in the sense-making session with Halogen, and the data was converted to them as well. An important deliverable here was Figure 5.2, a summary of their insights and interconnection, presented in an iceberg-like structure. As the main interest of Halogen lay in these improvement points, the main focus was on presenting and delivering those to Halogen and continuing with the design in a more general scope. From this visual presented in Figure 5.2 were several general leverage points assimilated, which can also be found in the Secured Appendix G.

Halogen's interest in this thesis lies most in the points where they, as a consultancy, could improve. Therefore, the assessment of Halogen focused on what areas they

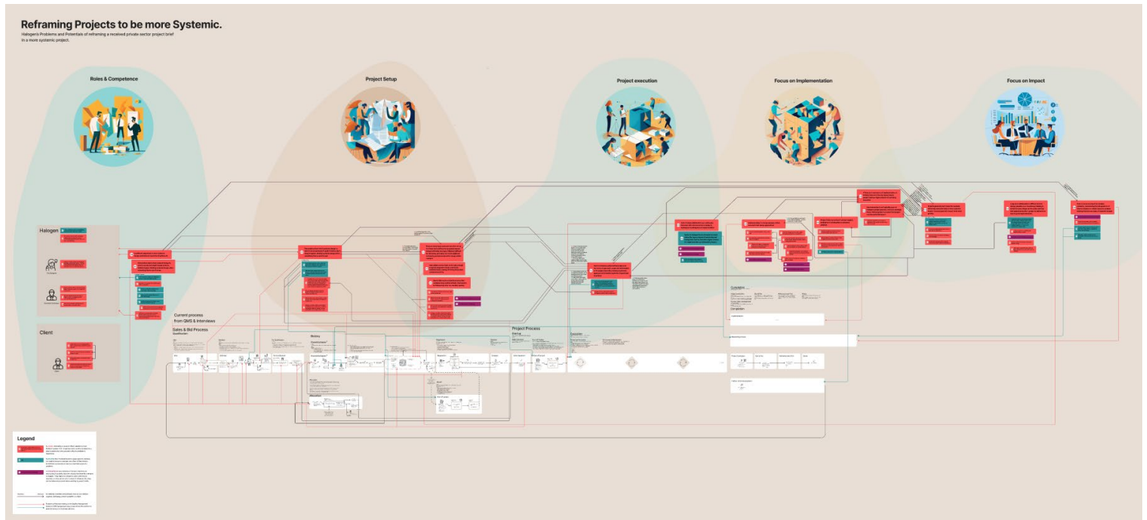


Figure 5.2. Improvement points as shared with Halogen, corresponding with the Halo way of Working Visual.

could improve in when it comes to reframing for private sector reactive projects, as was one of the questions to be answered in Chapter 3.

The questions to answer were:

- How does Halogen Reframe a project towards a systemic one?
- How can halogen make sure they execute more systemic projects?
    - How can Halogen improve this reframing process?
    - Something besides reframing?
- And how can Halogen improve the execution of systemic projects?

The assessment of Halogen was summarized in a deliverable that was handed over and presented to Halogen per presentation and digital format. The summary of these insights came from an analysis that links together all factors in an iceberg format (Jones & van Ael, 2022). In Figure 5.3. the summary of these insights can be found, which link to the insights presented in Chapter 4. We will now discuss the Leverage Areas.

In order to sense-check the information, the Iceberg-like structure was created with all the important Problem points and Potential points Halogen has. This was a combination of mapping out a problem according to the iceberg approach (Jones & van Ael, 2022), and ZIPP information as presented in the paper introducing gigamapping (Sevaldson, 2011). This iceberg mapping inspired Figure 5.3, which explains the different leverage areas they could focus on.

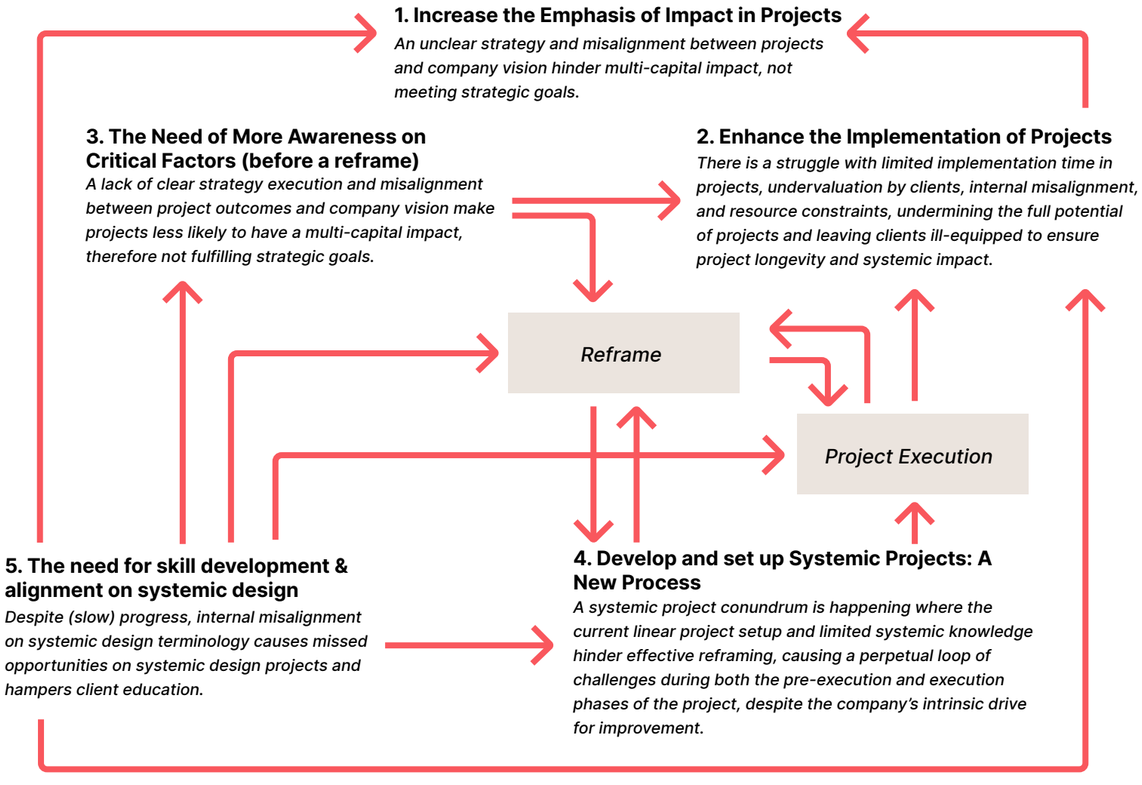


Figure 5.3. The summary of the Assessment of Halogen. It concludes in a systems view what elements influence each other, which areas could be improved and what the problem per area is.

Leverage area 1: Increase the emphasis of impact in projects.

The main goal of Halogen is to achieve impact in certain areas, as described in Insight 1. This is dictated in their strategy document. However, this strategy document does not describe how they will do it, nor how they will know when they have achieved it. This gives the problem that the impact they want to achieve as a company is not strived through within projects. Within the projects Halogen did, there was a mismatch between the impact they created with their projects and their vision of what this impact was supposed to be. As discussed in Insights 12 and 16, in most projects, there was eventually more impact to be achieved, but none of the case studies mentioned aligning it with the internal focus on impact. This insight elaborates further that when a project was delivered, employees sometimes wished they would have strived for a more positive, regenerative impact. Instead, projects focused more on creating a happy client, as could be seen in case study 3. It was here that only the projects in collaboration with the public sector, or if the public sector was indirectly involved, impact was achieved in different kinds of capitals, as was the case with Case study 4, and also highlighted in Insight 13.

The question, therefore, arises in how Halogen will, in the future, ensure alignment on what impact is for everyone in Halogen, and within the project, how do they ensure that the projects create the impact they want to achieve? Additionally, Halogen should focus on how they know when they achieved this impact.

Leverage area 2: Enhance the Implementation of Projects

Implementation is the best way to ensure impact. However, as seen in Insight 9, it is connected to different factors such as change management within the client's organization and change management of the actors involved, including and aligning the different actors and stakeholders, and incentivizing them so there is enough mandate throughout the project. Since a consultancy, most of the time only partakes in a project for a limited amount of time, they cannot partake in the continuous implementation and adaptation of a project and its interventions. Oftentimes, a client also does not see the worth of including a consultancy within the implementation phase of a project. Unfortunately, this also does mean projects oftentimes will not get implemented and do not get continued after they have been delivered to the client. It was seen in Case Study 5, a case that was left out, that the project was seemingly successful, but in the end, did not get implemented well because the consultancy could not be part of this implementation process, and the client was unable to adhere to the change management well, due to time constrictions. Although the plan was executed to some extent, the full potential of the project was not lived up to. Interviews also pointed out that Halogen was not always sure of what happened after a project got delivered, and even though Halogen tries to strive for 60% of their projects to be followed up by the same client, the actual project follow-up seems low. This was explained to be due to the designers often being "done" with the project, and the business developers often not being as involved as they should be. It turned out that Cases 3 and 4 were exceptional cases where client follow-up did happen and therefore the continuation of a project, and therefore the project had a possibility of being systemic. This indicates and justifies Insight 7, 17, 18, and additionally, Insight 2, where there needs to be more alignment and also the involvement of the people included in the project, from start to end, and project processes that sustain this way of working, so more project follow-ups can happen.

Therefore, a consultancy needs to partake in the implementation process, but this is not always possible due to a lack of ownership or mandate, incentives or resources, the inclusion of people internally in Halogen, and the processes that support projects to be executed in this way.

Additionally, another solution could be that within project setup and execution, the delivering consultancy creates an atmosphere where implementation can

happen and can prosper beyond the project of the consultancy. It can do so by bringing this issue to the awareness of stakeholders and clients. delivering consultancy must be able to take up change management by elongated projects. When that is not possible, Halogen must teach their clients about change management or systemic design, in order to foster the project and ensure its longevity, as discussed in Insight 11.

Leverage area 3: The Need of More Awareness on Critical Factors (before a reframe)

In order to know whether implementation and impact would be possible, it would be dependent on knowing if critical factors are in place or not. In the end, every project could be systemic, as discussed in Insight 12. However, that does not mean that each project should be one. In every case study, there was an overlap of critical factors mentioned that made or broke the project. Nevertheless, the entanglement and absence of some depend on whether they are critical to the project and situation. It is wise for Halogen to assess those critical factors before reframing a project, as discussed in Insight 9. Then, a better estimation of the probability of a more systemic approach, systemic impact, and project implementation can be made.

Leverage area 4: Develop and Set up Systemic Projects: A New Process

To conduct a systemic project and know whether or not implementation or enabling is part of a project process depends on the pre-execution phase of business development and project setup. As discussed in Insight 5, the case studies showed that reframing was often done within project execution. However, then, in project execution, it was seen that the project needed to be set up in a more systemic way, where there was more room to switch between approaches and deliverables, as many more factors were included than previously thought. However, as projects are often defined by hours, indicated by a certain approach to a problem and towards a deliverable, it is hard to change course within a project execution. Meanwhile, while setting up a project, many insights are not yet delivered, which causes the reframing of the approach, deliverable, scope, and/or problem.

Moreover, to do that research in project setup loses valuable time and money for the delivering consultancy. Therefore, the consultancy is stuck in a loop, having the information to reframe in project execution. At the same time, reframing during the project's pre-execution phase might lack the reasoning and convincing arguments. It is a perpetual loop that was seen throughout many projects and led to the many tactics that are described in Insight 10.

The leverage area, therefore, focuses on aligning the pre-execution phase to allow for such a reframe and build cases that show clients why an open project and the possibility to reframe is important, as discussed in Insights 2, 3, 5, 14, and 18. The linear and defined as possible manner of setting up projects internally should be switched out and replaced with an approach that does not cohere to only pro-active bids and should accommodate systemic projects to be as flexible and open as possible. This is primarily due to the many logistic and administrative tasks in the project's pre-execution phase that need to follow each other, making no space for exploring the possibility of whether this project is systemic or not and often hindering communication and the sharing of information between different employees, and the loss of information and spotting of opportunities as a result of that. Besides, more people with systemic knowledge can be involved or are trained with systemic knowledge. Then, more opportunities can be spotted, and more systemic projects can be executed, as discussed in Insight 7, 17, and 18. Halogen is already experimental within its approaches and shows a continuous drive for improvement, as discussed in Insight 14 and 15. It only needs to foster this knowledge to be implemented in its processes, which then can be recorded in the QMS for future use and knowledge sharing among colleagues.

Leverage area 5: The need for skill development & alignment on systemic design

Missing an opportunity to reframe a project within the pre-execution phase is not only due to the project setup process. It is also primarily based on the employees' skills, as discussed in Insight 6. Many people responsible for project setup might not have a thorough knowledge of systemic design, what it is, and in what setting it is able to flourish best, leaving opportunities in projects for a systemic reframe missed, as discussed in Insights 2, 7 and 17. In interviews, it has been discussed that there could be projects that should have been reframed, or at least considered a reframe, but that have probably missed this opportunity as people in the project were not knowledgeable of spotting systemic indicators. The leverage area that emerged from this is the improvement, creation, and alignment of systemic knowledge and skill in Halogen. That could be having methods and tools that get applied throughout a systemic project, creating and sharing the same language if it comes to applying systemic design and talking about certain systemic elements in projects, spotting indications of systemic elements in a project, and educating other employees on how to do so—but also acquiring new skills, such as project reframing, teaching the mindset of systems thinking or managing and implementing change management if the client is not able to do so themselves. Additionally, a large part of this alignment in systemic design goes hand in hand with the alignment on impact, creating a common language on achieving a common goal, which therefore aligns with Leverage area 1.

The observations on Halogen, however, already show Halogen is working on this by having created an (unfinished) Playbook on what systemic design is and creating a Slideshare on the systemic team, what they do, what their methods and tools are, and how they want to onboard new employees that are aligned with their team. It is worth mentioning that this is still a work in progress and is merely for the studio's use and not organization-wide yet. Therefore, they started with the alignment steps but have yet to receive the desired results.

As the leverage areas have now been discussed, the next step is to discuss the insights the leverage areas had.

Insight 20: Understanding the importance of internal Foundation that is needed for the reframing process and systemic execution of a project

As discussed in Insight 2, many people are involved in different parts of the processes in pre-execution and execution of the project. Not everyone has the same knowledge of systemic design, as discussed in Insight 7. As mentioned, designers who execute the project are often not the ones who are involved in the project brief-making. People skilled in systemic design but not involved in specific parts of the project, as discussed in insight 6, can cause a miss in opportunities for a reframe. Since not being involved causes a mismatch between designers and project developers/business developers. Therefore, the goals and scopes of the project can not be questioned thoroughly by the designers who are to execute the project, having to do so once in the execution. Then, later on, the opportunity for a reframe will be spotted, but it can be too late to start the reframing process, as the project is already well on its way, and the client will be more hesitant to do the reframe. This opts into Insight 5. The current process of setting up a project does not allow projects to be reframed properly later in project execution. Additionally, this information that gets spread around the company but is then forgotten, as discussed in Insight 18, adds to this mismatch in knowledge, as discussed in Insight 7. Although Halogen continuously tries to improve its way of working, as discussed in Insight 15, there is little use in creating knowledge as it is not being shared, constantly updated, or finished. Therefore, this loss of information can cause an unfortunate effect of perpetrating this mismatch in knowledge on systemic design and the missed opportunities to reframe a project to be systemic, as the case studies show.

After the assessment of Halogen, it became clear that four elements at the start of the process were necessary as a foundation for successful reframes to happen:

- An internal alignment on what systemic design is, as discussed in Insight 7 and 17
- A process and plan to look at skill development to create this internal alignment and make it practicable as discussed in Insight 17
- And organizational adaptation to ensure smoother systemic design execution, as discussed in Insight 5, 7, and 18.
- But, also alignment in the organization on what systemic impact the organization wants to achieve and how that should look, as seen in Insights 1 and 16.

Insight 19: Emphasis on the importance of Impact - a red thread through the project

After creating the assessment of Halogen, it occurred that the execution of a systemic project all fell back towards the goal of such a project. Opting into research question 3 and the goals of Halogen itself as well, the question became why would a company opt into systemic design practices? As described in Chapter 2, the importance lies in solving complex societal problems. Therefore, the alignment on impact in the organization, as discussed in Insights 1 and 12, became more important than initially thought. The lack of impact in projects is most likely due to losing sight of the impact Halogen wants to create once the project and reframing start. These processes are time-consuming and challenging, including many elements that might cause an increased focus instead of looking at the overall goal.
Therefore, instead of proposing impact as a small part of the canvas, having a mere mention in step 2 and 4 of how they try to achieve it, it should become more of a red thread throughout the next iteration.

Design Synthesis
Iteration 2 - Framework

The second design iteration, the framework, was formed as a combination of the synthesis of best practices in reframing, visualized in the canvas's first iteration, and the synthesis of the improvement points within Halogen. The question became how the learning for Halogen could also be applied in a way that could prove helpful for the canvas. For this, it was chosen to zoom out of the canvas and set up a framework that would logically put all important steps in place before, during, and after the reframe, where the learnings of the canvas and the improvement points could be combined. This framework can be seen in Figure 5.5.

The main goal of the framework was to align best practices, as seen in the empirical research, together with the improvement points obtained from the same research. Both were synthesized in different canvases, as previous sub-chapters discussed. This framework was the bridge toward the final design presented in this thesis report.
As shown in Figure 5.5, the canvas highlights in black the steps that the canvas took, whereas the important steps that could be subtracted from the improvement points were highlighted in pink. The main steps from the improvement points came mainly in the before and after stages of the reframing. Most of the best practices were filtered from Halogen's previous reframing practices and were doing well.

The way the framework altered the perception of the canvas by adding the improvement points for Halogen was that Insight 19 was implemented into step 1 of the canvas. Since impact became more of a red thread throughout the project, it was decided it should be included in all canvas steps. Therefore, the first step did not only focus on the spotting of systemic indicators but also specifically what kind of impact could be created. With that new point of view, multiple elements besides critical factors probably have to be assessed, deciding that this consideration of impact was also to be carried on in step 2. It should offer a guide towards whether systemic impact is created or not. Therefore, focusing on critical factors was not enough but rather, the whole feasibility of the project in order to ensure if impact was also feasible. This was done by considering the project's feasibility, depending on impact, implementation, and assessing critical factors. If the goal is to create an impact beyond the client, then extra attention should be focused on an indicator showing how impact beyond a client organization can be achieved and how this is feasible. From creating this framework, a few learnings occurred that also got adopted in the framework:

Insight 21: Focus on feasibility instead of just critical factors

As just discussed, creating the framework highlighted that assessing a reframe extends beyond critical factors, emphasizing feasibility. The Halogen improvement and leverage areas stressed the importance of considering implementation and impact. Beyond critical factors, achieving impact requires successful implementation tied to actor involvement and mandate. The approach evolved, holistically evaluating impact, critical factors, and implementation, forming the basis for feasibility. Step 2 in the framework considers implementation and impact in systemic projects. Building solely on critical factors proved insufficient; the entire feasibility required assessment, including implementation, impact, and factors.

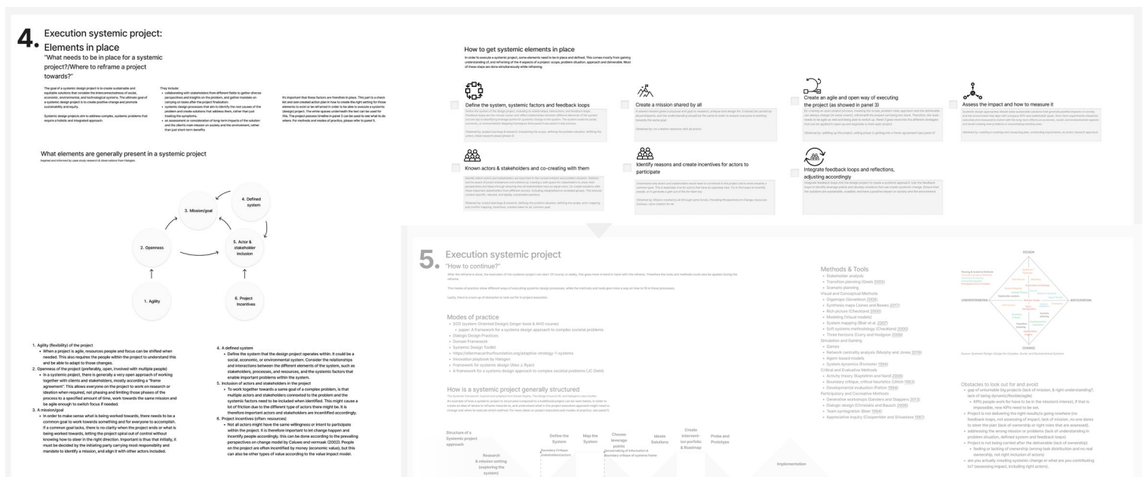


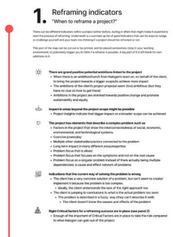
Figure 5.4. Step 4 of the first iteration of the canvas.

Insight 22: Accommodating for the needed elements in the systemic project is part of the reframe

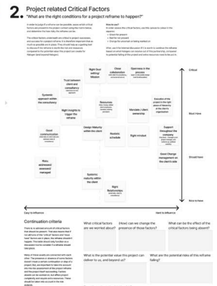
While constructing the framework, it occurred that step 4 in the first iteration of the canvas (presented in Figure 5.4) did not make sense to be the fourth step. The step focuses on what elements should be in place in a systemic canvas as something to work towards. However, to understand, one would need to read through the whole canvas first to know they needed to work towards that, as explained in User Test Finding 1. Additionally, indicating this information while being open and applicable enough for unique cases was tough.
In the framework, I saw that this accommodating was done by assessing which critical factors needed to be in place in step 2 and accommodating those in step 3 of the canvas while reframing. It then occurred that step 3 was not only focusing on the reframe but also on the accommodation, which was to be carried on in step 5, the continuation of the project. Therefore, as discussed later, step 4 was embodied in the other steps.

Steps in the Reframing process

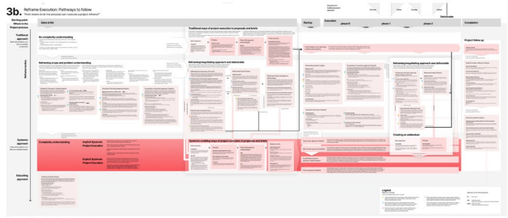
And how they correspond to the "Systemic Reframing Canvas" and sense-making workshop.



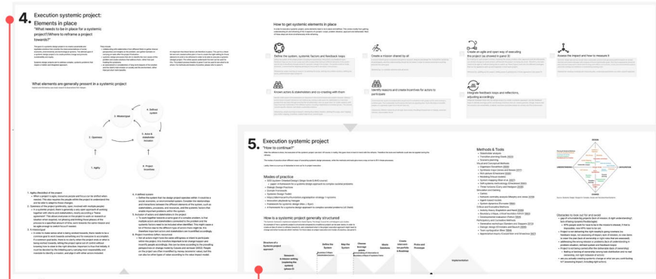
Tool | Checklist of indicators
Potential (other) Medium | Checklist, visual reminder



Tool | Matrix of critical factors
Potential (other) Medium | ...



Tool | Decision tree & critical questions
Potential (other) Medium | Booklet on different applicable strategies for reframing, presentations slides on strategies for reframing



Tool | Information & Checklist
Potential (other) Medium | information booklet (playbook), Presentation, Checklist, alignment tool for current setup of a project vs what a systemic project needs.

Tool | Information
Potential (other) Medium | QMS, information booklet (playbook)

Project setup in simple/complicated context

Project setup in complex context

Internal alignment on what kind of systemic design & (systemic) impact is wanted.

Goal | Making sure to have a baseline of how to execute systemic projects, and alignment on this way of working and ideology.
Aligning everyone in the organisation that projects should generally work towards the same mission in regards to where to have impact, and what could be criteria in order to achieve that.
Expected outcome | an organisation that understand what systemic design is, what that entails for internal processes and project processes, and what tools and methods could be applied within a project.

Skill development and organisation adaptation to ensure systemic design execution

Goal | Making sure to have a baseline of how to execute systemic projects, and adapting to a needed skillset within systemic design that might not be accounted for yet, or might be new (e.g. change management, educating on systemic design skills for the client).
Embedding pragmatic ways in the ways of working internally to achieve the aligned mission on how to achieve impact.
Expected outcome | an organisation that understand what systemic design is, what that entails for internal processes and project processes, and what tools and methods could be applied within a project.

1. Spotting for potential systemic impact (in the project)

Goal | For employees to know and recognise the signs of potentially having a bigger impact than the project is currently framing. And, for them to be able to act on it.
Expected outcome | Employees realizing, recognizing and acting on signals of projects that they can become systemic, to start the process of assessing feasibility of a reframe and the reframing process itself.

2. Assessing the feasibility of the project for being systemic

Goal | Analysing if the incoming project has the right critical factors in place to make a systemic project feasible. And, spotting the opportunity if there is room to change any of those factors to enable for systemic projects.
Expected outcome | a stop or go moment within assessing if a project should be reframed in the following cases:

- When projects are being assessed for taking in before or during the sales & bid process
- When during the project execution or start-up stage of a project, to see if it is worth the investment of hours and effort vs the potential output, and how likely it is to come there.

3. Reframing the project (continuously)

Goal | bringing a project from simple/ complicated context towards complex, through different strategies that can be applied to change either problem view, scope, approach and/or deliverable to be more systemic.
Expected outcome | a reframed scope, problem view, approach and/or deliverable. Ideally, in a project setup that is also reframed towards facilitating for systemic design (see next point)

4. Accommodating for the needed elements in a systemic project

Goal | To know what elements should be present within a systemic project. So that during the reframing process, it is certain that these elements are in place and a systemic project can be executed.
Expected outcome | Employees knowing what elements to take into account when reframing towards a more open project, and being able to explicitly or implicitly communicate this towards the clients, or assess so themselves. In order to make sure that the client or Halogen is able to accommodate for this.

5. Executing the systemic project

Goal | Making sure to execute the systemic project according to the baseline of how to systemic projects should approximately be executed, as aligned with in the way of working in Halogen.
Expected outcome | an organisation that understand what systemic design is, what that entails for internal processes and project processes, and what tools and methods could be applied within a project in order to get the aspired results that are in line with Halogen's company vision and mission.

Measuring the impact.

Goal | Making sure to achieve impact in the project according to the initial alignment on what kind of impact is wanted, according to internal and external goals and missions.
Expected outcome | projects that are executed and bring change in a way all organisations deem valuable and needed.

Insights from sense-making workshop

Elements already present in the canvas

Figure 5.5. The second design iteration: the framework. A visualization of the important steps in the reframing process.

Design Synthesis

Sense-making & Co-creation Sessions

After the insights of the two synthesis canvases were merged in the second iteration - the framework and work on the multiple visualizations discussed before were finalized. From here on, getting input and insights on those was important. The goal was to sense-check information and learn what could be improved. In order to do so, the systemic praction of sense-making and sense sharing was applied (Sevaldson, 2022). It was done through internal and external sessions, varying in length (based on availability). Two sessions were conducted with educators of Systems Oriented Design in AHO, of which one was Birger Sevaldson himself, to understand if they felt that this information aligned with their ideas on reframing towards using systemic design. These sessions both took 20 minutes of presenting and obtaining feedback on the materials provided. The sense-making and Co-creation sessions conducted internally in Halogen took longer, where one Sense-making and Sense-sharing session was conducted with the Systems Studio team, taking an hour to conduct, delving more in-depth into the Synthesis of the improvement points to align the insights gained during the empirical research. The sense-making and Co-creation sessions after that were done with three Systemic design Experts, two of whom were also interviewed at the beginning of the empirical research in the Halo Way of working, and another expert who held just as much seniority in the field, being suggested by colleagues that deemed it relevant I spoke to him. The way the co-creation was conducted was by laying out the designs in a physical format and going over them, ideating on either the laid out designs, blank paper, or a whiteboard, where the user was given the position of expert and plays a large role in knowledge development, idea generation and concept development (Sanders & Stappers, 2008). An additional factor playing into the co-creation sessions was to also enhance a feeling of ownership of the products created. As said in the empirical interviews, this is done by including the stakeholders throughout the process and design. Preferably by delivering something they can work on themselves. Co-creation was therefore important to ensure implementation in the company. Different sessions have been executed, where either different designs were shown or not, depending on the time there was for a session and what kind of input was expected. The insights from the sessions will now shortly be discussed.

Sense-making sessions outside of Halogen

Sense-making sessions with three educators of the School of Design and Architecture in Oslo were conducted. One of which was Birgir Selvadson, initiator of the RSD symposiums, creator of the book Designing Complexity, and creator of the explanation of the approach of Gigamapping (Sevaldson, 2011; 2022). Within these sense-making sessions, the framework iteration was shown. The goal was to get feedback on the general steps presented in the framework, as the framework included insights into both canvas and relevant improvement points. An outsider's perspective wanted to generate feedback on the general application of the deliverable. Showing the first iteration of the canvas would take too much time to go through, as turned out within the user tests of the canvas, as previously discussed. Therefore, it was decided not to show it or briefly glance over it. The improvement points for Halogen were not relevant to discuss in detail outside of Halogen. Three important insights obtained from this sense-making session will now be discussed.

User Test Finding 4: Circular, but still too linear
The first overall point of the framework received was that the framework and canvas did not look circular enough. "It looks like much work, hard to grasp. At one point, it even felt sequential." Even though the framework has an elongated circular loop, advice was given to create intermediate steps where one could go back and forth between, like a flowchart. This would make the framework and canvas more dynamic.

User Test Finding 5: Questioning the use of canvas as medium
Eventually, two of the three interviewees raised the question of whether a canvas was the best medium to pursue. As mentioned by Birger Sevaldson, "Why choose a BMC-like format? It is an old format. Maybe BMC is familiar to people, but it is a bit obsolete". Another interviewee suggested using different types of mediums for the different canvas steps and splitting them up.

Initially, the canvas medium was chosen as it made sense to put a step-by-step approach to reframing in a worksheet format. Initially, as presented in the subchapter of the first iteration of the canvas, it presented questions and information to visualize while obtaining data on how this process and the important questions could look. Therefore, the canvas was a good fit. This medium was continued due to the goal of making such a canvas accessible and usable for everyone, but, as will be explained later in the benchmark of canvasses and improvement points in Chapter 8, it has been decided that a singular canvas might not be the best tool, even though highly accessible and known among people.

User Test Finding 6: Framework and canvas shouldn't portray as a one time thing
Another element that opts against using a canvas as a medium to portray the framework's steps is the notion that reframing might come across as a one-time thing. This means something is conducted once, and then the reframe is final and does not have to happen again, especially since the canvas does not promote a second use, as will be discussed in the validation of the final design.

Sense-making and Co-creation sessions inside Halogen

The sense-making sessions that were conducted inside Halogen were to ensure that information resonated within Halogen. This was to let Halogen take up the improvement points given to them as an intermediate deliverable and to fact-check the information as validation. Additionally, the co-creation sessions had the same goal. One sense-making session was conducted with multiple people where the improvement points of Halogen were discussed, and reactions were captured on whether they agreed with the information presented, the important leverage areas, and how they looked onto these leverage areas. The most important insights from that session are captured below.
Other sense-making sessions were conducted one-on-one with experienced systemic designers in Halogen with over 10+ years of experience in the field. Both improvement points, canvas and framework, were presented, explained, and run through. The setup was a non-structured interview, which allowed them to discuss and alter on paper any elements they were or were not agreeing with. Those sense-making sessions were to fact-check the steps in the canvas and framework and co-create the next steps, which became the final design. All insights will be discussed now.

User Test Finding 7: Emphasizing that Impact is not aligned with the project, Halogen and client
One thing that became clear is that the impact envisioned from the strategy document, as discussed in the 'Halo way of working', is often not reflected within company practices. Where impact is often not directly correlated (yet) with project execution. As discussed in Insight 13, 16, and especially 19, impact heavily relies on factors that Halogen either does not focus on or is working on, keeping a monetarily focus on projects by the client's wishes. Focus on impact was later regretted for not having pushed through, or not sure if a project obtained the wanted impact, since there were seldom project follow-ups.
This insight was heavily supported during the sense-making session and emphasized that it was one of the main issues that the alignment of impact in Halogen needed more attention internally and in projects,

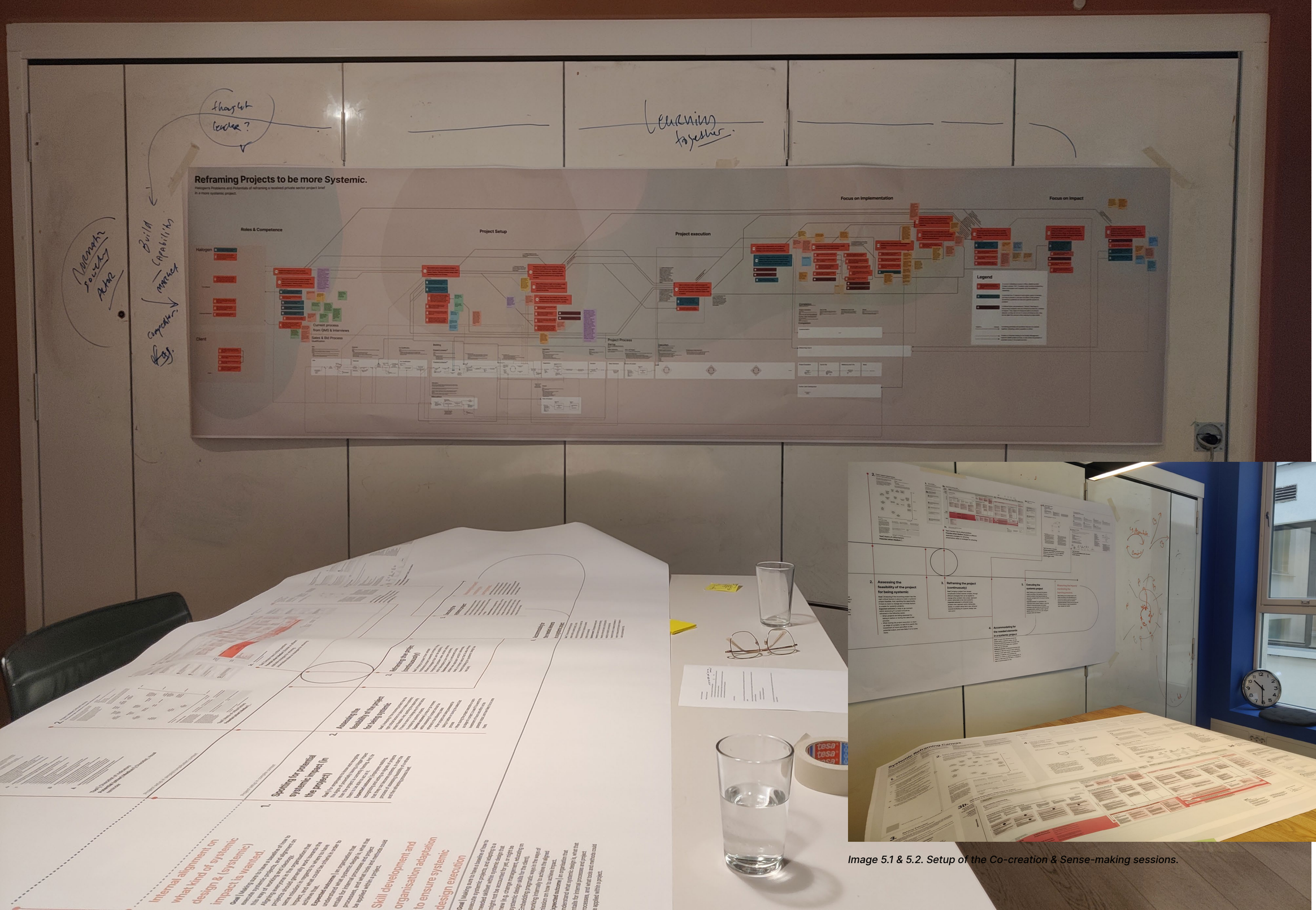


Image 5.1 & 5.2. Setup of the Co-creation & Sense-making sessions.

confirming the beliefs of previously mentioned Insights and Leverage Area 1. This caused an even higher emphasis on this problem in this thesis.

User Test Finding 8: A systemic project does not always mean more impact
One participant in the sense-making sessions pointed out that creating a systemic project does not necessarily equal more impact. They added that sometimes even a more simple or complicated-oriented project allows for more impact. It was mentioned that this was due to fewer factors involved in such projects. That more impact could be achieved through systemic projects was an assumption initially held throughout the creation of the designs in this thesis. The participant pointed out, “There is a risk with working with these [systemic] kinds of projects. Since they are complex, they are not easy to handle many stakeholders and different parts of the problem. They rely on many factors that are not dependent on us.”. They continued that “More systemic projects will not lead to systemic projects if you [as a client] do not know how to do systemic projects.”. Additionally, it was mentioned that even with trying to be involved as much as possible, Halogen is often not included in the implementation processes of projects. Not necessarily because they do not want to, but because the client often restricts them. They continued to explain that project budgets are not created to support implementation. This troubles the road to achieving impact. An example of this is mentioned in another sense-making session. From a client’s perspective, it should also be understood that to reframe this aspect, it might look like Halogen wants to generate more revenue instead of trying to implement the project successfully. This shows a lack in the systemic understanding of the client, not being able to see the holisticness of a project and critical factors that come with it, its change management, and trust in Halogen from the client, as mentioned in Insight 9. This shows a glimpse of how complex it can be to ensure impact within a project.

The following insights were the results of the one-on-one sense-making and co-creation sessions and contained smaller edits to the final framework and canvas, as in broad lines, the content was agreed upon, as the last point reflects.

User Test Finding 9: Reframing of content AND context New iterations for the final canvas and framework
were already being created during the sense-making and co-creation sessions. The employees of Halogen asked ideas and questions to help create a direction for the framework and canvas to have a vision of where it needed to go. Examples of such questions were, “What is complexity for you?”, “What does systemic reframing mean”. However, one comment stood out that helped to rethink the focus of the framework. I was asked what the “Reframing of the process” meant, while earlier, they said I should “Connect what you do to a bigger context because that will always be there”.

After these comments and questions, some ideas about the framework grew. Instead of focusing visually on moving from a simple/complicated context towards a complex context, as is visualized in iteration 2 - Framework, focusing on the different types of frames might be more relevant. It then clicked that, instead of focusing only on the project’s content (the problem, scope, approach, and deliverable), the framework and canvas also focused on bringing elements to accommodate the project’s context. Initially, this was called reframing in the project and reframing of the project, and named together with the interviewee the reframing of the content (in the project) and reframing of the context (of the project). It felt important to visualize this better in the next iteration, as it occurred then that reframing of project content cannot be done without bringing the right elements in place, such as the critical factors.
As will be discussed in the improvement points in Chapter 8, another layer can be added to the context of the organization where the project takes place in, although some critical factors of step 2 already do this.

User Test Finding 10: Align principles of systemic design with critical factors
One of the interviewees noticed a minor detail, but it was important for the change of the canvas. As discussed in the case study findings and the first iteration of the canvas, the initial step 4 of the first iteration focused on which elements to bring in place. At this point, it was already known that this needed to be moved more toward the front, as explained in Insight 22 of subchapter iteration 2 - Framework. One of the co-creators drew a lot of similarities between the principles of systemic design and the tasks that should accommodate them in step 4 of the first iteration of the canvas, indicating they should be combined. Additionally, they also drew similarities between the principles of systemic design in step 4 and the critical factors in step 2.

User Test Finding 11: Continuation vs execution
Little details, such as text elements, were also changed. One that is noteworthy, as it also holds relation to the continuity of the canvas, something that got critiqued before, as mentioned in the sense-making sessions outside of Halogen, was also tackled. The initial step being called the “execution of the systemic project” made it sound like all steps had to be done before the actual execution of the project in the project’s pre-execution phase. Although that is advised, the idea of the framework and canvas always has been that it could be executed during the project process.

User Test Finding 12: Measuring impact vs continuous learning
When presenting the second design iteration, the framework of the steps generally resonated with everyone. There was one person who had a comment on it regarding the last step: the measuring of the impact. Even though it seems tempting to want to measure impact, the co-creator recently mentioned an article on the measurement of impact. The basis of the article explains that measuring for impact is doomed to fail. When attempting to create impact measurements, it enables corruption and skewing of data. In reality, it cannot be known in a system where impact is generated and what the contributing factors are (Lowe, 2023; Lowe & Hesselgreaves, 2021).

Therefore, instead of a way of measuring impact in the last step of the canvas and framework. Continuous learning has been suggested to be implemented within both designs. The first reason was to motivate and critically reflect upon the project’s goals in line with impact. Therefore, beautifully aligns with the impact as a red thread throughout the framework and canvas, as discussed in Insight 13, 16, and 19. Secondly, it motivates the continuity of the canvas and framework as the next steps are planned out. Thirdly, it also encourages to keep learning instead and generate insights that can be brought into the next iteration of the canvas filled in by the user, as discussed in User Test Finding 6 and Insight 18.
Another of the co-creation sessions conducted supported this latter insight. It was mentioned that continuous learning in projects is essential to flow back into the providing organization. It was deemed important that the organization continuously grow, fostering and growing with systemic design as a discipline and adapting to the field it is working in, as has also been discussed in insights 7, 14, 17, and 18.

User Test Finding 13: Validation of the steps within the framework
As mentioned before, the steps within the framework were generally well received. One employee mentioned the framework functions as a way to “give an overview”. Another employee mentioned they “agree with most of the content”, besides separating the critical factors and the principles of systemic design as presented in the first iteration of the canvas under which elements should be in place. This was in line with User Test Finding 3, where it was also mentioned the content seemed to be right but overflowing. Further in the discussion, it was highlighted that the framework could represent something associated with the “right thinking” part of a brain, whereas the “left thinking” element could be the canvas, where it is more exactly put what elements need to be in place. What is in the middle is then for a company to decide, which could be its knowledge document or how they execute systemic design. This would be the Playbook on Systemic Innovation for Halogen and the new presentation, which explains more about systemic design and Halogen’s methods and tools. This aligns with Insight 7, 18, and 17,

and supports including the foundational elements that support reframing and systemic projects, as discussed in Insight 20.

This insight determined that continuing with current elements was the right way to go, with minor tweaks in wording, etc. Additionally, due to the focus on right vs. left brain thinking, it was also validated that it is important to include a focus on a knowledge document that represents systemic design for a providing consultancy. Then, the designed framework and canvas can be used as important tools around this.

Design Synthesis

Benchmark of Canvases

Before pouring all the insights into a new framework and canvas, a benchmark research was conducted on how canvases are designed (see Figure 5.6-5.11)(Brown et al., 2021; Design Sprint Academy, n.d.; Gray, 2009; Griffith Centre for Systems Innovation, n.d.; Osterwalder & Pigneur, 2010; Wieck & Gampp, n.d.). The decision to stick with a canvas, even though the process was deemed too complex to capture in a canvas, as also proposed in the next chapter in subchapter 'sense-making and co-creation', is to try to explain the process as easily as possible. The improvement points discussed in Chapter 8 will also be reflected that this might be needed to let go of in the future. However, due to the time limitations of the project and the goal to optimize for usability, this was the best decision for now.

Between the first iteration and other canvasses out there, comparisons were drawn, and the following criteria for the canvas were constructed:

- The canvas shall not hold information but only hold questions with additional information put on explanatory pages.
- The canvas should have an order of filling in, which should be easy to follow (but does not have to be from left to right)
- Canvasses are often contained in gray to express their drafty and altering image, something that can be worked with, and a user should not be afraid of making changes.

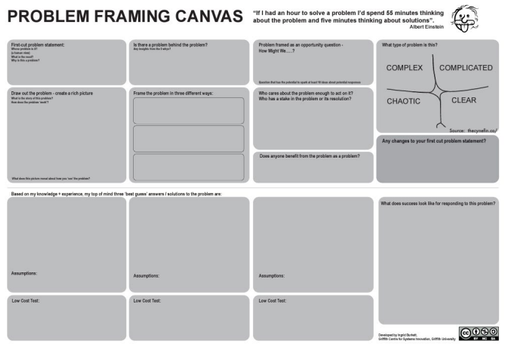


Figure 5.6. The Problem Framing Canvas (Griffith Centre for Systems Innovation, n.d.)

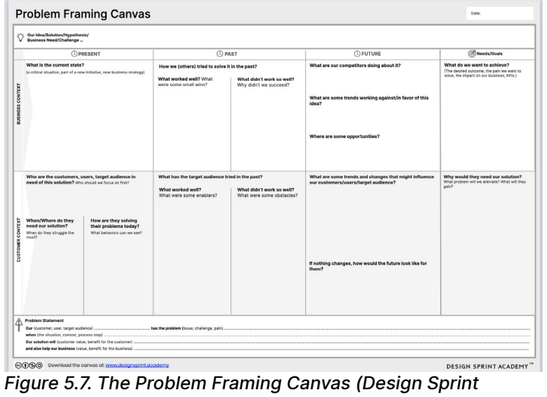


Figure 5.7. The Problem Framing Canvas (Design Sprint Academy, n.d.)

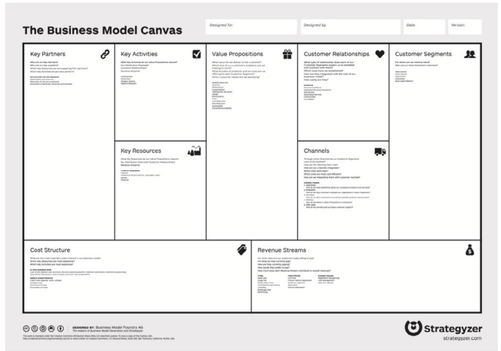


Figure 5.8. The Business Model Canvas (BMC) (Osterwalder & Pigneur, 2010)

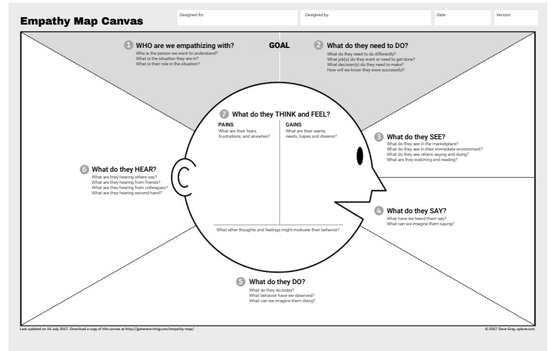


Figure 5.10. The Empathy Map Canvas as an extention of the BMC (Gray, 2009)

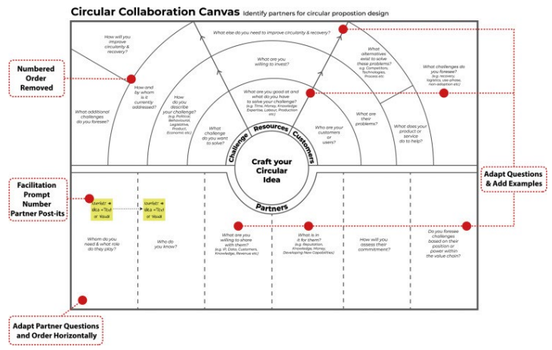


Figure 5.11. The Circular Collaboration Canvas (Brown et al., 2021)

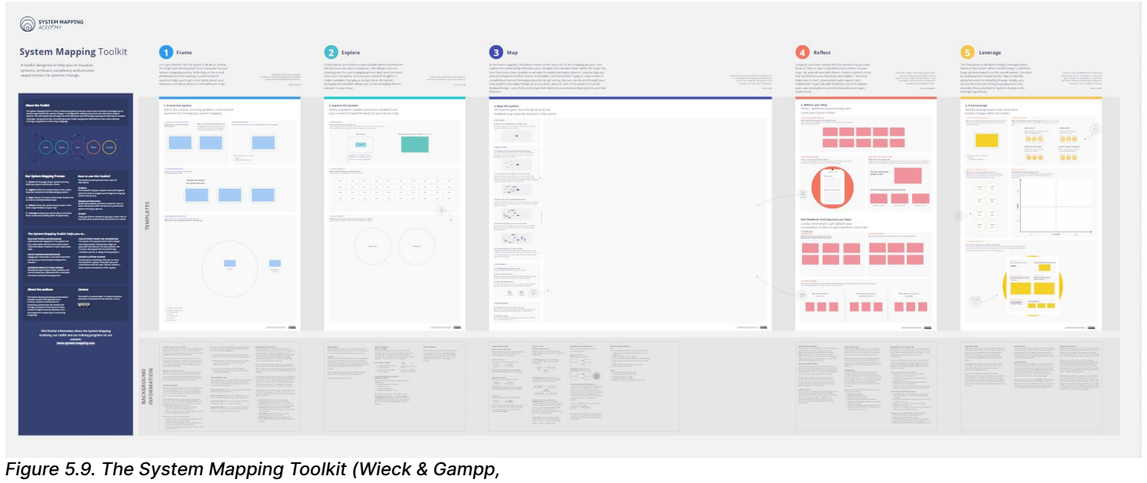


Figure 5.9. The System Mapping Toolkit (Wieck & Gampp, n.d.)

6. Design Criteria

Design Criteria

In order to understand how the research findings directly impacted the design, we will first discuss the design criteria that came out of the research and how that formed the final design. Then, the empirical research findings will be shown and linked to their influence on the final design and the iteration before that.

Design Criteria

Design Criteria

The main findings from the research insights are divisible by best practices from theory and empirical research and improvement points in theory and empirical research. The insights from Chapters 4 and 5 are summarized here into design criteria. We will discuss these design criteria here.

Design criteria	Subcriteria	Insights
A. Include systemic design methods and tools that help to reframe and execute a project		Literature review
	A1 withouth overloading the user with information	User Test Finding 1 User Test Finding 2
B. Create a method or tool that brings systemic design in place from a traditional approach.		Literature review Insight 17 User Test Finding 13 User Test Finding 3
	B1. in every step of the project process	Insight 4
	B2. Early on	Insight 5
	B3. in a way that is easy to use	User Test Finding 1 User Test Finding 2
C. Help the user to spot systemic indicators		Insight 6
D. Help the user to avoid risks	D1. By assessing the use of a reframe	Insight 21 User Test Finding 8
	D2. By helping the user to assess which critical success factors are absent before the reframe, and what influence this has on the project	Insight 9
E. Help the user to reframe a project	E1. Through creating an oversight of the needed content and contextual elements that need to be reframed	Insight 6 Insight 9 Insight 10 User Test Finding 9
	E2. By helping the user to accomodate the context by bringing critical success factors in place	Insight 6 Insight 9 Insight 22 User Test Finding 10
	E3. By helping the user to accomodate the content by making it easier to align problem, scope, approach, goal and impact of a project	Insight 6. Insight 22 Insight 12 Insight 19 User Test Finding 7
	E4. Through helping the user to select or create implicit and explicit reframing tactics	Insight 6 Insight 10 Insight 11
F. Increase focus on impact in the reframe	F1. which goes beyond the impact in the direct circles of the client, in different capitals	Insight 1 Insight 12 Insight 13 Insight 16 Insight 19 User Test Finding 8 User Test Finding 7
	F2. and is maintained by continuous learning	Insight 1 User Test Finding 12
G. Assure the right conditions for a systemic project and reframe in the organization	G1. By aligning internal organizational structure that supports the execution of systemic design	Insight 2 Insight 3 Insight 5 Insight 17 Insight 20
	G2. By internally aligning what systemic design and how it is executed	Insight 6 Insight 7 Insight 17 Insight 18 Insight 20
	G3. By internally aligning what type of impact the organization wants to achieve, and how	Insight 1 Insight 16 insight 19 Insight 20 User Test Finding 13
	G4. And motivates for continuous adaptation and improvement of these conditions and knowledge	Insight 14 Insight 15 User Test Finding 6 User Test Finding 4 User Test Finding 12

A. Include systemic design methods and tools that help to reframe and execute a project

The first design criteria mainly stem from the literature research of Chapter 2, where it became clear that there is plenty of literature and theory on systemic design, its different processes, mindsets, frameworks, methods, and tools to accommodate systemic projects. It turned out, however, that awareness of this practice and the difference in complex and complicated contexts and approaches fitting to these contexts might be lacking. Therefore, it was initially deemed important that this knowledge was reflected in the canvas as well, as seen in the first iteration of the canvas in Chapter 5. Hence, creating the first Design Criteria A, where the canvas was also expected to carry on this knowledge on systemic design. However, as User Test Findings 1 and 2 showed, this information made the canvas cluttered, overflowing with information, and therefore unusable. Therefore, point A1 was created to create a design that delivers hints at this knowledge through a more usable means without overloading the user with information.

B. Create a method or tool that brings systemic design in place from a traditional approach.

Chapter 2 also indicated a gap in the current knowledge on transitioning from conventional practices used for complicated problem-solving and contexts to complex contexts and problems. Therefore, design criteria B was formulated: creating a method or tool that brings systemic design in place, transitioning from a traditional approach. Additionally, Insight 4 showed how reframing can happen in every part of the process. Therefore, the final design should be directed to accommodate the reframing in every part of the process while stimulating reframing early on, as was found in Insight 5. Additionally, continuing on design criteria A, the final design should be targeted to include design elements that make it easy to use, as found in User Test Findings 1 and 2, as the canvas information initially showed overloading and non-user friendly, with confusing design elements. To improve that, the benchmark of canvases will be used, as discussed at the end of Chapter 5. However, remotely the same content will be followed up with, as the project's content has been received well, just in a way that was overwhelming, in User Test Findings 3 and 13, creating an interesting challenge in combining complexity with simplicity. Lastly, the final design(s) should accommodate this information being stored and worked continuously improved as became clear from Insight 18. Not adding to the endless information stored within Halogen but becoming a concurrent element within current-day practices.

C. Help the user to spot systemic indicators

As became clear from Insight 6, the skills of a designer are essential in spotting if a project holds the potential to be systemic or not. However, as people new to reframing and systemic design might not know how to execute a reframe or see these "glimmers" in systemic projects, the final design should help the user spot systemic indicators.

D. Help the user to avoid risks

However, as it turned out from Insight 8, a project can always be possible but comes at a risk. These risks can have some financial impact on the providing organization of the reframe, like losing a client or putting resources into a reframe that was not plausible in the first place. Therefore, risks should be avoided by (D1) assessing the use of a reframe and (D2) by helping the user to assess which critical factors are absent or present before the reframe and what influences this has on the project. As discussed in Insight 9, critical factors strongly indicated the success or failure of a project but were often spotted in hindsight. Assessing these factors beforehand, as D2 proposes, can help the user to avoid risk. Additionally, as Insights 21 and 8 propose, assessing the critical factors and the impact and implementation possibilities of a project once it is systemic offers to avoid risk and see if resources are put to valuable use.

E. Help the user to reframe a project

As discussed in Insight 6, the skill of an experienced business developer and designer can make or break the project by knowing when to spot an indicator for a systemic project (as discussed in Design Criteria C), but also by knowing how to reframe. As the target group for the final design is those struggling with a reframe because they have not done it before and are inexperienced in systemic design, guiding people within the reframe of such a project is essential.
Through the analysis of the insights, four main points have been derived where users need help in guidance within reframing. The first one is (E1) the creation of an oversight of the needed content and contextual elements that need to be reframed. As Insight 9 showed, the context, mainly consisting of critical factors, needed to be brought in place while also using tactics for reframing project content, as shown in Insight 10. Additionally, User Test Finding 9 showed an explicit difference between the context and the project content having to be reframed. The tactics were primarily used to bring forward elements of the critical factors while aligning the content, such as the problem, scope, approach, and deliverable. This adds to the second sub-criteria of (E2), helping the user to bring critical success factors in place, which account for the context of a project, while ensuring its accommodation, as Insight 22 argues, is necessary. By doing so, these critical factors will align the project with principles that belong to systemic design, as argued in User Test Finding 10, making sure it is reframing towards a project that is (more) systemic.
Additionally, the content needed to be put in place and aligned with the goal and the impact, as described in User Test Finding 7, and Insights 12 and 19. In those insights, it became clear that impact should have a broader theme throughout projects, and therefore, is the ultimate goal, having to align project content with it, together with the client. Therefore, design criteria E3 was shaped: the help of accommodation of the content, making it easier to align the problem, scope, approach, goal, and impact of a project. Eventually, to ensure a reframe, tactics should be used to accommodate implicitly or explicitly, as shown in Insights 10 and 11. Then, the user can ensure the project context will be set in place through critical factors. At the same time, they can shape the content and align it with impact through different tactics or strategies that bring forward a plan on how to do so (either implicitly or explicitly).

F. Increase focus on impact in the reframe

As argued in previous Design Criteria and Insight 13, 19 and User Test Finding 7, impact should be aligned accordingly in a project as it should be the main focus and red thread throughout a project and the project's end goal for the consultancy and the client. Insight 12, 16, and User Test Finding 8 substantiate this by saying more external impact could have been achieved in previous projects, where currently there is often a more monetarily focus. However, not transforming into a systemic project can also mean more impact. Therefore, creating sub-criteria 1: increasing the focus on impact in the reframe, which goes beyond the impact in the direct circles of the client, in different capitals and should be thoroughly assessed. As User Test Finding 12 dictates, to ensure impact, the impact cannot be measured but should be reflected upon continuously. Creating subcriteria F2: Impact is maintained by continuous learning.

G. Assure the right conditions for a systemic project and reframe in the organization

To ensure impact is created through more systemic projects, not only the projects can be held accountable. Often, the structure underlying the projects affects the possibility of ensuring a systemic project or not. As Leverage Area 4 indicates, supported by Insights 2, 3, 5, 18, and 20, the right conditions can only be met when (G1) internal organizational structure that supports the execution of systemic design must also be aligned. It could help a systemic project to be spotted sooner while assuring a reframe could be initiated earlier, or at least easier later in the process. Halogen's project setup process, while linear, did not fully hinder systemic project execution in various project phases. Instead, it revealed the value of a designer's skills in accommodating reframes, as shown in Insight

6, where the absence of this skill and understanding along the organization leads to a miscommunication within systemic design language and understanding as framed by Insight 7 and 17, and the missing of systemic potential in projects and acting out the right reframes. Therefore, it is crucial to (G2) internally align what systemic design is and different processes, methods, and tools for execution. As discussed in Insights 7 and 18, information is lost as learnings are not shared, and between employees, not the same systemic language gets spoken where discussions cannot be held. It emphasizes the importance of the foundation needed internally to reframe and execute systemic projects. Although this thesis does not aim to improve project setup, it underscores its importance in aligning systemic project setup practices within the consultancy. Partially due to underscoring design criteria F. where impact should be aligned in projects and (G3) internally in organizations, as turned out, could still be improved by Insights 1, 16, and 19. This alignment involves creating development and execution plans to ensure adherence to desired practices. To make the final design not redundant, getting lost in the bulk of knowledge and information as discussed in Insight 18, and focusing on the continuous and iterative focus of reframing as discussed in User Test Findings 4 and 6, a special notion was made of (G4) the continuous adaptation and improvement of these conditions and knowledge. The continuous experimental way of working was deemed useful for systemic design in Insight 14 and adapted by Halogen, as seen in Insight 15. It would, therefore, only make sense if the final design also symbolizes that.

7. Final Design: Reframing Framework, Canvas & Booklet

Foundations

Reframing

Outcome

0. Establish Internal Alignment on Systemic Design.

- What are the approaches, modes of practice, processes and methods and tools that get applied?
- What competences and knowledge are needed in the office?
- How can we align this knowledge among our employees?

1. Spot the Potential for Reframing and a Systemic Project

- What are triggers in this project that could indicate room for a (different) systemic design approach?

2. Assess the Feasibility of a Systemic Project

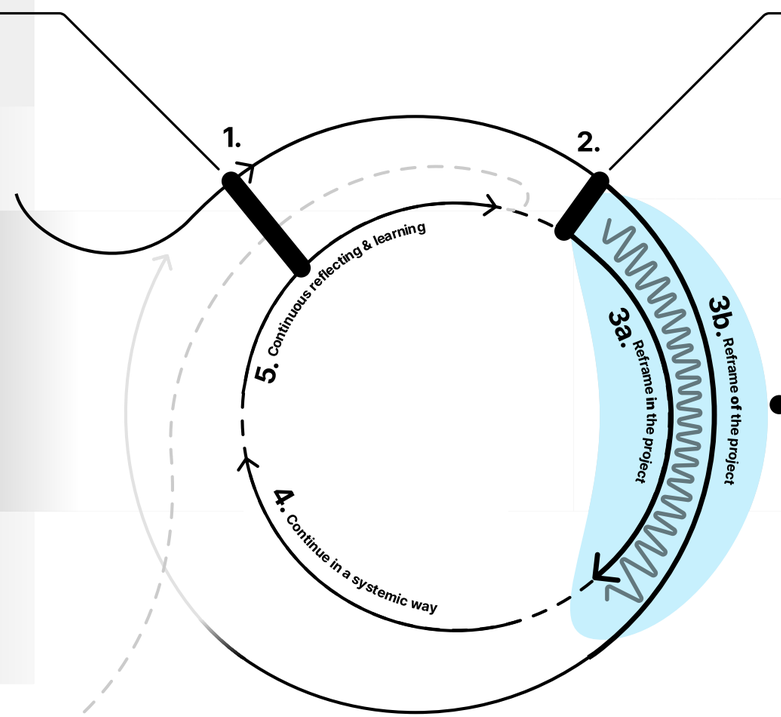
- What elements are in place and which need to be catered/accommodated for of how the project is set up?
- What factors might make implementation and impact hard to achieve?
- What impact can be achieved through the project as is?
- Is reframing a valuable choice for us, actors and/or the client?

Establish Internal Alignment on (Systemic) Impact.

- What is the type of impact we strive for?
- How could that look like?
- What are preconditions to make that happen? What needs to change?
- What are strategic priorities? (prioritised domains/actors/sectors)
- What can we do to create this impact)

Spot the Potential for Systemic Impact

- What is the initial goal of this project
- to which higher goal does this project contribute?
- does it align with the client's vision of impact
- does it align with the consultancies' vision of impact?
- How can the project outcome contribute to this impact?
- Based on the impact that should be created, what should be the new project goal?



3a. Reframe & Accommodate Project Content

- What insights trigger a reframe?
- What should be the new problem(s) focus?
- What should be the project problem(s) boundaries/scope?
- What should be then be the project's delivery?
- What approach should be used to come to this delivery?
- Based on the impact that should be created, and the revised project aspects, what should be the new project goal?
- How to accommodate for these elements?
- What are methods, tools & tactics could be applied to reframe?

Implement Faciliatory Elements that Enable Systemic Design

- What is our strategic plan concerning systemic impact?
- What competences and knowledge are needed in the office?
- What current practices are there in the organisation that might need to adapt or change?
- What have we learned from projects that need to be applied within the organisation?
- What other elements are important to facilitate for systemic design projects?
- What actions and resources are needed to facilitate for this change?

3b. Reframe & Accommodate Project Context

- How to accommodate for these elements?
- What are Tactics that could be applied?

5. Continuous Learning, Reflecting and Evaluating

- What have we done?
- What did we learn from it?
- Does we still achieve the envisoned goal & impact?
- What do we need to do differently?

4. Continue Project (in a Systemic Way)

- Can the reframe be executed in the current phase of the project?

Outcome

Guidance while Reframing

Vision on Next Steps

Alignment & Understanding of the Project's Goal

Figure 7.1. The reframing framework in small format. For the full version of the framework, canvas and booklet, access here.

Final Design: Reframing Framework, Canvas & Booklet

The framework as displayed in Figure 7.1 depicts a simplified way of what steps happen while going through the reframing of the project. A reframe means bringing the project from a simple/complicated context towards a complex context, according to the Cynefin Framework (D. Snowden, 1999), by adapting the project problem and approach, as according to Kees Dorst (Dorst, 2015), project scope (boundary paper), and deliverable.

The framework is built out of 6 elements:
Step 0. The foundations
Step 1. Spotting for systemic potential
Step 2: Assessing the feasibility of a potential systemic project
Step 3: Reframing and accommodating in and of the project (content & context)
Step 4: Continuing in a systemic way
Step 5: Continuous reflecting, learning, and evaluating.

The following paragraphs will explain the steps mentioned above after the scene is set in the upcoming sub-paragraph, explaining under which conditions the canvas and framework should be used. The steps explain what each entails, how to execute the steps, and why it is essential to include, substantiated by academic literature. The canvas shown in Figure 7.2 follows the same steps as the framework. Therefore, they will be explained alongside each other. Each step and its description is followed up by how this is reflected in the canvas. The framework's steps are formed by the empirical research findings that were just discussed. The framework's steps are substantiated through literature to make the framework and canvas grounded in literature. Therefore, literature is already mentioned in this part of the thesis. Afterward, it will also be discussed how empirical findings and literature align in these steps.
The canvas and framework are in the additional Open Appendix B. or this link. The explanation booklet accompanying the framework and canvas is the same information as presented in this report, where this report gives some extra accommodating information about which design criteria and/or insights the design choices came from. The booklet is presented in a smaller version in Figure 7.7, and can be found in previous shared link.

Final Design
Setting the Scene

What is it?

The reframing framework and canvas describe the reframing of a project context and content to be more systemic. It helps to determine if reframing should occur, what elements in and of a project should be reframed, and to create tactics. Regardless of what phase the project might be in. The canvas helps to achieve this by asking the right questions, as indicated in design criteria B.

Why these steps?

It allows for the project to accommodate project elements in a complex context. For example, it allows for collaborating with multiple stakeholders or switching focus on 'the right problem'. Since dealing with complex problems requires a different approach to executing projects than a more traditional approach, project content and context elements must be changed. Putting down the steps that could be taken to reframe the content would be incomplete as it would not consider the right factors that need to accommodate this reframe, as indicated in design criteria E1, E2, and E3. The canvas, therefore, focuses on reframing project context and content, that is, the reframing of the project and the reframing in the project. Where content stands for the problem, scope, approach, and deliverable, the context stands for all factors and elements surrounding the project and influencing its systemic continuity. Before reframing, the potential must be spotted as indicated in design criteria C. These steps might come naturally to trained designers, as discussed in Insight 6. However, designers new to the systemic design or applying a reframe in practice could use help and guidance in carrying out such a reframe. Simultaneously, it needs to be monitored if a systemic project is feasible, depending on many critical factors related to what it means to execute a project in a systemic way, therefore aligning with design criteria D2 and E2.
After the reframe, it is crucial to accommodate the reframe while the project continues, whether during pre-execution, execution, or project follow-up, as indicated in design criteria B1, E2, and E3. Additionally, it should be learned if the steps taken acclimate the desired change, focusing on the continuous element of the framework and Canvas emphasized in design criteria F2 and G4. Once the project is executed, the constant reflection (and reframing, if necessary) should lead to desired results in line with the desired impact. Therefore, each step is critical for the reframing process.

Who is it for?

Business Developers, Designers, and Sales in design consultancies.
Anyone in charge or part of the pre-execution, executing, and/or following up (on) the project who knows systemic design practices and approaches in design consultancies where the user needs help to apply systemic tools and methods within a project that initially follow traditional approaches. The primary focus is, therefore, on consultants that are either new in systemic design or of which they or the company has not performed much reframing in such projects and need to become familiar with reframing to a more systemic project. Or anyone who can use some help to make sense of the current state of a project within transition.

What is the result/outcome?

The goal of the canvas is for employees working in a design consultancy with systemic design knowledge to navigate how to reframe a project to be more systemic through manageable steps they can make. With the canvas, users can:

Have guidance and a way to make an abstract process concrete by following steps and noting down learnings, which users can build further in the project and within the company.
By having guidance, people new to systemic design have a pathway to make applying such practices easier and more guided. Besides that, it is essential to

keep learning within systemic design, and note down learnings regarding critical success factors that might be relevant to a project or client within the operating consultancy, as suggested in User Test Finding 12 and Design Criteria G4 and F2, motivating for continuous learnings back into the project and organization.

Have an overview of the project elements and factors that might need to be subjected to reframing.
The relevance of this step lies in the problem that reframing might feel overwhelming due to all the factors that need to be taken into account to make an accurate frame of the current standing of the project, which the canvas helps to assess. This is a result coming from Design Criteria E.

Gain insight into whether the project goal is aligned with the impact the consultancy, the client, and the two together want to achieve.
The relevance of this step comes forward in the problem that reframing can be an overwhelming process, where the focus might be shifted from what kind of impact a consultancy wants to create together to how to reframe. This canvas helps to align impact and reframing steps on the same path to ensure the focus on positive impact is maintained, of which its importance is discussed in Chapter 2 and design criteria F and G3.

Assess the feasibility of executing a reframe based on the impact they want to achieve, the critical factors that are in place or need to be accommodated, and if this is worth the risk.
It is essential to estimate if reframing is possible because reframing can be risky due to losing a client or wasting resources on a project doomed to fail. Of course, it can never be fully known if an attempt at reframing is worth it, but by taking the steps in the canvas, the users can make a more informed decision on whether or not they should. This is implemented as a result of design criteria D and E2.

Explore how they can reframe certain elements, with which tactics, tools, or methods.
This step is relevant due to the need for more methods and tools in literature to transform projects that follow a traditional approach to a systemic approach, as discussed in Chapter 2 and as shown in Design Criteria E.

Have a clear vision of what follow-up steps should be
As continuous learning is essential in the canvas and framework, it should also be important to know what follow-up steps should be based on these learnings. Once the user knows what needs to be aligned and creates strategies or tactics on how the next steps will become apparent.

In what context can it be used?

This tool is meant for design consultancies reframing projects received by the client (vs. actively approached by the consultancy) who operate within the private sector.

When can it be used?

This tool is made so it can be used in whatever phase of the project process: pre-execution, execution, and even follow-up, as described in design criteria B1.

Final Design

Step 0. The Foundations

The foundations should be established to ensure an organization has an aligned view of systemic design and the methods, tools, processes, and practices to execute and support systemic projects. Everyone (business designers, sales, and designers) must be aligned, to some extent, with what systemic design is so they can view the potential when a project brief gets received.

The foundations describe what an organization should contain and work towards to establish the possibility of achieving systemic projects. This step comes before all the other steps in the reframing process, as reframing is only possible with the foundations being in place or at least being cultivated. Therefore, it is advised to tend to the matters written below before reframing.

The foundations are divided into ‘plan & prepare’ and ‘execute’. To get the essential elements in place within an organization, a plan and preparations must be made to be executed. After this, there will be a stage of learning and adapting (included in the ‘execute’ stage), which should be fostered but is optional to work perfectly to execute systemic projects. In the explanation, it is described that an organization facilitating systemic projects or facilitating a reframe needs the following things:

- A knowledge hub of what Systemic design means internally (Design criteria G3)
- A development plan on what practices or ways of working within the company need to be adapted (if any) (Design criteria G1 and G4)
- Creation or update of the strategic plan of the company to align with what type of impact the organization wants to make (Design criteria G2 and F1)
- A plan on how to align and implement this knowledge and practices internally in the company (Design criteria G1, G4, and F2)

These four elements need to be built towards and have some form of establishment to create internal alignment on systemic design, implement facilitatory elements that enable the execution of systemic design, and establish internal alignment on what (systemic) impact is for the company and employees.

If there is internal knowledge of systemic design, there can be alignment or discussions if people agree, as discussed in design criteria G2. Furthermore, there needs to be a way to facilitate internally in the company, so systemic design can flourish as intended and face fewer obstructions while reframing, as described in design criteria G1. The need for this facilitation shows in, for example, how projects are being set up in the project’s pre-execution phase, making it unable to reframe later on, as discussed in Design Criteria G1 and B2. At the same time, a reframe should also not happen too fast without enough information, as mentioned in Insight 4. This emphasizes the need for flexibility in a project.
If there is no alignment on what kind of impact needs to be created, there is a high chance that a systemic project will not yield the providing organizations’ goals and instead go for the short-term impact that a client wants. This impact is, highly likely, capital or manufactured value for the company itself, as shown in Insight 16 and encaptured in Design Criteria F1.
Lastly, only raising awareness for what elements need to be in place and creating a knowledge space in the providing organization will not ensure that knowledge will be shared and adapted (Christiano & Neimand, 2017). There needs to be a plan and a team or person responsible for aligning this internally, as discussed in User Test Finding 12, Insight 15, and Design Criteria G4. Systemic projects can be reframed better and set up easier by enforcing these foundations. If these foundations are not fostered or incomplete, creating systemic projects might take on additional burdens and factors that need to be set in place before it can accommodate a project to be systemic, as seen in Case Studies 1 and 2. Additional tasks might result in the slowing down of the process and the project in question.

The explanation booklet in the Open Appendix B tells the advised content of each of those four foundations and what relevant questions need to be answered in line with the framework.

Reframing Canvas: Shaping Systemic Projects

How to move project context and content from a simple/complicated focus, to being able to deal with complexity.

4. Feasibility

4.3 What impact could be achieved if this were to be a systemic project?
Is it more than it being a non- systemic project?
Is it more than currently envisioned?

If necessary, put an arrow between the impact and a goal down below in the schematic

4.4 What impact could be achieved if this were not to be a systemic project?
Is it more realistic than it being a systemic project?
Is it easier to implement?

If necessary, put an arrow between the impact and a goal down below in the schematic

4.5 Which critical factors are in place, and which need to be accommodated for?

4.6 What critical factors are we worried about not being in place?

4.7 What can be the effects of the critical factor(s) being absent?

4.8 How can we ensure implementation of this project?
Which critical factors need to be put into place?

How to foster for implementation in the current state of the project?

How to foster for implementation if the project will be systemic?

4.9 How can we ensure Impact?
Which critical factors need to be put into place?

How to foster for impact in the current state of the project?

How to foster for impact if the project will be systemic?

4.10 How hard would you rate it to make implementation and impact happen in the current state of the project?

Implementation ____ /10 Impact ____ /10

4.11 How hard would you rate it to make implementation and impact happen if the project were to be systemic?

____ /10 ____ /10

4.1 When approached in a (more) systemic way, what value can this project deliver?
To us?

To the client?

To potential actors & stakeholders?

4.2 When not approached in a (more) systemic way, what value can this project deliver?
To us?

To the client?

To potential actors & stakeholders?

4.12 What are the potential risks of this reframe failing?

4.13 Why is or isn't it worth to pursue a reframe?
Is it still worth to pursue this project?
Compare answers from section 4 and decide whether or not it is valuable to pursue a reframe. If not, the canvas does not have to be filled in further.

Do the impact, goal and project content align?
Does the project content align with the goal we want to achieve?
does the goal align with the impact we want to achieve?
If not, consider reframing or wait for this in step 5.

5. Reframe

Use seperate 'Reframing canvas: Shaping Systemic Project Context and Content' to fill in!

5.1 How can we accommodate for each needed element?
Which tactic(s) can we apply?
How will we apply them?
When?

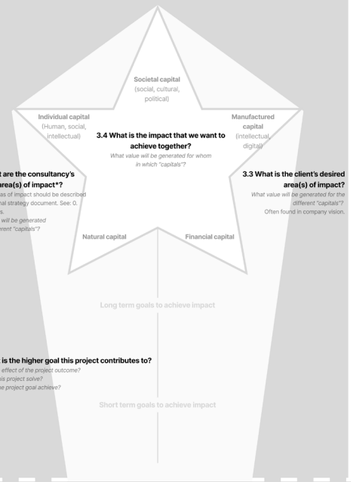
Fill in the reframe canvas to individually reframe the different elements.

5.10 How does this affect the project (continuity)?
Can we continue reframing efforts?
Do other elements need to be reframed first?
If this element cannot be accommodated for, can we proceed systemically?
Can we continue the project at all?
Are we happy with the results if the project will not be executed in a systemic way?

3. Impact

Use seperate 'impact canvas' with client to fill in!

3.5 How does this project contribute towards the envisioned impact?
It could help to think of what could long and short term goals be to achieve this impact, and where among those goals, the project goal lies.



3.4 What is the impact that we want to achieve together?
What value will be generated for whom in which "capitals"?

3.2 What are the consultancy's desired area(s) of impact*?
Internal areas of impact should be described in the internal strategy document, See: 0. Foundations.
What value will be generated for the different "capitals"?

3.3 What is the client's desired area(s) of impact?
What value will be generated for the different "capitals"?
Often found in company vision.

Long term goals to achieve impact

3.1 What is the higher goal this project contributes to?
What is the effect of the project outcome?
What will this project solve?
What will the project goal achieve?

Short term goals to achieve impact

What is the initial goal of this project?

1. Indicator

1.1 What are indicators in this project that could point towards room for a (different) systemic design approach?
(e.g.) amount of stakeholders involved, internal and/or external ambitions, problem structure, project insights indicating a different approach or deliverable is needed, complexity of the problem, scope of the problem, a reframe in the project content (problem, scope, deliverable, approach, goal)

2. Content

2.1 What are the project "elements"

Problem
What is/are the main problem(s) focused on in the project?

Scope
What (other) problems or elements of the problem are left in and out of scope?

In scope

out of scope

Deliverable
What is the deliverable as currently decided, to solve the problem?

Approach
What is the approach as currently decided, to define out the correct problem, scope and deliverable?

Problem
Use Problem Framing canvas if needed

Scope
Use iceberg canvas and boundary critique if needed

Deliverable
Use the problem and scope to redefine the deliverable.

Approach
Use the project Foundations in step 0, or explore different modes of practice, processes, methods and tools.

What is the initial goal of this project?
Re-align impact, goal and project problem, scope, deliverable and approach in step 2 and 3.

7. Notes

6. Reflect

What did we learn?
What are new project insights?
Which of these learnings are valuable for internal use?

are we still on track for creating our desired impact?

What are the next (new) steps?
What needs to happen within the project content?
What needs to happen within the project context?
What needs to happen in the project continuation?

Figure 7.2. The reframing canvas in small format. For the full version of the framework, canvas and booklet, access here.

Final Design

Step 1. Spotting for Systemic Potential

The first step in starting the reframing process is to spot if there is any potential for a systemic project or reframing as described in Design Criteria C. Often, this spotting comes automatically for experienced designers, as discussed in Insight 6. However, it was added to the framework as an essential step for people who have not reframed many projects (the target group of the canvas). It might be relevant first to establish knowledge that this spotting is necessary, making them think about what elements could indicate that this project might be systemic.

In the explanation booklet describing step 1, a comparison is given between simple/complicated and complex/chaotic contexts. This comparison is also presented in Figure 7.3. If a complex problem is solved with a simple/complicated approach, it might be oversimplified, and symptom-solving might occur. This step prevents that from happening. The figure in the explenation booklet and the one to the right can be used to see what applies to the current project of the person using the canvas and framework. Possible indicators, as seen from case studies, are given as a leading example. An example could be a hunch on how the project is described, as mentioned in Case 3 and Insight 6. If the solution is oversimplified while the problem is not fully known or described in 'a fuzzy way', the client might not know what they are dealing with.
Another example is the high ambition for a regenerative tool as presented in Case 2, where the project goals seem (too) ambitious but were still taken upon by Halogen. Here, the product was already set in stone with no knowledge or means of what this should look like, without involving needed stakeholders who should be convinced of its use in the first place. However, it is not meant as an extensive list of the only indicators that can be there, acknowledging there could be many more. These indicators show what happens when wrong contexts are applied in a project, causing a mismatch in approaching a complex context in a complicated manner. Indicators can be some of the principles, as shown in step 2.

By correctly identifying the governing context, staying aware of the wrong approach, and avoiding inappropriate reactions, project decision-makers can lead effectively in various situations (D. J. Snowden & M. E. Boone, 2007). By knowing what kind of context you are dealing with, the project can be adhered to in the proper context. The following comparison is a simplified adaptation of case study insights and Snowden's comparison between simple/complicated and complex/chaotic contexts. As a project typically deals with a simple/complicated approach, this tool helps to compare both contexts and spot indicators that a project is being approached in a simple/complicated context while it should be approached as a complex/chaotic context.

Compared with the first iteration of the canvas, the indicators were not given as a list and guideline but more compared to literature and seen as possible indicators for the difference between simple/complicated context and complex/chaotic context to adhere to Design Criteria A1 and B3. Adding to the validity of the indicators heard from case studies as described in the insights in Design Criteria C.

Spotting for Systemic Impact

Spotting for systemic potential might be considered ambitious and should focus on bringing out the potential positive impact of the project and seeing the bigger picture. Therefore, it is important to spot potential systemic impact. An important aspect of spotting for systemic potential is the spotting for eventual more significant (systemic) impact. That is an impact that goes beyond the company micro and meso sphere, in different capitals than economical and manufactured. Spotting for systemic potential is important to see the bigger potential of a systemic impact, that is, the impact that could be generated beyond consultancy and client organization as described in design criteria F1 and if the problem at hand is approached with the proper context at hand. Impact is the red thread throughout the project and what the project should be aligned with, as described in Design Criteria G3 and F. That is, if the project is still delivering the desired (positive) impact the client and consultancy want to bring into the world while trying to mitigate negative impact. When left out or lost out of sight in project development, there is a chance that the project focuses on short-term goals, often profit-oriented, and long-term positive results might become less important, as described in Insight 16.

In the canvas, impact is viewed through the lens of what value can be delivered for which "capitals", as can be seen in Figure 7.4. Literature has some differences in which capitals to focus on (Jones & van Ael, 2022; Wealthworks, n.d.). In the explanation, we focus on nine capitals, where the canvas focuses on 5, where some thematics are combined as aligning with the ease of use explained in design criteria B3. The explanation per capita is provided in Figure 7.4.

Furthermore, Figure 7.4 contains different levels in which system operates to indicate where the envisioned

Simple/ Complicated	Complex/ Chaotic	Project Indicators of incorrect simple/complicated context application*
expert diagnosis is required	All opinions and input matters; many competing ideas.	Multiple actors and stakeholders are not continuously involved; The project does affect multiple actors/stakeholders; Coercive powerplay;
Repeating patterns and consistent events.	Flux, unpredictability and sometimes even high turbulence.	There is not a clear understanding on why this problem occurs; the problem is described in a fuzzy way; The client doesn't know the causes and effects of the problem; the problem focus is siloed or on a singular problem; there are multiple dependencies causing a network of problems; the problem focuses on symptoms and not root causes; One solution won't solve the problem
clear or discoverable cause and effect relationships.	No clear cause-and-effect relationship, many interconnections.	
Known-knowns & -unknowns	Unknown unknowns, unknowables.	
One or more than one right answer possible.	No right answers; emergent instructive patterns.	
Fact-based management	Pattern-based leadership	The client already knows that the design should be, and how it should be done, but has a struggle to implement.
Best practices.	A need for creative & innovative approaches.	
		long term impact in different areas; project goals seem (too) ambitious; More (positive) impact can be achieved.

Figure 7.3. Adapted overview of comparing simple/complicated vs complex chaotic contexts as adapted from D. J. Snowden & M. E. Boone (2007), with additional project indicators that show a wrong context approach is applied within the project.

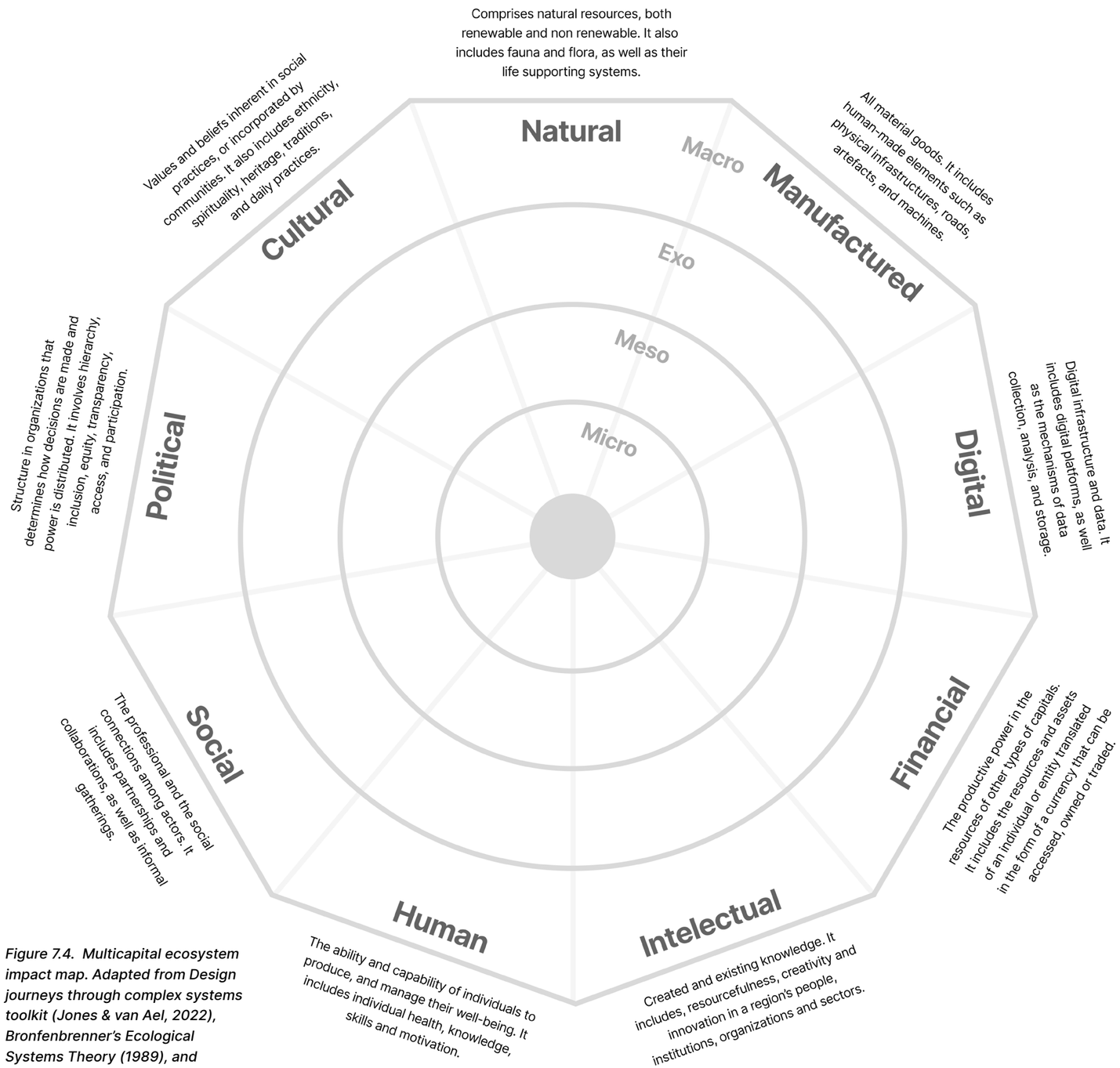


Figure 7.4. Multicapital ecosystem impact map. Adapted from Design journeys through complex systems toolkit (Jones & van Ael, 2022), Bronfenbrenner's Ecological Systems Theory (1989), and Wealthworks' eight capitals model (n.d.)

impact would take place, according to Bronfenbrenner's ecological systems theory (1989).
The spotting for systemic impact is done by aligning the intended impact for the consultancy and the client organization in the canvas and seeing where interests overlap or can breach new areas of generating impact. The canvas is meant to help align project goals, impact, and content. Aligning impact with the client is done in the separate impact canvas with the client or on the canvas itself in step 3. Aligning impact, goal, and content is done in steps 2 and 3 of the canvas. This alignment and reframing happens either after step 3 or in step 5 (reframing). This emphasizes the red thread of impact along the canvas and framework, as mentioned in Design Criteria F and E3.
These steps are achieved by questioning how the project can contribute to this impact and how the client and consultancy envision this. A simplified version of the impact figure portrayed to the left is given to assess the impact in different capitals for both parties and the project. Long-term and short-term goals or effects can optionally be filled in in the canvas if it is easier for the project goal to align where this impact is made. The figure to the left can give an idea of on which level impact can be delivered and for whom. In the project's development, it is important to keep validating and questioning if the project goal and deliverable live up to create impact in this way, and if not, to iterate on the project goal and content. Not only within the canvas but also throughout the whole project process, possibly attempting a reframe again.

The spotting of systemic potential, as well as the spotting for potential impact, indicate an important first step to be made to assess the feasibility (step 2) of the project to know if there is something worth pursuing in a systemic way and if both client and delivering consultancy agree on which impact needs to be achieved. This contains steps 1, 2, and 3 in the canvas, as well as the separate 'impact canvas' that is the only element intended to be filled in with the client.

Final Design

Step 2. Assess the feasibility of a systemic project

The project's feasibility is assessed by considering which critical factors are in place, which tie towards principles of systemic projects, the potential impact, and the implementation possibilities of both the project as it is and the potential systemic project. These are key findings of the assessment of Halogen, where it was found that these specific assets can make or break a systemic project as described in Design Criteria D, E2, and F1.

Critical factors, or critical success factors (CSF), should be in place or be dealt with to ensure smoother project operations to achieve its mission. It is often used in management settings. The critical factors themselves are based on a combination of literature (Fortune & White, 2006) and the conducted case studies summarized in Insight 9, where much overlap was found, and some critical factors from systemic projects needed to be added. In general, the critical factors can assess the possibility of implementation and the principles of a systemic project. However, it is still essential to know the principles that should be worked towards.

The principles that the critical factors lead up to are elements that should exist within a systemic project to ensure it is being approached as a systemic project and, therefore, in a complex context. The critical factors make sure there is a possibility that these elements are brought into place. These will be discussed after the critical factors.

Step 4 in the canvas focuses on assessing the feasibility of all these aspects by questioning the value of the project and if it were to be (more) systemic and questioning to which extent this reframe is possible. The impact is assessed in the previous steps but taken into consideration in step 4 as well, to what it means related to implementation and a possible reframe. As the business developer of Case 3 said: "*Reframing brings a lot of risks with it, for the client as well as the company*".

The interviewee elaborates further that a reframe can cause the loss of a client, which can be devastating for

Critical Factor List

These critical factors of project success are an adaptation of the paper of Fortune and White (2006) and a combination of critical factors analyzed in this project's case studies. They dictate factors essential to project success and are adapted in this framework to fit the needs of a systemic project. Having these factors in place will not guarantee project success, implementation, or the reframe's success. However, it increases its chances. Therefore, encouraging a project to reframe and systemic project execution once these factors are in place. The critical factors are assessed in steps 4.5-4.7 in the canvas.

An arbitrary scale accompanies the explanation of the critical factors to assess how difficult it is to influence a critical factor vs. how important it is to have, as seen in Figure 7.5. This is a misleading take as the idea of critical factors indicates they are critical. Therefore indicating they should all be incorporated. The idea behind this scale is that some critical factors are easier to establish by the consultancy itself or easily deviate with tactics if the client lacks these aspects. However, it should be considered, as they make the project more complex to execute successfully once systemic.

The following part discusses the different critical factors. Afterwards, we will discuss the principles of a systemic project. For each critical factor, an indication of when it is in place, an explanation of why it is needed and where it came from is given. The description of these critical factors is the same as in the explanation in the additional booklet accompanying the framework and canvas.

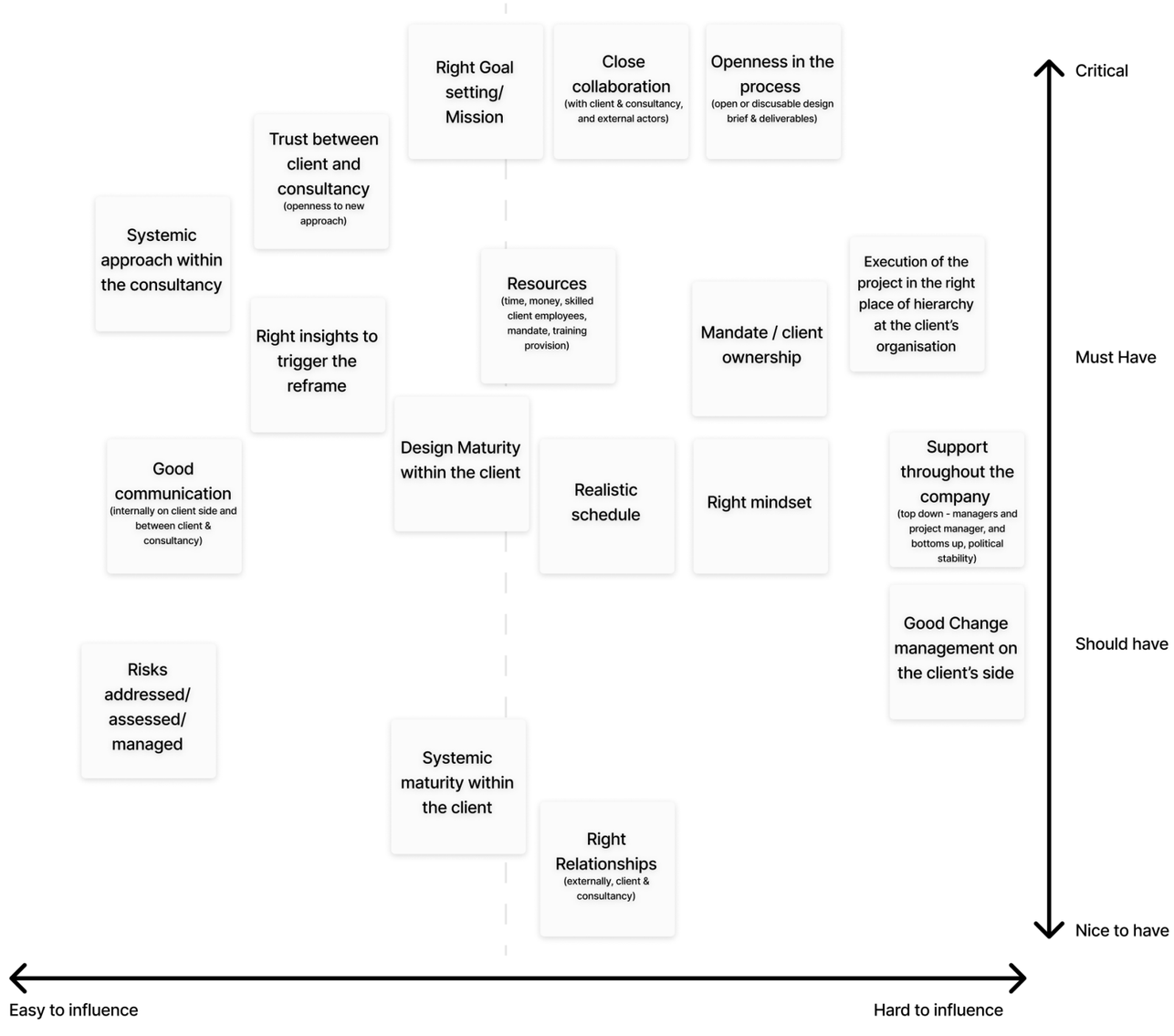


Figure 7.5. An assessment of the urgency and difficulty to bring critical factors in place. adapted from Fortune & White (2006)

Systemic approach within the consultancy
(Fortune & White, 2006)
Sufficient staff members in the providing consultancy must be aware and share, to some extent, an agreement on how systemic design should be executed, allowing them to apply methods and tools according to the situation. Additionally, since the consultancy deals with problems that do not have a best practice, it should be able to adapt its approaches towards new scenarios. This requires a skilled team that is suitably qualified in the systems and design thinking mindset and practicing methods and tools of systemic design. Systemic design projects are also enabled throughout the structure and setup of the consultancy itself. This requirement comes back in step 0. 'foundations', and was found in all cases, mainly due to Insight 6, which argues for the skill of a designer or experienced systemic business developer to see the systemic potential to act on the potential of a reframe and bring a systemic project into place. In the paper of Fortune & White (2006), this element comes back as skilled/suitably qualified/sufficient staff/team but is rephrased to fit the characteristics of a systemic project.

Design maturity (within the client)
Design maturity is the client's maturity in how they view design and the extent to which businesses incorporate design practices in their overall system (Invision, 2019). It can be measured through different tools (DDC, 2001; Whicher et al., 2011; Invision, 2019; Nielsen Norman Group, 2021). It often goes in 4 steps and can be indicated by if design is not used at all within an organization (no designers involved at all), design is used as a form-giving or styling in new products/ services, design is used as a process where it is an integrated element in the development process, and lastly, that design is a crucial strategic element in business models. The latter two are indicators of what design maturity is in an organization. This factor can be found if the consultancy tries to understand how other client projects were conducted and how much design was involved in those.

The client must know that design goes beyond functioning styling (Whicher et al., 2011).

Design maturity is needed because the client can see the value of design as a problem-solving practice and facilitate credibility in the practices. Therefore, it is highly related to trust. Case 3 showed that the reframing was possible due to high trust in practices and their knowledge of what design can deliver. Additionally, Case 2 builds a strong case as to why the lack of design maturity within the client is fatal for an organization, thinking of design only as a means for visualization, as is in line with a low level of design maturity in the literature mentioned above. However, as seen in Case 3, this skill in visualization builds a strong case for what else design can do.

> Q: What made it so easy to convince them?
> *I think it was because [the sales manager of the client] had the conviction already and he had been witnessing the effect, the impact that [design] can have. But then there were always people in the organization who were against us and against using design and didn't understand, or we should be using design or talking to customers or doing any of this. But then, thanks to my colleagues who are very good at visualizing, they really helped in making the organization understand what we were doing and why we were doing it.*
> - Designer Case 3

Systemic Maturity within the client
After the Danish Design Center came with the Danish Design Ladder in 2001 (DDC, 2001; Wicher et al., 2011), an adaptation on the model was made in 2016 by Australian Deloitte director B. Hoedemaeckers, pleading for two additional steps: Systemic Change and Culture. Systemic maturity could therefore be seen as the next step after design maturity has been achieved. Other indicators for Systemic maturity is the ability to apply systems thinking principles (see: mindset), or how ambitious their project goals are, or where in the world they would want to have (positive) impact (and how achievable this looks like). These indicators are also the ones to look out for when spotting systemic indicators in the project as phrased in Design Criteria C.

> *It's finding the systemic neighbors, those who think like you and can get these things done. It's no use trying to get this flexibility into a system or with a client that doesn't think that way.*
>
> *We've been trying to test out the playbook in so many settings with with the people that haven't had the right mindset and it fail every time.*
> - Designer Case 4

If the systemic maturity in the client is absent, they might not understand the choices being made in the design process. For example, they cannot see the impact their organisation makes in the world, or don't feel a direct responsibility for it. This is highly related with the next factor: for the client to have the right mindset.

Right mindset
The right mindset points towards having a design and systems thinking mindset, thus correlated with design and systemic maturity. It does not only involve understanding these practices but believing and incorporating them, such as the belief that user testing or co-creation is essential, seeing that constant shifting in a project and experimentation is needed, or seeing that problems in a project are relational. A great indicator is the 'mouthset shift to mindset shift' (Griffith Centre for Systems Innovation et al., 2023). Adopting a mindset is shown by first adopting a language, having dissonance between words and actions, the breakdown of the mismatch, realignment, and then embodying the language. Additionally, it has been described in case studies as finding someone who thinks alike and can get things done, therefore having an aligning practical approach as well.

The important elements of a design thinking mindset are incorporating different views, ideating solutions, framing a new view on problems, communicating a story, iterating, and bringing action toward analysis. For systems thinking it is seeing connections, relationships, consequences, complexity, and the whole picture. It focuses more on synthesis than analysis circularity instead of linearity and emergence (Disrupt Design, n.d.; Arnold, 2015).

These elements are essential due to getting leverage on why specific changes must be made in the project and convincing the client of why specific approaches towards a problem must be taken. The right mindset was formed in Case 4, being accredited for its success. In Case 4, the right mindset being in place is mainly accredited to them being able to see the picture. The 'mouthset shift to mindset shift' tool can be used to measure this.

> *To reframe was not so much the brief, because it wasn't that clear, but reframe their perspective of their work, which opened up to work in completely new ways. I think it will have lots of ripple effects in the future.*
>
> *So I think also we got them to understand that too, that if we are going to continue, we need to find the big picture and then we need to see, okay, what's the technology like or, what will public administration really be like in 2035, all these things that you have to deep dive in with experts and go in the deep.*
> - Designer Case 4

Openness in the process
Openness in the process dictates that the project must be "open" to reframe. Hence, the project brief must be unrestricted, where the client is open to flexibility. Restricting, in this case, means defined hours on a project approach that offer no means for transitioning,

having fixed people on the team, not being able to shift in between, and a deliverable that, although it can be vaguely described, offers no freedom in change of focus (which problem it solves), form or function. Often, approach and deliverable are two elements set in stone once the project goes into project execution. Having a flexible client, as seen in Cases 3 and 4, means someone who does not stick too much to 'its darlings' and cannot switch focus in a project. This, of course, can also depend on higher-ups asking for a specific result, putting the project lead of a client in a tough spot. It is, therefore, essential to assess where in their organization this question comes from and gauge how much flexibility is given in a project.

Within systemic projects, the problem often evolves along with the approach, creating a different deliverable.

The project must be open enough to change the problem, scope, approach, and deliverable to generate the right results focusing on the right problem. This might also mean switching resources, priority, or focus during the execution of the project. This openness was available in Case Studies 3 and 4, being flexible and open to a shift of focus.

> *"[The client] was quite open on possibilities in their strategy."*
> - Designer Case 3

Right insights
Insights hold the power to change a perspective or view on the problem or scope, to understand different elements that need to be included in the project, or attention needs to be shifted. It can also be little sparks of knowledge that indicate a reframe. This indicates complexity or knowledge, such as who multiple actors are or who needs to be included.
Obtaining the right insights in a project is a challenging and ambiguous task. It is reliant on the designer's skills, the connections it has between other actors and stakeholders, the project continuation, and the close collaboration between them. Including the proper knowledge domains; therefore, actor inclusion is a highly related element of this factor.

The right insights are needed to start a reframe. However, to achieve a project content reframe, the project context needs to allow this reframe, therefore connecting with project openness. Case 1 showed that not delivering the right insights supporting the reframe might lead to a wrongly based reframe, leaving the client unsatisfied. Here, the insights needed must either confirm or reject assumptions made within the project. Additionally, Case 3 shows that having the proper insight, delivered by additional data through the client, enabled them to generate the right reframe in the project. This case emphasizes that extra information, the 'unknown unknowns' of a project, can be vital for systemic projects, too.

Risks addressed/assessed/managed
(Fortune & White, 2006)
Within a systemic project, there are many risks of colliding opinions of different actors and stakeholders, the danger of being unable to implement the project to create impact, or to foresee other issues such as some of the critical factors not being in place.

A good assessment needs to be made of what potential risks in this project can be and what the potential negative impact of this project might be.

This step is needed to prepare for the "unknown unknowns" and explore possible scenarios of how elements can play out and to navigate or prevent them. The canvas partially helps with some critical factors but cannot account for all the elements that might play in a project since each project is unique. In systemic projects, there is much uncertainty that needs to be mitigated. It is, therefore, also crucial that the amount of trust is high while mitigating risks, as some consequences cannot be foreseen due to unknown unknowns.

Right goal/mission setting/Clear objectives
(Fortune & White, 2006)
The right goal is focusing on solving the right problem, having everyone agree on the same goal and mission, and working towards it.

It is in place when all stakeholders and actors agree on the goal/mission of the project. Another possibility is having an agreement on where to work towards with incentives. A good example where this essentially went wrong was in Case 2, where the client's project lead was absent when the project's main goal was set, causing a later hindrance. Therefore, this indicates that alignment on a project needs to be in place before continuation can happen. Otherwise, incentives should be used in order to get them in place. For more information, check the Systemic Principles: incentives mentioned after the Critical Factors.

It is needed to create unity in the project since working towards different goals will cause disagreement among all, and the project will fall apart if they are at least not somewhat in line. In all the cases, there was always some form of misalignment or disagreement on the goal, but the client almost always followed through. It is, therefore, heavily reliant on the client's trust, mindset, design, and systemic maturity.

Resources
(Fortune & White, 2006)
Resources mean time and money/budget to execute the project. In all cases, time and money were vital compounds. In Case 2, time was crucial, especially because some factors, like goal setting, needed to be set in place when there was no time for it. Time was running out, and people needed to catch up on schedule to eventually deliver what was promised, having to discontinue the project prematurely. Therefore, time should also be allocated to bringing the critical factors in place.

It is in place when the team feels there is a reasonable amount of time, money, and skill available to execute this project in a systemic way. A rough indication for a minimal investment project is around the million NOK/100,000 euro. Indicated that higher budgets for systemic projects are needed to build a mindset for a client, as seen in the quote below. However, impact on a smaller scale is also possible to achieve with smaller budgets, as was seen in Case 5, which was eventually left out in the evaluation but showed how including the client actively could keep costs low while having a high sense of inclusion and generating understanding and creating the right mindset.

It is needed to finance and execute the project. With the right resources, the project will exist.

> *"That's because a hundred thousand [NOK] is nothing. If they had paid 1 million, we would've had the chance. So that's a question of having budgets that make. Like in [other project] we have like 4 million, so then we can use one of the millions to, to get the right mindset."*
> - Designer Case 4

Realistic Schedule
(Fortune & White, 2006)
A project is bound to its resources and the time that can be spent on the project (before it needs to be delivered before a specific deadline). This means there is not much time within the project (left), as seen in Case 2, where the project needed to be ended prematurely, and it is tough to achieve a reframe or a systemic project in general as there is no time for implementation, or trying to grasp how the system is behaving.

Trust between client and consultancy
(Fortune & White, 2006)
Trust is defined by the client's ability to rely on the consultant's knowledge and skill.

A clear indicator of when trust is not in place is when

the client does not trust the process or approach in the project, which can be very coherent with not understanding it (see: mindset, design maturity, and systemic maturity). It is in place when the client is transparent about its practices and information. This could be seen in Case 3, where data sharing made the case more successful, as they could include more new information that resulted in a successful reframe. Cases 1 and 2 also underpin this claim, where the sharing and access of stakeholder information was limited, making the team unable to talk to people involved causing a hindrance in the inclusion of essential actors in the project, leading to a failed systemic project.

In order to bring it in place, it might take multiple projects of working together to build that trust. Or, the client must have heard of the delivering consultancy through their close network.

Trust is needed to convince clients of certain approaches if their maturity in (systemic) design is low. Experimental approaches might be scary for the client. Trust can help to overcome this anxiety. It helps to allow for a sudden shift in the project, which is often needed, and to contact the actors and stakeholders important to the client and the project. With more trust, there will be more transparency between the two parties, resulting in a smoother way of working together.

> *“Ensuring the right participation of different knowledge domains, actors may actually provide that bridge toward implementation.”*
> - Expert systemic designer 1

Close collaboration & Co-creation
(Fortune & White, 2006)
Close collaboration and co-creation depict the ability to work with the client and user closely, but also important actors and stakeholders related to the project and problem, such as suppliers/contractors or other consultants (Fortune & White, 2006).

It is in place when user/actor involvement is accessible, and the client sees value in doing such practices in the project, which is related to design maturity. Ideally, the client is also part of actor collaboration and co-creation. Different viewpoints can feel like close collaboration is not achieved, but it is essential in systemic design to understand the complexity of the problem and, therefore, completely normal (Fortune & White, 2006; Buckenmayer et al., 2021).

Close collaboration and co-creation are needed to discover different viewpoints and the social complexity of the problem to reach an outcome that most essential actors and stakeholders, according to the salience model of Mitchel et al. (1997), can agree with. Through the interviews in the Halogen way of Working and observations, it became clear that Halogen holds a strong interest in including the actor and stakeholder early on, as it creates a better mandate and the right insights and later on implementation, designing from a place of emergence instead of from the designers’ point of view. Case 5, although not included, held a nice preview of this phenomenon as they included the client and their stakeholder throughout their process as a way of cost reduction and to assure implementation. Although the project was successful, implementation was not entirely, where no clear roles were divided, and some tasks were not picked up, as the previous client mentioned, who is now working for Halogen. Therefore, proper collaboration also includes role division.
As mentioned in the previous critical factor concerning trust, the lack of trust led to little inclusion of other stakeholders in Cases 1 and 2, causing some insights to be missed, which were essential for both projects’ success, causing them to fail.

Right relationships
(Fortune & White, 2006)
Right relationships indicate the right connections to important users, actors, and stakeholders according to the salience model of Mitchel et al. (1997). That is actors that hold power, legitimacy, and/or urgency.

It is hard to know when it is in place since it is not always known which actors are left out (unknown unknowns). It is important to include (groups of) actors that are part of or affected by the problem and constantly analyze what other groups could be missing as aligned with the salience model. As discussed in the previous point, relationships with the right actors and stakeholders can create valuable collaboration.

To create the right relationships, working together towards a solution that fits all as well as possible is important. Different viewpoints will come up, but being able to mitigate those will bring the project closer to a solution. Having the right relationships, either through the client or own network, is related to a successful close collaboration and co-creation to be possible, including important actors and the mentioned ‘knowledge-domains’.

Good communication & feedback
(Fortune & White, 2006)
It is important that within the team, there is clear communication and feedback on improvement points. Therefore, it is important to question what can be done better within the project. Within a project, continuous improvement needs to be taken into account.

It is in place when there are not many meetings, but meetings are concise, have clear goals, and can be revised by people who are not available. The communication between all parties is ideally transparent and honest. Moreover, feedback is constructive. Feedback can be taken into learning and is built towards improvement points that are taken into action. In order to create good communication in opposing projects, it is important to facilitate conversations where both parties can be heard and are understood, as explained in the fruitful friction framework of Buckenmayer et al. (2021)

It is important to have this aspect in place to facilitate the correct information sharing to keep aligning on goals, approaches, and understanding of the problem.

Support throughout the company
(Fortune & White, 2006)
Support throughout the company means that, ideally, everyone in the client company supports the project. This is rather impossible to achieve, but important stakeholders to win over are top managers, company workers, and, at least, the project manager. This depends on whether the project manager is competent and supportive, and there is little to no coercive power in the company that workers do not dare to speak up. Otherwise, this needs to be included in the change management of the client company and project (if it is the case that the project needs these aspects to be in place).

Support is in place when interest and support (agreement and continuation) are shown in the project. Case 2 is a good example where this was not in place, as initially, the client team agreed upon a goal and a way of working. However, when their project lead returned, they followed the project lead’s orders, which disagreed with the project’s goal. This indicates it is important to have at least the project lead on board as they act like a funnel to the organization, basically being dependent on the delivery of the project. Case 5 also showed that support throughout the company is important, especially if multiple employees from the client side are involved. The business developer of Case 5 explained that only some were on board with the project. However, some employees were eager to be included and to contact important stakeholders and actors, revealing the essential stakeholders within the client company. This shows that support is essential, although only a decent amount needs to be behind the execution. The latter statement is also supported by Cases 3 and 4, where project leads were not sure of the project execution but, due to their trust, continued with the project and, later on, fully supported it based on the result. This shows that sometimes support is also a matter of emergence.

It is needed to get internal funding and approval for certain approaches. As well as getting people on board to help execute or follow project goals. As seen in all

Cases, full support throughout the company was not possible, with here and there some people not agreeing on either the approach or the deliverable. From the cases, we could conclude that the involvement of the project manager to some extent is essential, as they are the ones sharing it among the company, and some involvement from higher-ups and employees within the company, as they are generally the ones that spread the knowledge of the project, and carry out the project (depending on the project however).

Execution of the project in the right place of hierarchy at the client's organisation

Closely connected to 'support throughout the company' is the execution of the project in the right place of the hierarchy at the client's organization. It means neither project being executed within the upper or most "low" players in the client hierarchy can be entirely successfully executed. With workers, there needs to be a mandate, and with top managers, it needs convincing. Therefore, accessing and including these "right actors/ stakeholders", as discussed in 'Right relationships', is also essential to let a project take off internally in the client company.

It is in place when there are indications of mandate, and there are chances of top management being convinced. This might only be able to show later on in a project. It is, therefore, important to assess the client's general design and systemic maturity and important actors that need convincing or if they are open to learning about this. Cases 2 and 3 show strong indications of the importance of the execution of the project in the right place in the hierarchy. It partially brought Case 3 its success, whereas it brought failure to Case 2. In Case 3, the project was executed with higher-ups, indicating that bosses' expectations would not limit their ability to switch to different prioritization, as they gave orders within the company. Case 2, on the other hand, shows that the project manager was conflicted by going against the KPIs it would get assessed on. Both cases show the importance of the involvement of higher-ups and their approval.

Mandate

(Fortune & White, 2006)

For projects to be carried on internally and externally, it is essential to get the proper mandate. This can mean internally in the client company (see: support throughout the company) and from actors and stakeholders. Through early and continuous inclusion, a mandate can be built.

A clear indicator of project mandate is when the project starts to emerge by itself without the help of the providing consultancy, and the providing consultancy can pull away without the project falling apart. It can be seen that people know how to take on tasks and execute them without being steered by the consultancy. This latter point also involves change management, which we will discuss next. Case 5 showed how mandate was important to the success of the case. By involving many employees from the client, a mandate was created and allowed it to flourish. Unfortunately, no clear roles were divided, so the project's deliverables and time pressure could only partially live up to the complete roadmap. Case 3 confirms this, as a mandate on the higher-up management was created by convincing them first with visuals, gaining their trust. Then, the deliverable, a customer journey for the client from beginning to end, with several interventions to improve the customer journey, became the baseline of many new projects.

Mandate and change management are needed to let the project live on after it is finished. It is heavily dependent on the (early) inclusion of many actors inside and outside the client organization, where the project is accepted by most people within the organization, carrying on the project further.

> *"Ensuring the right participation of different knowledge domains, actors may actually provide that bridge toward implementation."*
> - Expert systemic designer 1

Change management (of the client)

(Fortune & White, 2006)

Effective change management of the client means organizational adaptation. This can be in culture, structure, practices, or even mindset. The client's organization, involved actors, and stakeholders must align its teams, top management, and/or workers to accommodate the project internally. As systemic projects often accommodate or try to achieve permanent change, change management is important. Even if the project changes something outside the client's company, the change has to be accommodated.

It is hard to assess when change management is in place. An indicator is looking at how the client has done so before. Their history and how they have dealt with change before, if this is a common practice, or if there are people responsible for change management internally are good indicators. Another good indicator is when specific people are assigned to a task (and their ability to live up to it).

Change management is needed to integrate and accommodate the project within the client company so that it can be fully executed as a part of the client company. For this to happen, mandate, support throughout the company, and execution of the project in the right place of hierarchy at the client's organization can also be important critical factors.

Principles of a Systemic Project

To bring the critical factors in place is bringing in place the principles of systemic projects (Figure7.6). The principles of a systemic project are relevant elements to be present when executing a systemic project. It is initially the "end goal" of the context's reframe and a guideline to follow to know what to work towards. These principles are tied to findings and learnings in previous lessons on systems-oriented design (based on work from Birger (2011;2022) and the executed case studies of this project discussed in Chapter 4. They also draw similarities in literature research (van der Bijl-Brouwer & Malcolm, 2020; Jones, 2013). Therefore, this thesis bridges the principles with critical project factors to ensure that the reframing of the context and operations continue more smoothly, resulting in systemic projects, all the while hoping that the context reframing needs to happen as few times as possible as it slows down the project.

Underneath are the principles explained, with which critical factors accommodate them. The principles are not reflected in the canvas, as it is more a knowledge compartment than something that needs to be asked questions over but is incorporated in the canvas explanation.

1. A continuous experimental & adaptable work approach
A systemic project is not a one-shot project but a continuous one where change needs to be constantly implemented, monitored, reflected upon, and evaluated. When a project is experimental and adaptable, resources, people, and focus can be shifted when needed, as concluded in Insight 3, 4, and 15, summarized by Design Criteria F2 and G4, just like the project aspects itself, such as problem view, problem boundaries, (systemic) approaches in the project and deliverable(s).

Critical factors: *Systemic approach within the consultancy, Openness in the process, right insights to trigger the reframe, Realistic schedule, Risks addressed/ assessed/managed, Good change management on the client's side*

2. Open and curious mindset
To have an experimental work approach requires the people within the project to understand why this is important and be able to adapt to those changes with a continuous learning mindset—aligning mostly with the critical factors found in Insight 9.

Critical factors: *Design Maturity within the client, Right mindset, systemic maturity within the client, Openness in the process*

3. Agreement on where to work towards to
Actors within the system need to continuously work towards the same goal, in which the goal and mission are reshaped along with new insights in the project that might cause a shift in problem view, approach, and deliverable. It is important to align on what to work towards; there is alignment with the personal (hidden) agenda and strategy of actors and stakeholders, As discussed in Insight 21 and User Test Finding 8. However, there also needs to be a focus on what impact is eventually achieved in the overarching aspect of the project, as discussed in Design Criteria E3 and F1.

Critical factors: *Right goal setting, Close collaboration, Mandate, Execution of the project in the right hierarchy, Trust between client & consultancy, realistic schedule, good communication*

4. Actor & stakeholder inclusion
A holistic perspective on the problems and their boundaries is important in working towards a unified goal, as discussed in Insight 21 and Leverage Area 2. This perspective is shaped by continuously including a broad scala of essential actors and stakeholders.

Essential stakeholders are those that hold power, legitimacy and/or urgency (Mitchell et all 1997).

Critical factors: *Close collaboration, good communication, right relationships, Execution of the project in the right hierarchy, support throughout the company*

5. Project incentives
In order to let different actors and stakeholders work towards the same goal and agree on it, they must be incentivized accordingly. The motivations and KPIs of each actor and stakeholder must be considered to align with the strategy of the client's organization (and that of the providing consultancy).

This can be done according to the prevailing perspectives on the change model, where there is differentiation between enforcing change through, social dependency, a clear result, attractiveness, changing through learning, and autonomous change (Caluwe and Vermaak 2002).

Critical factors: *Resources, Mandate, Execution of the project in the right hierarchy, support throughout the company*

6. Interconnectedness of the system
In systemic projects, complexity arises from involving all actors and stakeholders and emphasizes the interrelatedness of the problems in scope, as discussed in Chapter 2. Systemic change is not about solving a single issue but altering conditions that perpetuate problems—resulting in a portfolio of interventions rather than a singular design solution. As discussed, this approach requires continuous implementation and adaptation, not a one-time action.

Critical factors: *right insights to trigger the reframe, right relationships.*

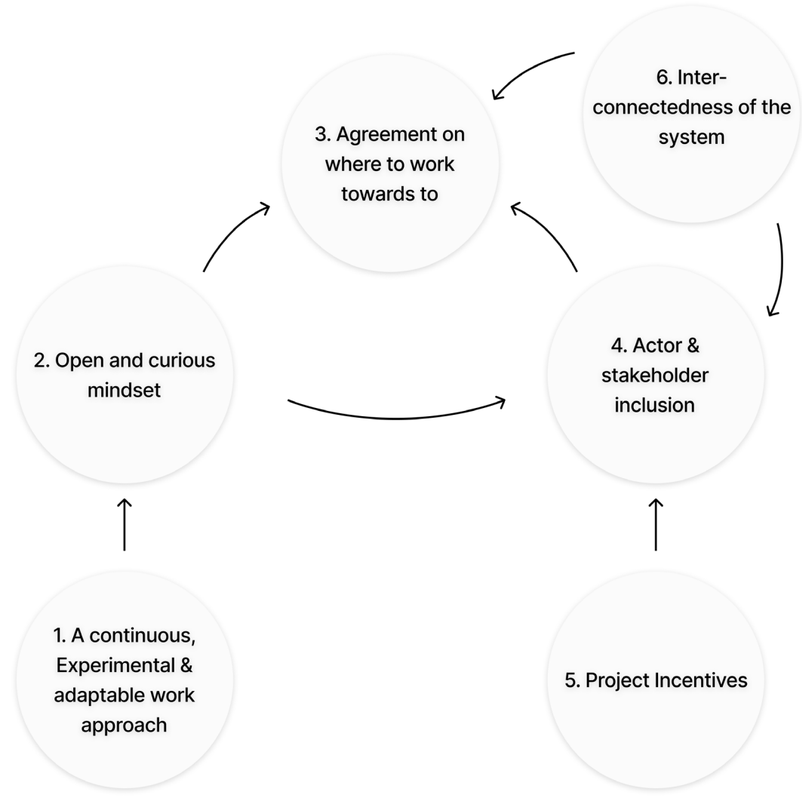


Figure 7.6. The Systemic Principles, the end goal of the Critical Factors.

Final Design

Step 3. Reframing

As explained in the intro of this report, a frame is a way of looking at the problem situation and a way of acting within it (Kees Dorst, 2015). Reframing is the act of changing these elements in order to accommodate the new findings in the project, as followed by Design Criteria E. In this case, it focuses mostly on the project content and/or context as derived from User Test Finding 9. Where project content stands for the problem, its scope, the approach towards targeting this problem, and the deliverable that comes out of this approach. The context is all the factors the project builds and drives on, such as the project brief and who is involved, as aligned with the critical factors of a project discussed in the previous step and Insight 9. Project reframing of the content is often done automatically within the project when insights uncover that a different problem should be pursued or problems are related differently than initially expected. Reframing project content (problem, scope, approach, deliverable) often also means reframing project context (elements supporting the project, such as the critical factors of the previous step). This can either be done during or after reframing project content or in advance as a preventative way of not disturbing the project continuation. Another critical aspect of project continuation is that the reframing of project content is done as often as needed to adapt to the insights emerging in the project. However, the context is done as few times as possible. High amounts of reframing project context and bringing these elements in place might slow the project process and require much time. Ensuring these elements are in place as soon and as fast as possible helps more time to be spent on the project content itself.

Reframing in the Project: Reframing the Content

The project content concerns mostly the problem(s) the project focuses on, the problem scope, the deliverable(s) that focus on solving this or these problem(s), and the approach leading to (a) deliverable(s). These four elements deliver towards a common goal that is part of delivering a (positive) impact that both the providing consultancy and the client organization want to achieve as aligned with Design Criteria F. The reframing of these elements happens mostly automatically. The canvas helps to give a place that aligns these elements with each other and think of strategies or methods and tools that can help to reframe other elements when they do not align as indicated by Design Criteria E.
Whether purposefully reframing the content or having to do so out of emergency due to the project's continuity or otherwise coming to a halt. The canvas provides tools linked to literature that help with different content elements that can be reframed, following design criteria A and B3.

Reframing of the Project: Reframing the Context

The project's context focuses on everything happening around the project execution, such as the people involved, the agreements made, resources, and time available to be spent on the project. These are just some of the examples.

The canvas makes sure that most of these elements are in place. These elements are described in step 2, under the principles of a systemic project, and are what the critical factors lead up to, as explained in Insight 9 and Design Criteria E2 and D2. It is, therefore, important that the critical factors are managed by establishing them or finding a way to deal with them not being in place. To reframe each critical factor, use the 'Reframing Canvas: Shaping Systemic Project Context and Content' per critical factor (after step 5.1). Then, when finalized for all the critical factors, note down all the final steps of these canvasses (5.10) on the larger canvas for reframing the project (also on step 5.10).

The project reframing canvas mostly facilitates the thought process of what needs to be reframed and if a systemic project is worth pursuing. The smaller context and content reframing canvas helps to think out different strategies or tactics of reframing to bring the critical factors and project content in place.

Tactics

The tactics for reframing offer a possibility to align content and context elements with the whole project, that is, actors, the client, and other important stakeholders, to finalize the reframe or bring it into place and align it overall as described in Design Criteria B and E.

Tactics are classified as explicit or implicit, indicating if it is explicitly mentioned whether a systemic project will be pursued or not. Explicitness might trigger heavy resistance from the client since a new way of approaching a project is daunting to apply and is mainly recommended with high (systemic) design maturity, openness, trust, and a good mindset in place. Pursuing a project implicitly might be a safer option in the beginning if mindset and systemic maturity are not in place. However, it might be more challenging to get people to understand why specific actions are done (e.g., approach the problem from such a broad perspective, including multiple stakeholder and actor perspectives). Therefore, it might be safer to pursue clients with a systemic viewpoint.

The tactics are suggested content of what was observed to be applied in systemic projects in the case studies discussed in Chapter 4. They function as an inspiration but might not be directly duplicable as tactics are very specific to the content and context of a case, varying widely in their use. Within the explanation of the canvas and framework, the tactics are explained one by one. The overview can be found here and in the Open Appendix B, in the explanation document underneath the header "tactics". The explanation per step is skipped in the report as it does not contribute to the literature since it is too case-specific, varies per unique case, and merely offers inspiration. The list is certainly not limited to these tactics, and the reframing canvas supports a combination of multiple tactics, where one's own tactics are highly encouraged to be created. From the summary of the tactics, however, came a list of topics under which some of these tactics could fall, which could be relevant in forming tactics for further use. Therefore, the report will shortly go over the different topics of tactics.

Questioning

Asking confrontational questions to broaden the scope of the problem towards the client is an excellent way to probe if they are ready for the answers. The result: a continuation of working together is worth the effort. Alternatively, within project execution, a project can be opened up for a reframe regarding content. It can create an understanding of how interconnected a problem and scope are with multiple other factors and if a different approach or deliverable might be necessary. One example of such a tactic is critical questioning. Most cases presented in the empirical research had some form of critical questioning[1] engrained within their tactics, either during the project or in the pre-execution phase, where it looked like critical questioning was more successful in the pre-execution phase of a project than in the actual execution. Case 4 showed that within their tactics combined, the critical questions helped to open up a broader perspective of the client and actors involved. Case 3 showed that critical questioning in the project's pre-execution phase can help uncover why the client wants a pre-set tool to start with and can alter the project's focus (approach and deliverable) to switch into something more explorative. Case 2 also showed the downside of asking critical questions, where the client shut off and wanted to avoid answering them, indicating that they were not ready for a systemic approach.

> *"What is your plan for engagement? How do you plan to make sure that this tool actually works? How is your infrastructure going to be set up in order to make it, cause it is a data platform. It's you know, data coming from all kinds of places. And yeah. These kinds of questions and also questions of, for example, even more taking a more systemic approach when they talked about being regenerative. Like, but do you think that this is a good approach? What do you think about this? And what is your stance around that? And they didn't have answers."*
>
> - Designer Case 2
>
> *1*

Mapping
Mapping activities can be used in a workshop or as stand-alone methods to generate more insight into the situation (creating systemic situational awareness) or to get people on board with the project. It shows and lets people think of the project and the problem they are dealing with in a broader context. These can be very well combined with questioning tactics. The tactics are meant to steer the people towards a mindset change by mapping out and discussing project elements.

The result can start a mindset shift or reframing of the project content since the evidence is delivered or presented. Examples of this are Assumption spotting/ mapping or future/ambition mapping, where the client is taken through a participating journey on exploring their current perception of the project's content to be faced with difficulties within the project's current state. Cases 1 and 4 both exhibit these tactics. Case 4 specifically executed the future ambition mapping[2] as one of their main deliverables, making people more aware of their role and helping them see the bigger picture. It was believed to have a long-lasting effect on their mindset regarding this project and target future projects. Therefore, the mapping exercise helped to reframe the mindset within the project.

> *"To reframe was not so much the brief, because it wasn't that clear, but reframe their perspective of their work, which opened up to work in completely new ways.*
> *I think it will have lots of ripple effects in the future."*
> - Designer Case 4
>
> *2*

Educating
Educating tactics can be seen as "convincing through logic". It focuses on convincing the client to apply systemic practices in an often explicit manner by educating them on how it works and that the steps towards systemic practices are not as risky as they seem. Proof and solid reasoning are important in these tactics. Also, here, the result is the start of a mindset shift, which is more easily followed up once succeeded by being able to speak the same language. An example of this is in Case 4, where they convinced the client through a more explicit way of framing by showing the consultancy's systemic approach[3] as a form of how they wanted to target the problem. Then, a more common language was created, enhancing the client's systemic design maturity.

> *"But pretty soon we had kind of a presentation about the playbook. We went there and were sort of, this is what we wanna do. If we are gonna see how we're gonna work with with organization and how we have to collaborate and how we have to develop the future. It has to be in an ecosystem. So, so sort of understanding that and working in a program that sort of focuses on that. So we went in, and it's starting to feel a bit like almost going to school. So we had these exercises. What is systemic? What is regenerative?"*
> - Designer Case 4
>
> *3*

Convincing
Convincing tactics are often explicit and focus on getting the client on board with systemic design practices. Convincing the client is challenging and requires trust, openness, the right mindset, and (systemic) design maturity. However, if able to convince the client, these earlier mentioned aspects might also be brought into place. As seen in the Open Appendix B, many convincing tactics overlap with educating them. An example of a purely convincing tactic is the +/- negotiation, as was applied in Case 3[4]. By convincing the client that a shift in focus was better as the new focus of a customer journey was earlier implementable than the one they wanted to make, they could convince the client. This indicates that +/- negotiations helped to convince the client of a shift in the deliverable, as the approach did not need to alter much. The latter is an example of the offering more for the same price tactic.

> *"We saw that if we delivered a customer journey to them. They wouldn't have that chance for the next three to four years to do it. So instead we gave them something that could be used to, as a tools in maturing while while they were maturing their organization."*
> - Business Developer Case 3
>
> *4*

Workarounds
Use these tactics when some project critical factors cannot be reframed. The most common are the approach, deliverable, and (project) openness. This is primarily the case in projects that have passed the project start-up phase. The result is that reframing and execution of a systemic project is harder to pull off. But if the value of the project is seen as high once reframed, it might be worth pursuing. An excellent example is the 'offering more for the same price' tactic[5] in Case 3, which we just discussed. Even though the case itself was more open to reframes, it could give what the client wanted without shifting the focus entirely on the approach, as they could not invest more resources. This tactic, therefore, shifted the deliverable and scope while keeping the approach and problem focus the same.

> *"We had that talk with them and then we discussed internally, but the right way to do this would be this, and then we talked with the client and said, we are going to offer, Not only this, the sales process of the contract, but we are going to offer you approach where we look at the whole customer journey till end of guarantee. And I remember they said, but it's only the initial place we were willing to pay for. And we said, but it won't actually cost you more. We're doing interviews and we will document how we're doing things. So you'll actually get the whole process for the same. We just wanted to verify that. And then we presented that and we won the project."*
> - Business Developer Case 3
>
> *5*

Continuation
Continuation tactics help with the continuity of the project, which is important in systemic projects, mainly through following up, but also ensuring the project's continuity in project set-up or execution. The result is to keep the project going as it is and often let systemic knowledge and insights emerge. However, it is sometimes about creating the right factors, such as trust, as seen in Cases 3 and 4, where tactics such as 'the foot in the door approach' [6] and 'Act on opportunities' [7] were used. Through these tactics, trust was created with the client, making it easier for Halogen to present new, more innovative approaches to problems the client presented.

> *"Clients hadn't necessarily seen the value. So it was also a bit about getting a foot in the door and showing value and getting trust. And when you do get that, you could do more."*
> - Business Developer Case 3 on using a foot in the door approach
>
> *6*

> *"They established a frame agreement, but actually they established the frame based on kind of digital and technology. And then we started doing these assignments, competing. [We were] doing these small assignments. And we had Ambition on their behalf. [We said] let's collaborate with the other agencies. So we have had an agenda on maturing [the client's] use of service design. And so we have become very trusted [with the client]."*
> - Business Designer Case 4 on gaining the client's trust through acting on opportunties
>
> *7*

Final Design

Step 4. Continuation

Besides reframing and accommodating for a desired result or deviating from current obstacles, the project needs to be set up, executed, or followed up alongside the accommodation of the reframes, stimulating continuity, which means the continuation of where you are in the project and continuing business as usual. Basically meaning, the main work in the project, besides the reframing. This step is explicitly added to the model as a strong reminder that the whole reframing process exists next to the project as it is.

Every project, especially systemic projects, is entirely different and characterized by uniqueness, as described in Chapter 2. It shows where a project currently is within the process, what needs to be done in the project itself, and its continuation. Therefore, the canvas does not provide tools or questions to incorporate project continuation directly. The canvas is not meant to dictate how to continue the project itself. However, it gives guidelines on which actions could be taken further, specifically reframing as indicated by Design Criteria E2, E3, and User Test Findings 11 and 12. Only the tactics provided in step 3 of the framework (step 5 in the canvas) are connected to project continuation, as they often string along with applying practices. Since this requires applying practices in real life, moving away from the canvas towards putting a plan into practice is then essential.

After application and continuation, It is then vital to move to the next step, reflection, to see what went well, what went wrong, and how to adjust the project and the reframing (again) to continue building towards a systemic project and the intended impact as indicated in Design Criteria F2.

Final Design

Step 5. Reflection

The last step focuses on continuous learning and reflective practices to follow up the canvas's experimental approach, as Schön (1983) and Design Criteria F2 proposed, derived from User test insight 12. After these reflections, a new plan can be made, and (a part of) the canvas can be edited and filled in again. This fulfills the continuously iterative part of the framework in the canvas and will attribute mostly the elements that have changed (probably including steps 2, 4.5-4.13, and 5 in the canvas). Reflecting and continuous learning is essential because we do not learn from experience; we learn from reflecting on experience (paraphrased from Dewey, 1933). Through learning, there will be a better understanding of the system (Lowe & Hesselgreaves, 2023), and what steps need to be taken to facilitate accommodation and change of this system.

The reflective practice step was initially intended to measure impact and adapt, as mentioned in User Test Finding 12 and the first iteration of the canvas discussed in Chapter 5. The initial logic behind it was: if impact can be measured, it can be demonstrated. However, impact cannot be measured as it is unclear what influenced a change (Lowe, 2023; Lowe & Hesselgreaves, 2021). Therefore, measuring impact is inherently false because, in complex problems, there is no apparent cause and effect (Snowden & Boone, 2007). Also, when impact is measured, data is created that tries to tie impact in numbers, creating a corrupted version of what impact is and dictating the wrong learnings and goals (Lowe, 2023). Measuring impact allows for bureaucracy, as it is impossible to demonstrate impact, and attempts to do so will push for the wrong goals in creating impact (T, Lowe, 2023). Instead, there is a plead for an experimental and learning approach as encaptured in Design Criteria F2, much as is now adopted in the reframing canvas in steps 3, 4, and 5, which continuously move between states of doing or reframing, learning, and creating a new plan on what different reframe tactic can be applied (hence, experimenting).

As the goal of the project is to strive for impact as aligned with Design Criteria F, accountability of the client company needs to be in place. However, asking organizations to demonstrate accountability does not create accountability (Lowe, 2023). Therefore, assessing where organizations want to achieve impact in step 1 is important to see if they can be held accountable. Additionally, when they feel accountable for a problem and want to solve it, experimentation and learning help positively impact the problem.

Therefore, reflective practices come back throughout the canvas and are "the last step" of the canvas (that is, before the steps are repeated). From these reflective practices, as adapted from Schön (1983), new points of action can be taken, with the leading goal: the impact that wants to be created. Theories of change can be an assisting tool when creating impact (Mason & Barnes, 2007). Instead of generating measurable KPIs, indications of change are used to maneuver if impact is being achieved (e.g., what do we expect to see happening when we achieve our goals).

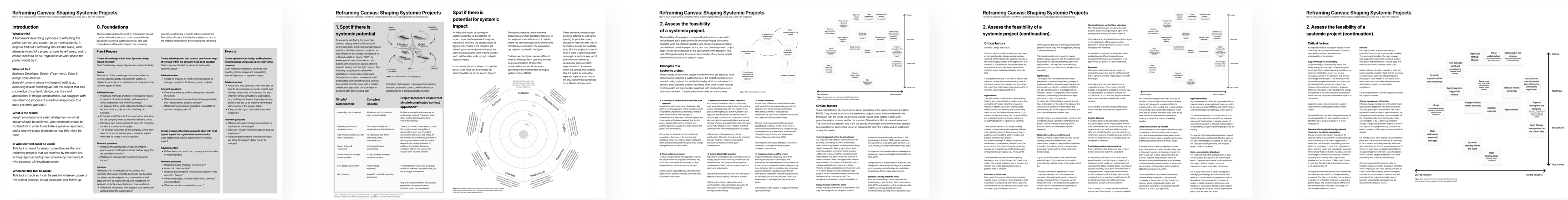
Final Design

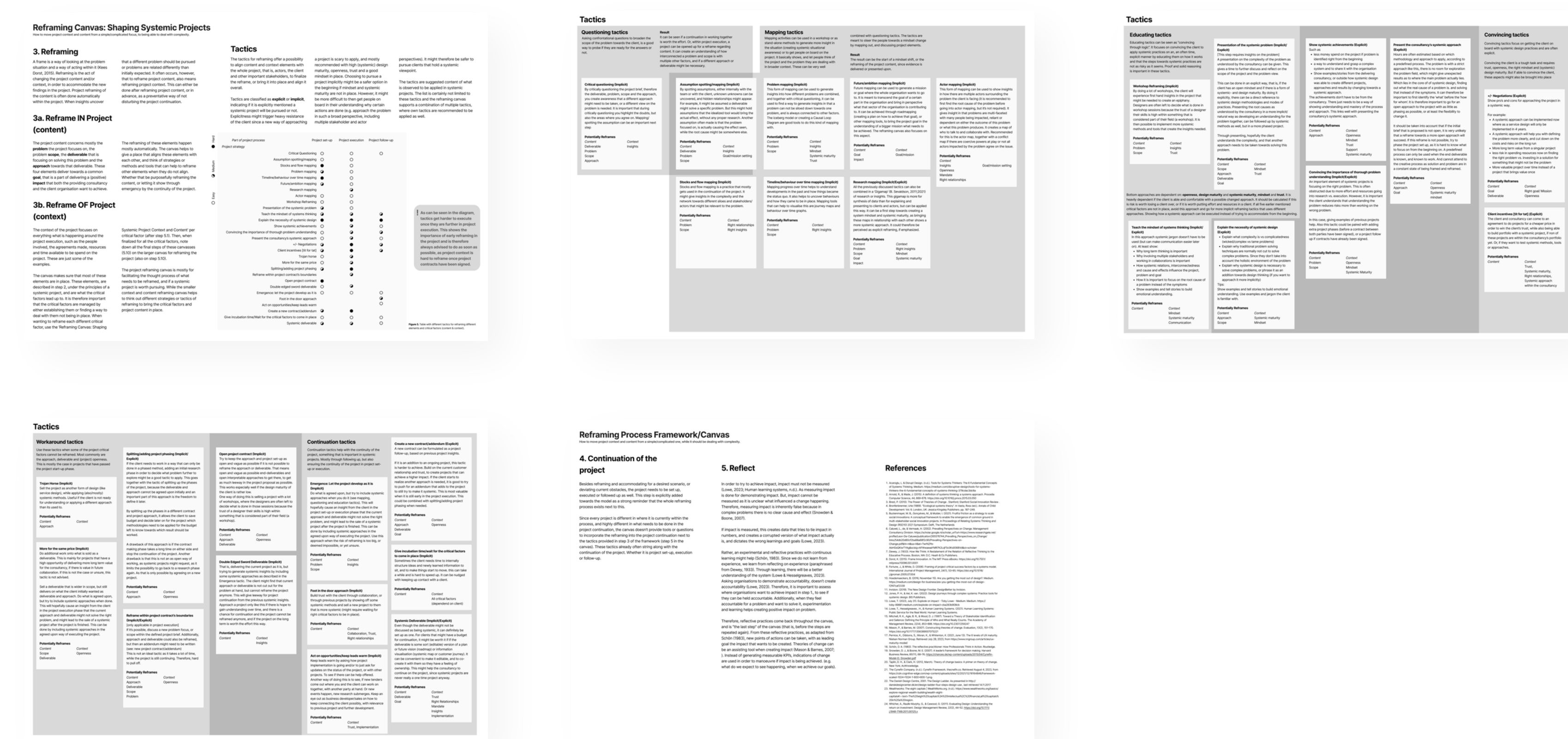
Canvas

The previous steps of the framework, the guideline of the canvas, already explain which steps in the canvas correlate with the framework. This part only focuses on the reasoning for the shape of the canvas.

The canvas's shape was formed to accommodate elements next to each other so elements could be better transferred and related. It was assumed this was an important step to prevent repetition and bring more clarity to filling in the canvas. For example, the critical factors and content are placed next to the reframing area, indicating that these elements need to be reframed, being able to write down which tactics the user could use to reframe each element, if not to be combined.

The form of the canvas also accommodates a flow. Even though it might initially not be visual, the flow is in a spiral, going from step 1. indications, towards step 2, content, which flows into step 3, assessing impact, further on to the outward sides of the canvas. The idea behind this was that content and impact could easily be aligned with each other to continue with the reframing, if necessary.





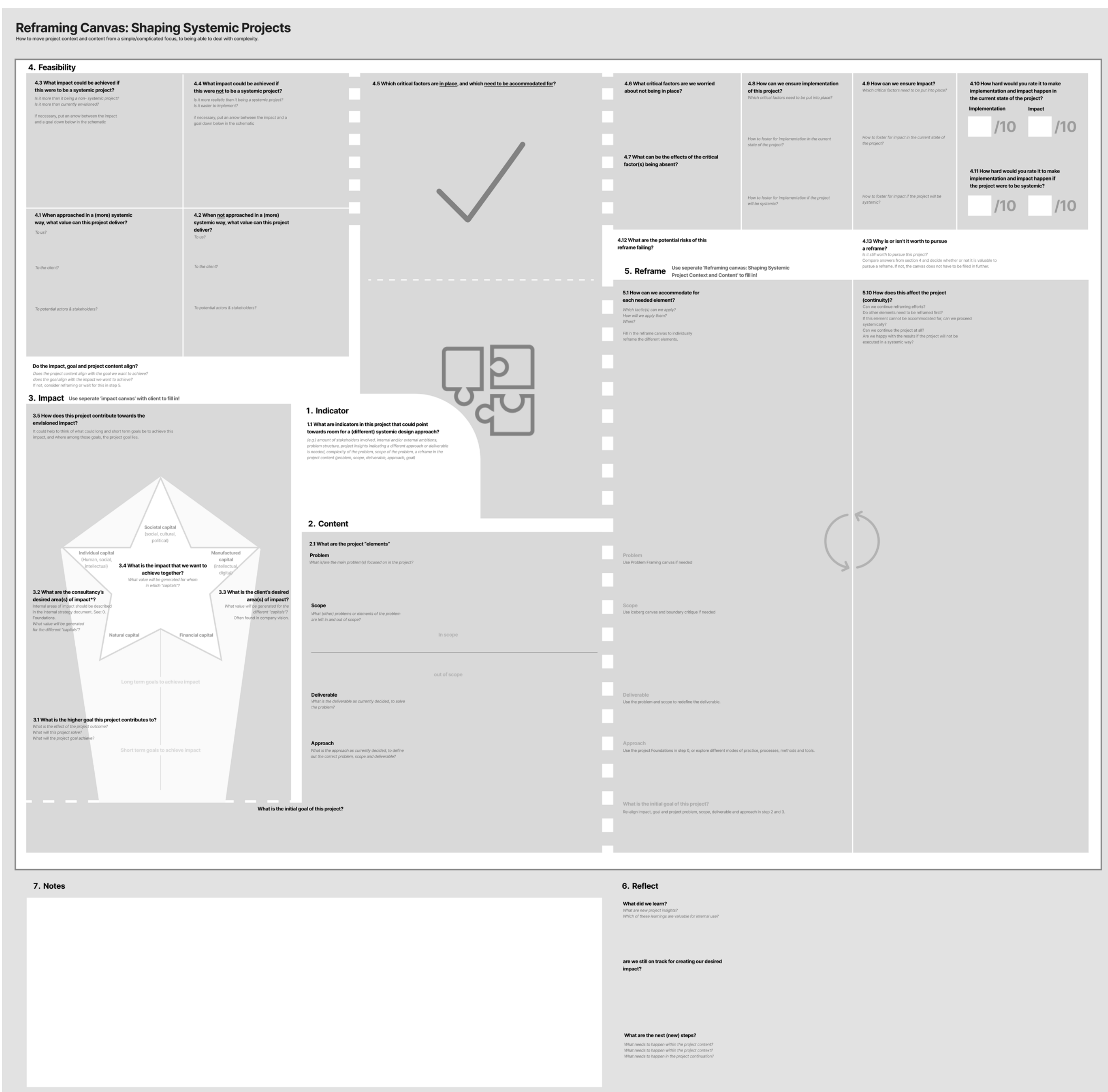


Figure 7.7. The reframing booklet in small format. For the full version of the framework, canvas and booklet, access here.

Figure 7.2. The reframing canvas in small format. For the full version of the framework, canvas and booklet, access here.

Final Design

Value for Halogen

As we have discussed the insights from empirical research and how this delivered the final canvas and framework, we will now discuss what value this thesis brings to Halogen. As discussed in Chapter 1, Halogen wanted to keep its head position in the market, being one of the few organizations to be able to deal with complexity, hoping they would be able to execute more systemic projects by receiving insights into what elements within their process they could improve to do so. Therefore, the empirical research discussed in chapters 3 and 4 has been conducted, going into the Halogen way of working, case studies, and observations to find out what could be improved for Halogen. Expected was to find problem- and potential points in how they reframe their projects. Instead, it turned out that, first of all, the reframing practices happened naturally by skilled designers and business developers, and most of the problem points and potential points lay within the processes that support (systemic) projects and potential reframing practices. Therefore, the value for Halogen is mainly in the advised improvement points discussed in Chapter 5, in addition to the design of the canvas and framework. We will discuss now how both deliver value for Halogen.

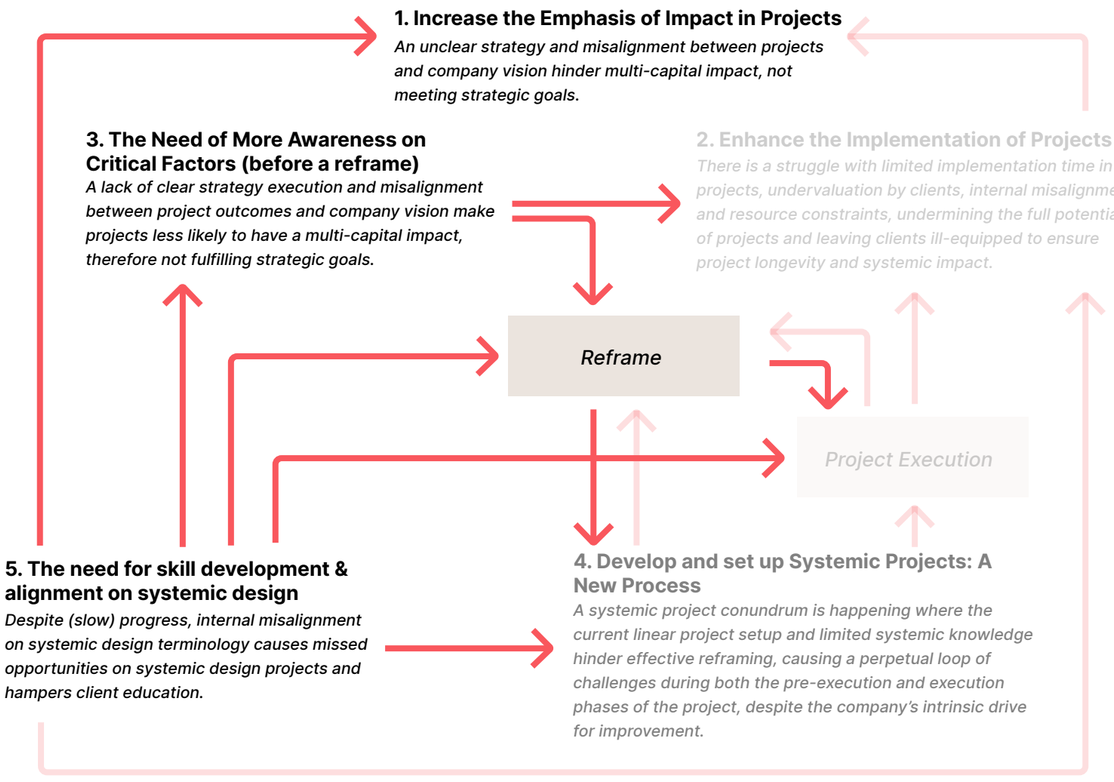


Figure 7.8. The Summary of the Assessment of Halogen, with emphasis on where the thesis' deliverable has impact.

The assessment of Halogen: Improvement points in Leverage Areas

Within the assessment of Halogen, the leverage areas discuss which problems Halogen is currently facing based on the different insights obtained from empirical research. Halogen's interest was mainly in improving systemic design practices in reactive project briefs to sell more systemic projects and keep their head position in the market. Therefore, the improvement points presented in the leverage areas are considered relevant to make them able to achieve those goals. Surprisingly, from the empirical research results, the improvement points lay more in the processes supporting the reframing practices as opposed to the reframing practices themselves, as seen in Figure 5.3. We will briefly go over the improvement points presented in Chapter 5.

The first leverage area suggests a better alignment with the strategy document by creating a better realization of how to achieve this impact, aligning it internally, and making impact a red thread in projects, in which the framework and canvas play an important role in supporting this, integrating impact as an essential element throughout their whole structure. Essential to the impact being integrated into projects is the focus on implementation in projects. The second leverage area, therefore, suggests that implementation should become a necessary part of the project, and need to partake in these processes more as the change management can not always be left to the client, or they need to educate their client more in change management practices for systemic design projects in general. This leads us to the third leverage area where more awareness in Halogen must be created on critical factors, such as change management, within the reframing processes. By doing so, the organization will avoid risks of faulty reframes or putting valuable time and resources into projects when such a project is not feasible to even start with. Alternatively, other tactics for reframing should be created necessary to generate a certain impact still, altered on the project's current state, maneuvering around certain critical factors, such as change management. Then, a better estimation of the probability of a more systemic approach, systemic impact, and project implementation can be made. The fourth leverage area mentions the improvement point of creating a pre-execution project process that facilitates systemic projects by being more flexible and less linear. This is done either by creating the possibility to integrate more systemic knowledge in the project or aligning systemic knowledge better throughout the consultancy, as is the last leverage area. Additionally, and to support Leverage Area 2, new skills should be developed among the organization, sustaining systemic projects to be executed, such as facilitating change management or a more educational role within systemic design so that reframes do not have to be implicit, allowing for a better communication within the collaboration of Halogen and the client.

All in all, these improvement points deliver the goal for Halogen to create more systemic projects by enhancing processes facilitating systemic projects to be more flexible, adapting to the nature of systemic projects. Additionally, it aims to align knowledge within the organization for this practice to flourish, assuring systemic potential is easier spotted within projects through the enhancement of skill and better assessment of critical factors in projects, creating the possibility to achieve the impact they want to achieve while doing so. Adapting the improvement points can be assured since there are 'dependent actors' in Halogen pushing for a change within Halogen (Mitchell et al., 1997). The framework and canvas are adapted to these specific knowledge points, focusing on spotting critical factors early on and the alignment of impact as a red thread throughout the framework and canvas. As discussed in Chapter 2, most urgent problems are urgent of nature, and Halogen does state in its strategy that it wants to create impact in three domains. The canvas and framework help align projects with this focus on impact and what impact the client wants to generate. By doing so, the designs deem their relevance to the improvement points and, most importantly, Halogen. Therefore, the leverage areas presented by itself already deliver value for Halogen in achieving its goal of creating more systemic impact, aligning with the canvas and framework.

The value of the Framework and Canvas for Halogen

Continuing focusing on the value of the designs- the framework, canvas, and explanation booklet for Halogen- it becomes evident that these designs offer value while the improvement points are being implemented within the organization of Halogen, as seen in Figure 7.8. Not only does the canvas support the application of the improvement points, facilitating new systemic designers who are new to the concept of systemic design and reframing, but it also relieves experienced designers while teaching this knowledge through the support of this canvas and framework.

The canvas and framework provide a clear roadmap for improvement and equip employees, especially newcomers to systemic design, with the essential tools to transition to systemic design practices. These resources encourage the collaborative practices of Halogen, being able to be shared between the many people involved in projects, fostering a shared language within Halogen's teams that simplifies the understanding of the projects, its alignment with the envisioned impact, and embraces continuous steps of fostering for systemic design.

Beyond this, the canvas and framework directly contribute to Halogen's overarching objective: creating more systemic projects. By offering a structured approach with the improvement points, these tools empower teams to identify new opportunities and reframe projects with more ease and careful selection, thus driving the systemic shift Halogen aspires to achieve.

These tools are strategically designed to support Halogen's journey, ensuring that resources are allocated efficiently per project. By assessing the suitability of a systemic approach, they reduce risks, allocate resources better, minimize project failures, and enhance the overall success rate of systemic projects. This results in an enhancement of client and employee satisfaction through more successful projects, delivering an impact both believe in, where projects are more cost-effective through allocating resources better, minimizing the chances of a failed reframe. With more successful systemic projects aligning with the impact the employee and client believe in, this will also enhance the industry reputation, maintaining their market-leading position for Halogen.

Looking ahead, the canvas and framework are poised to play an even more significant role. They serve as a transition stage for employees, initially assisting in their understanding of systemic design, and helping more employees to adapt the knowledge of reframing during practice. Over time, as systemic design becomes embedded in Halogen's culture, these tools can seamlessly integrate into daily practices. To ensure this, these tools are presented through sense-making and co-creation sessions, as presented in Chapter 5. Since these sessions were conducted with skilled designers in systemic design, they can bring forward these tools when further spreading the knowledge on systemic design internally as they are now familiar with it. Their adaptability and ease of alteration make them future-proof, evolving alongside Halogen's evolving needs and practices if needed.

Additionally, this canvas and framework help to keep knowledge and information alive, as was discussed as an improvement point. It suggests that continuous learning of projects should flow back into the project and the organization, keeping the knowledge on systemic design and the canvas and framework alive and up-to-date and ensuring it will not be delved under all other documents.

In conclusion, the canvas and framework presented in this thesis are not just assets but serve as guidance for Halogen on its transformative journey into adopting systemic design within the whole organization. They provide immediate value by offering a structured approach and a shared language, making systemic thinking accessible to all. They support Halogen's goal of creating more systemic projects and contribute to the consultancy's continued success. As Halogen commits to its systemic design goals, these tools will undoubtedly play a pivotal role in achieving success, positioning Halogen as an industry leader, and shaping the future of systemic design.

Final Design

Validation of the Final Design

The contents of the final design were tested to see if the final design lives up to the potential and intended use, as discussed in the explanation of the steps in the framework and canvas.

In the test setup, two junior student designers were subjected to the canvas and framework where initially an explanation of the canvas was given to them, and they would go through the canvas with their own design projects to see if they would deem a reframe important for their project. The user tests were conducted online and lasted for an hour. The decision for two external student designers was due to them fitting the target group of being new to the systemic design field. These types of participants were lacking in Halogen, due to employees being too experienced or unfamiliar with systemic design, as discussed in the 'Value for Halogen' earlier in this chapter. The following important insights were found:

Long duration and loss of focus while filling in the canvas

During the user test, it was often mentioned that filling in the canvas took quite a time. Filling in the canvas took 1 to 1.5 hours, a long time for a singular canvas. Another element that came forward within them filling in the canvas was that the answers given to the questions were relatively short due to the number of questions asked, not being able to fully reflect well on what the questions asked.

Unable to fully understand all tasks of the canvas

While filling out the canvas, some questions about what was supposed to happen there were misinterpreted. One of the most important tasks is filling out which critical factors are missing, deciding which ones are most critical for a project, and then creating or choosing strategies to bring them in place. Initially, separating the critical factors in place and those that need to be accommodated went fine. However, only one critical factor was often chosen when selecting the most important critical factors, while the test subjects vocally indicated that multiple needed to be set in place. It was addressed as the canvas's design suggested that only a few could be chosen to accommodate for.

> *"I have the feeling I need to choose [one]. I don't know why. There is not so much space."*
> - Participant 1

Furthermore, due to another design flaw, it was not seen that these critical factors should be reframed or catered for, making it miss an important step in the canvas. Therefore, less priority was put on reframing the context. Another reason this could be was, as said by themselves, lack of time in the project to reframe and accommodate these elements. This is an interesting finding as it indicates that the canvas does help to include these factors and perspectives in the canvas as well.

> *"Not right now, I cannot accommodate for everything."*
> - Participant 1 on their worry about accommodating the other critical factors

It could also be due to the need for more clarity in creating and applying tactics, in which the canvas should accommodate more for setting up tactics. Overall, sometimes the questions, design, and sequence confused the participants.

> *"To be honest, I'm confused."*
> - Participant 2, filling in the critical factors for step 4 in the canvas.

Confusing design elements within the canvas
As mentioned, some ways the canvas was designed confused the participants and made them either skip or fill in parts of the canvas in other intended ways. One such example is the white space between steps to indicate a final decision or step that needs to be made but is probably skipped as it does not fall into a box, so it is seen as some unnecessary text irrelevant to the canvas.
It was also mentioned that the structure of the canvas might feel confusing, as starting from the center is not a logical way of working through the canvas. However, none of the participants had trouble navigating what they needed to fill in within user testing.
Small elements, such as division lines between the critical factors and reframing, were, as mentioned in the previous point, overlooked, making it seem they were separated elements, but was confusingly so understood for the reframing of the content, probably due to the repetition of elements on the right-hand side in the area of reframing. Another element that raised confusion was the in-scope/out-scope element within step 2 of the canvas, dealing with project content, which made the deliverable and approach to getting there seem out of the project's scope. At the same time, it was only meant for which problems, elements, or factors were in or out of the project's scope.
Lastly, another element of the canvas that needs to be clarified is the numbering of the steps, which does not align with the framework and the explanation steps, which must be adhered to.
The structuring of the canvas was created so that answers to questions could be given next to other answered relevant questions. However, in the end, it was deemed less necessary than initially thought, as one of the participants was dragging around content from different places on the canvas. At the same time, the answers to questions dragged around were not aligned or next to each other, indicating that most elements do not need to be next to each other and aligned.
The other elements that were filled in differently than intended were mostly due to confusing use of wording.

Confusing wording
Some of the wording in the questions, such as referring towards "elements", "more systemic projects", or "clients", was confusing, as it was too suggestive. The participants needed help defining what these words or definitions mean, or in case the word "clients" needed to be left out, to make it more broadly applicable.
A clear example of this is the comparison between the status quo and the ideal project, which was meant to be an ideal state and the project's current state. This caused one participant to fill in the questions of step 4, assessment of the reframe, wrong. A suggestion from the participant was to make, visually and question-wise, a better distinction between the project as it is, its goal, and the highest goal, and what the maximum viable systemic goal is that this project could then achieve—making step 4 easier to navigate.

Canvas made it seem reframing was a one time thing
Another point that came up during the filling in of the canvas is more a speculation than being confirmed through any of the quotes the participants gave. When filling in the canvases, even though it was confirmed that a reframe on critical factors would not be manageable/plausible, they would continue filling in the canvas. Also, every part of the canvas was filled in, while that was not necessarily the intention. For example, the reflection part is meant to be filled in while executing the reframe to see what needs to be done and the effect of trying to reframe. However, everything done by the test subjects in this reframing canvas was possibly interpreted as what needed to be done before reframing. This is also a great use of the canvas, but it might indicate that reframing is a one-time thing. It must be emphasized that this is not the case, as mentioned in one of the sense-making sessions with Birger Sevaldson, as explained in Chapter 6.

Helpful tool for framing and reframing the project; focusing on the right impact
Comments of the participants highlighted the use of the canvas for their projects.

> *"By understanding the problems, I'm now looking at it from a different way. I think it actually really helps. Definitely works."*
> - Participant 1

> *"Your tool can be useful to be sure that the project is actually systemic, and the steps that you are taking in the project are actually helping in the project that are not focusing on symptoms.*
> - Partricipant 2

> *"I know my steps are systemic, and it feels like what I've done is systemic. But I think it is a nice reflection for people who don't have that [who can't answer what this project contributes to].*
> - Participant 2

Based on these comments, it was concluded that the canvas was an excellent tool to capture the project's current status and help to reorient where the focus needed to be put in future steps to create a systemic project.

Limitations to this user test were that these students already focused on executing their project in a systemic context. Therefore, the canvas might not have delivered to its full potential, but it has proven to be valuable for reframing the content of the canvas. This does not indicate that due to them being systemic designers, their projects were automatically systemic, as one might think that being systemic automatically brings forward a systemic project. The Case studies indicate that in practice, this is seldom the case, and the reason why it was so for these two students can be written off due to the academic freedom both have within their projects.

The validation session concludes that the reframing framework and canvas have proven to offer guidance and a moment to generate a frame of the project to reframe important elements. Reframing the content for now seems promising, whereas reframing the project context is yet to be explored further. Even though it has yet to be proven that the final canvas fully delivers to its intended potential, it already shows great potential in offering guidance to users new to reframing projects and implementing systemic design in projects. Future improvements from these insights can be found in the next chapter.

8. Discussion & Future Work

Discussion

At the start of this thesis report, we concluded that current urgent problems are complex and that there is a gap between applying traditional approaches for such problems and using approaches that can deal with complexity, such as systemic design. No resources are yet given focusing on the transition between the two, while knowledge and awareness of the difference between complicated and complex contexts and the different approaches in those are also lacking. Based on this, the project's goal was to make systemic design easier and better adopted in projects (that do not inherently have a systemic focus) by design consultancies in general. This thesis aims to guide design consultancies new to systemic design or the ones trying to incorporate fully within their organization how to navigate the reframing process by offering resources that can help the designer assess if a systemic approach is the right way to go and how to get to a point where systemic design methods can be applied in a project, in order to create projects that will generate a more positive impact on society and the world. Based on this, the following research questions were created:

I. How does a design consultancy that holds systemic knowledge reframe projects to be more systemic?
    a. How do they convince the client to do a reframe
        i. How do they reframe the brief
        ii. How do they convince to create a bigger impact on society, and come to an agreement on what is meaningful?
    b. How do they deliver results that are systemic, yet make the client happy
    c. How do systemic methodologies get applied, and how does that differ from theory
II. How can a design consultancy that holds systemic knowledge improve this reframing process?
III. How does this reframing create more meaningful impact beyond company profits?
    a. Why or why not does reframing to systemic projects create more positive impact on society?

This thesis wanted to answer those research questions by analyzing a design consultancy well ahead in dealing with complex problems and reframing towards using complex approaches. This consultancy was Halogen, and from the practices of Halogen, it was intended to subtract insights into how this reframing is done (question 1) while analyzing where they could improve (question 2). Additionally, it looked at how they partake in challenging these complex problems that urgently need to be solved (question 3). We will now discuss the answers to those research questions.

Answering the research questions

Initially, the assumption at the start of this thesis was that more knowledge would be generated on the reframing practice itself. Eventually, the improvement points for Halogen were more evident on the elements connected to reframing towards a systemic project. I decided a split approach should be used where I initially wanted to focus on the practices around reframing and the elements that sustained it while synthesizing the information after the empirical research. Based on the results, we see that a Halogen reframes the process through what is expressed in the designed framework in this report. First, the consultancy's designers and/or business developers instinctively spot potential opportunities to make a project systemic, often to the advantage of the delivering consultancy, in this case, Halogen, and the receiving client. Then, the consultancy tries to reframe the project because they feel more value can be delivered for the client or for Halogen itself. This value is often monetarily focused, although some cases also show that there were other 'capitals' to be benefited. It does so often implicitly, trying to open the context by questioning, educating, and convincing tactics.

Suppose a project is being reframed during the execution phase instead of pre-execution. In that case, the consultancy might run into the boundaries the project is shaped, such as a set approach or deliverable. Often, it is seen that the consultancy does not reframe the project boundaries directly to deal with these difficulties but tries to be creative within the project brief that was given. Alternatively, if the content of a project needs reframing, creative methods are applied within the context to accommodate for a needed content-oriented reframe. This opposes the initial hypothesis that projects would then start to educate clients on systemic design and reframe the project explicitly to accommodate the project. As the results of the empirical research showed, this is not a possible approach in time-bound projects, where resources and systemic understanding might be scarce. To prevent reframing from happening within project execution where the project might be less flexible to do so, the consultancy tries to frame the project brief as open as possible before the start of the project execution. Convincing and educating tactics are used here as well, but often on an implicit level, where a part of the mindset of systemic design is conveyed, but not to an understanding of its need and all factors included as discussed in Chapter 2, or aligned with the systemic principles presented in Chapter 7. This information answers the first research question: How does a design consultancy with systemic knowledge (Halogen) reframe projects to be more systemic? The main relevant systemic methods and tools, such as mapping practices, were applied as a part of a reframing tactic but mixed with more traditional design practices. Making projects neither black and white regarding being systemic or non-systemic, but more gray in their level of systemicness. Projects do not have enough time to have a fully systemic project, as the client's systemic mindset also takes time to foster. The duration of a mindset to foster within clients is one of the reasons the results delivered in projects create mainly impact within the client organization, but little outside of it, as to understand the use of systemic design as something that solves pressing problems is not fully fostered, looking at problems at a smaller scope, and not seeing the connections and effects projects can have on such problems. They could generate more positive or regenerative value in different "capitals". As mentioned, expected was a more educating perspective towards the client, where they also convinced the client with logic regarding the necessary impact to be made based on systemic maps they created.

Further on, it was to be expected that the project was executed on a systemic nature. Which, as discussed, was not necessarily true. This opposes the view on how approaches deal with complexity or complicatedness as presented in Chapter 2 by the Cynefin framework, which does not necessarily give leeway for a combined approach (Snowden & Boone, 2007). I think trying to combine practices from complex and complicated approaches leaves us with complicated problem-solving, and we should be careful of mixing praxises. However, all could work well if respect is paid to the systemic principles by, for example, taking into account the larger system and acting out of the interest of the multiple actors involved (Bijl-Brouwer & Malcolm, 2020; Drew, 2023; Jones, 2014; The Design Council (UK), n.d.).

This is immediately one of the pitfalls of the researched consultancy Halogen. The impact seems to be a less high priority than the execution and delivery of the project. The company's strategic and impact goals are lost out of sight somewhere along the lines of the project. Therefore, the answer to where a design consultancy can improve their knowledge of reframing starts here. Improvement points were oriented less at the reframing itself, which was the project's initial focus, and more on the processes underlying these reframing practices, focusing more on the pre-execution phase of the project and internal knowledge within Halogen. This thesis concludes that focusing on impact in the core of the projects and implementation will be a great step for the consultancy. Suppose internal processes will be adapted, like the pre-execution phase, to be more flexible and mindsets getting aligned on systemic design and aligning projects with the impact defined in the strategy document. In that case, this will trickle through toward how projects are set up and executed, creating more alignment with strategy and better reframing practices. Reframing will become easier once the way projects are set up is designed to accommodate systemic projects.

Unfortunately, reframing is often done in the project execution rather than beforehand. This is one of the most essential improvement points for Halogen to follow. However, it is also the hardest. Putting effort into the project set-up phase to uncover the problem

does not bring revenue for the consultancy. Also, not all employees have the same level of knowledge on systemic design and might miss cues that such an approach is needed, which calls for alignment and (re-) education among employees. A way to approach this problem is to phase up the project. However, phasing a project still does not allow for total flexibility as the phases are often divided into research and execution, making it unable to jump back and forth between the two. Yet, it allows for more systemic practices. Ideally, a project would be set up as free as possible, where resources can be moved around in some sort of frame agreement. This requires a high amount of trust from the client. It is, therefore, essential for a consultancy to have alignment in the practices of the consultancy to allow systemic projects to take place and to question themselves what is the best way of working that is also manageable for the client to allow. A latter point of improvement for the consultancy is to see where these projects lead to. As most consultancies have a form of impact they want to create, they need practices on aligning these visions of impact with what the projects hopefully achieve, and they need to find out what in these projects will lead to this impact.

It is hard to indicate if these projects account for impact, as wondered in the last research question posed in this thesis. Often, these projects are executed just to be executed and make the client happy. However, it is not sure if they account for impact. At the same time, it is almost impossible to measure if these projects also account for impact, as discussed in literature (Lowe, 2023; Lowe & Hesselgreaves, 2021). Besides, a project that does not have a systemic connotation can also impact even more than a systemic project, as these are harder to implement and execute. It is hard to say then which kind of project achieves impact. It needs to be assessed beforehand and during project execution if the desired impact can be achieved.

Reaching the project goal

This thesis project aimed to bridge the gap between traditional and systemic design approaches by introducing a structured framework and accompanying canvas. The results of this research provide valuable insights into the practical and academic dimensions of transitioning projects towards impact creation across diverse capitals (Wealthworks, 2022). Comparing our findings to the existing literature, we find resonance with the increase in focus on complex problem solving and a gap within transitioning from traditional project approaches that deal with complicatedness towards an approach that can deal with complexity in the project through systemic design (Kolko, 2012; Snowden & Boone, 2007). This framework extends the Cynefin framework by incorporating impact across multiple capitals and taps into knowledge of different domains to strengthen the design choices made in the framework and canvas.

Regarding addressing research objectives, our framework and canvas demonstrated its effectiveness in guiding beginning practitioners through the intricate journey of reframing. However, it is yet to be validated to show its effectiveness in facilitating the transition, allowing for a comprehensive reconsideration of the project content and context. However, it is essential to acknowledge the limitations of this study. The empirical research, while insightful, focused on a specific organization, Halogen, and mainly on private sector organizations and may not fully capture the diversity of contexts in which the framework could be applied. Further research is warranted to explore the applicability and adaptability of the framework across different sectors and project scales. These and more findings will be discussed in the future work section of this chapter after the improvement points on the deliverables are discussed. Lastly, we will discuss the general practical relevance of this thesis and its academic relevance. We are finishing with a personal reflection on all the work conducted.

Difficulties with the execution of the project

As mentioned in the 'Answering of the research questions', and in the value for Halogen in chapter 7, it was found that the problems in reframing did not lie as much in the actual reframing and project execution but more in the processes that support the pre-execution phase of the project, and project execution. This created a deviation in this thesis' focus, as the main initial interest was on the reframing practices of the organization to create a framework for this and base the improvement points on the reframing itself. Instead, the focus was set on improvement points within the organization and how processes were set up that could accommodate such a reframe, and more reframes, for that matter. The insights that were of interest to Halogen were mainly these improvement points, with no further interest in a design necessarily, as this would focus more on practices Halogen was well equipped with. However, with the initial focus of this project being on reframing while also suggesting improvement points on where to improve, both needed to be supported. Therefore, this thesis was split into two focus areas: assessing Halogen and creating a more general design that could be applied to other organizations based on the practices of Halogen. The assessment of Halogen focused more on the leverage areas where Halogen could improve, substantiating the best practices that were found in Halogen as well while reframing. These findings and improvement points created the "outer shell" of supporting reframing practices, forming the beginning and the end of the reframing practices and the foundations of bringing a well-designed reframing practice in place. Feedback was received that this thesis focused on too many areas and needed to be narrower in scope. While acknowledging that it covers many areas, tapping into many insights and losing depth, focusing on a more general design was deliberate. It was done because designing internal project processes was out of scope for this project to continue focusing further on, wanting to focus more on reframing itself, not something of personal interest. All the while, it was still seen that there was this theoretical gap in the literature that was personally deemed interesting and valuable to design something for and that could offer value to multiple organizations, therefore, in the grand scheme of things, offer a more positive impact than to design an improved internal process underlying reframing practices for one design consultancy. It instead tried to aim specifically for a generalized framework that could also be implemented by other organizations, with the idea that it could deliver more impact broadly, besides offering value for Halogen through improvement points that could leverage their reframing and systemic practices, creating more impact as a single organization. Additionally, supervisors in Halogen stated the importance of improvement points and not being interested in a design generally, so I decided to devote attention to a design that general design consultancies could implement. That caused a broader scope throughout this project to be maintained, even though questioned by the stakeholders involved.

Desirability, viability, and feasibility of the framework and canvas for Halogen

This framework and canvas can support Halogen within its practices once systemic design becomes a more aligned practice within the organization, as discussed in the assessment of Halogen in Chapter 5. Once processes can support systemic projects, creating the flexibility they need to operate and having a common and shared language that can be adapted and fallen back upon, Halogen can start creating more systemic projects because colleagues and projects can scout more opportunities that can be reframed more easily. Achieving the goal of Halogen: to create more systemic projects.

Desirability

This thesis, therefore, creates value for Halogen by delivering improvement points and a canvas and framework that can be used once internal practices are more aligned with systemic design and its practices. Implementing the improvement points and embracing systemic design in the knowledge internally in the organization and within its processes aligns Halogen with current industry trends, maintaining the consultancy's position as a frontrunner in the design field.

The canvas and framework then help to support in this transitioning process, by being used by people new to reframing practices and systemic design. The user group chosen is not one that is expected to exist for a long time; it is one that is going through a learning curve on how to reframe projects from a traditional approach to a systemic one. When experience is gained in such practices, the framework and canvas might not be needed anymore. However, they can still offer

support in doing so, even for experienced designers to take a mental snapshot of the project's current state, as these tools also provide a structured and accessible framework, making it easier for teams to grasp the intricacies of systemic design. However, this is something that should be researched further in the future if this is to be of value to experienced systemic designers. As Halogen goes through this adaptation phase, as observed and suggested in the improvement points, it is necessary to deliver a framework and canvas that can guide employees learning a new mindset and discipline to work with, supporting them on this learning journey and assisting the organization in their transformation. Therefore, it is ideal that the canvas aligns with current practices in Halogen subtracted from empirical research, making it easily adaptable as experienced designers will understand it as their practice, and will make it easier to teach and align with new employees learning systemic design and reframing practices. This canvas and framework also support and add to the new shared and common language for systemic projects and sustain the flexibility needed in systemic projects, as mentioned in the improvement points. They can foster a collaborative environment within Halogen, promoting knowledge sharing among employees even further, as the many people involved in the project have an overview to go back to the status quo of the project. If the improvement points are followed up, more systemic projects can be created and scouted for, delivering the original goal of Halogen.

Feasibility

The use of the canvas and framework heavily depends on whether Halogen will achieve this form of alignment and knowledge internally in the organization. This is, of course, something that is hard to predict. It has been argued internally that too little time and investment go into organizational development, causing Halogen not to be able to achieve this state, making the canvas obsolete. Additionally, as seen in the empirical research, Halogen and its clients might be lenient in focusing on monetary incentives, creating projects that generate money, not impact. It is difficult to decide whether such a framework would be 1) deemed valuable and 2) deemed useful as the main focal point is impact and not revenue per se, bringing the feasibility of this thesis at risk.

On the other hand, if Halogen wants to keep being a frontrunner in the field of complexity and systemic design, executing more systemic projects, they would have to adapt to the improvement points and leverage areas shared in Chapter 5, which indicates that more internal work needs to be done to support and sustain systemic projects, which is also confirmed by employees within Halogen. Therefore, the advice and deliverables of this research hold feasibility as long as Halogen wants to stay true to its goals. If not, this project was also aimed to be adapted by other organizations, aiming for broader adaptability and increasing its chances generally. Luckily, it is clear that within Halogen, work is already being done to live up to these improvement points mentioned, therefore adding towards its needs and suggesting additional steps to take, blending in with already emerging practices, making it more feasible.

Focusing on the designs- the canvas and framework- helps Halogen to achieve the goal of more systemic projects by focusing their resources per project to be spent wisely. The result of the design could be that fewer systemic projects are created by assessing if a systemic approach applies to a project. In contrast, the goal of Halogen is to create more systemic projects. However, assessing if a systemic approach, or even creating a more systemic project, can be achieved can hold many other benefits. Through the assessment, aligning the project with the impact goals of the organization can be enhanced, making sure the organization and its employees contribute more towards something they consider essential, creating a higher feeling of achievement for employees and less frustration by eliminating the risks of a project not being reframed or resources being put to a project that was deemed to fail in the beginning on. The latter point also helps the organization of Halogen, in general, to put resources into projects that can create impact on a larger scale, being more thoughtful and concise with their resource investment and project management. Additionally, risks and the loss of clients can be mitigated by carefully selecting which projects need to be reframed, creating more value per systemic project, and increasing the success rate of such projects. Moreover, they contribute to systemic projects' overall quality and value, focusing on delivering meaningful impact rather than merely increasing quantity. It should be tested and experimented if the adaption of the canvas holds to cut down on more systemic projects being generated, and if this has a negative impact on Halogen in general, besides revenue, or might positively impact employee and client satisfaction.

A last point concerning the feasibility of this project is that the generated knowledge of this thesis and the knowledge document accompanying the canvas and framework might be overwhelming and complex to implement, although catered to the needs of Halogen. However, the improvement points and the designs delivered at the end of the canvas do not focus on immediate and sudden implementation. Instead, it creates multiple interventions that can sustain the transition that Halogen will go through in the long run, giving an apt amount of time to consider, alter and implement the designs of this thesis. Although complex, many people dealing with complexity in day-to-day practice are stakeholders of this design and can understand the improvement points and the design itself.

Therefore, if Halogen wants to stay true to its goals of achieving the impact it desires by creating more valuable systemic projects, instead of more systemic projects that might end up not living up to expectations, leaving clients and employees frustrated, this canvas holds much potential of being feasible too, proving its worth in value and usefulness in delivering better projects to clients. While acknowledging that the immediate application of these tools may not be feasible, they represent a strategic investment in the future. Halogen can initiate a phased adoption, starting with specific teams or projects to minimize disruption, enabling iterative prototyping and testing. As designed, the canvas and framework are adaptable and can evolve alongside Halogen's evolving needs and practices.

Pilot projects can serve as a testing ground, allowing for careful feasibility evaluation before full-scale implementation.

Viability

As discussed, while knowledge of systemic design and the differences between complicated and complex contexts and their approaches is on the rise, this canvas and framework are only applicable once this knowledge is generated and adapted within an organization of a design consultancy, making it a future investment. Even though the framework and canvas are meant for a transition stage where employees learn how to reframe systemic projects, it could hold value for later use in terms of alignment internally in a team and creating a discussion platform once the design is used within this knowledge transition phase. However, this must be further researched once the framework and canvas can be applied. As discussed in future work and improvement points, this might indicate a shift in needs for the canvas and framework to create more longevity, focusing on a less niche target group going through a momentary transition. On the other hand, teaching this practice and using these frameworks can hold the key to assuring future use. Once adopted, continuous use will emerge as part of a taught practice.

Therefore, the use of this canvas and framework lies more within the future, where a state of awareness and knowledge is created around systemic design. Therefore, additional knowledge or future work could orient how to implement systemic design practices within a design consultancy more broadly, as suggested in the improvement points. Unfortunately, this was out of scope for this project due to personal preferences that wanting to focus more on the practices of reframing itself and what elements in practice support it in general, as covered earlier in the discussion.

However, future work could build on the framework's foundations presented as step 0. Additionally, the delivery of a canvas and framework before they enter this phase will help Halogen to first adapt the canvas and framework towards something that is more catered towards their organization, making the canvas more viable as it can adapt and grow with the organization, as the design of the canvas is easy to alter. To further emphasize the viability of these tools, it is essential to highlight their cost-effectiveness. Mitigating the risk of investing resources in unsuccessful projects can lead to substantial savings over time. Furthermore, these tools

can yield long-term benefits, including improved client satisfaction, higher employee morale, and an enhanced reputation in the industry. The return on investment can be quantified in terms of successful projects and their corresponding impact, providing a compelling case for their adoption in the long run.

In conclusion, this canvas and framework represent a strategic asset for Halogen as it embarks on its journey toward systemic design. Their desirability, feasibility, and viability are well-supported by their potential to address specific challenges outlined in Chapter 5, their adaptability to changing organizational needs, and their ability to deliver long-term value. As Halogen commits to its systemic design goals, these tools will undoubtedly play a pivotal role in achieving success.

Desirability, viability, and feasibility of the framework and canvas in General

As discussed, after the improvement points were delivered to Halogen, it was looked at how a more general design could be made to answer a gap within literature on reframing practices from a traditional to a complex approach, being systemic design.

Desirability

The desirability of the framework and canvas is evident in its ability to fill a gap in the literature on transitioning from traditional to complex approaches in systemic design, as it has yet to be created. It solves a problem expected to occur once systemic design gets more widely adopted as design thinking goes through similar problems, as has been apparent in literature (Dunne, 2018). As systemic design gains traction, similar to the trajectory of design thinking, the need for structured frameworks becomes increasingly apparent. This thesis delivers value by providing a canvas and framework that aligns with current industry trends, thereby maintaining Halogen's position as a frontrunner in the design field while offering the same potential for impact for other organizations. Halogen can still maintain a frontrunner by showing their skill within the field through the open sharing of this document, while bearing the needed elements relevant for reframing practices.
Moreover, the framework supports the transition process, particularly for those new to reframing practices and systemic design. This makes it highly desirable for Halogen and any organization looking to adopt a more systemic approach to design. The design's desirability lies in its comprehensive approach to systemic design through a framework that presents steps towards the reframing process, accompanied by a canvas and explanation booklet, making it a valuable asset for design consultancies aiming to tackle complex projects.

Feasibility

The comprehensive approach of the framework makes the designs easier to adopt as well. The framework is not just built on theoretical constructs; it is grounded in empirical findings and academic literature. For instance, Step 2 focuses explicitly on assessing the feasibility of all aspects of a project, considering its current and potential systemic value. This makes the framework desirable and feasible for implementation, approaching complex scenarios with care and risk assessment, making it more likely to be adopted by other design consultancies. As explained in the feasibility for Halogen, the likelihood to be adopted within Halogen can be higher since it aligns more with design practices from Halogen, possibly creating a challenge for the adoption of other consultancies. Although the framework might be easy to understand, the canvas and explanation booklet and the foundations that come before the reframe, make it more time-consuming to go through and understand, making it challenging to implement. Bringing those elements in place is a whole task by itself and requires many resources internally. Having those foundations in place is not fully impossible, yet it creates potentially more difficulties for other consultancies while not in place. Therefore, the assessment of the risks in step 2 becomes more important and more evident to the feasibility of the design, being able to make such an assessment.

Viability

While the framework was initially developed with Halogen in mind, its abstract structured approach makes it universally applicable. The steps are designed to be flexible and adaptable, allowing other design consultancies to implement them according to their specific needs and contexts. As discussed in the viability of Halogen, the use case of this framework and canvas might be short-lived due to being targeted at a specific target group of short existence: those who go through a learning curve of adapting systemic design within their practice and reframing towards it. However, as argued above, implementing such tools while going through such a transition phase also adds to the longevity of the use afterward, becoming embedded in their practice. This is something that needs to be shown during the usage of it.
Additionally, the framework and canvas are designed to be adaptable, catering to an organization's specific needs. This adaptability makes the tools highly viable as they can grow with the organization. The design of the canvas is easy to alter, allowing for customization according to organizational needs. Furthermore, the framework and canvas have the potential to yield long-term benefits, including improved client satisfaction, higher employee morale, and an enhanced reputation in the industry. Their cost-effectiveness, as they mitigate the risk of investing resources in unsuccessful projects, adds another layer to their viability for external consultancies.

In conclusion, the final design presented in this thesis is a strategic asset for any organization embarking on a journey toward systemic design. Its desirability, feasibility, and viability are well-supported, making it an invaluable tool for navigating the complexities of modern projects.

Dealing with complexity in this thesis

While acknowledging the feedback regarding the breadth and complexity of the thesis, I argue that the decision to encompass various dimensions was made to provide a holistic view and contribute to well-rounded improvement points for Halogen, but also create knowledge and practical tools for other organizations to use while adhering to the needs of all stakeholders involved in this thesis. This thesis can deal with the complexity given in the project by showing practical implications of the improvement points and applicability of the canvas and framework for Halogen while also delivering a general adaptability of this framework and canvas for other organizations through a design as requested by the TU Delft. Therefore, this approach aligns with the overarching goal of offering a comprehensive understanding that benefits the wide range of stakeholders involved while also administering to the personal interest of creating something that can generate impact on a larger scale. This thesis dives deeply into specific subtopics within the broader field to demonstrate that complexity does not necessarily hinder effective analysis. This depth of analysis enriches the discourse and enables a nuanced understanding of key aspects summarized in the design criteria. The complexity within this thesis arises from the desire to consider multiple angles and viewpoints within the subject area, believing this adds to the complexity and profoundness of delivering something that considers multiple aspects relevant to the success or failure of a reframe of a systemic project. Despite the complexity, this thesis remains committed to providing practical implications and recommendations for addressing real-world challenges. The depth of the analysis ensures that the insights derived from this research are actionable and relevant. Additionally, I argue that the complexity within the thesis leads to the discovery of new connections, theories, or perspectives that significantly contribute to the academic discourse.
As seen in the final design booklet accommodating the framework and canvas, multiple theorems are combined to support reframing practices that have not been necessarily related before. These contributions are essential for advancing the field. It is important to highlight that, even within the complexity, this thesis

maintains methodological rigor. Carefully chosen research methods are employed to address the diverse topics effectively, through research for and through design with implementing systemic methodologies such as sense-making sessions and assuring the inclusion of stakeholders for better implementation. The work presented in this thesis is tailored to a specific audience—those seeking comprehensive resources on reframing complicated contexts. It approaches to complex contexts and the possibility of applying systemic design within such a context. In Chapter 2, the lack of such resources is emphasized, therefore wanting to deliver an all-around understanding of what it entails to execute such a reframe instead of focusing specifically on some aspects of this process. The complexity is intentionally aimed at meeting the needs of scholars, practitioners, and decision-makers who require an all-encompassing reference. In conclusion, the complexity of this thesis opens up new avenues for future research. The comprehensive exploration of multiple topics serves as a foundation for more focused and specialized investigations in the future, even though it is vast in the information presented.

Discussion & Future Work

Improvement Points & Future Work

To say that all objectives are achieved by the end of the project would be naive. Within attempting to close the gap between traditional approaches and being able to apply a systemic approach, the first steps have now only been set. Therefore, a list of improvement points and possible future work have been curated. They can be separated in three areas. Improvement points and future work suggestions on 1) specific steps within the final designs, 2) the final designs in general, and 3) beyond the final designs of this thesis. The improvement points and future works will now be discussed.

Improvement points and future work on specific steps in the canvas and framework

Clearer concepts within step 0: the foundations

As described in the insights of the 'Halo way of working' and in the 'case studies', the first step of foundations focuses on internal improvement through an internal knowledge document and a way of building and sustaining a project process adaptable to systemic design.

As the focus of the project was not to be improving a way of setting up projects to allow for more systemic projects but generally acknowledged that they should be more flexible, more future work can be done on exploring how this project setup phase could look to accommodate systemic projects and to allow flexibility and an element of surprise in it. This step was perceived to be too specific for its context and, therefore, considered problematic to generalize for this thesis. It is valuable to research whether or not this statement is true.

Critical factors amounting to systemic projects

When changing the first iteration of the canvas, the step that dictated which elements needed to be in place contained a list of principles that needed to be present within systemic design, with steps on how to get there. Eventually, this step was aligned with step 2, the critical factors, as they showed much overlap as became clear in one of the sense-making sessions within Halogen. After aligning with the paper of Fortune & White, the critical factors were never revised. Nevertheless, a double check should be taken if these critical factors build towards systemic design principles and are not too general. If that were the case, the framework would lose its value for a reframe to a systemic project and would be a general canvas.

An improvement point to increase the validity of the critical factors is the connection of the critical factors with each other, as was mentioned in one of the sense-making sessions. More specific tactics could also be curated if such a network could be curated. However, as will be questioned later in this chapter, it could be questioned if making the project more detailed assists its systemic nature, and perhaps more abstraction is needed instead.

Additionally, the systemic design principles set up in the explainer booklet should align with existing literature. More user tests should be conducted to test if the canvas, as it is, is too general or does help with setting contextual factors in place to have a systemic project. Furthermore, more exploration is needed on what other critical factors might need to be put in place to align these factors with the systemic principles, or an additional step needs to be implemented in the canvas to ensure the canvas focuses on bringing forward a reframe that makes a project (more) systemic.

Overlooking improvement factors in reframing

When analyzing how Halogen reframed their projects, most improvement points were given on all the steps around the reframe, however, not on reframing itself. It might be that during this research on reframing, some essential points that went on in the process of reframing were missed. Looking back on the research conducted in this thesis, pinpointing specific tactics or measures taken when reframing was a problematic practice. In this thesis, this has been explained due to the unique character of a reframe and a project, therefore not being able to underpin it to a general strategy other than crafting strategies to get critical factors in place or aligning content elements in the project. Besides, reframing is a highly abstract and sometimes even unconscious step taken, making it harder to generalize if people cannot explain their steps, as it happened subconsciously (Dorst, 2015). Because of this, it was reasoned that a general way of executing a reframe was impossible to record. In that case, the framework and canvas created as a result of this thesis aim to bring forward the right questions to see what needs to be reframed and which factors might pose a threat to executing projects in a systemic way. However, if the situation presents itself that the canvas and framework need to provide better in bridging this step of reframing because it appears to be difficult for the current user group, further actions can be taken. It could be valuable to have a generalized procedure figured out for reframing. Specifically, one could conduct further research on reframing by following projects in real-time, step by step, to uncover some commonalities in the reframing practices.

Prevailing perspectives on change: a reintroduction

As explained in Chapter 6, the first iteration of the canvas, the first iteration took into account literature on the prevailing perspectives on change. Its goal was to align these perspectives with the different tactics to motivate why they would work. Eventually, it was considered to drop as it made the tactics more confusing, and the tactics mentioned mostly had relations to one or two perspectives on change. However, as posed in the final design, the criteria listed as systemic design principles voiced that knowing what different motivators might drive incentives to collaborate is vital. Therefore, the tactics need to be restructured and supplemented with more tactics that provide different strategies on other perspectives on change, showing that the list of tactics formulated now (and as has been discussed) is incomplete and open to more viewpoints.

Critically questioning general elements of the final designs

From canvas to toolkit: Changing the appearance, wording, and structure of the canvas

As discussed in the findings of the sense-making and co-creation sessions, improvements can be made in compartmentalizing the canvas into a toolkit to emphasize the framework and canvas's iterative core and make the reframing more manageable.

As mentioned in Chapter 5 of the final design, the structuring of the canvas was due to essential elements of the canvas being next to each other. However, in the end, this was less crucial than believed before, as was shown in the validation of the final canvas and framework. Additionally, the canvas would improve usability if simplified into one canvas. However, as it turned out in the final design's creation, this was a complicated task. Reframing is so complex that it is hard to simplify and leave important characteristics out, just like the business model canvas does. Therefore, the decision is made that it should be let go of the idea that everything needs to be on one canvas and can be adapted in a toolkit structure. Another possibility that taps into the simplified nature of canvases could be a structure of multiple canvases supporting the framework, much like what is already done with assessing the impact and the separate reframing canvas. These canvasses can then be used to fill in necessary information while remaining optional. It is similar to the business model canvas's value proposition canvas. Future iterations could be made and tested on what the best structure is and could be, also in the sense of usability. More research must be conducted on what the points are that novice systemic designers and business developers need help with in the process of reframing.

Another improvement within the design of the canvas could be, as discussed in the results of the validation of the final design, to change the way step 4. assessing the feasibility of the reframe is set up in the canvas (step 2 in the framework, assessing for feasibility). By making a clear definition and separation between the current state of the project and the ideal state of the project, better assessments can be made about what the maximum viable systemic goal in a project could be, and if this could be achieved. Implementing this change could also better assess the critical factors needed to be brought into place.

Lastly, the wording of the canvas should be adapted to create a more general use case instead of positioning the canvas only for consultancies and their clients. Although that is the original point of view, the possibility must be taken into account that the canvas is more broadly applicable to the domain of consultancies and their clients.

Revalidate the user group and its needs

During the validation phase of this thesis, it could not be fully validated if this framework solved a problem for people just entering the domain of systemic design. Due to personal experience and from what is seen in practice, it is a problem that traditional approaches will be applied to complex contexts. However, the participants that the canvas was tested with had the academic freedom to curate their systemic project. Therefore, they did not require the canvas to reframe the context of their project but used it to reframe and align the content. Thus, it cannot be said with certainty that there is a need for help in reframing for people new to systemic design but experienced in executing projects. Some designers or sales/business developers might need different tools to reframe since they hold different problems. The need for different tools was challenging to validate within Halogen, as it seemed no one had just entered the domain of systemic design and needed more knowledge on the field or experience in projects. All employees either had systemic knowledge or not, and much experience in the design field, or were not in a position to reframe a project in the first place. Therefore, a suggestion for future research is to user-test this framework and canvas more. The improvement point 'generalize reframing' suggests how to do this.

Looking into systemic discussions

A topic or mode of practice that needs to be covered in this thesis is the notion of systemic discussions or dialogic design science (Jones, 2014). It is mentioned as one of the modes of practice, and fruitful discussions are a topic of interest in the systemic realm (Buckenmayer et al., 2021). Unfortunately, There was little time to delve into this side of systemic design, as it seemed irrelevant to reframing in context with a client. The relevance lies in generating insights from opposing views and thoughts of actors and stakeholders that should be managed. Even though this is more a topic relevant for the execution of design, and not the reframing of it, it has yet to be covered as a specific skill that should be trained for and might need to get more relevance in future work. Especially if the framework and canvas will be directed to deal with more stakeholder inclusion, as will be proposed in the improvement point' part of a bigger system: project content, project context, stakeholder context.'

Complicated approach to a complex context?

Chapter 2 describes how complicated contexts generally apply best practices as a form of problem solution (Snowden & Boone, 2007). This thesis deals primarily with reframing toward a complex context. However, this thesis is mainly based on empirical research, where best practices and improvement points are used to define a linear methodology and generalize it to the public. These elements (best practice and linear approach) are highly characteristic of complicated contexts, not complex ones. Therefore, this thesis takes into account the act of reframing as a complicated context, as opposed to a complex one. One could say that this project does not consider the complexity of reframing through the right approach, even though it intends to approach the act of reframing holistically and even in a complex context. An opposing argument for this is that executing a systemic approach can be complex, but reframing could fall into a complicated domain. It is clearly shown that the steps around reframing hold some sense of generability towards it, while the act of reframing itself is too unique to be generalized.

Regarding the latter, the framework and canvas leave room for reframing tactics. Therefore, this framework and its canvas are set up so that it can be used to be made case-specific. Secondly, it leaves space for adding elements essential to reframing that are open to adapt to more unique cases. The question then becomes when such approaches to complicated contexts cross boundaries with complex ones and whether or not these practices can be used in complex contexts rightfully.

An improvement point could be to make the canvas more abstract and the framework less linear by creating more feedback loops to other steps, as mentioned in the previously discussed sense-making session outside of Halogen with Birger Sevaldson in Chapter 6. Besides this improvement point, potential research could conducted, analyzing approaches in the gray area between complex and complicated contexts. As mentioned in the case studies, designers neither saw a project as systemic nor non-systemic. They would instead seek the relevant balance in this gray area. Further empirical research could be conducted on how these practices play out for projects and the consequences of such approaches.

Beyond the final designs of this thesis
Part of a bigger portfolio of interventions
Even though the importance of reframing is explained in Chapter 2, it is mainly based on the assumption that it needs to come from reframing traditional approaches towards systemic design and not on creating more awareness of systemic design as an interdisciplinary or even the fact that there is a difference between complex and complicated contexts, and the approaches used in these contexts (Snowden & Boone, 2007). One could argue that merely creating awareness and understanding of systemic design and complex contexts is essential, but more is needed to achieve change (Christiano & Neimand, 2017). It might be more relevant to put efforts into educating this mindset early on in schools or to clients, even though the latter has been critically questioned by Gene Bellinger as well, as almost no one likes to be told they are doing it wrong (J. Michalski & G. Bellinger, 2020). Instead, such topics should be explored together where people trying to adopt a systems thinking mindset or understand systemic design as an interdisciplinary should get a feeling of ownership in the process.

Making systemic design more apparent and relevant to use is a complex problem. It will need a shift in mindsets and a change in mental models, which is known to be one of the hardest things to achieve (Meadows, 1999). Therefore, this thesis poses as one of the crucial elements within interventions to get to the point where systemic design is more broadly used as an interdisciplinary approach to complex problems. If it is not to reframe projects themselves, it is to create awareness of the complexity they might act in and the necessity of changing the approach in dealing with such contexts. Suggestions on closing the gap between applying traditional approaches where approaches should be used that deal with complex contexts is to analyze the problem in more detail and find which other interventions could be proposed to close this gap in literature and practice.

Part of a bigger system: Project content, project context, stakeholder context
After the final design of the framework and canvas and discussing the grounds of this thesis, the first question that was often asked was how the context of where the project acts relates to the project's context and content. While the context of the project relates closely to the project, it also relates to the context in which the project takes place: the client company and other possible fields it breaches where different stakeholders act. After a compelling conversation with Ph.D. student E. Mazerant, he posed the next view to me: the flexibility of an organization. If an organization can be seen as an elastic band, then there can be a project, a pulling force on that band. A project can have as much intention to bring change, deforming that elastic band, but if the organization that this project is executed in stays the same and holds that elastic band in place, and the flexibility of the organization is restricted, it will always flow back into its original shape. Therefore, it is crucial to change the context of where this project takes place, meaning the organization and the stakeholders associated.

The outer layer of the context where a project is executed could be a novel improvement point in this framework, where change management could be considered in combination with systemic design, as some practices already propose (Improconsult, n.d.) — expanding the framework beyond the project content and context towards the contexts of the different organizations and stakeholders involved. Applying this change could increase the framework and canvas' complexity but will give a more representable and realistic overview of the situation. Future work on the canvas and framework could incorporate more of the importance of stakeholder inclusion since a project that deals with systemic elements also deals with a highly complex social structure — leaving it impossible to leave out crucial stakeholders and the reframing of critical factors concerning them.

Generalize reframing
The insights obtained in this thesis, designed into a canvas and framework, are meant to be generalizable to other design consultancies dealing with reframing to make their projects (more) systemic. This approach is applicable if they struggle with the same process and pain points as Halogen. However, the question remains if this is the case. Halogen is more advanced than most consultancies in having the knowledge, skill, and project setup to implement systemic design by, for example, knowing which questions to ask and creating tactics reframing the project to be systemic. Therefore, the framework and canvas as proposed in this thesis will come in handy with organizations who do not have this experience since systemic design can be a new practice for them. It might be unbeknownst to new practitioners what elements to pay attention to or even where to start, even though the practice of reframing, in general, is not new. The comparison between companies with systemic design skills and those without is knowing which elements are essential within a systemic design project and facilitating for those, based on the content that also needs to change. It was experienced in case studies that this is a demanding task, and even though executed successfully, it could make other aspects lose out of sight, such as the overall impact the project is supposed to bring forward. Unfortunately, when it comes down to specific skills and practices within the design domain, the canvas, framework, and explanation booklet are still lacking. For example, the canvas does not say which critical questions to ask to achieve a systemic reframe. The amount of detail in tactics still needs to be figured out in practice and could be an additional improvement point to the canvas. However, by making tactics more concrete and creating more guidelines for executing them, the canvas and framework will not become more generalizable per se. It may be more usable.
Nevertheless, the question remains if tactics can be detailed or are too case-specific for this level of detail. Instead, to generalize the reframe, more attention could be spent on future research comparing findings in other consultancies (in size and systemic maturity) and drafting a list of similarities and differences in points of struggle. There may be stages where a consultancy stands when attempting to adopt systemic design within their practice, and guidelines should be written on managing change towards a systemic design-supporting organization. Besides additional research in other consultancies, the design canvas and framework should be user-tested in practice while a project is reframed. One way to do this is by distributing it online, where feedback is asked on usage as a form of a social experiment.

Besides creating relevance in the general practice, the framework and canvas also held relevance for Halogen. On the other hand, this relevance and implementation might be difficult to achieve. The next sub-paragraph will discuss this more.

Discussion & Future Work

Practical Relevance

As the project ended, the question remained: How was the project goal achieved? The following four points prove its achievement by creating the (first) design of a framework and canvas for systemic project reframing. This project aimed to make systemic design better adopted and executed by design consultancies in their project, guide how to navigate the reframing process, and create a more positive impact.

Guidance for Transition
The conceptual framework created within this study offers a structured trajectory for consultancies and individuals aiming to transition from conventional design paradigms to those of a systemic nature. As one of the first, this thesis addresses a distinct gap within contemporary literature, providing practitioners with a practical navigational compass to traverse the rugged terrain of modern and future projects. It creates a moment to stop and reflect on the project's current status to then enhance the project. This framework becomes an invaluable instrument by straying away from linear problem-solving towards a systemic focus by assessing the reframe's feasibility and necessity.

Real-world application
By incorporating insights from empirical research, resulting in best practices and improvement points, interwoven with a theoretical backbone, the canvas and framework are rooted in practical and theoretical application. Adaptable to the unique nature of projects that deal with complexity. This real-world relevance is vital for professionals seeking actionable tools to implement systemic design. The canvas enables project teams to reframe content and context effectively, fostering a deeper understanding of complex project dynamics.

Managing the upcoming era of uncertainty
Projects often encounter unforeseen changes and uncertainties in today's rapidly evolving world. Once knowledge and awareness of systemic design practices gain more traction and popularity, how to incorporate such practices remains. The designed framework's focus on a systemic approach enhances adaptability and resilience for projects and companies. They are allowing organizations to navigate ambiguity and respond effectively to dynamic contexts. This practical advantage is crucial for industries where flexibility and agility are paramount and risks are wished to be calculated for or prevented. Through the transition to a systemic approach, projects are more likely to achieve innovative and holistic solutions that align with the intricate, interconnected nature of modern problems. This can lead to improved project outcomes and long-term success for the providing consultancy that uses the canvas and framework, and its clients.

Creating impact, one project at atime
The framework and canvas present a structured approach that guides practitioners to shift their focus from insular company-centric outcomes to a systemic view encompassing diverse capitals like natural and societal factors. Embedding this perspective equips projects to generate holistic impact strategically, fostering a more resilient, socially responsible, and environmentally attuned approach that aligns with contemporary demands for sustainable or regenerative business practices.

Discussion & Future Work

Academical Relevance

Here, we will discuss the academic relevance of this thesis. Although this project's research questions and goals were mostly practically focused, academic relevance is certainly obtained.

Advancing Theory
This thesis contributes to the academic landscape by bridging the gap between executing traditional and systemic design approaches. By building upon the Cynefin framework, this thesis extends existing theory and offers a more comprehensive understanding of how to approach complex problem-solving in a transitioning context. This extension could stimulate further research and discourse in the field.

Methodological Innovation
This canvas and framework represent a methodological innovation by providing a structured process for transitioning design approaches, which can be associated with design and project management. This contribution adds to the toolkit of methodologies available to researchers and practitioners, showcasing the evolution of design methodologies addressing new complex challenges.

Theoretical and Empirical validation in interdisciplinary fields
Incorporating insights from empirical research and a theoretical backbone adds rigor to this thesis' work. By grounding your canvas and framework in empirical evidence, practical applicability is validated and demonstrates the alignment between theory and practice. This validation contributes to the academic credibility of the research. At the same time, this research brings together concepts from design, complexity theory, and problem-solving frameworks. This interdisciplinary approach enriches the academic discourse by building further on the recently found interdisciplinary field of systemic design. It encourages cross-pollination of ideas and perspectives, fostering a more holistic understanding of project management in complex contexts.

Personal Reflection

In this project, I delved into systemic design, a field that has always piqued my interest. My journey led me to explore the roots of systemic design and how it sets itself apart from traditional design methods. Additionally, I learned more about the difficulties and the many elements that come into play while reframing from those traditional practices to systemic design. As I delved into this intricate inter-discipline, I unearthed insights that left an indelible mark on my understanding and practice.

One key revelation on this path was the nuanced boundary between systemic and traditional design. While traditional design methods can incorporate certain systemic elements, it does not necessarily transform the approach into a truly systemic one, let alone guarantee impactful results. Neither does it diminish its systematicness by incorporating some systemic elements in a project, making systemic design more of a blurry practice with other design practices than initially thought.

My commitment to continuous learning in this field became imminent. Staying at the forefront of systemic design meant staying informed about emerging trends and refining my knowledge and skills within the field. I got a better understanding of the current problems surrounding systemic design and complex problem targeting not being picked up as a practice itself. I took it upon myself to develop strategies that harmonized systemic design within project practices. All while advocating for more awareness of systems thinking among those more rooted in conventional practices.

My research also provided insights into the exemplary practices of Halogen, a company proficient in implementing systemic design. I gained valuable exposure to the tools and methods that facilitate a systemic approach, such as early actor inclusion in practices and change management practices. However, it also revealed areas where Halogen and potentially other consultancies could enhance their practices. Translating these insights into action, I aimed to share my observations with Halogen, encouraging a culture of continuous improvement within their organization and an increased focus on impact beyond the organization so pressing complex issues would be targeted. I deemed this step important as systemic design is offered as a solution to these pressing issues, where leaving them stranded and used for monetary value was deemed to miss the point of using these practices. Simultaneously, I adopted these lessons to enhance my future consulting endeavors.

As I reflect on my journey, I envision applying these learnings in my future role as a systemic design consultant. My primary focus throughout this project was transitioning projects from complicated to complex contexts in collaboration with a client. I believe that this is a critical factor in fostering more effective systemic projects. However, as my research progressed, I recognized that while reframing remains essential, there are other paths towards making systemic design better adopted in general. Besides reframing, a broad scale of different relevant elements underpinning the reframing practice became apparent. It piqued my interest, going in a broad exploration within my thesis, often to the question of my supervisors. Admittedly, going for an abstract approach made it difficult for me to focus on specific insights and combine them into a supporting narrative, leaving the insights domain presented in Chapters 4 and 5 somewhat unconcluded. The amount of insights and information gathered was admittedly too overwhelming to process. Still, in hindsight, I wonder if the result would have been different if I mainly focused on specific elements within my design. Growth, therefore, lies in improving my ability to communicate complexity effectively. I recognize the challenge of conveying complex ideas concisely, as stakeholders often lack the time to delve into intricacies. Additionally, I aim to refine my skills in finding the balance between simplifying complex concepts into easily understandable designs and filtering out unnecessary complexities while staying true to the complexity at hand and not oversimplifying it too much. I argue that going more in-depth in certain elements would have felt just as confusing and irrelevant as it would not present the whole process one should go through, going against the vision I had for my final design to deliver something that could help consultants from the start to the end with reframing. Besides, part of the practices discussed within reframing advised to be of the main focus, such as the critical factors and tactics, were based on best practices, not being able to assure if they are relevant for each case. Especially the tactics, as I firmly believe these should be catered for specific to the context and content of each project, making the tactics presented in my work a mere inspiration based on insights gathered from the case studies in my empirical research. Otherwise, by focusing on these main elements only, it would have felt that this thesis would have embodied the isolating practices of complicated problem-solving that it was trying so hard to argue against, trying to approach this project rather more systemically, seeing it in a complex contact than a complicated one.

In hindsight, I recognize areas where I could have made my process more systemic. This includes more extensive involvement of the Halogen team in the co-creation process and a deeper exploration of the problem area and the goal I was trying to solve before analyzing my data and designing a concept or tool that addresses the project's core issues. The co-creation could have embodied better assurance of implementation later on, but was unable to be achieved due to time and location restrictions at the time.

During this thesis, I encountered conflicting forces pulling me in different directions of what eventual goal should be pursued. On the one hand, there was a call to deliver insights and improvement points, primarily focused on the pre-execution phase of a project. On the other hand, I was encouraged to provide a design that emphasized the execution phase of the project, focusing on reframing and critical factors and scoping the project more. However, as discussed, I had reservations about implementing these best practices and focusing on specific elements within reframing practices. It would otherwise not align with the definition of complexity and systemic design principles understood by the literature research I conducted. Additionally, I was ambitious to contribute something lasting value beyond Halogen, even if its implementation across multiple organizations is still to be determined. The project highlighted my need for better planning and organizing my work and additional stakeholder inclusion, management, and expectation management from both sides. I struggle with knowing what feedback to ask for and what information needs to be shared and asked for. Besides, it was unfortunate that I could not fully synthesize all my findings to a level that would suffice Halogen and towards my expectations while delivering something deemed valuable by the stakeholders of TU Delft and myself as well due to time constraints and, as mentioned being unbeknownst to different expectations of a final graduation that later on became apparent to me. It highlights my responsibility and needs for training in setting what is expected of me by both parties, highlighted with examples if needed, as interpretation got the best of me while communicating with stakeholders. From the beginning, it has been emphasized that the idea of a final deliverable was essential in my graduation thesis. I now have the realization of why this is so. It would have highlighted where my synthesis of information would lead and prevented the perception of two pulling forces expecting something different from me besides my interests. Although I understand that from the beginning, it is difficult once you enter a field you are unaware of what such a design deliverable would be and sometimes can only be shaped while continuing. Interestingly enough, this aligns perfectly with my findings in research, making it difficult for design consultancies to work towards something undefined, highlighting the importance of creating a defined yet flexible project deliverable that can be reframed. Besides, it highlights the importance of reflecting and taking a said "snapshot" or frame of the project to align with all stakeholders involved where it is being worked towards. Unfortunately, this moment of discussion came rather later than sooner in my project.

In conclusion, this journey has deepened my understanding of systemic design and shed light on my growth areas. I aspire to leverage these insights to make a meaningful contribution to the field of systemic design and continuously improve as a designer and consultant.

9. Conclusion

Personal Reflection

The journey of this master's thesis has been both intellectually challenging and profoundly enlightening. It has offered a comprehensive exploration into systemic design, specifically focusing on its practical application within a pioneering company in complex project execution. It began with recognizing a significant gap between traditional problem-solving approaches and the complex challenges organizations like Halogen face today. One of the most salient contributions of this research lies in its ability to bridge theoretical constructs with real-world applications. The empirical foundation provided invaluable insights into existing processes, identifying challenges and opportunities. These findings were not confined to academic discourse. However, they were synthesized into a framework, canvas, and an additional information booklet that create actionable "tactics" in reframing challenges. This dual focus ensures that the research is theoretically robust and practically relevant.

The dual value proposition of this thesis is noteworthy. On the academic front, the research contributes to the burgeoning field of systemic design, particularly its application in complex contexts. On the practical front, it provides actionable insights and tools to improve systemic project execution. This is particularly emphasized where the advised improvement points and the design of the canvas and framework are discussed in detail.

The research adopted an iterative approach to design. Insights from empirical research were continually integrated into the design iterations, ensuring that the final framework is robust and adaptable. This iterative process was validated through sense-making and co-creation sessions, adding another layer of credibility to the research.

Significant findings include the natural inclination of skilled designers and business developers within Halogen to employ reframing practices. This suggests that the ability to deal with complexity is as much a skill to be acquired as a mindset to be nurtured. It delves into seeing the potential within projects to be systemic, understanding how critical project factors tie together, and how different tactics should be sculpted to create the right circumstances for a reframe to happen to a more systemic approach. However, it was also revealed that the challenges, besides understanding reframing practices for potential new systemic designers, lie in the processes that support these practices. This highlights the need for Halogen to look beyond aligning systemic knowledge and skills and dig deeper into the issues in processes facilitating projects that may hinder progress. Lastly, it emphasizes the need to target complex problems challenging society by focusing on impact throughout the organizations and projects. The thesis also extends the use of the framework and canvas to other organizations and contexts by maintaining an abstract approach while delivering more specific improvement points to Halogen.

The canvas and framework developed in this research serve as tools to navigate the complexity of transforming traditional practices into systemic projects, aligning knowledge internally and focusing on impact as a red thread throughout projects, aligning with the impact a consultancy wants to achieve. It does so by the points mentioned above in spotting systemic potential in projects, aligning the project context through critical factors that need to be reframed and accommodated to align the content with continuous project insights and the impact it wants to achieve. Continuous reflection should be implemented to assess this impact to allow teams to evaluate if they are still on track to achieving said impact.

However, the utility of these tools is not without limitations. For instance, the canvas was initially thought to be a tool that could easily align various project elements. Yet, it was found that most elements presented on the canvas clutter information and make it less usable by going through all elements within the canvas, indicating that a more fluid and dynamic canvas is needed to accommodate systemic projects. This led to the realization that a single canvas might not be the ultimate tool for systemic design despite its accessibility and familiarity among practitioners. While the thesis significantly bridges the gap between theory and practice, it also sets the stage for future research. The challenges identified, particularly in the supporting processes for systemic projects, offer avenues for further exploration.

In summary, this thesis has provided valuable insights into systemic design challenges and opportunities, and offered practical tools and recommendations for organizations looking to navigate the complexities of today's interconnected world. It successfully navigates the complexities of bridging theoretical constructs with practical needs, providing the tools and insights to improve systemic project transition and execution.

As we conclude this academic journey, it is essential to acknowledge that while significant strides have been made, the field of systemic design in complex contexts is ever-evolving. The insights and frameworks presented in this thesis offer a timely and invaluable resource, setting the stage for ongoing academic discourse and practical applications in a rapidly evolving field that itself deals with unpredictable dynamics. While the canvas and framework developed here are steps in the right direction, they are by no means the end of the journey, presenting room for improvement and future work. As the world continues to evolve, so too must our approaches to understanding and shaping it.

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