DESIGNING INTERVENTIONS FOR RECIPROCAL STRATEGY FORMULATION AND EXECUTION

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Designing Interventions to Facilitate Reciprocal Strategy Formulation and Execution

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Advisory Team

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Dear reader,

In front of you lies now the final deliverable of my Master's thesis in Strategic Product Design. It marks the end of the 100 days of my graduation project and the two years of learning, growth, and exploration I have experienced in this program. It is an attempt at bringing many of the things I learned here at Delft University of Technology together, as well as connecting them with my previous education. Studying here challenged me and my understanding of design, expanded it, and gave me new perspectives that I am eager to explore further in the future. This is in large part due to the amazing people I was fortunate enough to meet here.

I was also fortunate to have my team in this endeavor, who saw something interesting in this project early on and decided to take me on as a graduation student, even though their schedules are so overbooked already. Therefore, I would like to thank Giulia Calabretta and Bart Bluemink for finding the time and helping me through this project with feedback and coaching, which always managed to get me back on track again, as well as their network that connected me to many of the people I spoke to for this project.

This brings me to the participants of my interviews, who I would like to thank for giving so generously their time to me to ask my questions and to provide such valuable insights from their perspective as design practitioners.

Furthermore, I want to thank my fellow students and graduates for lending an ear and offering feedback, as we all found ourselves in individual projects all over Europe.

Finally, I would not have been able to get through these past months without the support of my friends, my brother, my parents, and my wife Rebeca, who motivated me, encouraged me, and grounded me throughout this project. Thank you!

It has been a very rewarding experience and I hope you enjoy reading this!

Valentin

EXECUTIVE SUMMARY

This project set out to investigate how small to midsize industrial design practices address strategic challenges. For this a literature review was conducted, as well as complementary desk research and an interview study with design practitioners. Later on three small case studies helped set the direction of the project. The findings and insights were translated with the ViP method into a playbook containing interventions industrial design practices can use to connect their work closer to strategic design.

The literature research revealed a gap in the literature in the area of strategic design in settings outside of internal design teams of large organizations or as part of larger consultancies. This was true for small to midsize design practices employing strategic design or design in a strategic way, as well as for offering strategic design services for SMEs.

Therefore, the literature research was widened and served more to establish a solid foundation in organizational strategy, the development of design, and the value design can add to organizations. Furthermore, design thinking and strategic design were investigated.

The research suggests that:

- Strategic Design works best when it is embedded in organizations and consequently, the consultancy model needs rethinking
- there was a surge of design in businesses due to Design Thinking, accompanied by increased criticism of Design Thinking, especially from academics and design professionals
- there is a lack of theory, methods, and tools for strategy creation in traditional organizational strategy, a gap that design seems to be well suited to fill
- the role of designers and the way design is practiced and design business operate has changed significantly and continuous to do so

Additional desk research accompanying the preparation of the interview study showcased the change industrial design practices underwent over the last decade in the services they offer and the way they position and market themselves.

The interview study itself added the perspective of currently active design practitioners to the project. The focus of their practices varied from industrial design to strategic design as well as the size, with

designers participating from solo design practices up to a design practice with currently 27 employees. This variety offered different perspectives to the research question “How can small to midsize industrial design practices address strategic challenges?”. As varied as the insights and perspectives were, there were also overlaps and patterns in the recorded responses.

The main insights were:

- Strategy formulation and strategy execution are interdependent
- Context shapes the outcome shapes the context, meaning context does not have only a one-directional influence on designs, but designers can use the outcomes of design processes to influence context, they are means to an end
- “Pure” strategy is incredibly hard to sell, therefore it is often practiced as something industrial designers have always done: questioning and reframing a brief
- Industrial designers seem to have already the capabilities needed to address strategic challenges

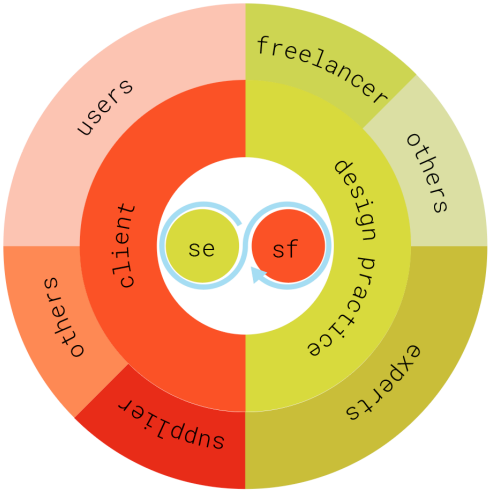
At the end of the research phase, the findings were translated into factors, categorized, and clustered following the ViP method, before arriving at a worldview and subsequent design statement.

Through several iterations, a framework and multiple interventions were designed to reenvision the consultancy model and utilize creative ecosystem collaboration with the goal to enable reciprocal strategy formulation and strategy execution. They were collected and tied together in a playbook. Each intervention consists of a concept, an approach, and a tool.

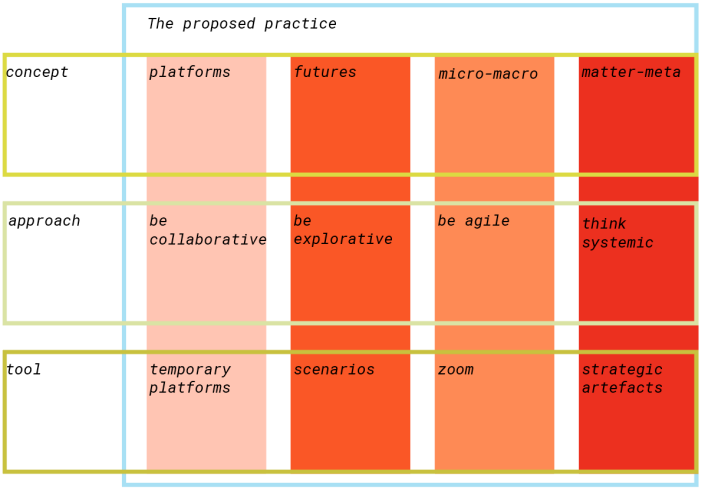
The interventions are:

- Platform
- Futures
- Micro-Macro
- Matter-Meta

This design proposal was ultimately evaluated through feedback conversations with a Ph.D. candidate and a design professional and through the creation of a scenario.



The framework for reciprocal strategy formulation and execution



The interventions developed during the project

CONTENT

INTRODUCTION

Innovation and the development of new product or service offerings are core components of enterprises of all sizes and vital for their survival and growth. To achieve this companies often used to look outside of their organization for external service providers to assist in these tasks or to completely outsource them.

In the past, Industrial Design studios were often found in this role as partners in these processes, since „design, closely allied to innovation, is the key to standing out and maintaining competitiveness. And that applies whatever the size of the business“ (Carlopio, 2009). With the rise of design-driven growth (Sheppard et al., 2018) big corporations increasingly developed internal design teams or rely on the services of large design agencies (Fabricant, 2014). These developments of creating internal teams or larger agencies acquiring smaller studios have progressed simultaneously with the rise of Design Thinking in the business world. While this development has had its positive results, like an increased acceptance and valuation of design and how design can help organizations, it is also critically seen, especially by design researchers and design practitioners.

These changes have been happening pretty much since the beginning of this century. However, they were accelerated by the economic crash in 2008, and it is to be seen how the most recent crises impact it going forward. While these are events that stand out, organizations have been undergoing tremendous changes during this time. Globalization is a constant influence, with all its benefits and disadvantages, automation is no longer just a change in the manufacturing sector, but thanks to AI it reaches most areas of a company, and while some organizations are already addressing this new frontier there are still others that struggle with digitalization. These challenges, as well as many others, are strategic in nature and organizations need to find answers to how they want and need to react to them. Innovative strategies are therefore desperately needed.

But how to create an innovative strategy? The difficulty in this question becomes apparent by the fact that there is no clear theory of strategy creation (Carlopio, 2009; Lafley & Martin, 2013). Over the years designers progressively worked on strategic challenges and the field of Strategic (Product) Design emerged. The methods, tools, and theories from more traditional design work served as the foundation for this development. Today, Strategic Designers can be found in larger companies and agencies.

Smaller design practices are trying to be part of this development as well. They position themselves more as “innovation agencies” and include in their offerings Strategic Design services. In the literature, however, these efforts are understudied. And it is questionable how far the way the practices market themselves overlaps with what work they actually are hired to do. In order to stay competitive, and part of the development of design, these small to midsize Industrial Design practices need to find ways to incorporate Strategic Design better into their everyday design work, since they do not have the financial power for experiments.

This thesis investigates how small to midsize Industrial Design practices address strategic challenges through a literature review, desk research and an interview study with design practitioners. Using the insights gained the aim is to propose interventions that enable these practices to utilize the strategic capabilities inherent to design to address these new challenges.

LITERATURE RESEARCH

The first part of the research conducted for this thesis is a literature review. The aim is to gain an understanding of the academic literature and to gauge if there are any gaps in the literature that this thesis might investigate further. Additionally, the goal is to establish a foundation on which later (field) research can be built.

1 Set-Up

1.1 Introduction

Every organization faces challenges: some straightforward, many of them complex and ill-defined. However, they are trying to be prepared for them and to solve them should they arise. These challenges are strategic in nature. Usually, an organization would turn to strategists with business degrees to solve these problems, to future-proof their organization, or to work out a competitive advantage. However, with the growing understanding and acceptance of the value design can add to organizations in the business world as well as the public sector, more and more organizations look at design for innovative and new ways to address these challenges. Design therefore no longer just operates in the area of strategy implementation, but also moves into the area of strategy formulation (Calabretta & Gemser, 2017), especially through the younger discipline of Strategic Design. With the evolution of design from non-design to systemic design (Kretzschmar, 2003), the move of large parts of production to Asia (Muratovski, 2015), and the development of either internal design teams and capabilities as well as the acquisition of many design studios by larger agencies and consultancies (Calabretta & Gemser, 2017, Fabricant, 2014), many rather traditionally positioned industrial design studios struggle to survive (Fabricant, 2014). To stay competitive one option seems to be to develop capabilities to be able to evolve upwards the Danish Design Ladder (Kretzschmar, 2003) and to offer services that can help clients to tackle more strategic challenges.

This literature review looks first at traditional business strategy before exploring complexity and so-called wicked problems and the value design can add to organizations in the private as well as the public sector. One way of doing that is through ‘Design Thinking’ which seems to be everywhere these days. This review takes

a look at the history of design thinking and how it developed in academia and the business world with a lot of success. However, there are also many critical voices about design thinking. Finally, this literature review highlights 'Strategic (Product) Design' and the different contexts it can be used in.

1.2 Methodology

The origin point for this literature review was the research question "How do small to midsize industrial design studios use strategic design?". This research question marked the starting point for the research. However, over time it became clear that the area of interest had to be extended, since there was a lack of literature pertaining to this specific research question. Furthermore, it became evident that some foundational knowledge had to be established in research, not just in a general sense or understanding.

1.3 Search Strategy

To get started with finding the literature, different search terms and combinations of search terms were used on Google Scholar, for example ""industrial design" AND "strategic design „". These search terms evolved during the course of the review. Additionally, some papers were recommended by the supervisory team. Furthermore, papers and their bibliography from previous courses in this Master were used as well. Finally, some books, talks, and blog posts were added as an attempt to fill some gaps.

2 Strategy

2.1 Organizational Strategy

Strategy, especially organizational strategy, is a vast topic with a large body of research on it. Therefore the literature on the topic is extensive, and a thorough review would be out of scope for this literature review since it is not at the center of the research question. However, it is important to establish a base understanding of the way strategy is understood in this thesis. One influential way of understanding and defining strategy can be found in the influential paper "The Strategy Concept I: Five Ps For Strategy" by Henry Mintzberg (1987): Strategy can be understood as a plan, ploy, pattern, position, or perspective.

- Strategy as a plan is made in advance, consciously, and with purpose.
- Strategy as a ploy can still be planned, but it has a specific purpose: to outwit a competitor.
- Strategy as a pattern is not just a plan, but also the resulting behavior, more precisely "consistency in behavior, whether or not intended".
- Strategy as a position is locating an organization in its environment, as a mediator between internal and external contexts.
- Strategy as a perspective is "an ingrained way of perceiving the world", an inside-out perspective of an organization.

Many of these definitions of strategy are not mutually exclusive but rather offer combined a more nuanced view of what is essentially a concept. Mintzberg makes also the important distinction between intended and realized strategy, for example, visible between strategy as plan and strategy as pattern, as well as between deliberate strategies and emergent strategies. Intentions that get realized can be understood as deliberate strategies, while emergent strategies describe strategies where "patterns develop in the absence of intentions, or despite them" (Figure 1, Mintzberg, 1987).

The origin of organizational strategy is often located historically in war strategy. Another origin point is game theory. Both these origins concern themselves mainly with strategies that involve two parties, which are usually referred to as head-on-competition in a business context (Mintzberg, 1987). Strategy as a position opens this notion up to more competitive parties involved, as well as considering contexts such as markets. However, Martin points out what most traditional strategy definitions miss in their views on strategy: the customer. He argues that to create winning strategies it is not enough to only look at the competitive forces an organization has to grapple with, but also the customer to which the company wants to deliver value (Martin, 2023). This necessity for customer centricity at the heart of strategy formulation is at the core of Martin's argument for integrating design thinking into the creation of strategies since in his view designers are customer experts due to the human-centeredness of design.

Formulating strategy only with an

understanding of strategy as competition is, however, excluding the fact that it is often more successful to avoid competition, for example by finding a niche (Mintzberg, 1987). Porter (1996) argues similarly that strategy is at its core about differentiation, namely “deliberately choosing a different set of activities to deliver a unique mix of value.” The emphasis here lies on “different”. While it is also possible to compete by doing the same activities better and more effectively than a competitor, known as “operational effectiveness”, strategy is about performing different activities (or the same activities in a different way), therefore creating a unique and valuable position (Porter, 1996).

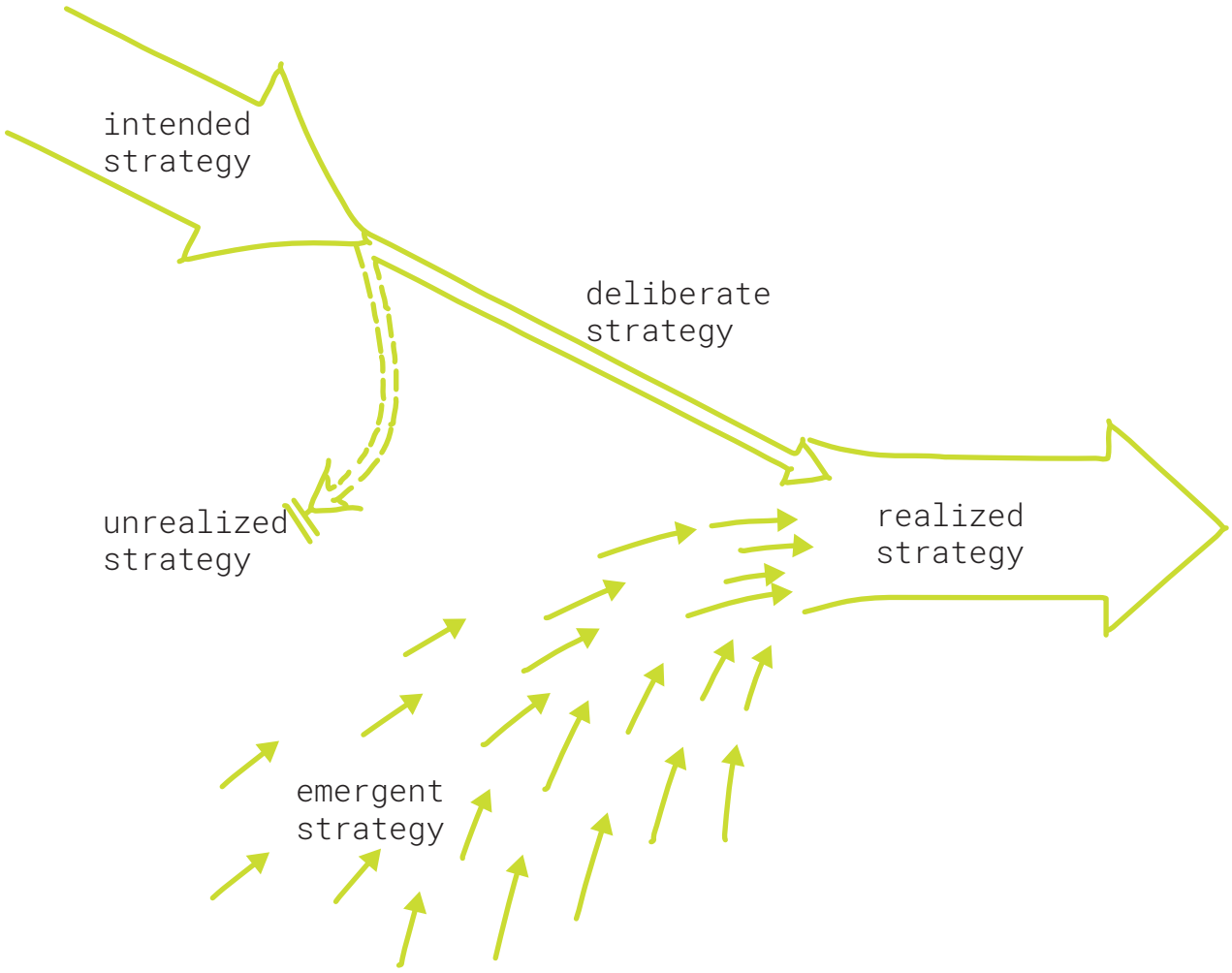
2.2 Challenges in Strategy

Since there are many different ways to understand and define what strategy exactly is in an organizational context, naturally there can be found confusion and a lack of clarity.

Especially the definition of strategy as planning has been seen critically over the years, for the reason that the terms “strategy” and “planning” are often used synonymously. Here it is important to note that “planning” refers to the step necessary to translate a strategy into actionable steps to execute said strategy. A lot of people are more comfortable with this planning phase, referring to it as “strategic planning”, since it is controllable and offers more certainty than strategy formulation (Martin, 2022). However, skipping over the actual strategy formulation stage and diving straight into the planning phase makes a strategy extremely inflexible and therefore more vulnerable.

This highlights the importance of strategy

Figure 1: Deliberate and emergent strategies. From Mintzberg (1987)



formulation. Nevertheless, there seems to be a lack of theory, methods, and tools for strategy formulation within traditional strategy literature (Hamel, 1998; Carlopio, 2009). Even though the literature on organizational strategy recognizes ten distinct schools of thought (Mintzberg et al., 1998) there is no broadly recognized theory on strategy formulation (Carlopio, 2009). Strategy creation seems to be a very secretive process, developed by the leadership team at a retreat from which they return with a strategy. It is a process heavily relying on the analysis of data to inform the outcome as well as to reduce complexity to control it (de Mello Freire, 2017), which lends itself to incremental change very well as well as improvements in operational effectiveness and developments that are relatively well predictable. This approach however reaches its limits when it comes to innovative strategies, as well as (re-) acting in a highly volatile and increasingly complex context.

3 The Value of Design

3.1 Complexity & Wicked Problems

Increasingly design is used to tackle problems with higher levels of complexity (Kretzschmar, 2003; van der Bijl-Brouwer, 2022). Often they are interconnected, everchanging, and interdependent. Many organizations find themselves dealing with situations full of unpredictability and continuous change and much of today's business has changed to a domain of "unknown unknowns" (Snowden & Boone, 2007). Since there is not one correct answer or solution (Snowden & Boone, 2007) it makes it even more difficult to solve these problems with the same methods we used to solve problems before. However, these problems are not new or a phenomenon of the 21st Century as they have been described already as early as the 70s when Horst Rittel wrote about "wicked problems" (Rittel & Webber, 1973). Rittel was writing mainly about policy problems when he coined this term, describing problems that are ill-defined in contrast to problems in the natural sciences which are "definable and separable and may have solutions that are findable" (Rittel & Webber, 1973). This points also to another important point in wicked problems: there can only be a resolution, but by their very nature they are not solvable (Rittel & Webber, 1973). This poses a challenge for many problem-solving methods and processes since they are structured to arrive at a solution, often even at a testable, quantifiable correct solution. Design is mostly seen as a way to solve problems as well. However, there are voices within the field that call for a departure from a fixation on (correct) solutions and instead shifting towards an embracing of solution entropy, by breaking a problem down, changing it, or shifting it (Foster & Ervin, 2020). To re-solve these problems, we first need to understand that we are dealing with a complex problem. Here the Cynefin framework (Snowden & Boone, 2007) can help (Figure 2). It organizes problems into 4 categories: simple, complicated, complex, and chaotic. Wicked problems would be located in the complex field. Just having expert knowledge is no longer enough, analysis only is no longer sufficient and there is a need for creative environments and experiments in which it is possible for patterns to emerge (Snowden & Boone, 2007). This is an area where systemic design is at home (van der Bijl-Brouwer & Malcom, 2020), as well as strategic design (Calabretta & Gemser, 2017; Hill, 2012). The way designers address these problems is with an approach of co-evolution of the (possible) problem and (possible) solution (Rittel & Webber, 1973; Dorst & Cross, 2001). This dialogic approach between (possible) problem and (possible) solution corresponds with the "probe, sense, respond" approach for complex problems in the Cynefin framework (Snowden & Boone, 2007). These approaches are most effective at the beginning of a process, often called the "fuzzy front end" where most parameters are still undetermined. Design is traditionally situated at the end of these processes, when (relatively) clear briefs have been formulated on which designers execute. Naturally, by that point, the problem can hardly be influenced anymore. This limits the ability of the designer to use the potential for (re)solutions that are inherent to the ways designers work. Therefore there has been a push to establish design at the beginning of processes, the fuzzy front end, or in terms of strategic design at the position of strategy formulation (Calabretta & Gemser, 2017). While strategic design is not limited to wicked problems, it's where it can best show its full potential.

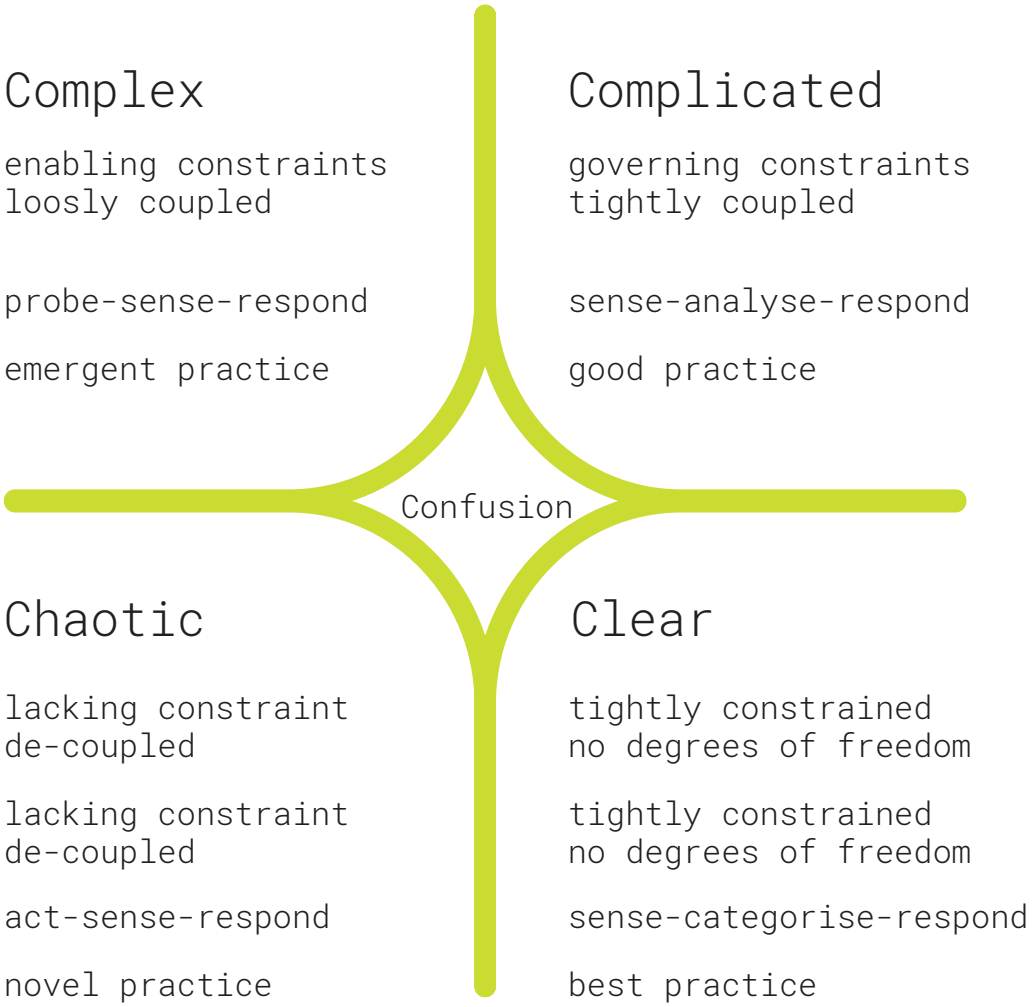


Figure 2: Overview of the Cynefin framework. A framework used to determine the type of problem one is facing. From Snowden & Boone (2007)

3.2 Development of Design & The Danish Design Ladder

There is this notion now that some people have that everyone is a designer (Lavender, 2014), while others advocate for licensing in the design profession (Monteiro, 2019). While it is widely understood that design is an inherently human activity: to make artifacts, to solve problems, to make artifacts to solve problems. However it was not a profession by itself, previous to the industrial revolution, but it was part of craft. Even as the profession evolved, craft still had an important role in the creation of goods. To describe the evolution that the design profession underwent, we can turn to the Danish Design Ladder (Figure 3, Kretzschmar, 2003) as a way to make sense of it.

Design, especially what we know today as Industrial Design, is a profession that evolved parallel with industrial production since the industrial revolution (Muratovski, 2015). While being often part of the production teams it became its own profession over time. Companies were developing products during this time of non-design (Kretzschmar, 2003) products without having the specific role of a designer in their workforce. Important movements that developed the profession of a designer were the Arts and Crafts movement around William Morris in the UK, the Werkbund in Austria, and later the Bauhaus in Germany with designers like Walter Gropius and Marcel Breuer amongst others, and Raymond Loewy in the USA. Especially in the economic boom after World War II, designers became more and more important in the creation of products. Even though the majority of designers approached design in a way that form and function were developed together and interdependent, in the wider public design became synonymous with the styling of products. This phase of design is also considered the time of design-as-styling (Kretzschmar, 2003) and had its peak in the 80s and 90s of the 20th century. With the rise of the internet and the importance of immaterial goods and services, companies

started to use designers more and more in the development of services and processes (Muratovski, 2015). This phase of design-as-process (Kretzschmar, 2003) integrated design more into everyday tasks and processes within companies. Designers and design were no longer just an afterthought in the development of a new product, tasked at the end to make the product fit a certain marketing strategy, but a user-centered designer (Tonkinwise, 2011) aligning the needs of the user with the capabilities of the company.

Finally, with the success of design-centric companies outperforming their competitors (Kretzschmar, 2003; Rae, 2016; Sheppard et al., 2018) design is becoming more of an integral part of many companies, entering a phase of design-as-innovation (Kretzschmar, 2003) supporting companies with more of its strategic capabilities.

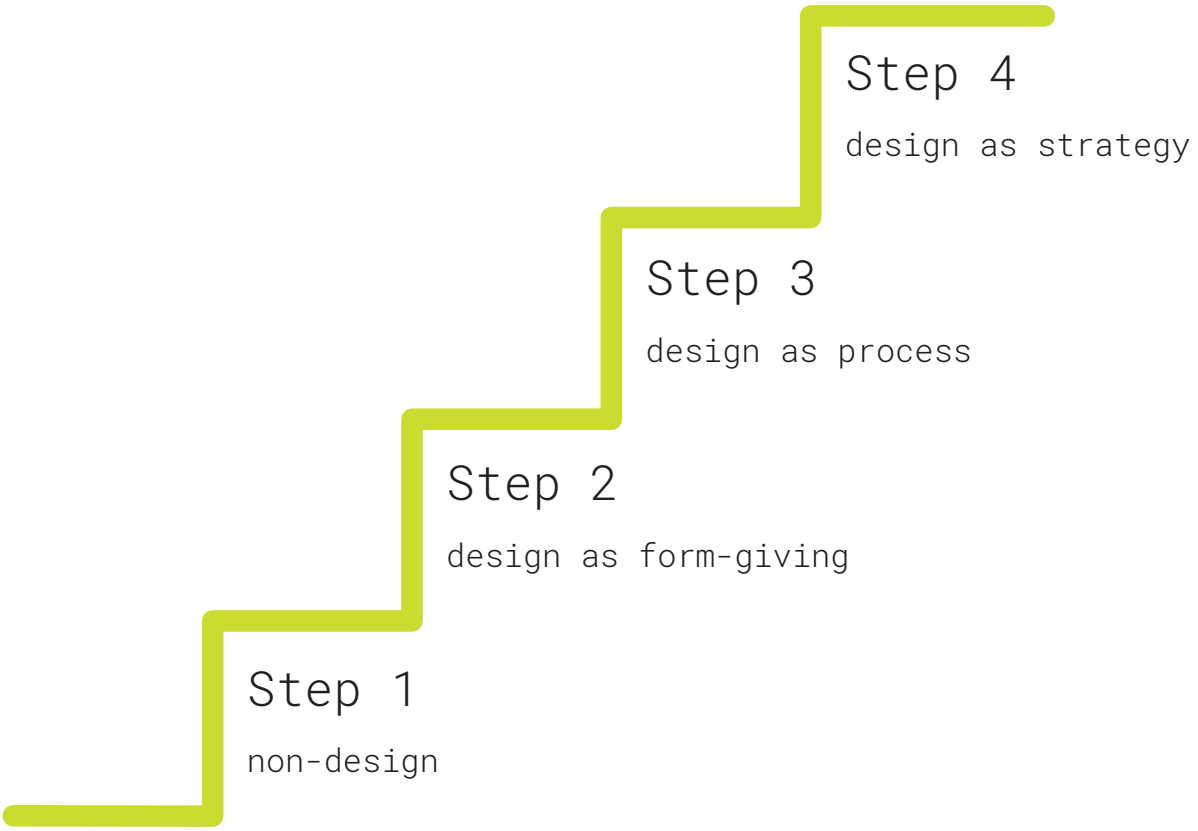
Design, or more specifically "design thinking", has now arrived in private as well as public organizations, to help with "disruptive innovation" (Muratovski, 2015) on the one hand and "social innovation" (van der Bijl-Brouwer & Malcom, 2020) on the other. It has been moved up earlier in the process (Kretzschmar, 2003; Tonkinwise, 2011) and away from its origins, or as Muratovski (2015) puts it: "Design is now seen as a field of thinking, rather than making".

3.3 The Value Design Can Add

For a long time, designers struggled with the fact that companies did not understand the value that design could bring to the table. It was only used at the very end of a development process to style a product, to add "lipstick to a pig" (Hill, 2012).

This however changed, and designers started more and more to become part of the decision-making early on in the development processes of products and services. From formerly only solving problems, designers started to

Figure 3: The Danish Design Ladder illustrates the development of design and how design is adding value to organizations. From Kretzschmar (2003)



shift their attention toward finding problems (Muratovski, 2015). Companies that used design expertise in their executive suite with the role of a Chief Design Officer like Apple, 3M and PepsiCo, etc. (Calabretta & Gemser, 2017) or at the heart of their organization started to outperform their competitors (Kretzschmar, 2003; Rae, 2016; Sheppard et al., 2018), which led to a growing interest in design and "design thinking" and the value design can add to a business (Muratovski, 2015).

But not just businesses became interested in the value design can add, governments, municipalities, and other public organizations as well as non-governmental organizations increasingly employed design to tackle the challenges they faced (Muratovski, 2015), specifically organizations that are dealing with policy problems, or what are known as wicked problems which are systemic in nature, ambiguous and ever-changing (Rittel & Webber, 1973).

Parallel to the evolution of a practice with a focus on the design of material objects towards a practice with a focus on immaterial systems is the evolution from involvement at the end of a development process to the so-called fuzzy front end. Furthermore, this dematerialization in design aligns with the continuous geographic separation of design and production with progressing globalization. While the production of goods moves to Asia, the economy in Europe and North America transforms into a knowledge economy and consumerist society (Fabricant, 2014; Muratovski, 2015). With these changes and the economic turmoil of the early 21st century, companies were looking for novel ways to innovate and generate a competitive advantage in times when it is increasingly difficult to differentiate from the competition. These fast-changing settings to which businesses had to adapt to as well as the presence of overarching complex global challenges revealed that established ways of business and management are not sufficient to provide answers (Kimbell, 2011; Dorst, 2011; Bongiovanni & Premala Louis, 2021). This offers a fertile ground for "design thinking" to find its way into corporations with the help of multiple publications, like books by Brown (2009) and Martin (2009), and "design thinking" being featured in the Harvard Business Review during this time. A rise in independent "design thinking" consultancies, as well as internal design teams at larger corporations (Fabricant, 2014), was the result.

4 Design Thinking

4.1 Overview

Design thinking has become a divisive topic (Kolko, 2018; Iskander, 2018; Micheli et al., 2019; Bongiovanni & Premala Louis, 2021). While the advocates of design thinking praise it for the acceptance it has created for design in other fields, namely the world of business, and its human-centeredness, the critics of design thinking argue that it devalued design by oversimplifying and commercializing design (Kolko, 2018). Some of this division can be traced back to the lack of understanding and clarity of the term design thinking (Kimbell, 2011) on what it entails and its use as an umbrella term (Micheli et al., 2019). It does not help that the terms 'design' and 'thinking' are already hard to grasp on their own (Rylander, 2009). There are many different versions of design thinking in practice with a varying magnitude of differences between them, however, there is an important distinction to be made between design thinking as it is practiced widely now as a business and management approach, and design thinking in academic research where it has a much longer tradition (Badke-Schaub et al., 2010; Kimbell, 2011; Tonkinwise, 2011). To differentiate the two, some scholars use "designerly thinking" as a term to describe the academic discourse on this topic (Bongiovanni & Premala Louis, 2021).

4.2 Design Thinking in Academia

In academia, there has been an interest in the way designers work and operate since the 1960s when researchers started to examine how people solve problems (Kolko, 2018) and the first Design Thinking Research Symposium was held in 1991. To write in detail about the history of design thinking in academia would go beyond the scope of his literature review. With the risk of reducing nuanced and diverse research to oversimplified categories, a short overview: It began in the 1960s with the design methods movement which evolved later into investigations into design thinking in the 1980s to understand the methods and processes that designers employed (Kimbell, 2011). During this time the term design thinking was used as a way of describing and understanding the way designers tackled problems and arrived at solutions and the insights gathered were

descriptive in nature. It was also the exploration of design problems and the understanding of what constitutes "wicked problems" (Rittel & Webber, 1973) that can be seen as a part of this research. While in 1987 Peter Rowe introduced the term "design thinking" into this field of research, over time the term "designerly ways of knowing", mainly promoted by Nigel Cross, gained acceptance as well (Kimbell, 2011). However, there was not only research done around the questions of how designers worked, what methods and processes they used, and what kind of problems they solved, but also around the question of what design is. Foundational research was done in this area by Cristopher Alexander "[who] argued that design is about giving form, organization, and order to physical things" (Kimbell, 2011) on the one hand, and Herbert Simon on the other, who understood design to be a form of knowledge that is underlying in multiple professions. These professions are interested in how things should be, contrary to science which looks at things how they are (Kimbell, 2011). What becomes clear is how nuanced and multifaceted design research is and that there is a comparatively long tradition of investigating designers, their way of working, and their work.

4.3 Popularized Design Thinking

However, it did not gain any popularity beyond the field of design. This changed when design thinking was popularized in the early 21st century, mainly with the books "Change by Design" by Tim Brown (2009) and "The Design of Business" by Roger Martin (2009) which stayed highly influential in the subsequent publications on the topic (Micheli et al., 2019). Interestingly, both of these publications themselves do not refer to or build on academic research (Badke-Schaub et al., 2010; Kimbell, 2011). Understandably this leads to confusion about which "design thinking" someone might be referring to (Dorst, 2011). This is partially due to the vagueness that can be found in the popularized version of design thinking (Dorst, 2011) (from now on referred to as DT in this literature review). For instance, it lacks a clear definition (Johansson-Sköldberg et al., 2013). Some commentators also point out the imprecise use of vocabulary, such as the synonymous use of method and methodology (Vinsel, 2017), which makes it harder to engage with it critically, especially from a research perspective. This vagueness might be frustrating from an academic perspective, when looking at the origins of DT it can be reasonably assumed that it is by design. Martin (2009), who has a background in business and management with its procedures and processes, presents his approach to DT as "a way to balance organizational tensions between exploration and exploitation" (Kimbell, 2011), while Brown (2009) developed it out of the work of his consultancy firm IDEO and presented it as a "loosely-structured organizational process that stimulates innovation" (Kimbell, 2011), which in turn also acted as an advertisement for the services of IDEO. It was an attempt to initiate a change within IDEO towards what was internally referred to as "IDEO 2.0", a change away from traditional design development towards design consulting (Irani, 2018), against a backdrop of the shift from a producing economy towards a knowledge and information economy (Muratovski, 2015) and the rise of what the economist Richard Florida called the "creative class" (2002). Furthermore, it was an attempt to defend (in this case) North American design against global competition, mainly from Asia (Irani, 2018).

4.4 Critique of Design Thinking

With this background in mind the oversimplification of the design process as presented by DT seems logical (Figure 4). It references the billing phases used by consultancies with outcomes and schedules agreed on in advance and reduces a complex undertaking to a linear process (Foster, 2022). A benefit of this simplification is that it can be taught a lot easier which lowers the barrier of entry for people unfamiliar with design work, be it in introductory courses for new design students or in DT boot camps for managers, like Stanford's d.school offers for $14000 for 3.5 days (d.school, 2023). Interestingly, many consultancies have given up on the Hexagon Model (Figure 4), adding more complexity to it to better represent the reality of design work (Figure 5 & 6) (Foster & Ervin, 2020) and even the d.school, one of the first institutions to teach DT, has announced they would no longer teach the Hexagon Model, going so far as to say "Design isn't a process [...]" (Forshaw, 2019). Acknowledging the complexity and introducing it (back) into the model allows DT additionally to differentiate itself better from other creative processes, as the overlap to some creative processes was rather extensive as some

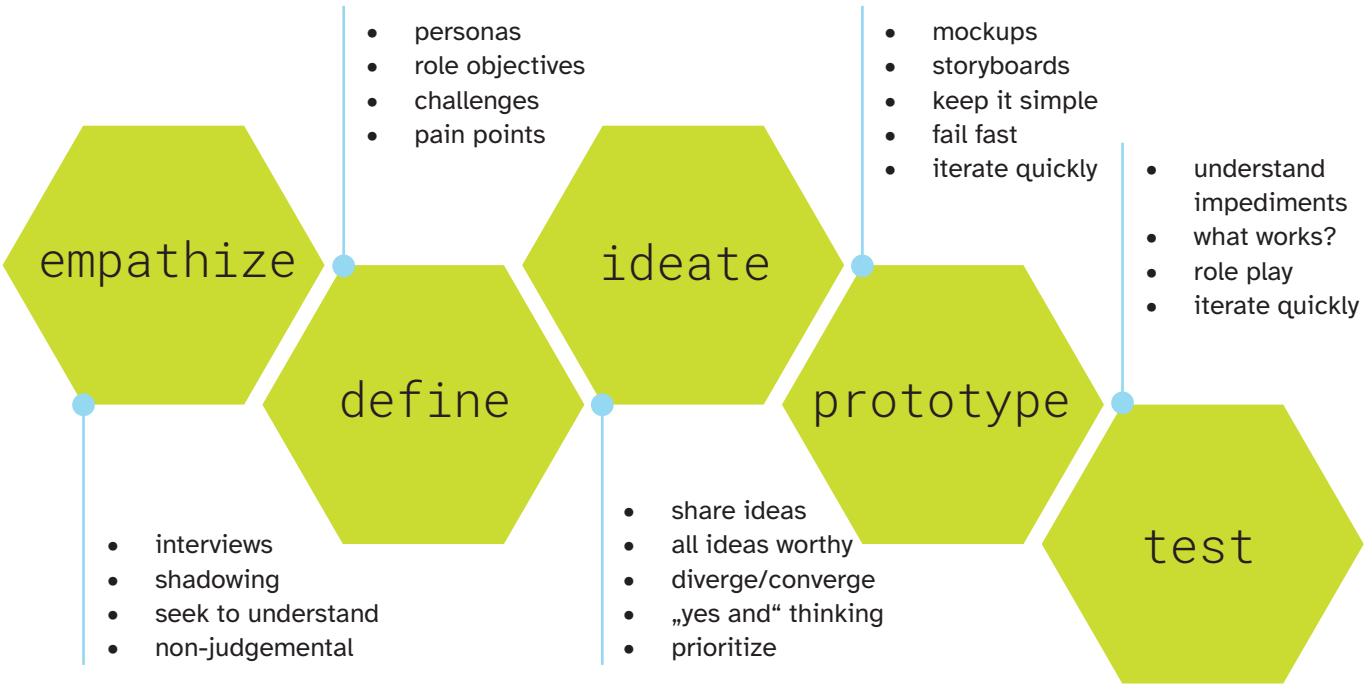
commentators pointed out (Vinsel, 2017; Iskander, 2018).

The objective of DT is the solution of a complex problem (Bongiovanni & Premala Louis, 2021), which links back to an understanding of design as problem-solving. However, with its clear structure with beginning and end it links more to well-defined problems known from design in engineering, therefore promising something which, based on Rittel & Webber (1973), is not possible, since every space for ambiguity that the method opens up, gets shut down at the end of the process (Iskander, 2018). It fits however into a time where organizations display almost an obsession with innovation (Foster, 2022), while the term "innovation" itself is losing more and more its meaning (Vinsel, 2017). This obsession with innovation stretches increasingly also into the space of public, societal issues. But the slogan of "move fast and break things" of disruptive innovation which is also often used in connection to DT (Muratovski, 2015) and design sprints can have devastating consequences when applied to these societal issues (Monteiro, 2019). When done with a more holistic approach, like in the case of Systemic Design, social innovation can be an approach with potential for systemic change (van der Bijl-Brouwer & Malcom, 2020), but when done with a DT approach many projects do more harm than good (Gram, 2019; Ackermann, 2023). This is especially problematic when it is not DT used by eg. a municipality, but by a consultancy that has only limited time to engage with a problem and the affected community. In such cases, a community can be left in a worse state than before, left with only recommendations after paying the often high consultancy fee (Gram, 2019). Tragically, these outcomes could be anticipated, since already Rittel & Webber (1973) make the point that these societal, complex issues do not have solutions, therefore they need continuous engagement. A consultancy with its limited time and clearly defined project outlines and deliverables can therefore not meaningfully engage with these issues.

4.5 Critique by Design Practitioners

Many critics can also be found among designers ((Jen, 2018; Kolko, 2018; Hill, 2012; Foster, 2022), with many of them preferring to not use the expression "design thinking"

Figure 4: The DT model as popularized by the d.school in Standford, also known as Hexagon model.



https://dschool.standford.edu

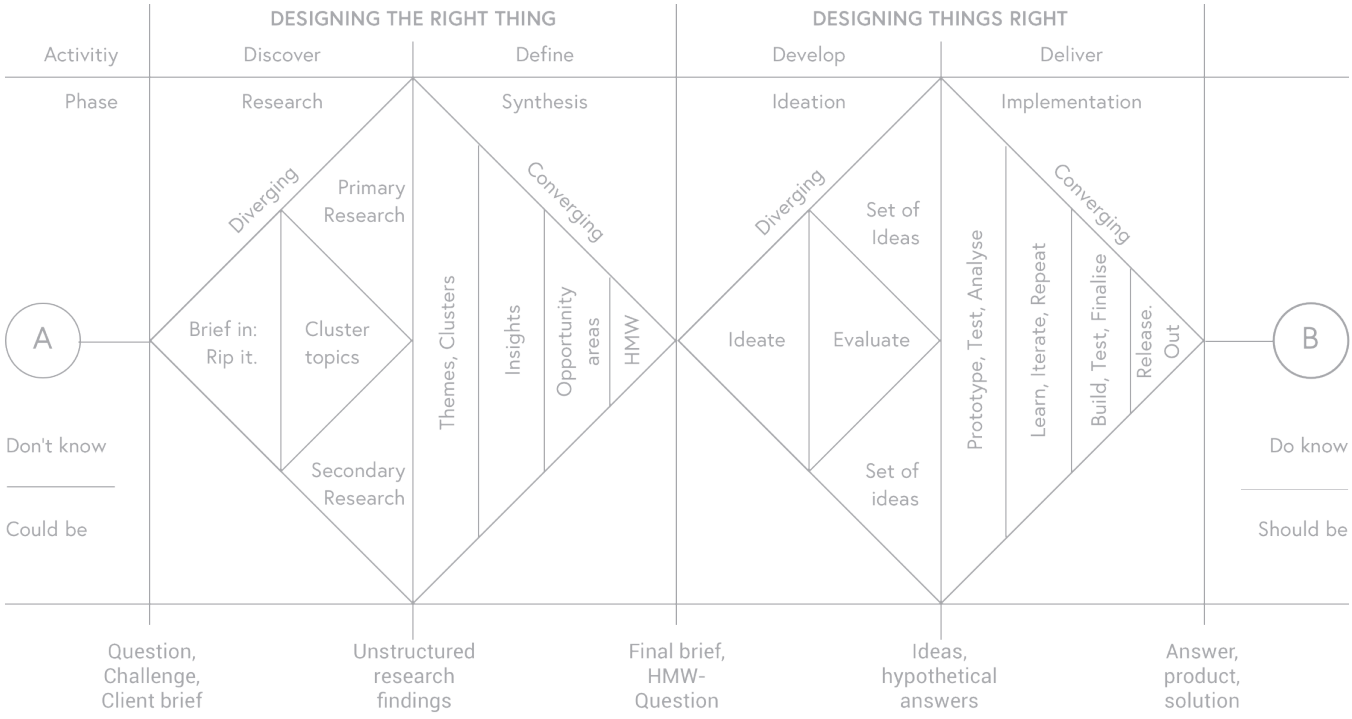
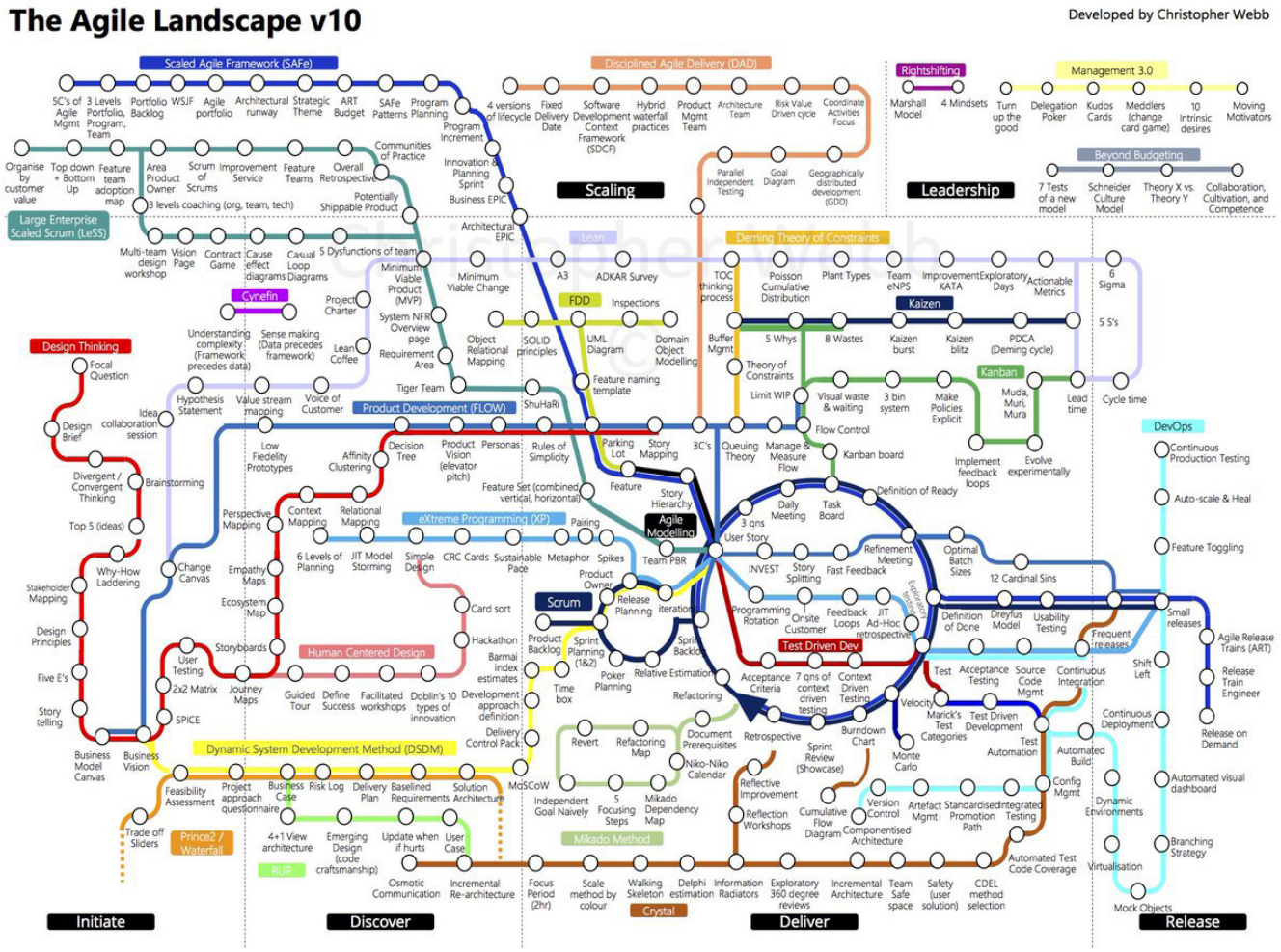


Figure 5: The revamped Double Diamond (Nessler, 2016)

Figure 6: The Agile Landscape used by Deloitte (Webb, ca. 2016)



at all (Dorst, 2011). One area of criticism is regarding the use of “empathy sessions” by DT practitioners, who do not recognize their own subjective bias and their bias in their research (sample), the way e.g. ethnographic researchers do, furthermore lacking depth in their research (Kolko, 2018). By doing this they are influencing their “problem framing” unconsciously. Every problem framing is essential for the following design process, leading to a particular outcome or solution. However, this outcome acts more as an illusion of the (definite) solution, when in fact it is only one of many possible resolutions (Rittel & Webber, 1973). This puts into question if empathy and human-centeredness solve the right problem, or if it only solves a problem. Kolko’s (2018) criticism of the empathy approach by non-designers practicing “2h empathy session”, or getting a certificate in “empathy” highlights what empathy in design practice is: a value. This points to design being at its core a value-based profession, which designers also use to differentiate themselves from other consulting professions (Fayard et al., 2017). Others argue that craft, as well as practice (aka experience), lies at the center of design (Badke-Schaub et al., 2010; Hill, 2012; Kolko, 2018; Foster, 2022). In their eyes, there is no design if there is only thinking; design needs doing. Furthermore, design is not play time, not a quick workshop with fun exercises that distract from an otherwise serious workday, filled with serious work. Marketing DT in this way, or generally marketing creativity in this way, especially with the notion “everyone is a designer” (Tim Brown, 2014, in a speech at Davos, (Lavender, 2014)) devalues the design practice immensely and contributes to designers not being taken seriously in organizations.

4.6 Material Experts

In contrast to DT, which seems to be “design without the material practice” (Tonkinwise, 2011), designers have been traditionally experts in physical material and how to shape it, over time that material has often become digital or intangible. In a wider sense, it can be argued that designers have vast material knowledge. Monteiro (2021) argues, that designers who work on strategies are shaping 3 materials (formal material, the material given to them eg. a problem, and psychological material). Designers’ extensive engagement with material throughout their training and careers builds an understanding of the implications, impact, and extensibility these materials, and therefore the design outcomes, have (Foster, 2022). This attention to impact is essential when shaping any design outcome, especially when dealing with complex issues, as any intervention inevitably leaves a trace and alters the context it is placed into (Rittel & Webber, 1973). Some designers, therefore, emphasize the need to design “implications” rather than “applications” (Foster & Ervin, 2020).

4.7 Experts in Aesthetics

Interestingly, a topic being left out of DT is aesthetics (Tonkinwise, 2011). „Interestingly“, because for a long time, design was viewed as only dealing with aesthetics. This might be a reason for deliberately distancing DT from this view on design to highlight the other qualities design has, however, Tonkinwise (2011) argues that aesthetics was removed from DT to make it more “appropriable” by managers. Aesthetics being highly subjective and/or cultural (Tonkinwise, 2011) could be a further deterring factor, especially when the target audience is multinationals with a global customer base. Additionally, aesthetics are also introducing a political dimension to design that might have been deemed incompatible with a business context (Tonkinwise, 2011). However, such a position ignores that all design is political (von Borries, 2016). Additionally, by ignoring aesthetics as an inherent part of design, DT accepts the predominant design aesthetic as given: a Eurocentric design approach based on “form follows function” and Modernism (Buzon, 2020). This monolithic approach to aesthetics in design calls into question DT’s claim of being universally applicable, specifically when creating products and services for a diverse audience.

4.8 Conclusion

Overall, DT has many critics amongst design practitioners, but there is also a significant amount of critique in the scientific literature, and increasingly even in the business community. However, the conclusions are different by various critics: some call it a failed experiment (Nussbaum, 2011), some a “useful myth” (Norman, 2010), some think it needs to go away before it does more damage, while others celebrate it for its accomplishments overall (Kolko, 2018), some point out that

there's a need for a more solid grounding in designerly thinking aka the research and practice (of designers) (Johansson-Sköldberg et al., 2013) because it is suffering from a lack of definitions, paired with a weak evidence-base while having high similarity to basic commonsense (Iskander, 2018). Otherwise, its future is most likely similar to many other approaches used by consultants until a new one, a more promising approach appears (Bongiovanni & Premala Louis, 2021). Now, 15 years after DT set out to change business through design, it looks more like design changed into business by "adopting its language, priorities and techniques" (Foster, 2022).

5 Strategic Design

5.1 Overview

After the design of physical things, the design of processes and services, and the way design tried to get a foothold in the business world, we arrive now at the design of the intangible, the design of problems and strategies, in short: at Strategic Design (Calabretta & Gemser, 2017; Caliskan & Wade, 2022). Sometimes Strategic Design and DT are used interchangeably since DT is being used to influence strategy formulation (Brown, 2009; Martin, 2009). There is an overlap there, as well as an overlap with other design disciplines that use a more holistic approach, for instance, Service Design (Fayard et al., 2017). Strategic Design being one of the youngest design disciplines is still in the formulation phase and in the tradition of the other design disciplines. In this sense, Strategic Design is furthermore another step in the evolution away from design-as-styling (Kretzschmar, 2003) and design as problem-solving, towards design as problematizer (de Mello Freire, 2017). This is a shift that is in line with the rise of complexity that designers encounter in the problems they are tasked to address. This complexity is not only found in the context to which designers try to relate but furthermore in the outcomes they design (Foster & Ervin, 2020). Multiple design projects highlight this wonderfully, for instance, "The Toaster Project" (Figure 7 & 8) by Thomas Thwaites (2009) and "The Anatomy of an AI" (Figure 9) by Kate Crawford and Vladan Joler (2018), making the systems and conditions visible that have to be present or constructed

Figure 7: The Toaster Project by Thomas Thwaites (2009). Thwaites investigates in this project how a cheap kitchen appliance comes to be.

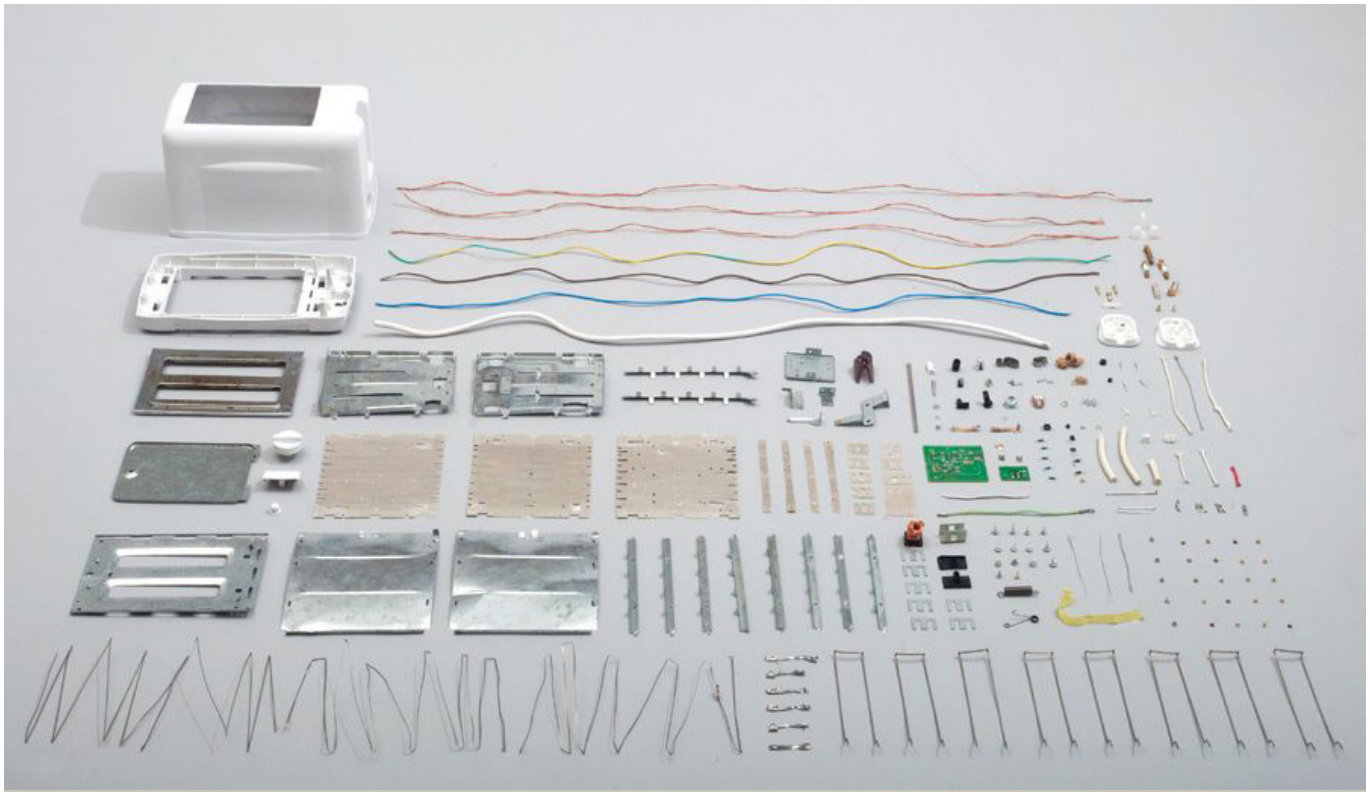


Figure 8: The Toaster Project by Thomas Thwaites (2009). Thwaites sources the raw materials needed for the production of a toaster and attempts to build one himself.

in the background to enable certain outcomes. As we have seen with Rittel & Weber (1973) and later as well with Dorst & Cross (2001) questioning not only the solution but the problem as well is required to address these challenges. Since this is only possible when things are still in flux, Strategic Design takes its place at the beginning of processes, at the "fuzzy front end". At this point, most decisions about a product or any other outcome are made, here most things can be influenced, or to use a term from systems thinking, here is the most potent leverage point in a process. Strategic Design works here well because it is well suited for areas in which there is a lot of uncertainty, ambiguity, and ill-defined problems.

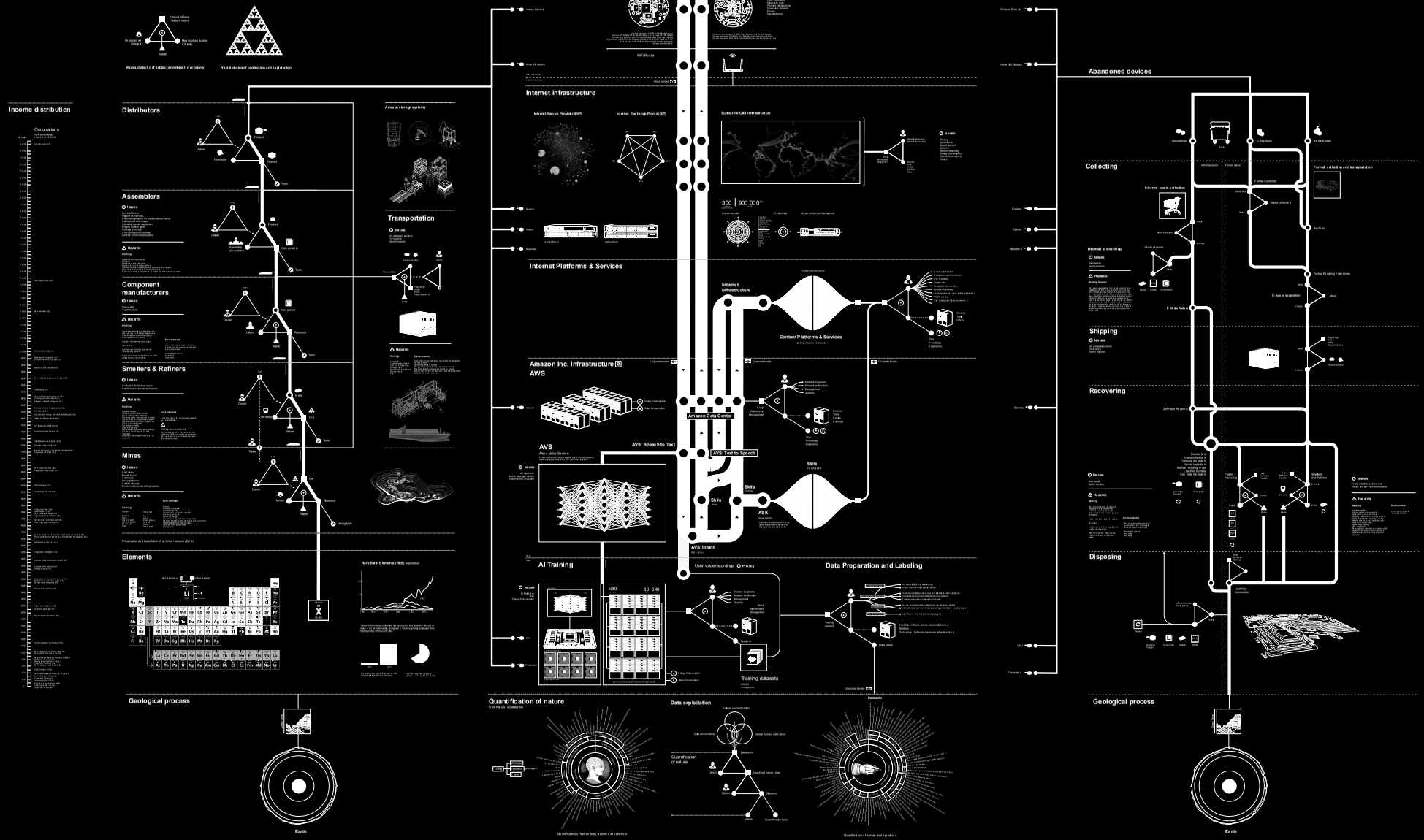
Researchers draw a parallel here from the practice to the practitioners of Strategic Design who need an "openness to change, tolerance of ambiguity, empathy, [and] willingness to cooperate" (Caliskan & Wade, 2022). Calabretta & Gemser (2017) describe a strategic designer as someone who can expertly connect all three areas of desirability, viability, and feasibility. While other design professions consider these three areas as well, they tend to focus more on one of the three, eg. desirability.

Next to this view on Strategic Design that focuses on a practitioner's perspective is also a view that focuses on its ability to address strategic problems on a scale from limited problems (organizational) to larger problems (social) (Caliskan & Wade, 2022). This shifts the tasks of a designer from strategy implementation (or strategy execution) to strategy formulation (Calabretta & Gemser, 2017). This area, traditionally occupied by managers, consultants, and strategists with an MBA, seems to be an area in which designers can add to the predominant way of doing things. Traditional strategists rely heavily on analysis, on a look to the past, which allows them to mainly operate in the space of incremental change. Additionally, there seems to be a lack of a clear theory on strategy creation (Carlopio, 2009). Designers on the other hand, are trained to come up with novel things, to innovate, to be creative, since Design is always concerned about the future, it is always about shaping something non-existent and realizing it (Monteiro, 2021). Their abductive reasoning skills can add value to strategy formulation (Martin, 2009). Especially in times of high uncertainty, these skills are of high value. While modern thinking, through analysis and strategic planning, had the goal to reduce complexity to be able to manage it (de Mello Freire, 2017), Strategic

Figure 9: The Anatomy of an AI System by Kate Crawford and Vladan Joler (2018) investigates the systems necessary to make a „simple" product like an Amazon Echo possible and makes them visible.

Anatomy of an AI system

An anatomical case study of the Amazon echo as a artificial intelligence system made of human labor



Design embraces complexity, paradoxes, and plurality of views, therefore enabling meaningful interaction with these “wicked problems”. It opens up a view of the systems within and around organizations, on the interactions, relationships, and interdependencies that exist and influence each other constantly. It incorporates elements of systemic design and systems thinking. But not just in the topic of complexity does Strategic Design move closer to the sciences, overall there is a closer connection to the sciences, particularly the social sciences (Caliskan & Wade, 2022), which sets it apart from the popularized version of design thinking. Particularly visible is this difference in the research phase, when Design Thinking employs “empathy sessions”, whereas Strategic Design brings together more rigorous quantitative and qualitative research methods borrowed from anthropology. This interdisciplinary nature of Strategic Design is also visible in the role of a facilitator which a Strategic Designer often embodies, bringing together different stakeholders from different expertise. Facilitation also ensures that the right people are at the table together early on, transcending silos and making sure the relevant parties are involved in the process. This builds also on the idea of a capital T-shaped designer (Calabretta & Gemser, 2017), with deep design expertise complemented by knowledge in other fields. However, there is some critique of the interdisciplinary approach, since it still legitimizes disciplinary silos (Caliskan & Wade, 2022).

Finally, the third approach does not define strategic design as its own independent discipline, but as a novel creative process in an organizational setting that combines elements of science and design for problem-solving or problem-setting (Caliskan & Wade, 2022). Interesting here is the sole focus on science and design as origins, leaving out influences on the discipline with a managerial approach. But, by doing so, this third approach highlights the connection to the design origin of strategic design, defining its four main practice sets as research, ideation, prototyping, and testing (Caliskan & Wade, 2022).

Regardless of which approach, the differentiating factor of strategic design to other disciplines engaged in organizational strategy is its root in design. While rigorous analysis is part of strategic design, it does not settle for this presentation of how things are, but it employs synthesis as a way to suggest how things could be, leading to a course of action (Hill, 2012). It is to be seen if strategic design manages to stay true to its origins in design as well as science or if it will go down the path of the popularized version of design thinking. As it is still forming as a discipline the criticism of strategic design focuses mainly on a lack of shared vocabulary and that it suffers from a set of still under-developed and vague methods (Caliskan & Wade, 2022).

5.2 Strategic Design in a Social Context

Especially in societal contexts, problems are wicked problems: many stakeholders with vastly different needs and wishes, ill-defined, overlapping, and ever-changing problem areas. These are the type of problem areas strategic designers can use their approach best in. Particularly, if strategic designers employ systems thinking as a core skill set within their practice, given that a lot of the work in societal contexts deals with systemic change (Hill, 2012). The interest in this so-called “social innovation” is increasing as a way to address complex societal issues (van der Bijl-Brouwer & Malcom, 2020), as public officials are looking for novel ways of policy-making and co-creation with their constituents. Some cities even appoint their own Chief Design Officers (Luovi Productions Oy, 2020). This engagement with the public sector can be very fruitful for designers, although it also comes with the uncertainty of public mandates and changing budgets which can bring projects to a sudden halt. The work here ranges from co-creation with citizens to high-level involvement in policy-making, however, it is worth noting that often in these societal contexts, strategic design blends into systemic design, which combines more directly systemic thinking with elements of design (van der Bijl-Brouwer & Malcom, 2020).

5.3 Strategic Design in an Organizational Context

Most clearly applicable is the role of the strategic designer in an organizational context. In a role in an internal design team, or another internal role in a more strategic position is ideal to be able to interact with strategy creation in a long-term timeframe. The creation of the role of a Chief Design Officer (CDO) in multiple larger companies is a testament to that (Calabretta & Gemser, 2017). At the same time, strategic designers find employment in larger agencies and consultancies that try to establish a

stronger design capability in their offerings. This can also be seen in the acquisitions of smaller design studios by larger agencies and consultancies (Fabricant, 2014; Calabretta & Gemser, 2017). While in that capacity, strategic designers can still have meaningful participation in strategy formulation, but the lack of long-term engagement limits the amount of control they can exercise over the implementation of said strategy. This can lead to a loss of the potential inherent to the strategy, if the recommendations can not be revisited or adjusted during the implementation stage or the implementation does not materialize due to a lack of ownership within the organization the consultancy worked with (Gram, 2019; Ackermann, 2023).

While the focus of the literature seems to be on (strategic) design in multinationals and consultancies, some literature points towards the benefits (strategic) design can have in small to medium-sized enterprises (SMEs) (eg. Nunes, 2015; Fischer et al., 2020). This is especially interesting for smaller (strategic) design practices, as many larger clients either build their internal teams or are hiring larger consultancies (Fabricant, 2014).

Overall, with the move of a large part of the producing sector to Asia, designers in Europe and North America increasingly transition into the earlier stages of the development process (Muratovski, 2015). Since it is in those early stages that most value is created, this change can be for the benefit of the client/company, as well as the strategic designer.

6 Conclusion

6.1 Content

One area essential to strategic design is undoubtedly strategy, in particular organizational strategy. This review focuses here on Mintzberg's (1987) five Ps for strategy as well as Porter's (1996) view on strategy as differentiation. Particularly interesting for a designerly approach to strategy seems to be what Mintzberg calls "emergent strategy". The more iterative, context-aware understanding of strategy offers itself for the way a designer might engage with strategy. How designers can engage with strategy formulation is especially of interest, since there seems to be a lack of theory and methods of strategy creation. Some voices see design methods here as a possible answer to this situation since designers are constantly dealing with the creation of answers to problems.

Strategy, however, is not the only area in which design can add value to businesses and other organizations. Especially when these organizations are faced with complex or "wicked" problems, designers can help engage meaningfully with those issues. Increasingly public organizations are working with designers as well. Overall the development of how designers can add value to organizations has developed over time from work on physical products, to designing services and processes to now designing strategies.

That design is seen more and more as an asset by organizations is often seen as the result of the popularization of design thinking. An important distinction has to be made between design thinking in an academic context and design thinking as it was popularized (DT). The first has a long tradition of research and nuance, while the latter sanitized design to make it more palpable for businesses. It removed ambiguity from design, and, by packaging it in a neatly defined process, greatly hindered its ability to be truly innovative. It eradicated aesthetics from the practice, therefore depoliticizing design on the surface. Furthermore, DT misrepresents design, by concealing that design is serious work. DT gave design the reputation to be a fun participatory workshop that lightens up the dull day-to-day work in a company. This devalues design and the expertise needed for design work. Amplified is this by statements like "everyone is a designer" (Brown, 2014 at Davos), which ignores the expertise designers have. In this way, DT obfuscates that craft and practice lie at the heart of all design work. Design practitioners point out that practice and the consequently gained experience and expertise are essential for good design work. Design thinking research confirms this. By understanding design purely as a process that can be easily learned by everyone in a short boot camp, DT ignores that design is a value-based profession. Designers (in consulting positions) reference their values as a differentiator to other, traditional management consultants. These values are deeply anchored in their work and approach, e.g. empathy being one of them. These values are hard to replicate in introductory design thinking courses or workshops, therefore designers who work in strategic positions consider them as a competitive advantage over traditional consultants (who might have some training in DT).

A different approach to design in an organizational context offers strategic design.

Compared to DT it is not just a method, but a design discipline. Furthermore, strategic design is anchored in a scientific background, grounded in research and the combination of well-established fields, namely design and social sciences like ethnography. Commonly DT is often used as a synonym for Strategic Design, or as a tool for strategic design. However, there are clear distinctions to be made, because DT alone is not adequate to address strategic challenges, whereas strategic design is not only suitable for strategic challenges but as an approach especially suited for systemic change. The holistic approach of strategic design is especially helpful for organizations that want to come up with alternative possibilities or need to react to drastic changes. However, in most normal circumstances this will directly put in question the hypothesis the organization is built on, and therefore triggering an “immune response” of the organization to maintain the stability of the organization. This can lead to resistance, which is best addressed through continuous engagement. Therefore the research suggests that strategic design needs to be embedded in organizations. Consequently, this suggests that design can only address strategic challenges adequately when it is embedded within an organization and can operate long-term.

Design, DT, and strategic design did not only find their way into internal teams of organizations but also into consultancies where designers are increasingly employed in strategy-facing positions. However, the research suggests that the consultancy model is not the right model for design to address strategic challenges. It is in the nature of consultancy work to end a project with recommendations, leaving the implementation up to the client. Often this implementation either never happens or is done badly, leaving the problem unsolved. Additionally, even if an implementation does happen, it does not solve the problem, because these wicked problems do not have a solution. Especially in so-called social innovation, this can lead to already vulnerable groups in a more vulnerable state after spending resources on services without a result.

These findings suggest that strategic design might not be the right way for industrial design practices to adjust to the changing demands of clients. Nevertheless, one area in which industrial design practices could provide services in a meaningful way is SMEs, which are interesting potential clients for strategic design work. Ever since larger companies build their own design teams and capabilities, small design practices are at risk of going out of business. Many of them get acquired by large consultancies, which survive due to their size. However, SMEs do not have the internal design capabilities, nor the budget to pay for the large consultancies. The findings of this literature review suggest that this is an interesting place for industrial design practices to focus their efforts, as well as start-ups that have similar profiles to SMEs.

6.2 Limitations

Throughout this literature review the net was cast progressively wider over the academic literature, to create a solid foundation for the area this thesis focuses on. The decision to do so came after encountering a lack of literature pertaining to the specific area of interest of this thesis: How small to mid-size industrial design practices use strategic design to adjust to the changing demands clients have for them. This makes this literature review wider in its focus, which adds different perspectives from which the research question can be approached, but at the cost of a greater depth.

6.3 Recommendations

It could be interesting to explore each of these different approaches to strategic design in more depth in their own individual literature reviews. Discovering the boundaries around strategic design in that way could help define the discipline and provide a more nuanced understanding.

INTERVIEW STUDY

Additional to the literature review and to gain some insights into current practices an interview study was conducted. The goal was to talk to practitioners of small to midsize Industrial Design studios about their practices and how they address strategic challenges. The following research question was developed: “How can Industrial Design practices address strategic challenges?”

To understand better if these practices had to transform to be capable of providing these services and if there was any influence of these fields on each other, these two sub-questions were added: “How do Industrial Design practices transform to address strategic challenges?” and “How do the different fields influence each other?”.

To answer these questions six design practitioners in leadership positions were interviewed.

2 Methodology

2.1 General Approach

In order to collect data on the research question “How do small to midsize Industrial Design offices address strategic challenges?” an interview study was set up. The interviews would be conducted through Microsoft Teams video calls one-on-one with the interviewer and the interviewee present and a maximum duration of 1 hour.

2.2 Sampling

The participants were selected through desk research into small to midsize Industrial Design studios. In the initial sample, the studio sizes ranged from solo practitioners to studios and agencies with up to 50 employees. Additional selection criteria were a focus on Industrial Design as well as services offered that could be considered strategic, eg. research, portfolio strategy, and other front-end activities. To determine this the websites of these studios were evaluated for these markers. Furthermore, practices that had undergone a change in their positioning and service offering from pure Industrial Design services to now additional Strategic Design services were considered first. To observe such a change, previous website versions from 2013 were evaluated with the

help of the Wayback Machine internet archives. In this way, 50 Industrial Design practices were selected and contacted via email and invited to participate in this study. Due to a lack of responses to reach a minimum of participants, additional convenience sampling was employed through the networks of the supervisory team of this thesis. Ultimately, six interviews were conducted (Figure 10).

Code in Text	Position	Practice	Size Practice
In1	Partner	Industrial Design	15 Employees
In2	Founder & Partner	Strategic Design	13 Employees
In3	Co-Founder	Industrial Design	6 Employees
In4	Founder	Strategic Design	1 (Founder)
In5	Owner	Industrial Design & Production	27 Employees
In6	Co-Founder	Industrial Design & Production	2 (Co-Founders)

Figure 10: The six participants in the interview study, their position and practice, and how they are referred to in the study.

2.3 Interview Set-Up

The interviews were conducted as semi-structured interviews with a prepared interview guide (Figure 11). Every participant was provided a consent form explaining the study as well as how the collected data would be used. The interview guide and an exemplary consent form can be found in the Appendix B. The interviews were conducted via Microsoft Teams video calls with a planned maximum duration of 1 hour and were recorded via the transcribe function.

2.4 Coding

The transcripts were edited for clarity and then coded. For the initial coding, inductive coding was used. After the primary coding cycle categories were established in the secondary coding cycle. Finally, in the tertiary coding cycle themes were developed.

Research Question:

How can small to midsize industrial design practices address strategic challenges?

Sub Questions:

How do industrial design offices transform to address strategic challenges?
How do the different fields (industrial design and strategic design) influence each other?

Introduction

First of all, I would like to thank you for taking time to have this interview. My name is Valentin Bufler, and currently I am conducting research for my thesis in Strategic Product Design. The purpose of this interview is to gain some insights into how small to midsize industrial design offices address strategic challenges.

The industrial design offices I am interested in for this study are small to midsize practices that manage to stay successful through the changing demands clients have of industrial design offices. I believe that your experience and insights can help me find some answers.

Your responses will be kept anonymous and confidential and will be only used in this study. At any time during this interview you can withdraw if you choose to do so. There are no wrong or right answers, since I am interested in your opinions, experiences and insights. This interview will last max. 60 min. During our interview you can interrupt me at any time. In order to use your responses better, I would like to record this interview, if that is ok with you? I will only use the recordings for transcribing this interview; after that the recording will be erased.

Before we start, did you have any questions regarding the consent form? (If I haven't gotten it yet, now is the time to get it)

- To start things off, could you tell me a bit about yourself, your background and what your practice does?
- How many people work in your practice?
- Is it an independent studio/office/etc.?
- When was it founded?
- How would you position your practice?
- What services does your studio offer?
    - What would you say is your target client? [prompts: SMEs, NGOs, larger companies, start ups, multinationals, local/international, certain sectors]

Theme 1 PRACTICE

- Could you tell me about a strategic challenge a client had for you and how you tackled it? [prompts: methods/tools, approaches]
    - *In your view, what makes this challenge strategic?*

and your practice generally approach a

esign practice? [prompts: triggers,

from such strategic challenges?

the practice to be able to address

those capabilities?
rally in order to meet these new
model, revenue model, restructuring
ess, etc.]

influence how you tackle these
ches, mindset]
your industrial design expertise in these strategic projects?

- How does working on these strategic challenges influence your industrial design practice?
    - *Could you elaborate on how the relationship with your clients has changed?* [prompts: project based vs account, long term, collaboration, etc]

Wrapping up

- Before we come to the end of this interview I wanted to ask if there are any insights/remarks you wanted to share about this topic that were not addressed with these questions?
- Do you have any questions for me?

Snowball sampling:

- Do you have a client that you think could be interested in participating in this study, to provide some insights in the clients perspective?

Figure 11: The interview guide for the semi-structured interviews. The full interview guide can be found in the appendix.

3 Results

3.1 General Results

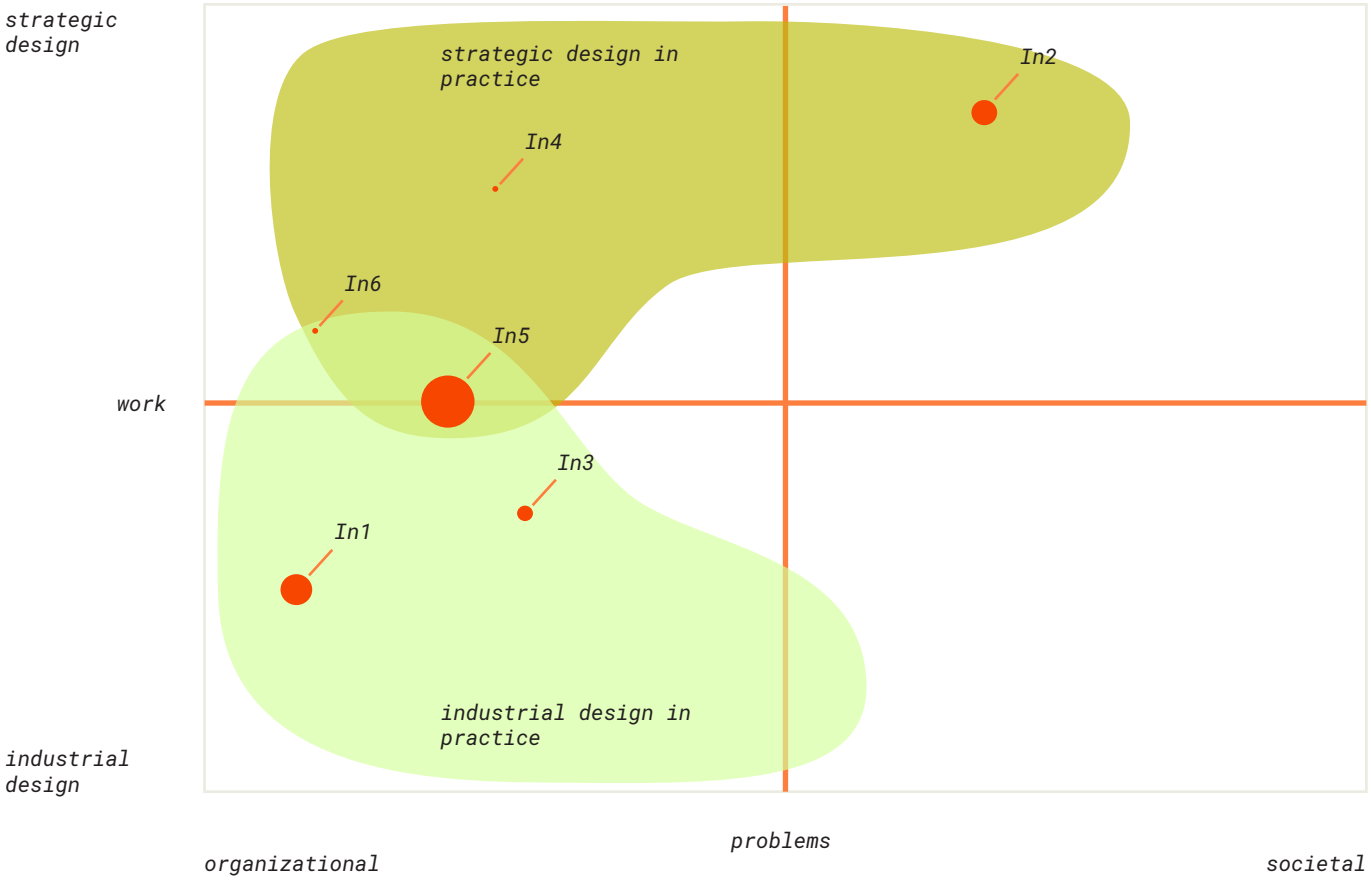
The interviews revealed that for many of the practices interviewed Industrial Design is still the main focus of their practice with In1 estimating strategical work at around 5% of their projects, while others have completely pivoted towards Strategic Design. It is important to note here that there is no overarching definition of what strategic work constitutes between the participants of his study. In order to not influence the answers of the participants no definition of strategic challenges was provided prior to the interview. During the interview it became clearer through the examples given by the participants what constitutes strategic challenges. Based on this information the positioning of the participants is estimated and mapped out in Figure 12. Strategic challenges, as emerged in the interviews, encompass a wide range of design work, including but not limited to research, reframing, portfolio strategy, opportunity mapping and external reflection.

3.2 How can Industrial Design practices address strategic challenges?

3.2.1 Client Relationship

At the core of all design work, but especially Strategic Design work sits a well-established and well-maintained client relationship. Since strategy making is usually still an internal task at most client companies and designers are hired for strategy execution work, a strong level of trust is essential in order to be included in strategy formulation. This level is often only

Figure 12: The practices of the interview participants mapped out. The size of the dots relates to the size of the practice.



reached after multiple successful execution projects for a client, which can then lead to more strategic collaborations. Therefore long-term collaborations with their respective clients are essential for Industrial Design practices if they want to be in a place where they can address more strategic challenges. In5 says about this: “So usually the relationship starts with a concrete product development. And then once they discover, once the clients discover that there‘s more knowledge that they can tap into, then usually it extends to a more strategic consultancy. Not always, but in some cases.”

3.2.2 Engagement with the context

Next to long-term and well-maintained relationships, an engagement with the context at large is indispensable. When dealing with strategic challenges it is essential to have an understanding of the changes happening on a societal level. The necessity for this derives from the circumstance that the client organizations have to react to these changes. For example, In5 talked about a client that had to adjust an important product in their product portfolio for environmental reasons. In such a case considerations that are normal and sufficient in a standard Industrial Design project quickly are no longer satisfactory in a strategic context. In this case, the trigger for the strategic project had its origin in changes in the context. However, the other direction is also possible, when a design outcome triggers changes in the context. In3 recounted a project where a new micro-mobility solution was developed, which had to be introduced into a context that had not previously interacted with such a design. Being able to foresee these contextual implications at the start of a development process saves a lot of frustration later on in the process.

3.2.3 Process Driven

A common theme among the participants was an emphasis on being process driven. “The process is always leading”, says In5. Being process driven allows these practices to cater to a diverse range of markets and clients, but more importantly, it provides a degree of freedom in their practice so that they can address a wide variety of projects, among them strategic challenges. This flexibility is essential to be able to provide services in strategy execution as well as strategy formulation. Since the participating practices are small to mid-sized practices they are not able to hire a workforce in a size where it would make sense to have specialized teams for the different tasks. This is not just a financial question, but due to the tendency of strategic projects to be further spaced apart, it is also beneficial to keep everybody busy. Closely related is here the connection between Industrial Design and Strategic Design: having a process-driven approach that can accommodate Industrial Design projects as well as more strategic projects is possible because the lack of capabilities in the original workforce is minimal. “I believe that we have the right people to do these kinds of projects, so we don‘t really need to change, we don‘t need to hire different people or something.” says In1 about the capabilities as well as, “I think it‘s more of an attitude thing. So the people that work here are really ambitious and they are really already looking and asking about these kinds of things.” In3 has a similar opinion:

>So after a few experiments with very smart people from a mixture of sort of technical and sort of more social science backgrounds, I‘ve gone back to just looking at hiring really smart designers and then showing them how to be a bit more strategic.<

3.2.4 Methods and Tools

This seems to be possible because the methods and tools used for every project change to fit the needs of the project. “I can always say that for every client we invent a new tool, if necessary”, says In5. But although the tools and methods might be changed or adjusted for the different projects, they build on an underlying, flexible, and process-driven framework. “We have frameworks that give us freedom”, says In2, while In5 acknowledges that “we became aware that what we‘re offering

needs a, let's say, theoretical background or let's say a model that you work with." Since then they have established a solid foundation on which they can address all types of challenges.

3.2.5 Strategic Work

The adaptable tools and methods as well as the frameworks used by these practices have by large their origin in product and Industrial Design. Therefore it is not surprising that most of the strategic work they get hired to do is rooted in design practice as well. Many of the strategic work these practices work on revolve around research and reframing and are aimed at rewriting the design brief by opening the problem space up. "We also introduced a phase to challenge the design brief," describes In3 this process and In1 locates this phase in this way: "So at the moment in which this project is kind of getting in shape and you're trying to define the scope of the project". In1 however, questions if this type of work is already strategic: "We try to discuss if we should change the design brief towards that direction. You could say that that's strategy as well. But I also think it's just in Industrial Design Engineering that's just part of it". Here is where the boundaries between Industrial Design and Strategic Design get blurry in practice. While these practices of reframing and challenging design briefs are common in many design projects and are part of many design processes they were not requested by clients as part of executional design work. However, they are inherent to design, or as In1 puts it:

>If you're always looking to make something better, no matter what it is, then you already think about strategy.<

This suggests that the connection between more traditional, executional design work like Industrial Design and the newer Strategic Design is arguably direct. Strategic Design builds directly onto design routines that are well-established within design practices. This is also evident in other design methods employed often by the interviewed practices. Visualizations and prototyping are used in strategic contexts and act as boundary objects as well as a tool for clarification and communication. "Our added value there was that we can really make quick visualizations of ideas", notes In1.

When moving higher up in the levels of strategy designers are often employed to establish design languages and to revise product portfolios. "Related to that we'll also get involved in planning new portfolios or lines of portfolios, for example", says In4. This can in return also lead to execution projects, but often it stays an entirely strategic project. Here their design expertise can shine. "So we'll do that, we call it experience strategy, other people call it design language or design identity strategy. So we typically do some analysis, come up with a vision and some principles, often you know co-created with their design team", describes In4 the process. Next to showcasing the process In4 also points out co-creation with the client. Here in this example, it is co-creation with an internal design team, but it can also be co-creation with other departments of the client. Important is the emphasis on co-creation, due to the fact that external Strategic Designers often find themselves in supportive roles for the client's internal teams. This can be the role of a sounding board to discuss ideas and visions, more of a research function or simply leveraging the elevated status external consultants have with higher leadership. "Or we were used by someone internal that had an idea that they couldn't get through the management", recounts In6 this role. Being in such a more supportive role has the benefit of a high level of ownership over the process and solution within the client company, which is crucial for implementation later on. In5 explains it like this: "If they feel responsible for the result, then it's much more likely that they will accept it and help implement it." In4 phrases it like this: "I think what we try, is to encourage our clients to own the strategy. So what we see ourselves as is a strategic support rather than "Hey you outsource your strategy to us and we'll deliver your strategy".

3.3 How do Industrial Design practices transform to address strategic challenges?

3.3.1 Positioning

Referring back to the close connection of Industrial Design and Strategic Design, particularly with methods like reframing, showcases as well that design practices do not necessarily change their practice that much, but rather make explicit that strategic work was always part of design. And while there is “a big difference between how you position yourself, how you market yourself and the actual work that you do”, as In4 puts it, it is noticeable that by doing so designers position themselves more offensively towards the early stages of the development process of a design. Simultaneously it is still possible for the practices that chose this positioning to firmly locate themselves in Industrial Design. A similar route, but pushing more the versatility of their services, is chosen by practices that position themselves with a full-service offer. However, design execution is still the focus of these studios, because “the execution work still needs to happen in a recession or COVID times”, as In4 puts it. This makes the business model more robust since strategy-focused projects are the first ones to get cut.

3.3.2 Hiring Practices

Internally the transformations are kept to a minimum. As described previously there is no need for substantial changes in capabilities and therefore organizational changes are also kept relatively small. While the practices have built a culture of constantly reevaluating their business models and experimenting with new revenue streams, the internal structures remain relatively unchanged as far as this study found. The main changes within the studios are facilitated by hiring people with specific skill sets that are needed or wanted. In2 describes this as follows: “The organization how it started, in the beginning, is completely different, simply because of the people that are here. So every time there‘s a new person coming in, we have another position as an organization.” Due to the small size of these practices personnel is a powerful lever to adjust the positioning of the practice.

3.3.3 Business Models

Therefore a transformation does not appear to be facilitated through organizational changes as much as it is enabled by a general flexibility in the way these practices operate, namely their business models: “In our career, we experimented a lot with different business models as well. So if it‘s like in the royalty model or venture model to even invest in companies... or even start up our own initiatives, that‘s the entrepreneurial part of the development process is something we‘ve always done”, says In3 about this. Others stated a similar sentiment, that in order to adapt to the contextual changes as well as the changing requirements of clients it is necessary to be willing to try out different business models. Since these practices operate on very thin margins, especially when they use an hourly-based model, a diversification of revenue streams, and with that often a diversification of services offered, is necessary for survival.

3.4 How do the different fields (Industrial Design and Strategic Design) influence each other?

3.4.1 Implications of Execution

Having a background in Industrial Design – and therefore strategy execution – provides these practices with very valuable expertise for strategy creation. In5 emphasizes:

>You cannot do strategy without a notion of execution.<

Approaching strategy formulation from a viewpoint of strategy execution is for In5 “the big difference between what Strategic Design consultants do and what strategic consultants do.” It allows for a co-creation of problem space and solution space which is especially helpful in situations with high complexity. Furthermore, it enables one to make more informed decisions because many implications can be anticipated. “So we are quicker in deciding which way to go because we know more [...] If you know more,

then you can better think ahead", notes In6. This awareness of the possible roadblocks and hurdles that could come up during the implementation phase proves to be a valuable asset to have. Having knowledge and more importantly experience with strategy execution ensures a smoother implementation phase, and therefore a more successful overall process. In5 states:

>I think what was really important is that it's very difficult to design… to set up a new strategy if you don't know about the struggle of the implementation side of it.<

3.4.2 Implications of Formulation

Similar to the participants emphasizing the benefits of experience with strategy execution for the creation of strategies, there were also voices pointing out the benefits of having experience with strategy formulation for the design process. Understanding more of the business side enables designers to gauge better how to adjust a design to meet the requirements and benchmarks a client company may have. In5 says about this that "as a designer, you have to be aware that there are things that you can change, that you can actually adjust your approach and adjust your design to meet the other goals". They continue: "We train our designers here in thinking that way that they are always right from the start [aware of] what the business implications of their design decisions are. And that…

>… you cannot make a decent design without knowing what the implementation implications are..<

Too often there is a disconnect between what a designer might consider the correct and appropriate design for a brief and the perspectives a business might have which are not communicated through the brief. Understanding those additional requirements and constraints, how they influence the decision-making of the client on the one hand and in return, how design decisions with that understanding in mind can improve the likeability of a design to be approved on the other hand, makes for a more successful design process and collaboration. In6 frames it in this way: "You have more feeling with the influences of what the design change will bring. And you're better at weighing that balance, I think".

3.4.3 Context Awareness

The mutual understanding of strategy formulation and strategy execution leads additionally to a higher awareness of the context and the implications of and for context. It allows for an understanding of how the context and developments within that context influence the client leading up to a collaboration as well as the design decisions during the process. This insight is more embedded in the ways designers think and act, especially if they are encouraged to open up a brief at the beginning of a design process. However, what becomes increasingly part of the considerations in a design process are the implications of the outcome to the context. And not just to the context but also to the client organization. This begins with the changes the client organization has to implement to produce and distribute the design outcome. For every design outcome there needs to be organizational changes to facilitate the implementation of the design outcome. In5 remembers that "years ago, I was collaborating with a management consultancy. And they said that you can't do product innovation without change management in the company. Because product innovation always has an impact on the structure of a company. So there you can see that the role of design in that sense is changing a lot because what we do in many ways impacts the way that companies behave in their environment". Much more established is an understanding that designs influence the user and the user's behavior. Being explicit about the reciprocal nature of context and outcome was not a widespread theme in the responses of the participants, however, some hinted at it with for example In3 talking about context awareness when introducing a new design to a public space, while In5 unambiguously states:

>you basically see that the design has that influence, that it changes the context. And the context changes design. So it‘s like a loop, like a Mobius loop that keeps going back and forth where both influence each other. It‘s not a static situation. For me, that‘s one of the most interesting elements of design. The fact that you are able to actually change the context.<

Interestingly, In5 points here to continuous interaction and influence of context and design outcome. With the previous arguments showcasing the reciprocal influence of strategy formulation and strategy execution, a parallel can be drawn. Every design decision changes the design outcome which influences the organizational structure of a client organization. Subsequently, the strategy has to be adjusted to fit this outcome. In return, an adjustment of the strategy challenges the appropriateness of the previous design outcome. Understanding the design process in this way calls into question if design processes are providing a solution:

>It‘s the context, and the fact that you add things to the context changes the context, and then all of a sudden you cannot speak about a solution anymore because it‘s a continuous process.<

, points In5 out.

In2 states: “Design is not about problem-solving, but it‘s about giving society opportunities”. These interpretations of design are not yet echoed across all the participants since it challenges directly the self-image designers have of being problem solvers and delivering design solutions. It also undermines the image clients have of designers and the role designers are supposed to play in a development process.

4 Conclusion

4.1 Content

Industrial Design practices that increasingly address strategic challenges as well, seem to highlight, through the way they approach these challenges, the connection between (Industrial) Design and Strategic Design. Seemingly they do not need to profoundly transform their practices on an organizational level in order to offer these new services. In their view, most of the needed capabilities are inherent in (industrial) designers. This emphasizes the grounding of the Strategic Design they represent in a designerly practice. Through the frameworks, methods, and tools they take and adapt from their Industrial Design practice to use to work on these new briefs they also make explicit the reciprocal nature of strategy formulation and strategy execution. While there is still no consensus on where Strategic Design work begins and Industrial Design work ends, this view and application of Strategic Design is deeply grounded in design and manages to create a clear distinction to strategy formulation as practiced by more traditional business consultants. Coming from a background of strategy execution enables these Industrial Design practices to provide a valuable contribution to strategy formulation.

4.2 Limitations

This study's limitations lay with the limited number of participants. While the professional level of the participants was ideal – they are in leadership positions that give them a very good understanding of the type of work the practices are currently doing as well as the changes the practices underwent over time – the number of people that could be recruited might not be enough to thoroughly validate the findings.

4.3 Recommendations

The limited number of participants suggests that to validate the findings it might be helpful to conduct a larger scale study, with more participants as well as additional data-gathering activities such as observations or even ethnological approaches.

Furthermore, it could be interesting to investigate quantitatively if a background in strategy execution adds knowledge to a strategy in such a way that it leads to higher or more successful implementation rates.

SYNTHESIS

This section focuses on the process I went through with the data I had collected, as shown in the previous chapters. I will discuss the method I have selected and how I used it to establish patterns in the data and to translate that into a statement that will guide the design phase.

1 Method

1.1 ViP Method

ViP stands for Vision in Product Design and stands for a design method developed by Paul Hekkert and Matthijs van Dijk. It's about creating a vision underlying a design, through deliberately constructing a future world. It combines a thorough research phase that deconstructs current products, services, etc., how users interact with them, and the context they exist in, with building a future context in which the design is placed, as well as a desired interaction and product or service features (Figure 13).

In the following sections, I will go into a bit more detail regarding the different stages of the process.

When I was choosing a method to guide me through this design process it was important for me that I was able to adjust the method to the task at hand. I had some previous experience with ViP and I came across ViP again in my interviews for this thesis as a foundational framework for strategic work. On a personal note, ViP is a method that I enjoy working with because it allows the designer to have agency in the work they are doing. While this might not always be the right approach for every project, it seemed to be the right approach for this project, since this project does not have an external client, like a company, etc. attached to it. Furthermore, after the interviews, which were very much a snapshot of the status quo of Strategic Design in Industrial Design practices, the method needed to be able to help me create a vision that opened up the door to a potential future scenario while being grounded in theory.

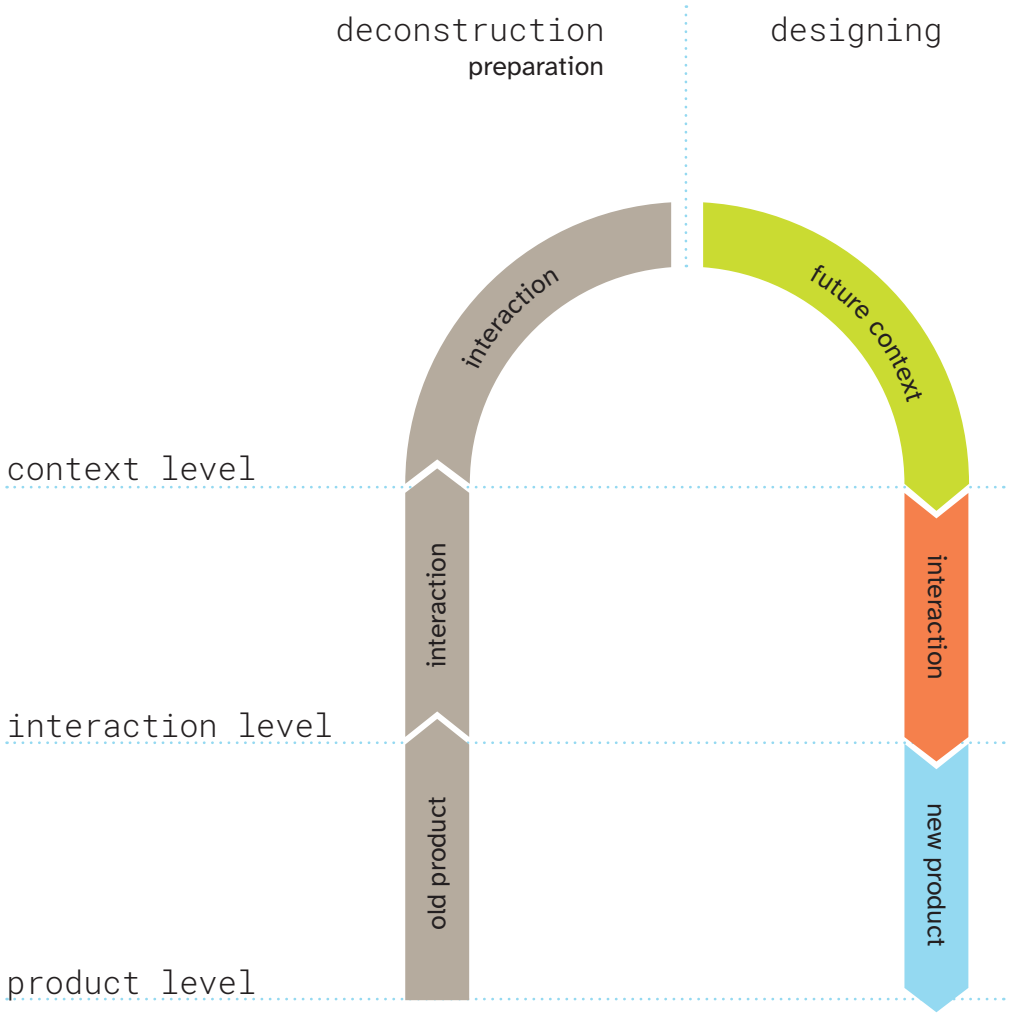


Figure 13: The ViP Method by Paul Hekkert and Matthijs van Dijk (2016)

2 Domain

The domain is “a description of the area in which [the designer] wish[es] to make a contribution” (Hekkert & van Dijk, 2016, p.137). It can be helpful to keep the domain fairly open to not limit oneself too much too soon. The boundaries set here are to be understood as guidelines because, in the search for factors, the next step, and therefore the material with which the worldview will be created later on, a wider approach can add a richer basis to the process.

My domain was a bit more on the narrow side, as it was built from my original research question. However, to keep it still more open I described my domain as:

>strategic challenges in Industrial Design<

3 Factors

3.1 Factors Overview

In ViP Factors are “observations, thoughts, theories, laws, considerations, beliefs or opinions” (Hekkert & van Dijk, 2016, p. 141). They will become the building blocks that will help build the worldview and the understanding of the domain one is working on. In the case of this project, the majority of factors are insights gained through the literature review and the interview study. Additional factors have been found through desk research into websites of design practices, talks, blog posts, and articles in design publications as well as other publications. The goal is to develop a thorough understanding of the domain to build a coherent worldview after clustering the factors in the next step. This means that the factors can be very close to the domain as well as seemingly unrelated, as long as they can add

something to the building of the worldview.

Over the continuous development of ViP as a method, the origin of the factors became more varied, and it included other research methods as sources for factors, for example, user research, while in the beginning, it was relying more on the designers' intuition.

Possible types of factors are trends, developments, states, and principles. In order to build a rich worldview it is helpful to collect factors from different fields: The factors could be for example cultural, psychological, demographic, sociological, economic, biological, evolutionary, technological, etc. (Hekkert & van Dijk, 2016, p. 143).

Being careful not to open up the domain too wide I chose to extract the majority of my factors from the literature review as well as the interviews I conducted. However, this core group of factors was enriched with additional factors, collected through desk research, as previously stated.

3.2 Main Takeaways Literature Research

- Design is a value-based profession.
- Craft and practice lie at the heart of all design work.
- Design Thinking misrepresents design.
- Design Thinking has sanitized design, to make it more palpable for business.
- SMEs are interesting potential clients for Strategic Design work.
- The consultancy model needs rethinking.
- Strategic Design needs to be embedded in organizations.
- Strategic Design is an approach especially suited for systemic change.
- Strategic Design must be more than Design Thinking.

3.3 Main Takeaways Interview Study

- Strategy formulation and strategy execution are interdependent.
- (Strategic) Design is not problem-solving. It's about providing opportunities.
- The context shapes the outcome shapes the context.
- Outcomes are a means to an end.
- "Pure" strategy is incredibly hard to sell because strategy (consulting) is a "nice to have", not a "need to have".
- Strategy is often used in a way Industrial Designers have already operated: as reframing and/or research.
- The next higher level of strategy work after product-specific strategy is portfolio strategy. here it often stops.
- Strategic Design seems less about capabilities, but much more about a mindset and an interest.
- To stay afloat studios need to be highly flexible and adaptable with their business model, specifically with their revenue stream(s).

4 Clusters

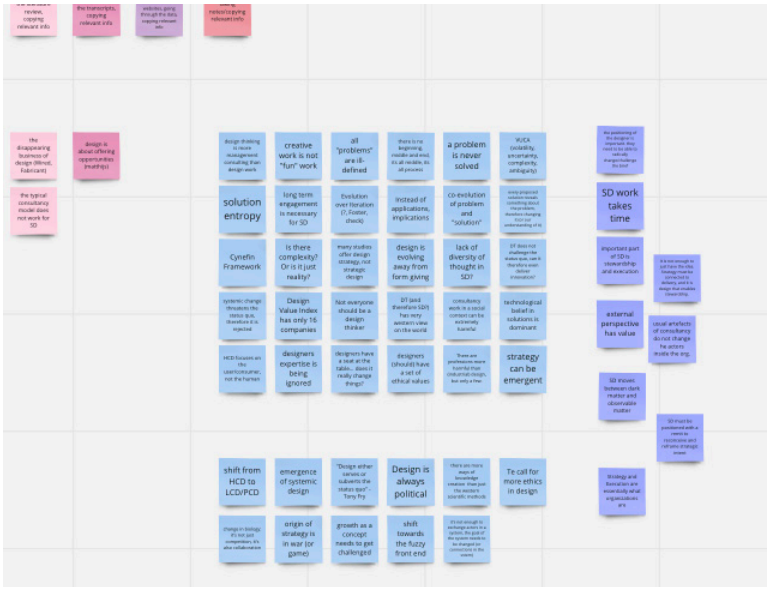
4.1 Clusters Overview

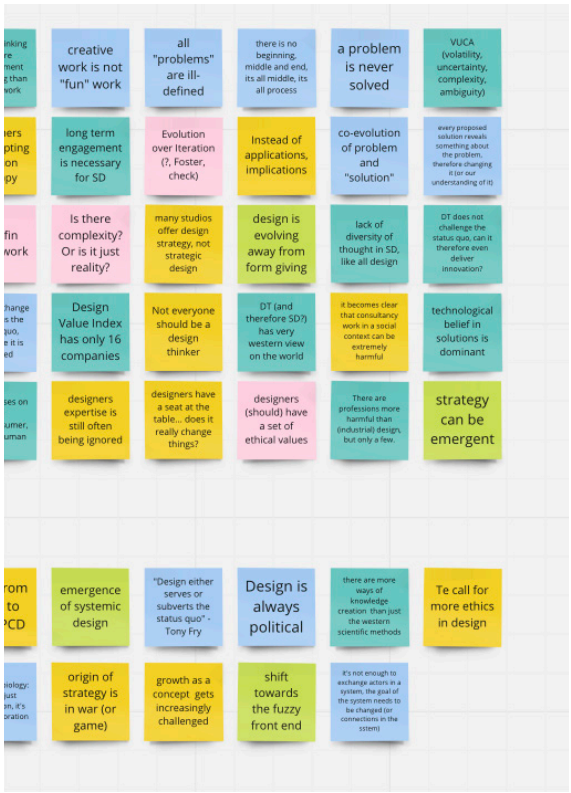
After collecting and categorizing the factors into their respective types and fields they belong to, the next step is to bring them into a structure. This phase starts with clustering the factors. The two types of clusters are "common quality cluster" and "emergent quality cluster" (Hekkert & van Dijk, 2016, p. 149). A common quality cluster combines factors that point towards a similar direction, underlying the individual factors. Emergent quality clusters on the other hand combine factors that point in different directions, but by combining them a new meaning or direction can emerge.

In this project, these clusters are not evenly distributed, with a larger number of common quality clusters than emergent quality clusters. This is due to an overlap of the directions of many factors that have been gathered through the literature review and the interview study. However, there are nuances and variations in these factors as well which are complementary. While this is the case for a large part of the factors gathered in that way, some clusters combine factors pointing in different directions.

The process of clustering feels often like solving a puzzle. It is a lot of trial and error, with some clusters forming seemingly easily, only to end up as a cluster that does not add anything to the overall emerging picture, while others seem to not want to form at all before a sudden breakthrough. This engagement with the factors creates a familiarity with them, even if they are there in large numbers. Over time some factors

Figure 14-19: Impressions from the data collection and establishing the factor categories.





are just too similar to keep them both, so one of them gets removed from the selection. If there is a notion that some might still be missing it is possible to revisit the previous step, the collection and categorization of the factors, and add some more. However, this process should not take forever, therefore at some point, the clusters need to be determined. Since I had the feeling that my two main data collections, the literature review, and the interview study, provided me with a vast and rich tapestry of factors, and the additional factors added enough further information, I added only a handful more to the collection at this stage.

4.2 Strategy formulation and strategy execution can function better when approached holistically

Early on in the literature review, the first sign showed up that the interaction of strategy formulation and strategy execution would be an important theme. In organizational strategy literature, the focus lies on strategy formulation, whereas design and the literature on design focus on strategy execution. With the Danish Design Ladder and later the popularized version of Design Thinking, we start to see also considerations of how design can and will add value earlier in the development process and other areas of an organization. This theme is emphasized with Strategic Design which makes it explicit that design can be used in a strategic context.

Especially with a lack of theory and methods for strategy formulation as described in the literature review, (strategic) design offers possibilities of adding value to the process of creating strategies. Furthermore, to distinguish itself from other strategy creation professions and methods, Strategic Design emphasizes its origin in design by employing the knowledge and experience gained through extensive engagement with strategy execution.

This theme showed up as well in the interviews, the benefit of understanding the execution and implementation of strategies, especially the struggles and pitfalls that come with that. Having experience in that area can be leveraged in creating more effective strategies that are also more actionable. Furthermore, executing a strategy influences the overall strategy, triggering a continuous process of mutually influencing each other, since every change in one requires an adjustment in the other.

Figure 20: Impression of an earrly attempt to cluster the factors

4.3 Consultancies are needed but don't really work in the way they are set up right now

This cluster is made up of rather opposing views, with the findings of the literature review suggesting that consultancies are not suited to engage in strategic work due to the nature of their mode of operation. Being an external partner that is only involved in a project for a limited amount of time is not suitable for Strategic Design, because Strategic Design best functions when embedded in organizations where a long-term, continuous involvement with a strategy is possible. This means, only being involved in strategy formulation without involvement in strategy execution jeopardizes the realization of the potential inherent to the strategy. The reasons for this can be found in a lack of ownership on both sides: A lack of ownership over the implementation allows the

consultancy to recommend steps and strategies to the client organization that are too ambitious or lack connection to the real-world context, while a lack of ownership over the strategy creation leads to an absence of motivation to implement the strategy.

The insights from the interviews on the other hand suggest that the role of an external partner, like consultancies, is very much needed in organizations. The reason for this can be found in the fact that organizations are heavily focused on making processes more efficient, reducing risk, and growing eg. sales of their current products or services. However, to stay competitive organizations need to innovate, which is in opposition to all their other management processes. Here an external partner can help shake things up and provide the necessary distance to the day-to-day operations.

4.4 Context shapes the outcome shapes the context

In many linear processes, only the influence of the context on the design outcome is described and recognized. However, it becomes increasingly accepted to also include the influence the design outcome has on the context. Especially in Strategic Design, this concept is of importance since it recognizes the strategic potential design outcomes have on a larger context. This sentiment of a design outcome being a means to an end, a tool to achieve a strategic goal was present in both literature as well as in the results of the interview study.

The context that can be influenced depends of course on the strategic goal underlying the development. The most common one is influencing user behavior, more and more accepted is also the notion that an organization changes according to the products or services it produces. And as (strategic) design addresses increasingly larger societal issues, for example through systemic design and social innovation, the implications design outcomes can have on a larger context become evident.

4.5 Strategic work is still not really seen that much as a design discipline

Design Thinking over the last 15 years led to a wider awareness of design and the value it can add to businesses. Unfortunately, this was not always to the benefit of designers, since many critics argue that Design Thinking led in fact to the diminishment of the value of design itself. Since it was touted as a process, especially a process everybody could learn in a short amount of time, it separated the design process from the designer. Therefore, designers still have a hard time selling design services that extend the design services of product and service design. In the interviews, it became clear, that in times like the present with the Covid19 pandemic just behind us and a progressing recession engulfing us, strategic work is the first type of work that gets seen as expendable and cut. And the design services for which designers are still getting hired in the strategy execution part of a development process, get trimmed down to the absolutely needed steps. Therefore, if designers want to be involved in strategy formulation strategy can not be just another service that is offered but must be an essential part of the design process.

4.6 Capabilities are highly compatible

Both the literature research and the interview study suggest that designers have the capabilities needed to be involved in strategy formulation. While it is beneficial for either strategy formulation or strategy execution to have knowledge of the other to achieve better results, the skills and capabilities needed are compatible. Especially the design practitioners in the interviews believed that Industrial Designers are well-prepared to address strategic challenges. A scenario where a few new tools need to be learned is a possibility, but since that is the case with most projects it is neclectable as an outlier for strategy making. However, due to the small size of the practices interviewed, the composition of the team is important. Every new hire influences the positioning of the practice and the type of projects the practice can sign up to.

4.7 Strategic design needs to be something else than Design Thinking

Since Design Thinking is often used in a business context, there is sometimes a perceived overlap with Strategic Design. However, heavy critique can be found in the literature as well as among design practitioners. Even in management circles, design thinking has lost its shine. Unfortunately, Design Thinking is still an approach often employed when there is a wish to use a more creative, designerly way to address strategic issues. But, the more we locate strategy in an area of “complexity”, the more unsuited Design Thinking becomes as an approach to address these strategic challenges. This highlights the need for Strategic Design to be more than just Design Thinking in a strategic setting. Instead of appealing to the business world, some design practitioners advocate therefore for a stronger connection back to design as the origin of Strategic Design, emphasizing the craft, experience, expertise, and values inherent to a design practice.

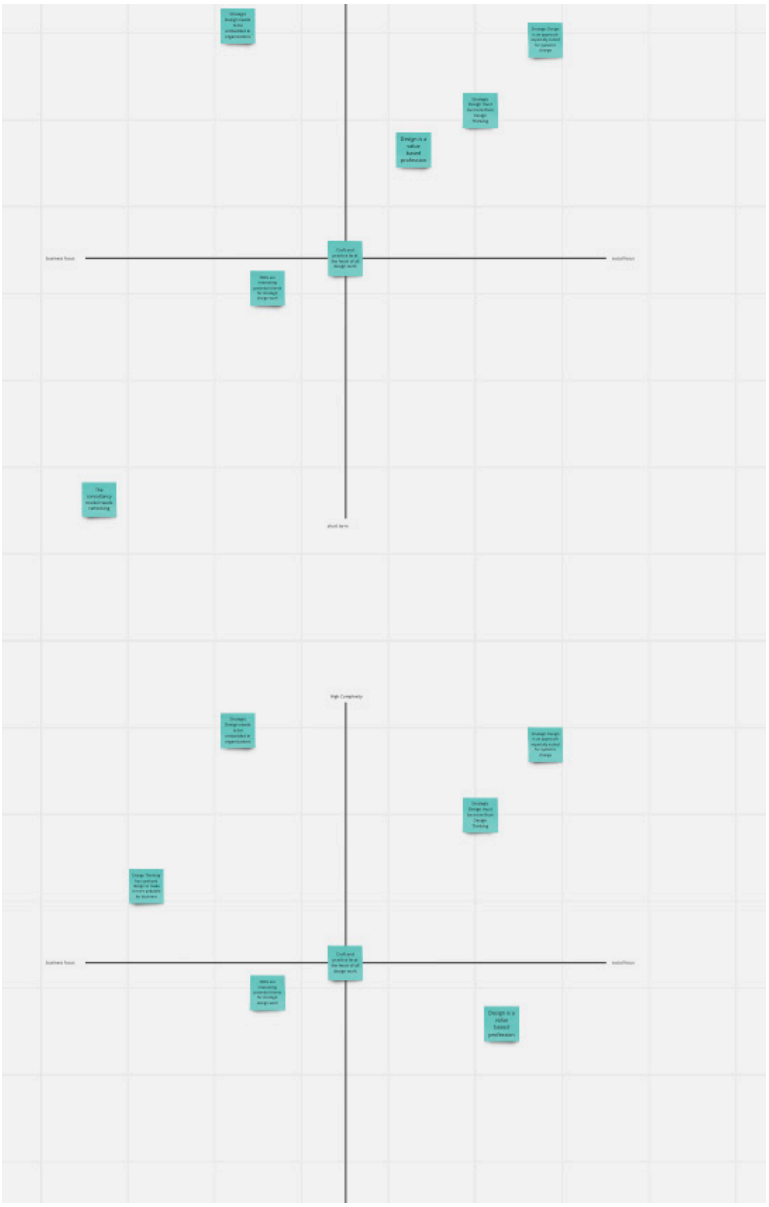


Figure 21: Impression of an earrly attempt to establish a worldview based on the clusters

4.8 Challenging the solutionism inherent in design

A common thread was an understanding of design that is deeply process-oriented. The practices interviewed in the majority position themselves not in terms of markets they can serve or products they can deliver but as process-driven. Not quite as widely shared, yet increasingly emerging, is the notion that even though design is often seen as, and taught as, a problem-solving tool, in fact, does not provide solutions. While this view is still less popular in more traditional design disciplines like Industrial Design, it gains popularity in design disciplines dealing with complex situations. In these dynamic situations the problem space is constantly changing and therefore any “final solution” does not fit the original problem anymore. Here the research for this project discovered different views on what design is or provides: Design as providing opportunities, design as producing implications over applications, and design as an ongoing process, to name a few. With that comes a view on problem-solving that understands design processes not as reaching the one solution for a problem, but as breaking down the problem, changing the problem, reducing the problem, moving the problem, as well as creating new problems through unintended consequences.

5 Worldview

5.1 Worldview Overview

Once the clusters have been established they will be put into relation to each other with the goal of the emergence of a coherent worldview. In the same way, factors were the building blocks of the clusters, the clusters are now the building blocks of the worldview. Combining these clusters can happen in a multitude of ways, with the most common ones being as a pattern or a storyline, or on dimensions. In a pattern or a storyline, a narrative might appear, while when combining the clusters on dimensions the emphasis is more on the differences between the clusters (Hekkert & van Dijk, 2016, p. 152-154).

5.2 Worldview Development

With the clusters I developed, it made sense to use more of a pattern approach than placing the clusters on dimensions. A short narrative or a quick pattern reveals itself often relatively fast, although they usually only involve a fraction of the clusters. While it is easy to fall for these first emerging answers a more thorough approach leads to a more satisfactory result. Especially when trying to treat all clusters with similar importance and not neglect one or two simply because they do not fit as easily in the overall emerging pattern. It can make sense at some point to revisit the previous step, the clustering of the factors, to see if there are other ways to cluster the factors, should no satisfying result show up. Over multiple iterations of potential patterns and narratives the pattern in Figure 22 emerged: Three overlapping areas with the clusters situated within the different possibilities of overlaps. The three areas are “the constant influence of each other”, “questioning the status quo”, and “the core of the design practiced”. The clusters are distributed as follows:

In one area:

- “Strategy formulation and strategy execution can function better when approached holistically” is situated only in “the constant influence of each other”
- “Strategic Design needs to be something else than Design Thinking” is situated in “the core of the design practiced”
- “Consultancies are needed but they don’t really work in the way they are set up” sits in “questioning the status quo”

In the overlap of two areas:

- “Capabilities are highly compatible” sits on the overlap of “the constant influence of each other” and “the core of the design practiced”
- “Strategic work is still not really seen that much as a design discipline” is situated between “the core of the design practiced” and “questioning the status quo”
- “Challenging the solutionism inherent to design” is located on the overlap of “questioning the status quo” and “the constant influence of each other”

In the overlap of three areas:

- “Context shapes the outcome shapes the context” is situated in the center

This worldview is now the basis for the design statement in the next step:

>anchored in process, driven by inquiry, inspired by exchange<

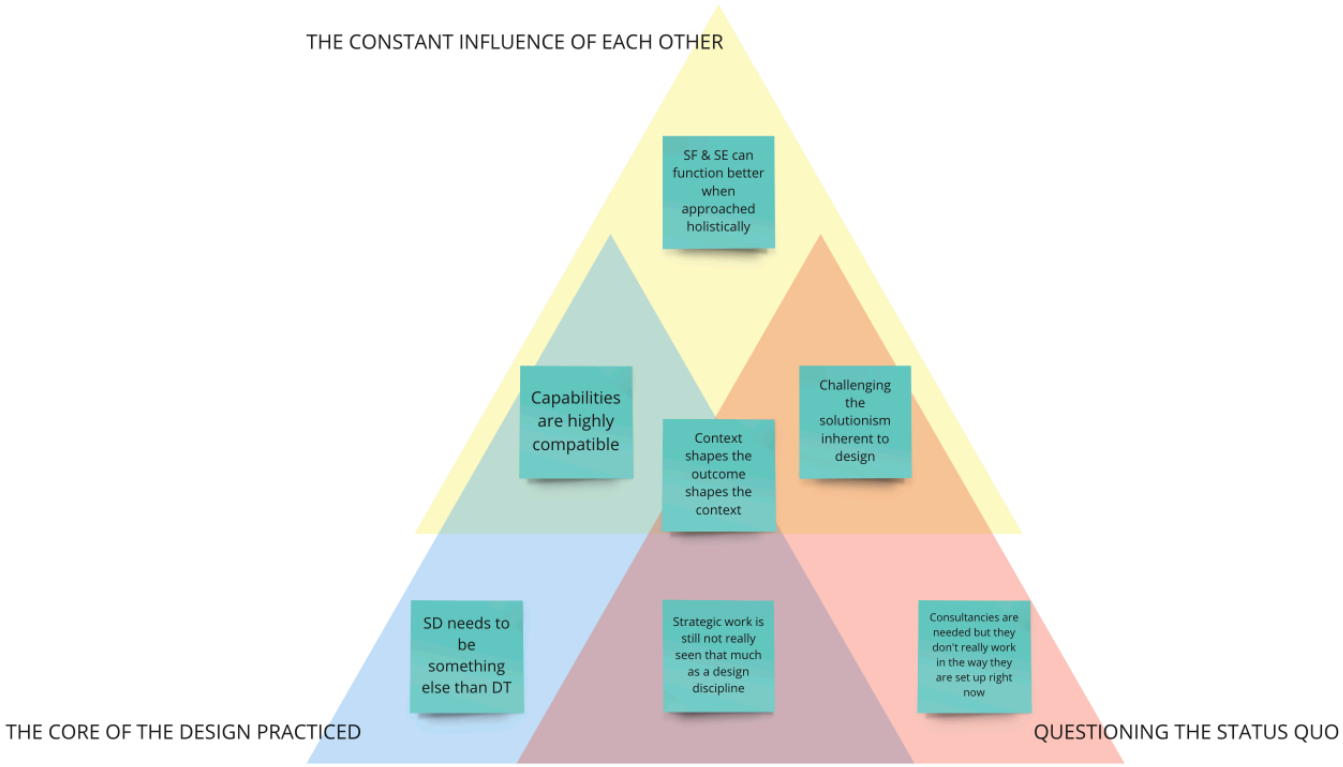


Figure 22: A visual representation of the worldview developed in this process.

6 Statement

6.1 Statement Overview

The statement is the way for the designer to take a position regarding the domain he works in, building on the factors, clusters, and worldview. It is a statement of intent, and within ViP also the acknowledgment that designers never take a neutral stand. Design processes always have an inherent bias, from the way a design studio is staffed, over the work they take on, the way they frame a problem, in which directions they investigate the problem further, what factors (in ViP) or other information they deem relevant, to how they combine all this information to gain new meaning and insights. Design is always creating something that has not existed prior, and therefore inherently future-oriented. A design also always takes a position toward the present, either as a confirmation of the status quo or as a suggestion of a different direction (Hekkert & van Dijk, 2016, p. 156).

6.2 Statement Development

Creating the statement for me is always a bit of a difficult endeavor. Words are not the material I feel best with, so crafting a statement that has a defining character for the project is always a struggle. Externalizing one's thoughts at that stage of the process is always incredibly helpful. And then similarly to other parts of the process, it is continuous trial and error. In my experience, there is also already a vague notion present of what this statement should be about. After having worked with the other previous steps extensively this step is often more a step of finding the precise words, rather than the overall direction of the statement. This is an example of an earlier version of my statement:

> "I want to empower small to midsize Industrial Design studios to transform their practice into innovation studios by introducing a studio model that interconnects Industrial Design and Strategic Design more thoroughly".

After first moving forward with this statement, I noticed at a later stage that I had to adjust it further.

The final version of the statement reads now:

> I want to enable reciprocal strategy formulation and execution by designing interventions that reenvision the consultancy model and utilize creative ecosystem collaboration. <

7 Metaphor & Interaction

7.1 Metaphor Development

With the formulation of the statement the process moves into the next phase, the actual design phase. This step (“metaphor”) and the next step (“interaction”) help translate the statement into a design. The main step here is designing the human-product interaction (instead of product it can be any outcome of the design process). Envisioning first a metaphor for this interaction can be helpful to gain a better understanding of the desired interaction.

When envisioning this metaphor it is important to dissect the various metaphors that emerge. Often one or two aspects of the metaphor fit well, but when inspected more thoroughly other aspects fall short.

The metaphor I chose for the interaction I envision, based on my design statement, is a coral reef (Figure 23). The reef provides a platform with all its corals and acts as a facilitator for the interaction of a multitude of diverse species. Through the reciprocal collaboration and exchange the coral reef becomes a breeding ground for innovation, resulting in a supercharged ecosystem bursting with life full of variations.

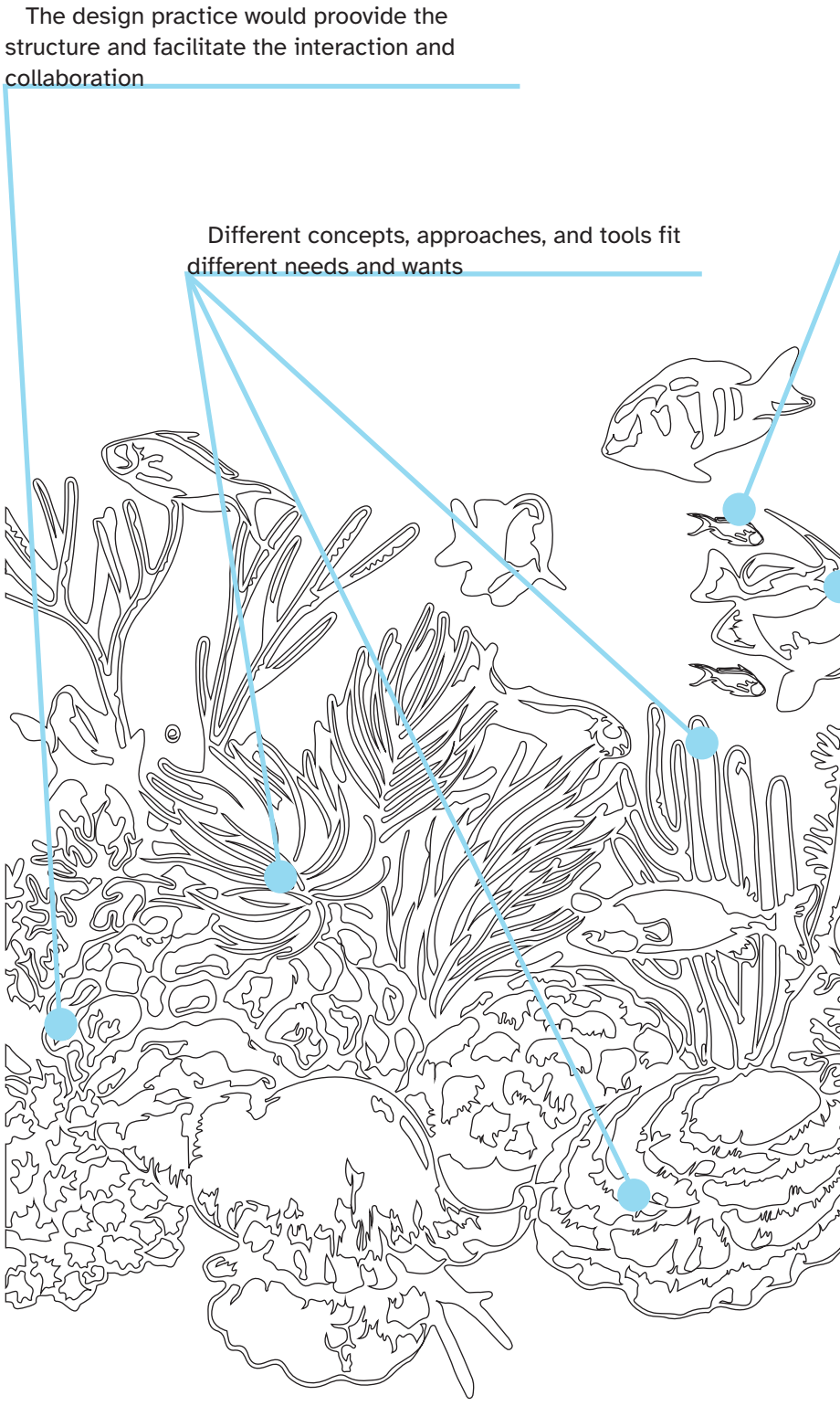


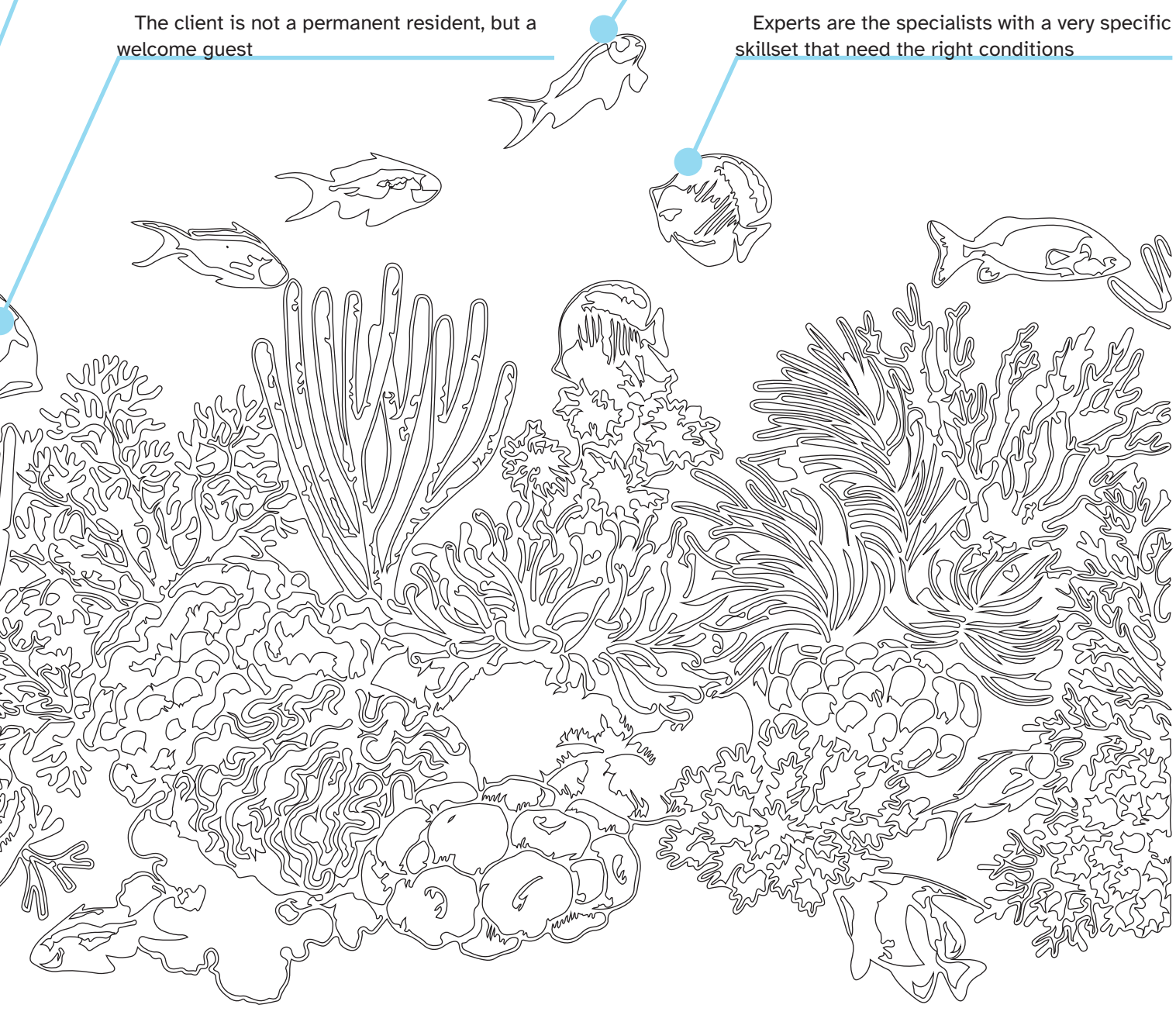
Figure 23: A coral reef as the methaphor for the envisioned interaction

With the client users show up as well once in a while

Freelance designers are regualar visitors, but they are always busy and don‘t stay long

The client is not a permanent resident, but a welcome guest

Experts are the specialists with a very specific skillset that need the right conditions



DESIGN PROCESS

Due to delayed interviews, the process wasn't as linear as the ViP model might suggest. Therefore the first design directions are mainly influenced by the literature research, as well as some desk research, mainly into the positioning of design studios based on their websites and the change in positioning as communicated through their website over time. While many of the insights gained during the literature research still influenced the final outcome, they were complemented and enriched by the insights gained mainly during the interview study, as well as desk research and case studies.

1 Initial Directions

1.1 Organizational Changes

1.1.1 Overview

The first promising direction was found in looking at possible changes to the organizational structures. This would include changes made to the way their client relationships are set up, as well as changes in their ownership structures.

1.1.2 Nacar

Nacar is a design studio located in Barcelona, Spain, that offers services in "strategy, design, technology, and enablement". Interesting about them in the context of organizational changes is their internal structure. They are essentially divided into two parts: one part is project-based and has therefore continuously changing clients and projects that the designers get reassigned to. The other part functions more like an internal design team of a client, it is therefore client-based and on retainer with the designers in this part of the studio exclusively working on projects for one client (Figure 24).

This separation into these two different sections of the studio allows for different revenue streams to come in. While the client-based part enables a continuous income stream that is much more stable than the other income streams Nacar has which are more hourly or royalty based, it also creates more dependencies and a more severe risk for the business if one of these clients decides to end the collaboration. As far as it is visible Nacar

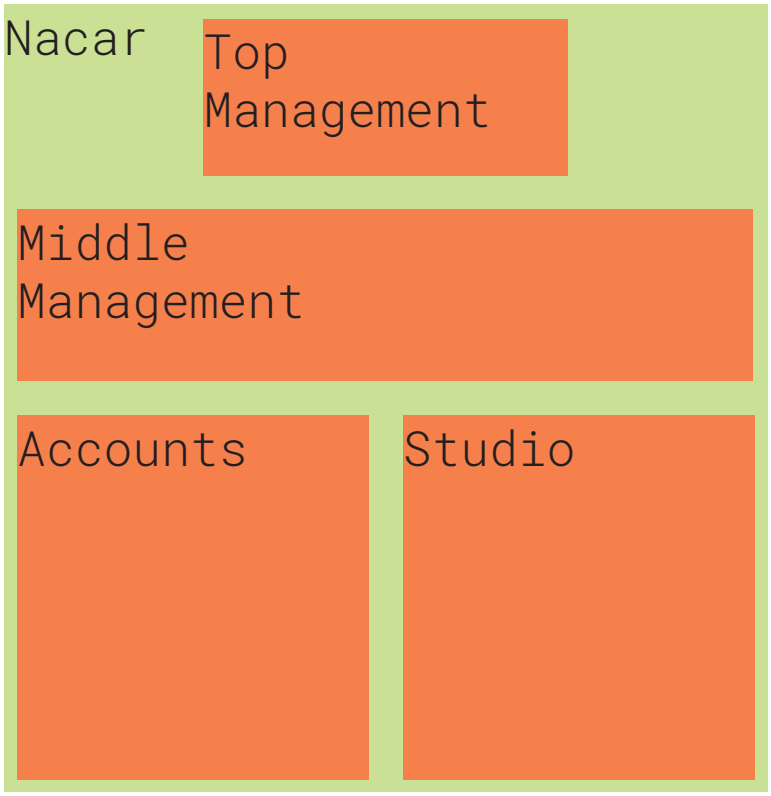
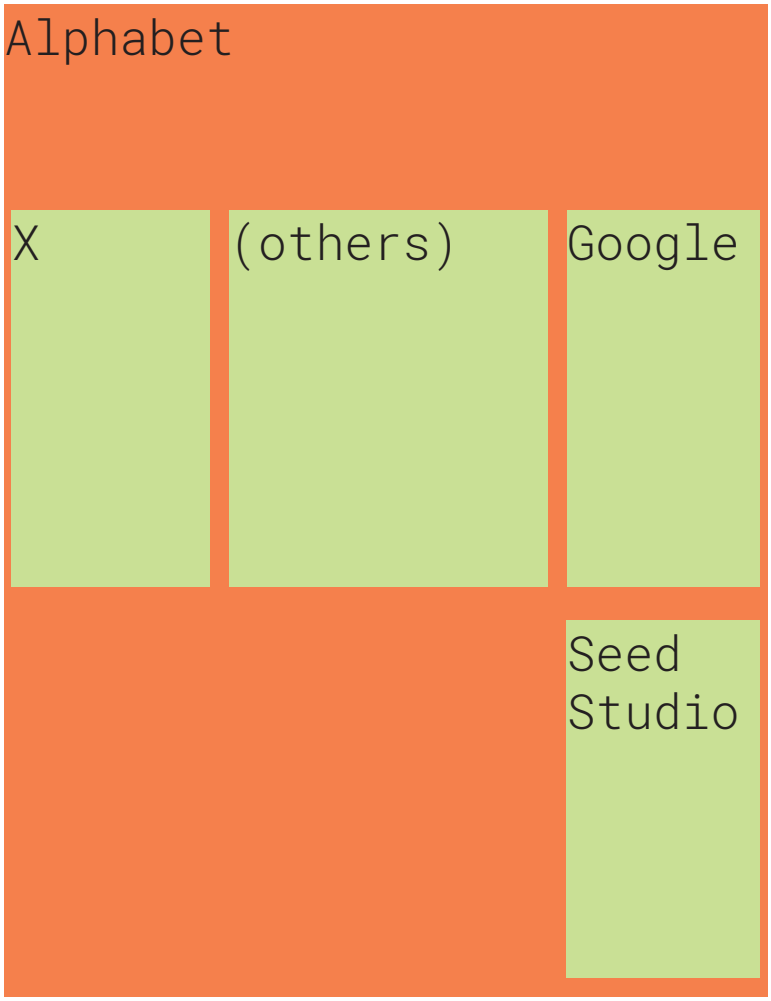


Figure 24: The internal structure of the design studio Nacar

Figure 25: The way X and Seed Studio are integrated into Alphabet



has only HP Europe as a client in this section as of this writing. However, they are aiming at growing this part of the business in the future.

This section is also the most interesting regarding this thesis. By functioning as an "internal team on the outside" Nacar can be involved long-term in projects. Not just in the strategy execution part, but in strategy formulation as well.

This way of working with clients appears to be an ideal way of collaboration, with advantages from both internal teams and consultancies. However, it is to be seen how much they can grow that division of their business, and if they can find enough clients interested in such a way of working.

1.1.3 X & Seed Studio

These are two companies that are part of Alphabet (Figure 25). They do not take on external clients, but they are also different from internal design teams. X, also called "the moonshot factory", develops projects that are pushing boundaries, using technological developments paired with research and speculative design. The technologies used and explored fit into the capabilities and interests of Alphabet and have the potential to become scaled as new ventures under the Alphabet umbrella.

Seed Studio on the other hand is the more speculative design team of Google's hardware design team. Their main task is to explore new interactions and directions for products as well as communicate the new launches.

The interesting part about both of them is that they have relative independence in their respective roles. While being part of Alphabet directly or through Google provides both of them with a clear "client", with clear goals and directions, they both operate still more independently than an internal design team. This allows them to be more boundary-pushing, more explorative, and agile while having solid backing and financial security. Therefore they manage to introduce new impulses similar to an external consultancy.

1.1.4 Space10

While X and Seed Studio are under Alphabets umbrella, Space10 is more of a satellite to IKEA (Figure 26). They call themselves a research and design lab and position themselves as an interface between the teams they work with and IKEA. In that way, they managed to keep their independence to a higher degree from the large company they exclusively work for. They were deliberately set up as an external lab for IKEA, an independent practice, but with an exclusive client in IKEA, providing them financial security (for the duration of their contract), relative independence in the areas they work in, albeit with a singular client that can use the outcome of the projects.

This relationship has proven quite successful with multiple contract extensions to this date. While not every project outcome results in an immediate use through IKEA, Space10 influences IKEA's future direction.

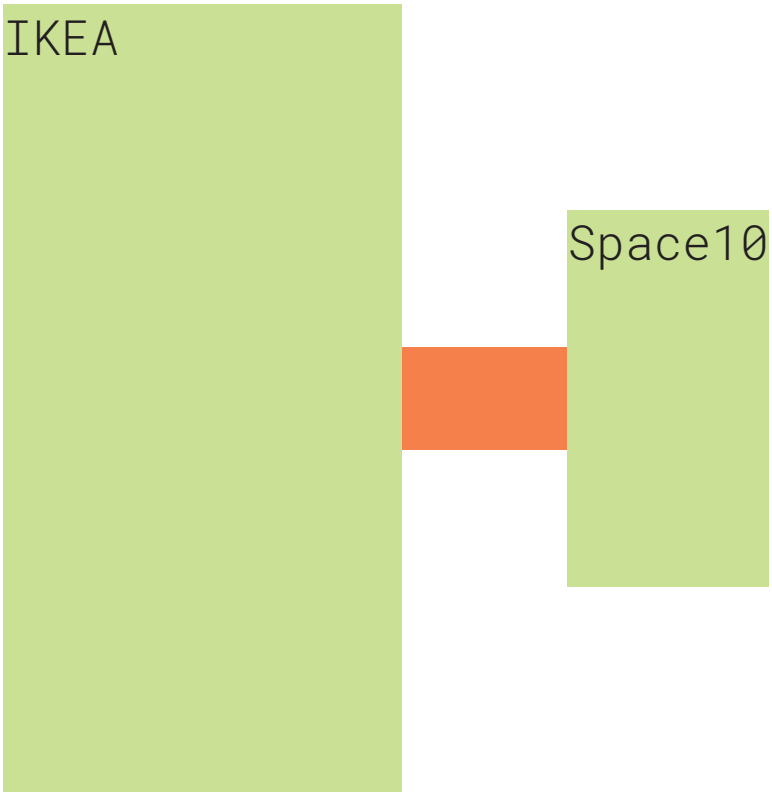


Figure 26: Space10 acts as a satellite to IKEA

1.1.5 Helsinki Design Lab

The examples so far were examples from the collaboration with private organizations. The Helsinki Design Lab is an example of a design practice that worked together with a government during its time of operation (Figure 27). It was a mission-driven initiative of the Finnish Innovation Fund, also known as Sitra, with the goal to explore how strategic design can work together with and for governments, especially on issues with a systemic scale. Even though they worked quite successfully on multiple projects together, their collaboration lasted only from 2009-2013. However, it is a good example that those types of collaborations with a singular client can also work with public organizations.

Figure 27: The Helsinki Design Lab was closely connected to the Finnish Government

1.1.6 Conclusion

Except for Nacar, the organizational changes mainly refer to how they work together with clients, or who their clients are. Organizational changes In the initial design directions, therefore, refer mainly to changes in their status as independent studios. And even Nacar seems to have only a singular client in its client-based division. While it can be interesting for Industrial Design practices to consider this client relationship, it is questionable how large the demand for this type of collaboration truly

is and if design practices are even interested in giving up their independence. So far large corporations, who could have the financial power for such an arrangement, rather build up their internal teams, by only delegating tasks to external teams on a limited basis.

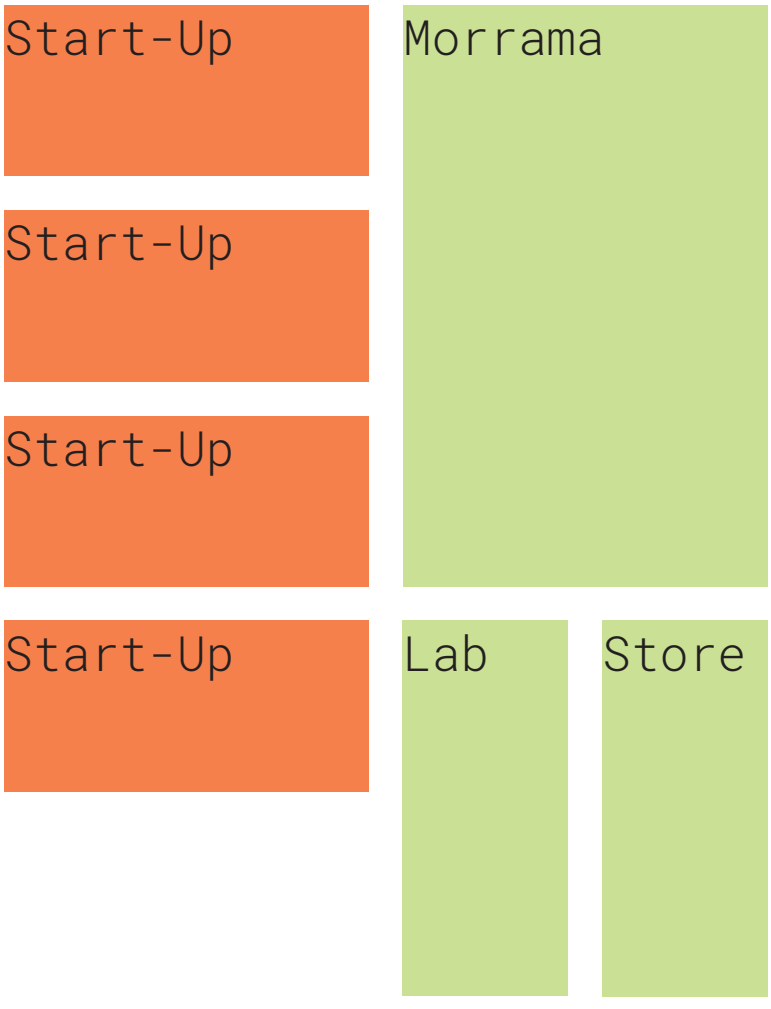
Based on this it is questionable how promising this direction is for this thesis.

1.2 Changes in Positioning

1.2.1 Overview

The other initial direction was a change in positioning. During the sampling process for the interview study, I noticed that the way a lot of practices talked about their services on their website as well as where they put the focus had changed over the last 10 years. On the one hand, this reflects in the potential clients they want to reach and on the other hand in the type of activities they perform themselves outside of the activities traditionally associated with industrial design practices.

Figure 28: Morrama has specialized in working for start-ups, as well as diversifying their business



1.2.2 Morrama

With Morrama we have a relatively small industrial design agency from London, which presents itself as an “innovation agency” on its landing page. They offer a full-service offering, especially aimed at start-ups (Figure 28), with expertise and a network, especially in production and bringing a product to market. Such expertise is especially interesting for start-ups that lack especially in those areas. Recently Morrama published a start-up guide as well which emphasizes this positioning.

An offering aimed more at the strategic side of a development process can be found in the Marrama Lab, the division of the practice focusing on design research. Here they publish reports as well as case studies, showcasing their abilities.

However, not all activities are aimed at working with clients. Over the years Morrama has also developed their own products which they sell through i.a. a shop on their website. This establishes an additional source of income as well as showcases their abilities to bring products to market very tangibly.

1.2.3 Form Us With Love

With Form Us With Love, a Stockholm-based industrial design practice, we see on the one hand collaborations with well-established furniture makers and other producing companies, as well as a more entrepreneurial side, with the founding of three ventures to this date (Figure 29).

Interestingly, even the more conventional relationships with clients get rethought and redesigned, for example with the furniture producer +Halle and the Annual Briefing model (more info in the “Case Studies” section). Form Us With Love showcases their ability to work more strategically and entrepreneurial through the founding and subsequent development of their three ventures, TID Watches, Baux, and Forgo. In these cases they developed projects internally and when they did not find the right partners they decided to set these veneers up themselves.

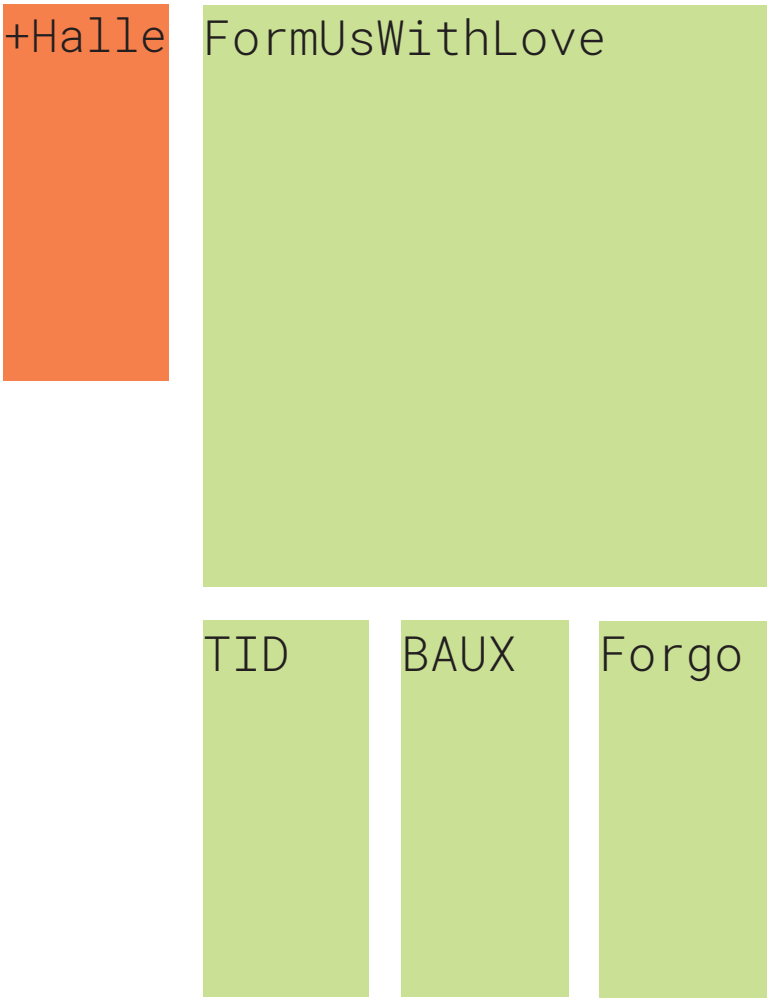
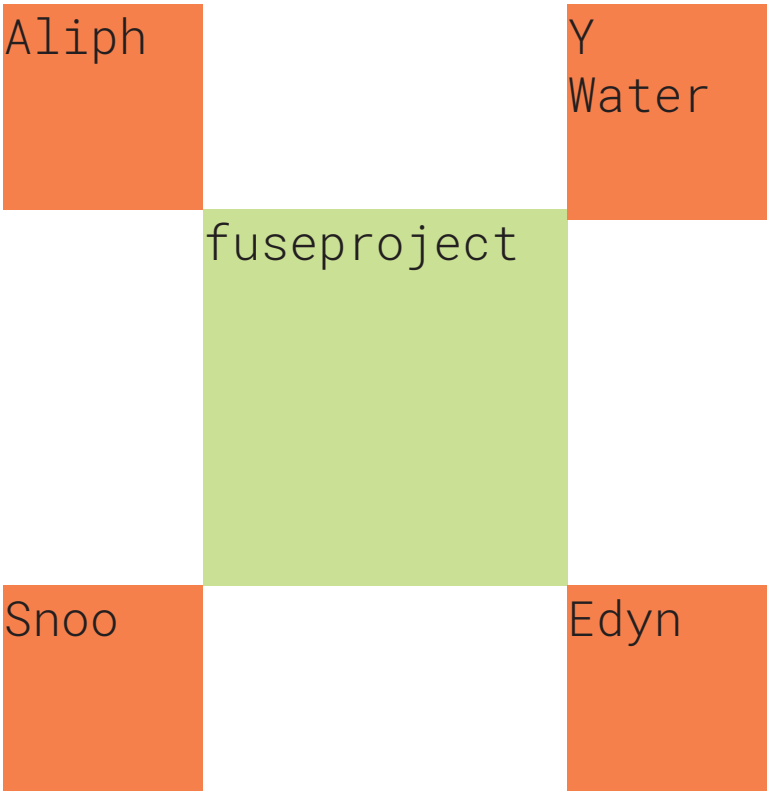


Figure 29: FormUsWithLove started their own ventures and reinvented their client relationships

1.2.4 Fuseproject

The Silicon Valley-based Industrial Design practice Fuseproject was one of the first practices to take on a venture-based business model. In this model, they often work together with start-ups but become partners as a form of payment (Figure 30). This helps them circumnavigate the common issue that many start-ups would like to work together with external design teams, however, they lack the financial means to do so. Especially in an environment like Silicon Valley, this business model was a necessary step to work together with the potential clients in the vicinity. However, it is important to point out that this revenue model is of course connected to a higher risk of getting any value back from the client at all, but can prove to be very successful in the long run. Some clients also like this model because it showcases that the design practice has also “skin in the game” and therefore provides their best possible work. The reason, however, that this model is not more widely in use is the necessity for a large amount of capital to be able to postpone revenue which many (independent) design practices simply don’t have.

Figure 30: The Helsinki Design Lab was closely connected to the Finnish Government



1.2.5 Conclusion

It is unclear without a more thorough investigation into these specific cases if these changes were a reaction or a deliberate action. While many changes to the revenue model come with risks for the practices as well as potential revenue loss for a time, it can be a good move to diversify the revenue model to build more resilience into it. Especially the examples of Morrama and Form Us With Love seem manageable for a small to midsize industrial design practice, while Fuseprojects changes might delay revenue for too long.

1.3 Development of Initial Direction

With these initial directions of organizational change as well as a change in positioning in mind, I went into the first ideation and brainstorming sessions. Having these examples helped illustrate the potential that was in these directions, but they also limited the first ideation phase. Especially the examples for organizational changes proved to be only relevant when the design practice was in a position where they could (and wanted!) give up their independence. This would have been too large of a prerequisite for the design outcome of this project and would limit its applicability severely.

Both initial directions ultimately carried through the project until the final solution in some shape or form. However, the way I approached it at first led to very specific solutions for individual cases and could not be generalized. Here the interviews proved to be incredibly valuable to detect patterns and build on those as a way to develop a more generalizable design outcome.

Another factor that played into the difficulties of the initial developments was that I had identified a possible solution space without having fully understood the problem space and narrowed the problems down to the problems that were at the heart of the issue and which my design outcome could address adequately.

2 Design Development

Parallel to the ongoing interview study I continued to develop the design. Especially in the beginning, it proved to be rather difficult to use the insights from the ongoing interviews productively in the development of the design outcome. The data set gathered is just too small to allow for patterns to emerge and it is easy to get positions and inputs that are rather far from each other. This can lead to two scenarios: Either at first the input leans heavily towards one side, neglecting the other viewpoints possible, which will put a strong bias on the design direction. Later in the process when this will become visible once more data is collected and analyzed and course correction can prove difficult in an efficient way. The other scenario is that the viewpoints are almost diametrically opposed, making it difficult to synthesize the information as well as position the design outcome on that spectrum.

With the progression of the interview study, I got a handle on these initial issues. Especially valuable were the results of the interviews regarding the exploration and definition of the problem space. They provided a well-rounded picture of the current situation, the issues these practices have to deal with as well as the approaches they address them with.

However, it also became clear that the current situation is not ideal, which emphasized the necessity for new approaches and suggestions on how to address this current situation.

2.1 Explorations of Positioning

Through the interviews, I noticed that Industrial Design and Strategic Design were seen as two rather separate areas. A practice would be situated mainly in one of them, with some connection to the other. For example, an Industrial Design practice would reframe a brief and explore the problem space in more depth, maybe even challenging if the “right problem” was being addressed. On the other hand, a Strategic Design practice would give recommendations for concepts or design directions, or already establish a design language.

Overall, design practices seemed to stay mainly in their area of expertise, even though the interviewees reported that a lack of capabilities was not an issue.

Therefore I tried extending the positioning of the practices into practices that could offer a service that would span both areas.

At first, I tried to establish a term that could describe the transitional state between Industrial Design and Strategic Design. I described it as “Design Strategy”. This term seemed to encapsulate for me the close relationship to design (and the design projects) that these projects seemed to relate to. By this, I mean that a lot of the strategic challenges that were described to me by the interviewees were closely related to the design brief they had originally gotten. While such work, like reframing a brief, is strategic in nature, it only concerns itself with the project at hand, not the larger strategic contexts of the client organization. Therefore, the strategy is very much about the design itself, hence “Design Strategy”. I located it as a transitional step between Industrial Design and Strategic Design on an axis between “design as solution” and “design as context-setting” (Figure 31).

To make things more tangible and visual I approached this transitional state also through these lenses: the focus of the practice and the expertise of the practice (Figure 32). This exercise helped me to understand the current state better as well as locate a gap that could be interesting to explore.

At this point, my main concerns were that stretching the positioning of the practice over both Industrial Design and Strategic Design in its entirety could lead to problems around losing a profile. It is still common to have a specialization (at least to a degree) that allows clients to understand the potential services they could get quicker and inspire confidence in the expertise of the design practice.

While some of the practices I interviewed are rather clear in their positioning within Industrial Design or Strategic Design, most did not have a specialization in markets or clients. Instead, they put process at the center of their practice. This insight ties in with the next section: Exploration of tools.

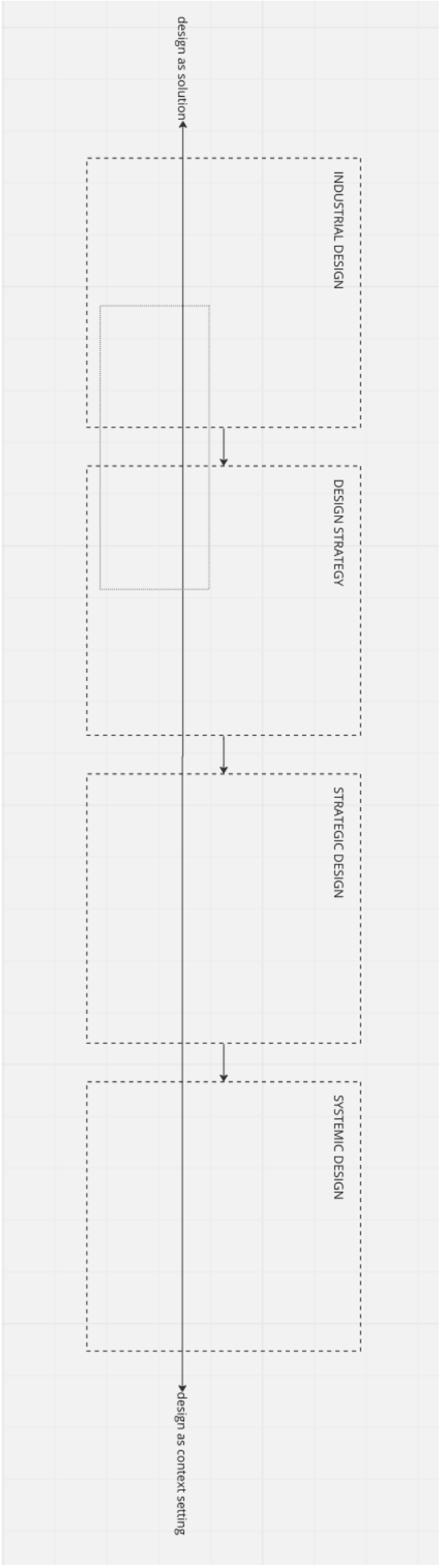


Figure 31: Initial attempts at extending the positioning of a design practice

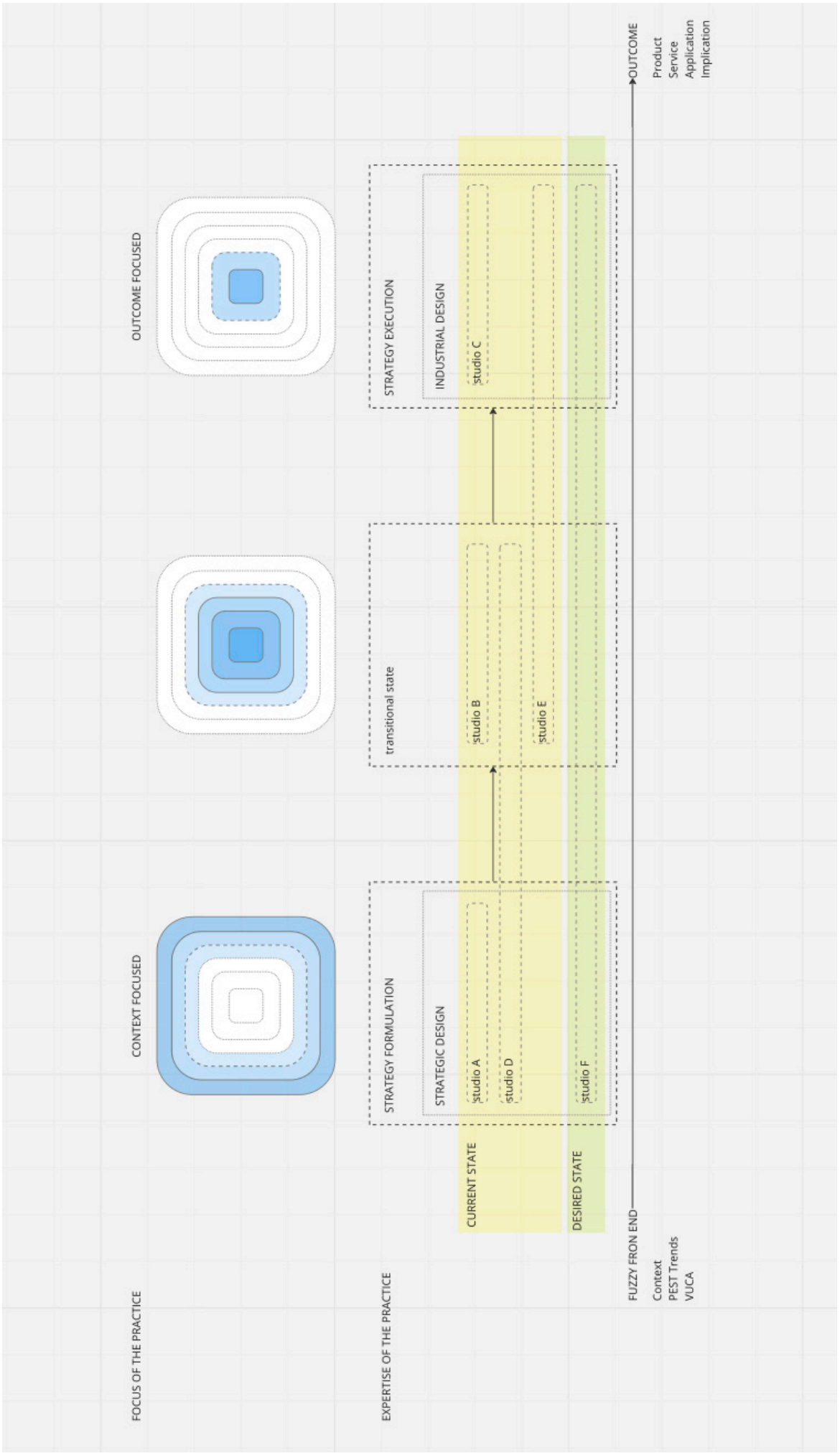


Figure 32: the focus and the expertise of the practice as a way to view their positioning

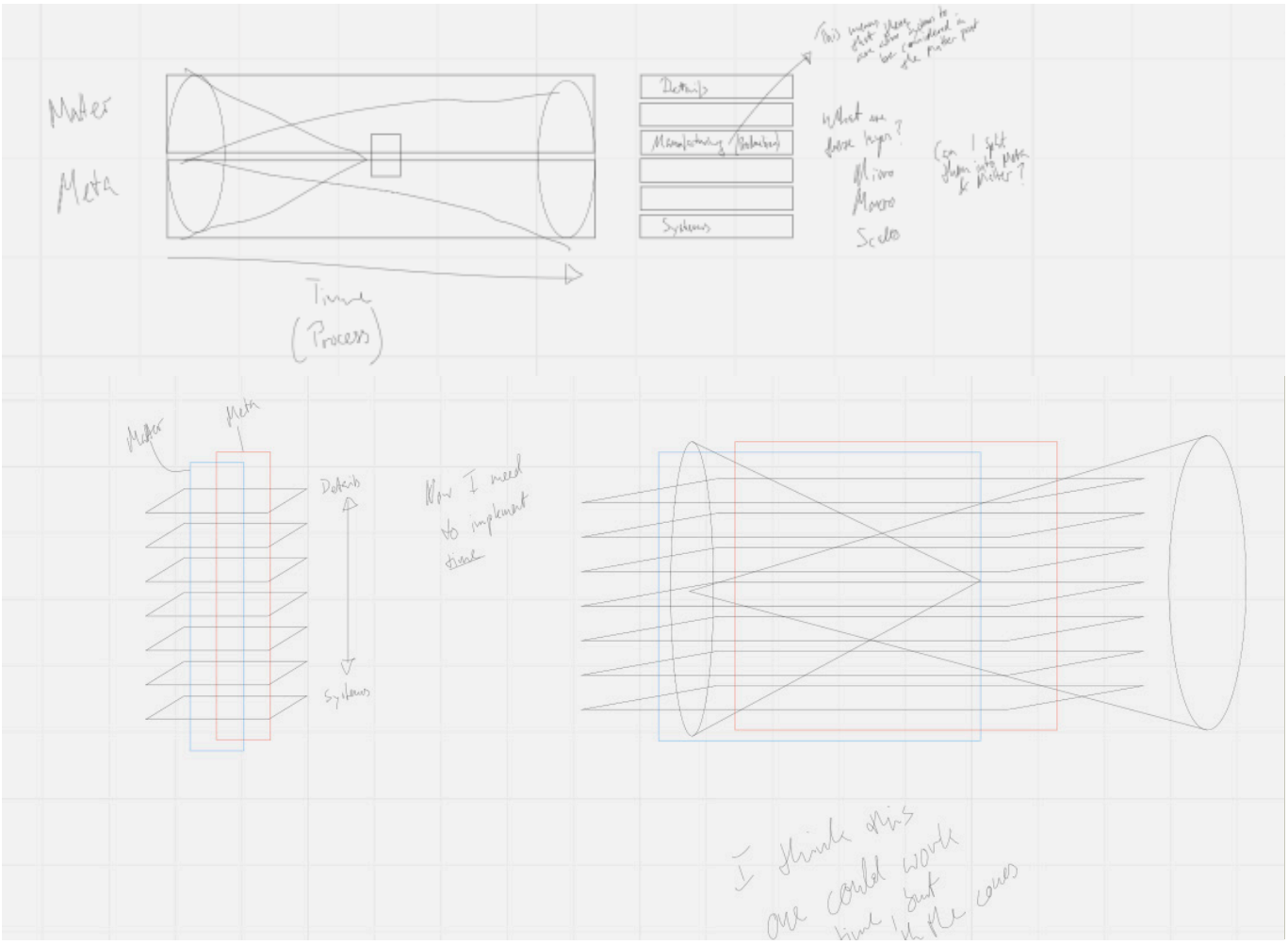


Figure 33: Initial explorations of tools as a way to develop organizational and positioning changes

2.2 Explorations of Tools, Methods & Approaches

Another angle to approach organizational and positioning changes is through tools and methods that are or can be used. Throughout the interviews, it became clear that the tools and methods used by the practices were changed and adapted for every project. However, it became clear that these practices had underlying frameworks that offered a structure for all their projects. Even though these frameworks were different for each practice interviewed, the emerging pattern was that process was at the heart of them.

While a common theme in the interviews was that Industrial Designers have the capabilities to address strategic challenges, exact tools, and methods could not be determined due to them being constantly adapted to projects and therefore them being everchanging. Through literature and desk research, I gathered different methods and tools and evaluated their potential for both strategy formulation as well as strategy execution.

If we view strategies similar to other design outcomes and strategic challenges in line with other challenges suitable for design, it becomes clear that the amount of tools and methods fitting for both is rather large. Therefore, I focused on those that were more on the side of strategy formulation, with the intent to use them to be some kind of pull factor toward more involvement in the strategy formulation. These tools were more located within systemic design and architecture which tend to be more strategic but can still be used for other design outcomes.

The exploration of tools and methods is closely related to the exploration of different approaches. Here the input from the interviews, that it was more about the ambitions and motivations of the designers than the capabilities, was instrumental in starting this exploration, as well as the exploration of tools and methods in adjacent fields like systemic design and architecture.

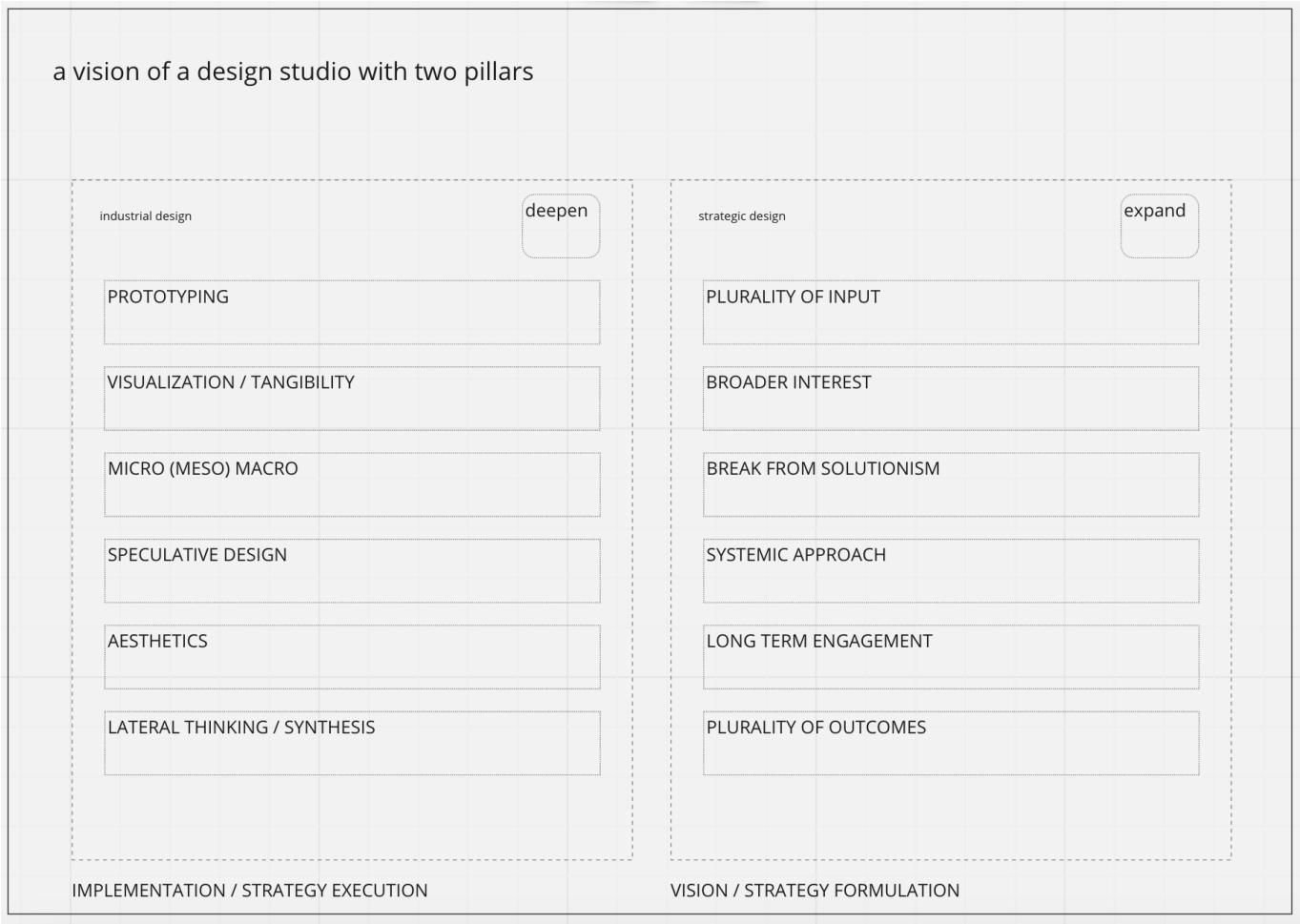


Figure 34: A iteration of what a design practice could look like that combines influences from Industrial Design and Strategic Design

2.3 Outcome

Out of these explorations, I condensed a first model of a design practice built out of two pillars, which correspond to the origins of this model rooted in Industrial Design and Strategic Design (Figure 34). On the Industrial Design side, we can find more tools and methods, while on the Strategic Design side, we find more approaches located.

Central to this concept is also the attempt to connect Strategic Design stronger to (Industrial) Design, in contrast to a close connection to more managerial practices. By focusing on the strengths gained from such a reinforced connection design practices could distinguish themselves better from other agencies and consultancies that employ more traditional business consultants.

For this reason, I focused on the tools and methods that play to the strengths of designers and their way of working. It is worth noting that in this iteration the concepts are still fairly abstract and they read more like a list of ingredients for a recipe. On the left side, the side of Industrial Design, and the side of implementation and strategy execution the focus is on deepening these methods, tools, and approaches. Fundamental is here the ability for synthesis and lateral thinking that is often associated with designers. Prototyping, visualization, and aesthetics can also be found in the majority of design practices in some form or another with designers having rather commonly expertise in. Speculative Design and a micro-macro approach are less common, but still well-established in the practice of design.

On the right-hand side, the side of Strategic Design, and the side of visions and strategy formulation the underlying idea is “to expand” into these approaches. This side is bookended by a plurality of input and a plurality of output, meaning the inclusion of different perspectives from the beginning of the project to an openness towards the medium of the output:

Figure 35: Translating the abstract terms from the previous step into a „new studio model“

when the process is leading it doesn't really matter if the output is a product or a service, it is more important to choose the right one for the problem at hand. A broader interest is essential to create good strategies as well as a more systemic approach, which is also true for design outcomes in an interconnected globalized world. And finally, a departure from solutionism paired with a more long-term engagement is an incredibly helpful prerequisite when dealing with (highly) complex issues.

3 Iterations

The next iteration was to translate these abstract terms into a clearer picture of such a new studio model (Figure 35). After different attempts I landed on a categorization of five areas: the underlying structure, the mindset, the capabilities, the modes, and the tools.

3.1 The Underlying Structure

This category refers to the organizational structures that should be ideally in place to enable such a studio model. Based on the research it seemed to be of high importance to have an adaptable business model that can change with the demands and opportunities. Especially important are the revenue streams, which need to be able to adapt without risking the survival of the practice. Furthermore,

diversity in multiple areas enables higher flexibility. These areas consist of but are not limited to the markets the clients operate in, the type of clients, a diverse work culture as well as a diverse output. This section of the model got the title “The flexible studio”, and was described in this way: „‘The flexible studio‘ refers to the underlying structure of this studio model, with a highly adaptable business model at its core. Instead of specializing in sectors or markets, the focus lies on process. Here is where the value is created. This also allows for a variety of clients and projects, opening up different types of revenue streams. A diverse workforce (skills, backgrounds, culture, etc) helps deliver successful results when working across sectors.”

3.2 The Mindset

This section refers to the underlying beliefs and principles of the design studio. This section got the title “The interconnected studio” and emphasized a more systemic approach that aims to achieve long-term relationships with clients collaboratively. Essential is additionally a strategic core, independent from the projects themselves. To describe this section properly I ended up with this paragraph: “‚The interconnected studio‘ refers to the foundational mindset that needs to be established in the studio culture. As a baseline lies an understanding that every design has a strategic aspect to it. By approaching a design challenge with a systemic viewpoint and an understanding that there is a reciprocal effect of context and design this strategic potential can be activated. A long-term involvement is beneficial as well. A departure from user-centered design and solutionism is encouraged towards a design that includes more beneficiaries and a plurality of outcomes.”

3.3 Capabilities

Even though Industrial Designers bring many of the needed capabilities to the table it is essential to keep growing these capabilities, especially when working on strategies, hence the name “the learning studio” for this section. This section is aimed at strengthening the design roots of the practice while simultaneously expanding the capabilities (Figure 36). I summarized it in a paragraph in this way: “„The learning studio“ refers to the capabilities of the studio, deepening the existing relevant knowledge, especially around strategy execution, as well as knowledge that can be also used in strategy formulation, like prototyping and visualization.

Additionally, necessary Strategic Design knowledge is expanded, like research skills, vision building and an understanding of business.”

3.4 Modes

The section about modes describes the different axis on which the practice needs to be able to shift back and forth (Figure 37). It is closely connected to the underlying structures which are supposed to enable this switching between modes, hence the title “the agile studio”. The modes themselves are modes of working during a project. It is also related to being able to adapt to the challenges at hand. Or in another way: “‚The agile studio‘ refers to the ability of the design studio to adapt to the changing challenges they are faced with. It means being able to shift between strategy formulation and strategy execution, between context and detail, between being able to build a vision, while grounding it in an understanding of the implications for implementation.”

3.5 Tools

Finally, the fifth section is about the tools that the practice could use (Figure 38-42). With this section, called “the equipped studio”, I struggled most because generalizable tools were hard to come by since they change and adapt to the challenges. Additionally, too general tools were often too abstract.

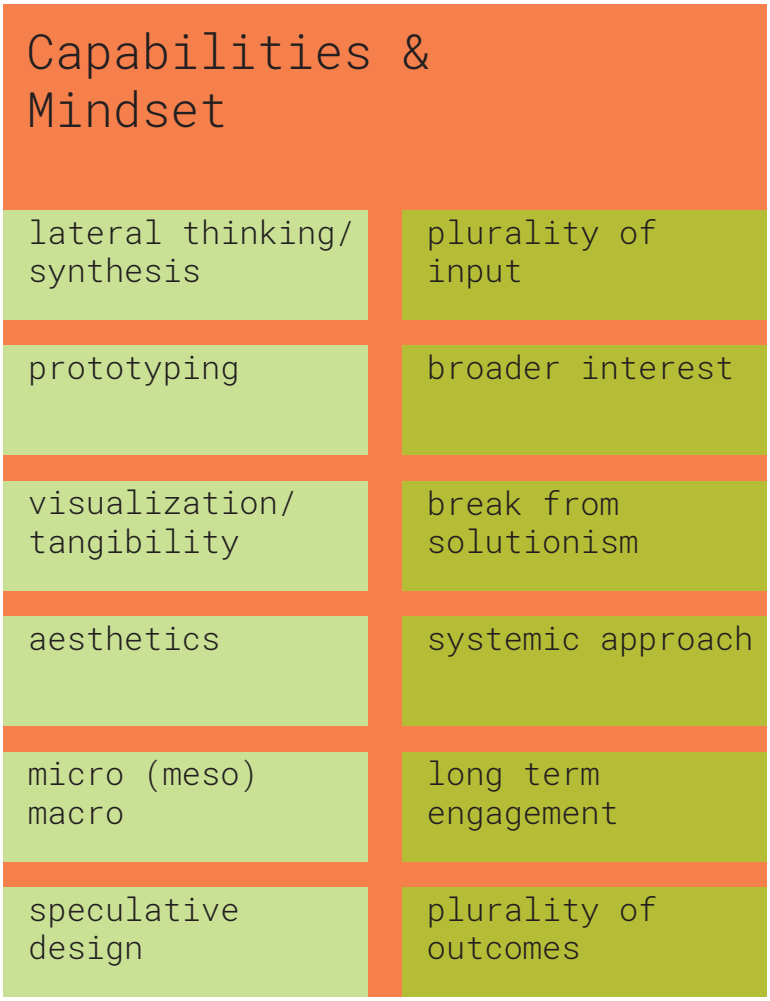
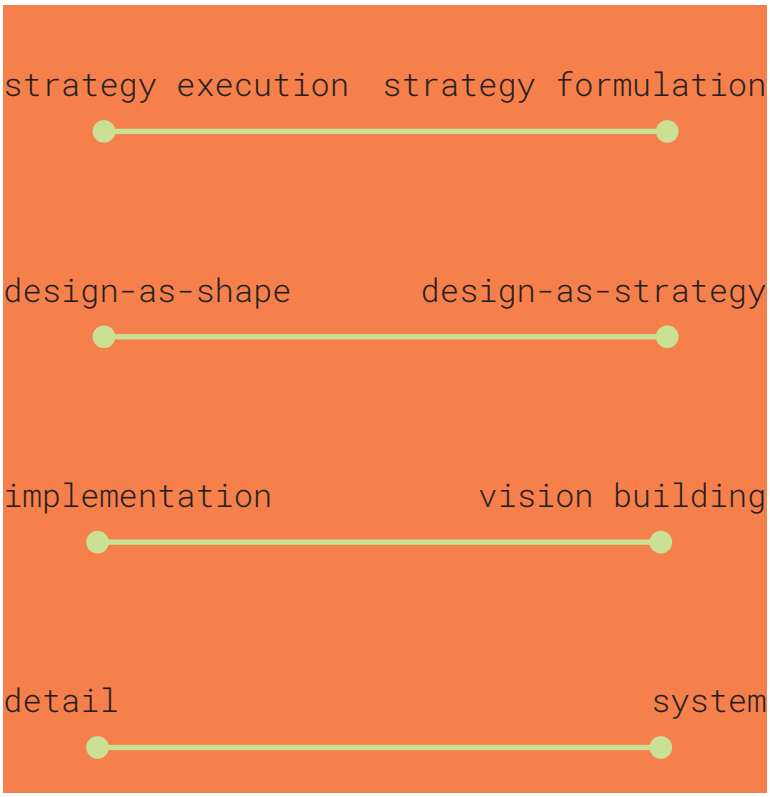


Figure 36: Finding a visual representation for the envisioned capabilities and mindset

Figure 37: The modes on which the envisioned „new studio model“ operates



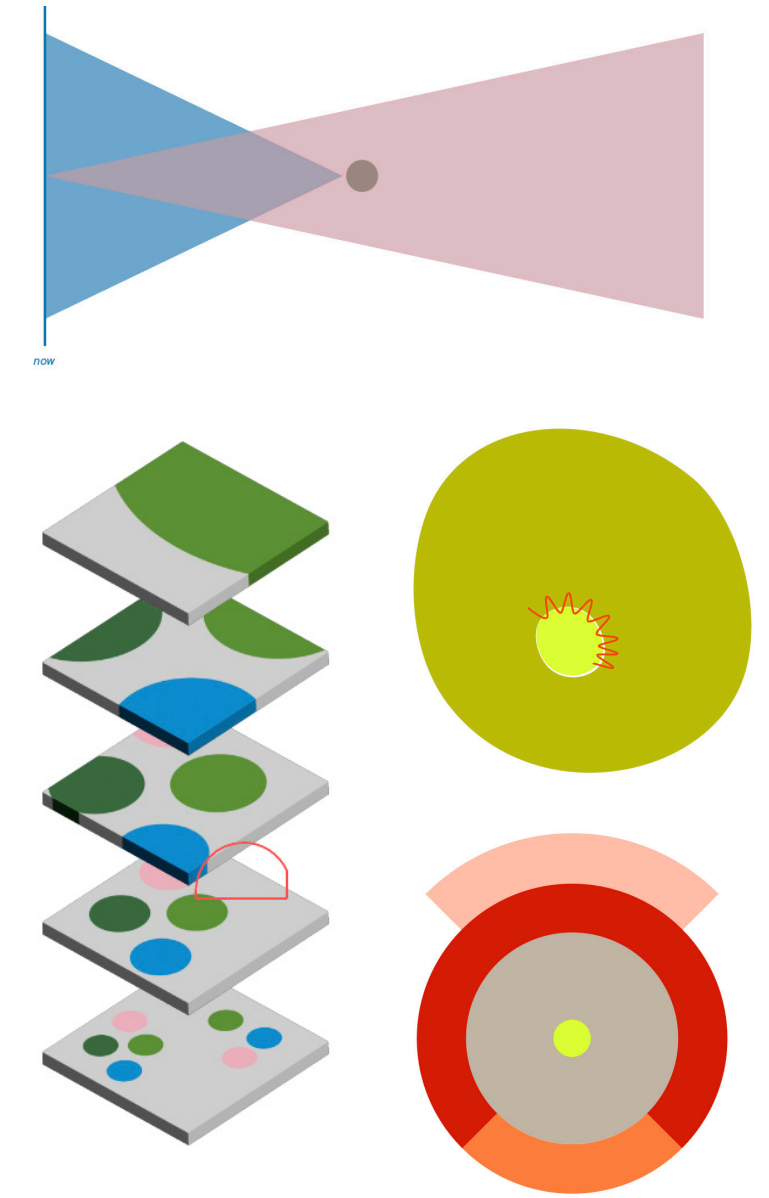


Figure 38-42: Visualizations of an array of tools I considered during the design process

3.6 Pivots

This struggle with the tools and discussions with my supervisor team and peers made me realize that all these steps were still far too abstract and needed to be turned into far more actionable items.

3.7 Further Iterations

To become more action-oriented and less abstract I decided to focus on tools and methods as a pivoting point and build the next iteration from there. By that point in time I had collected some which fitted the overall requirements of being useful for strategy formulation as well as strategy execution. I decided to try if I can use one of those tools for the design process itself, or at least as a starting point for the concept. The most intriguing one for this project seemed to be platforms.

I did some additional desk research into platforms and platform business models, but the common understanding was mainly about digital platforms, either as social platforms like Facebook or as marketplaces like Amazon. In the book “Where Good Ideas Come From: The Natural History of Innovation” (Johnson, 2011) I found some interesting perspectives on platforms in a more abstract sense: Platforms are here described more like structures that facilitate the interaction of different groups, enabling an environment that supercharges natural ecosystems like coral reefs, or boosts innovation as cities do in the built environment. Understanding platforms in this more abstract sense opened up a new direction. However, the first attempts at ideation to combine a platform approach with the previous iterations did not lead to any successful outcomes. Nevertheless, I was still of the opinion that a platform approach could be interesting here, since at the core of a platform lies the facilitation of connections and by now it had become quite clear through the previous iterations that my design concept should be helping to facilitate the connection of strategy formulation and strategy execution.

At this point, I decided to add the following case studies, to get some more insights into more actionable approaches located in an area in which I could see my design being situated, namely a more connected approach to strategy formulation and strategy execution as well as the use of platform-like models.

CASE STUDIES

In this section, I want to showcase 3 design practices that have found interesting ways to operate in the design industry. Unfortunately, it was not possible to have interviews with representatives of these practices, therefore I used only publicly available material and data, like their websites, talks, and interviews of members of these studios. Since it is material that these practices chose to publish to represent their services it is to be expected that the material has a bias. However, I believe that there are still interesting insights and learnings to be found, especially for the development of a design direction and vision.

1 Layer Design - The Full-Service Studio

1.1 Intro

Layer Design was established in 2015 by Benjamin Hubert [1] as the successor to his previous practice under his own name, Benjamin Hubert Ltd., in order to find a way to work more efficiently and effectively [2]. Since then it has grown to a size of 30 employees [1] and offers services in the areas of Industrial Design and Engineering, Digital Design and Branding as well as Strategy and Spatial Design [3]. They focus on providing a full service within the agency, from strategy formulation to strategy execution. Even though some clients only seek services in one area, Layer Design is able to support their clients in almost all aspects of a project (Figure 43).

1.2 Business Model Overview

Layer Design's business model builds on three core components:

- Full-Service Offer: By offering services that cover the whole product or service process Layer Design is able to deliver more successful outcomes. This is mainly due to a good integration of the different departments as well as a holistic approach to a project. [3]
- Focus on emerging tech: While still working on products more associated with the typical design work of industrial designers like different seating (e.g. Axyl for Allermuir, Sabot for Prostoria) or mobility solutions (e.g. GO for Nike, PAL for Nio)(2015-2020) (chair & public seating and wheelchair & electric scooter), Layer Design increasingly

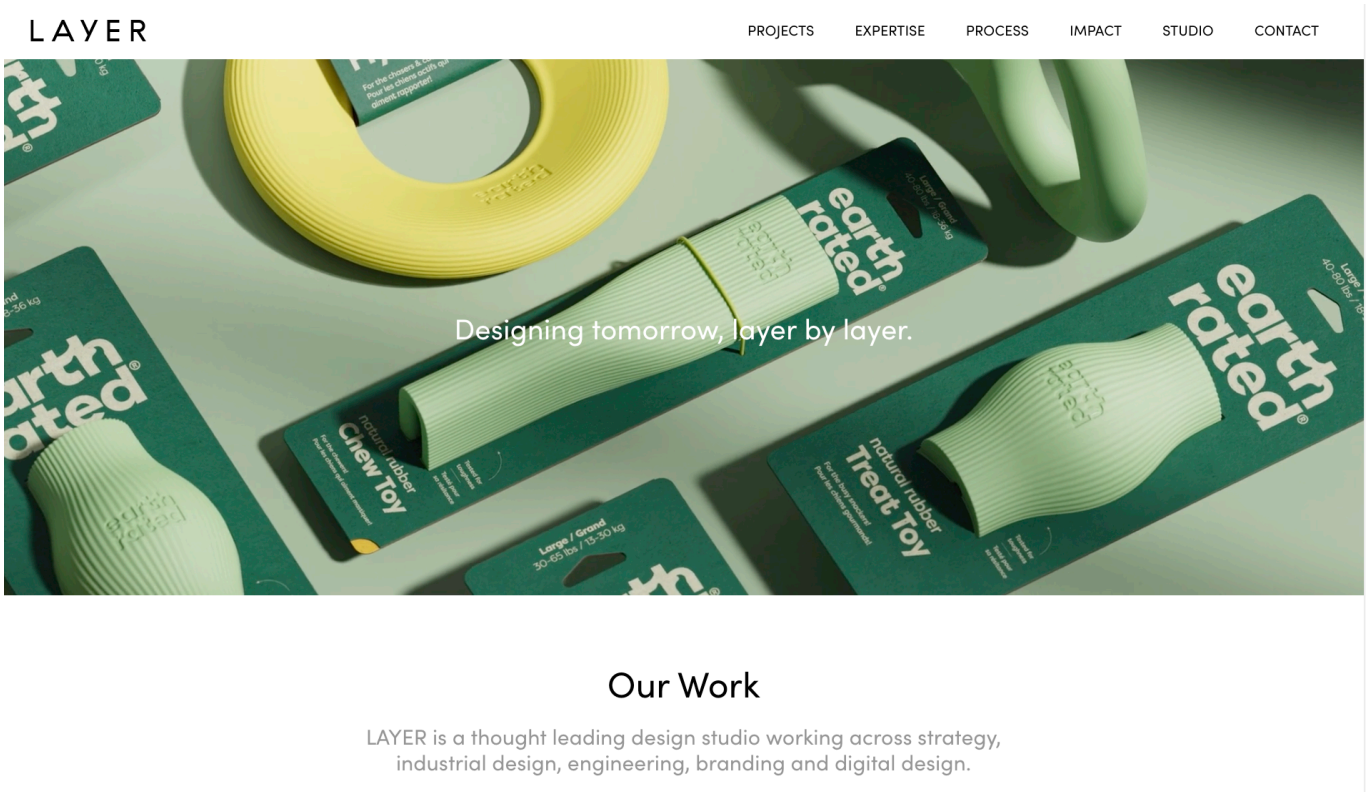


Figure 43:The landing page of the LAYER website

focuses on emerging tech solutions like Stax for Ledger, a Crypto Wallet and Nanoplant for Croft, a local hydrogen energy solution. In this field of emergent tech it is currently still possible to find areas that are not oversaturated with agencies and Layer Design can position themselves as the right creative partner with expertise and experience. [4]

- Collaborating with different types of clients: Focussing on the wide arrange of services and the ability to deliver on all stages of a project allows Layer Design to work together with large multinationals that want to outsource the development of a product as well as working together with a start-up that needs support in all areas of their portfolio. [4]

1.3 Case Study PAL for Nio [5]

Layer Design provided a wide array of services for the Chinese car manufacturer Nio when they approached Layer Design for a mobility solution for the so-called “last mile”. The resulting outcome of the project (Figure 44), the “intelligent, modular personal transport system” PAL showcases their Full Service Approach:

- Layer Design conducted extensive user research, trend research, and technology research, bringing about a vision for a smart transport system. This significantly influenced the strategic decisions at the beginning of the project, resulting in what the Design Director of Nio Life, Alexander Åhnebrink, calls “a new product category”.
- To develop the project and concept further Layer Design collaborated with production facilities in order to create prototypes of the design. Here they employed their knowledge and skills in materials, production, and design language to drive an outcome that satisfied the needs of the stakeholders.
- Accompanying the physical prototype the digital design team at Layer Design created an app to complete the concept and envisioned product system. This highlights the holistic approach of not only designing the product itself but also the associated digital products and services.

1.4 Case Study Stax for Ledger [6]

For the French cryptocurrency wallet company Ledger Layer Design created the hardware wallet Stax (Figure 45), a device to “securely store, access, and send cryptocurrency and NFTs. In this project the challenge was for Layer Design to not only design the hardware in a way that would combine all the necessary functions, but that the design would also evoke a feeling of security with the user.

- To develop this design Layer Design went through an extensive design and engineering process in which “function, format, size, UI, materiality and the integration of an innovative e-ink screen” were explored iteratively before arriving at the desired outcome.
- Layer Design collaborated with and supported Ledger after the initial design and engineering phase with the design-for-manufacture process, showcasing the expertise industrial designers have in different phases of strategy execution.
- To complete this project Layer Design provided additional services in designing the reusable packaging Stax is sold in. Even in this stage, the project benefited from the different disciplines present at Layer Design, from material experts to interaction designers.

Figure 44: PAL for Nio by LAYER

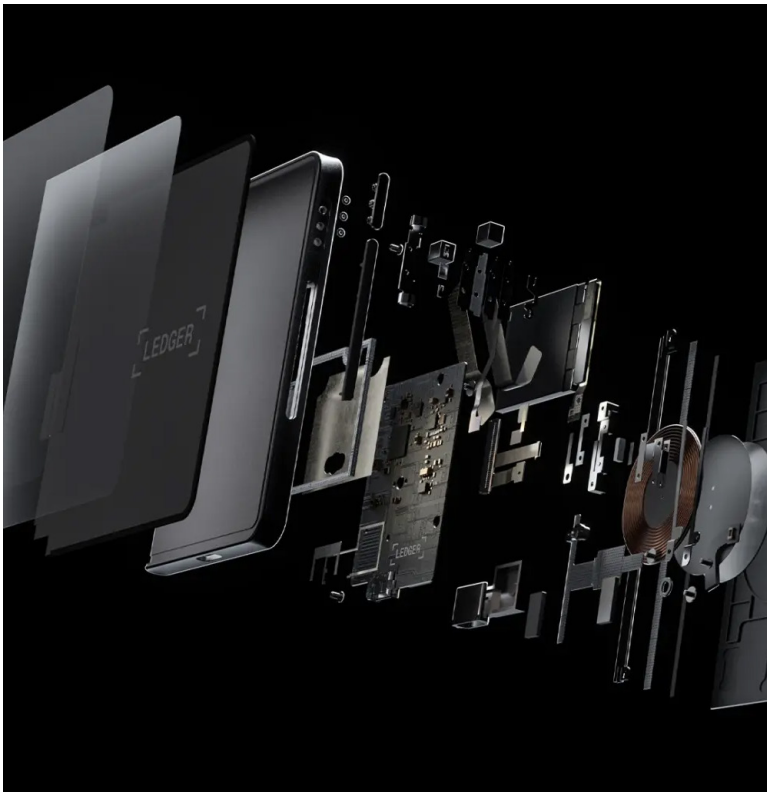


Figure 45: Stax for Ledger by LAYER

1.5 Impact and Results [7]

The Full Service Approach from Layer Design, as well as the focus on emerging tech and different types of clients results continuously in impressive impacts:

- The work Layer Design provided for a VR start-up in their pre-seed stages helped them define their strategy and concepts as well as designing visuals and prototypes allowing the founders to pitch their vision successfully to investors, resulting in $15 million seed funding. Being able to follow up on the strategic work with prototypes made the vision more tangible for investors.
- Layer Design was able to create a holistic brand experience for a campaign with visuals, prototypes, and other campaign material because they were previously involved in designing the product, the Virtue One smart glasses for the start-up Virtue. Having this holistic approach created the right prerequisite for a

successful crowdfunding campaign, raising $3.1 million and setting a new record in this sector.
- Similarly, such a holistic approach of designing the Beosound Balance Speakers for Bang & Olufsen as well as the PR launch strategy set the right tone for extensive coverage of this product with more than 100 million digital impressions.

1.6 Key Success Factors

This case study suggests that the success of Layer Design's business model builds on the following factors:

- A holistic approach that connects different phases of the development and launch of a new product or service in a way that they can influence each other: For example, being involved in the strategic decisions at the beginning of the project does not only help with the execution of that strategy during the product or service design phase but also with the design and execution of the launch campaign. In return, these phrases and their respective outcomes also inform the building of the client's brand overall.
- Being early adopters of emerging tech enables Layer Design to gain a competitive advantage, especially in the tech start-up space, but also in providing services for slower-moving, larger clients that are particularly interested in the experience and expertise Layer Design is building over the years in this area.
- Flexibility in the selection of their clients and collaborators. This allows Layer Design to adapt to the different needs of their clients as well as to different revenue models, therefore they are able to work together with start-ups and smaller companies as well as multinationals.

1.7 Conclusion

Layer Design's business model as a full-service design agency, enables them to provide excellent services that build on each other, providing a more successful and satisfactory overall result for the client while empowering Layer Design to be more involved in the development and launch process of a product or service from strategy formulation to strategy execution. While it might still be rare for Layer Design to be tasked to deliver a complete process from A to Z, any combination of multiple phases of a process already enhances the individual phases as well as the overall outcome.

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Figure 46: The landing page of the Space10 website

2 Space10 - The Innovation Lab

2.1 Intro

Space10 (Figure 46) was founded in 2015 by Carla Camilla Hjort and Simon Caspersen as an external and self-governing innovation lab with IKEA as its only client [1]. Since then the team has grown to 27 people from 12 countries [2] from various disciplines working together on research as well as design outcomes in various domains, from food design, through speculative design, digital design, and social design, to product design and architecture [1, 3]. While the lab is located in Copenhagen, Space10 regularly collaborates with designers, researchers, experts, and organizations all over the world [2], enabling an outside-in approach to innovation at IKEA [1].

2.2 Business Model Overview

Being completely funded by IKEA [4] allows Space10 to operate with less financial pressure than most design practices. However, being able to extend their initial 3-year contract with IKEA [4] multiple times speaks to the value they create for IKEA. The core components for their value creation are:

- A network: Space10 itself remains relatively small, which allows them to stay agile and adaptable to the different challenges they address. They see themselves as an “interface for innovation” [5] where active collaboration is at the heart of every project. This attitude toward community building can be observed in the recent redesign of their physical space in Copenhagen which opened a library, cafe, and exhibition space to the public that is also used by their own team daily [6] as well as their extensive community building in other locations and online through talks, collaborations and the sharing of research and design outcomes [3, 5].
- Open Innovation: Space10 built together with IKEA the open innovation platform Everday Experiments [7] which further opens up the space for outside communities and ideas to enrich the work Space10 produces [2]. This approach to innovation is especially fruitful in the

Figure 47: The Mexico City Pop-Up by Space10 in 2022

areas of emerging technologies and speculative design since it gives voices and ideas a platform that would not necessarily emerge from the lab itself, enabling “multiple narratives of possible futures” [2].

- A plurality of Input and Output: Space10’s team was built from the beginning as a heterogenous team to avoid blindspots [2] as well as increase the expertise within the team [4]. However, the team is still fairly small but seeks to cater to the global audience IKEA has. In order to deliver successfully for such an audience Space10 seeks to build their network of collaborators in many aspects as diverse as possible as well as utilizing different formats of working, for example, pop-ups, field studies, and satellite operations in New York, London, Shanghai, Nairobi, Delhi, and Mexico City to name some [2, 8, 9, 10]. Simultaneously, Space10 is not limited to one medium for the outcomes of their projects, rather they embrace an approach that is open to finding the appropriate medium for their output [3].

Figure 48: The cookbook „Future Food Today“ by Space10

2.3 Case Study Mexico City Pop-Up [9, 10]

The most recent pop-up Space10 organized was the Mexico City Pop-Up in April 2022 (Figure 47) with the theme “Beyond Human-Centered Design”. This event showcases the collaborative network approach of Space10.

- In order to facilitate the exchange of ideas and enable collaboration, Space10 created the pop-up as a platform that hosted talks, exhibitions, and events. Furthermore, they invited 5 local designers to work on a residency of which the results would be exhibited during the pop-up. In order to make this collaboration as fruitful as possible it was imperative to design the platform that would facilitate this exchange.
- Another important factor was the inclusion of diverse voices in the pop-up in order to “connect and listen to diverse perspectives on how we can move beyond human-centered design”. To enable this, Space10 invited artists, technologists, academics, activists, entrepreneurs, architects, and designers to contribute their unique perspectives to the event.
- To make the platform more accessible and to scale the impact Space10 utilized

multiple channels. Next to the important physical space in which the pop-up was hosted, Space10 set up also a “radio station” online, as well as streaming the event via Instagram and Youtube as a way of connecting the local community in Mexico City with their extensive global network.

2.4 Case Study Future Food Today [11]

The cookbook Future Food Today (Figure 48) is the result of multiple projects Space10 has worked on in the area of food futures. It is a project that makes design research actionable and accessible to a broader public than just the design community. Furthermore, it showcases the importance of design doing as an integral part of design research.

- The project was developed together with different chefs and food designers in the test kitchen at the Copenhagen location as well as input from their network. By collaborating with outside experts Space10 is able to hire the necessary expertise for the projects at hand.
- A factor that made this project as successful as it is as well as enabling the project to go through multiple iterations and directions is the physical test kitchen Space10 was able to provide for the experimentations to take place in. This space facilitated the conversational process of research and prototyping as well as research through prototyping.
- Throughout this engagement with the Foods of the Future Space10 was able to create broad public interest through the “Meatball of the Future” project that reimagined IKEA’s famous dish. Consequently, IKEA used this to develop various alternatives to their classic meatballs in their restaurants as well as stores. Next to the internal use by IKEA of the project outcomes, this cookbook is now a way to share the outcomes with the network of Space10 and the broader public.

2.5 Impact and Results

The collaborative, diverse approach utilized by Space10 led to truly innovative results. Throughout the time that Space10 is now operating they managed to create value in building visions of future living and innovative solutions for their client IKEA, like paving the path to the plant-based meatball at their restaurants and stores that has only 4% of the carbon footprint of IKEA’s standard meatballs [2], or the development of an augmented reality feature in IKEA’s app [3]. Simultaneously they build a growing worldwide community of designers, researchers, and other creatives as well as organizations like the TU Delft that share expertise and knowledge, collaborate on projects, and get inspired by the outcomes of research and design projects.

2.6 Key Success Factors

This case study suggests that the success of Space10’s business model builds on the following factors:

- They utilize their network very successfully in a reciprocal way. It allows Space10 to access a large pool of experts on a wide array of topics and stay up to date with technological developments through collaborations with universities. The results, (parts of) their space as well as collaborative events are shared with the public and encourage participation and shared learning.
- Space10 is aware of the need for a diverse team when designing for a diverse global audience. Furthermore, they are aware that by staying rather small and agile they themselves can not provide the appropriate workforce and experience to address the wide variety of challenges they address with their practice. Instead of limiting themselves with the projects they work on they rather address this by collaborating with external experts and users to ensure an appropriate level of expertise and experience.
- Similarly, like Space10 does not limit themselves with the projects they work on they also do not limit themselves on the outcomes. Since they are research and process-driven, Space10 is able to apply these to a multitude of problems and deliver a wide variety of solutions.

2.7 Conclusion

While Space10 undoubtedly benefits from the financial security the collaboration with IKEA brings, it is noteworthy that this collaboration is only ongoing due to Space10 creating value that IKEA considers worth its money. The research and design approach of Space10 which utilizes the power of a network and of collaboration and open innovation showcases the immense potential for innovation inherent in such a business model. Furthermore, their practice highlights the importance of a diverse range of voices and inputs when addressing challenges in this interconnected global community, especially when working for a client that operates on an international level.

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Figure 49: The landing page of the Form Us With Love website

3 Form Us With Love - The Lean Industrial Design Studio

3.1 Intro

Form Us With Love is a Stockholm-based independent design studio founded in 2005 by Jonas Petterson, John Löfgren, and Petrus Palmér (Figure 49). Currently, it has 11 employees and offers services mainly in product and industrial design [1]. In these projects, strategic and ecological considerations play a big part in their process. With their projects they “strive to create solutions to complex problems while keeping [their] designs at a human scale” [1]. They also initiate projects internally and if they consider them relevant they set up their own ventures like they did with TID Watches, BAUX, and Forgo.

3.2 Business Model Overview

Form Us With Love (FUWL) has a business model that builds on these components:

- The core of the studio is a process-centered approach that blends together “traditional creative practices with a lean, strategic application” [1]. This central motif helps FUWL to balance the needs of the business, the needs of the user, and the ecological impact of the project. By including a strategic lens into their design process they are able to shift between more systemic and more detailed considerations.
- FUWL keeps pushing the boundaries of what collaborations can look like. This is visible in their platform Prototypa which explores the prototyping process together with other design studios [3], or new ways of collaborating with clients like in the Annual Briefing Model with +Halle [4].
- Understanding the business side itself allows FUWL to develop their own ventures for projects they initiate themselves. This provides them with greater strategic control of the project as well as additional income streams.

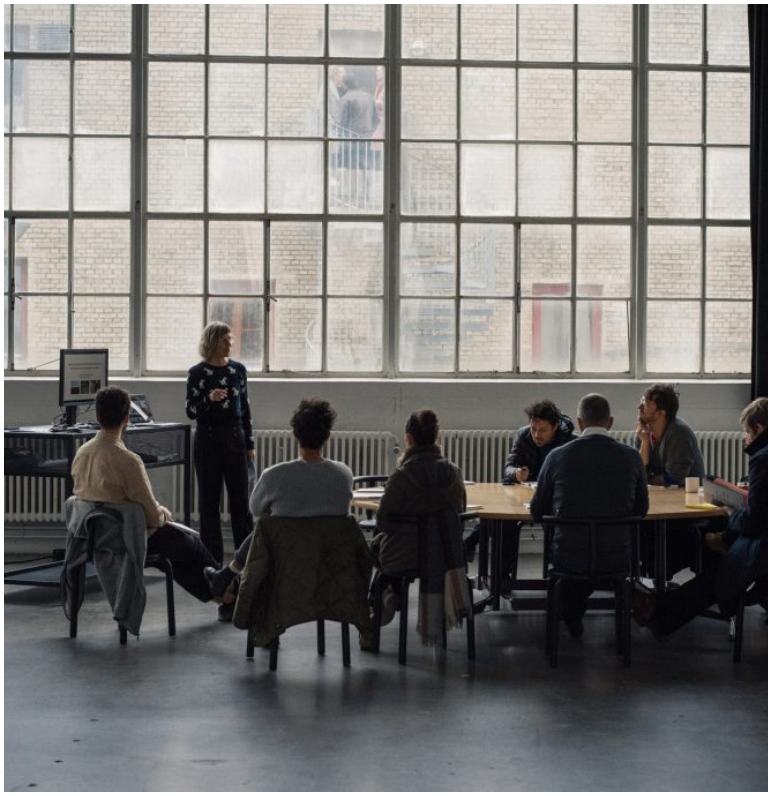

Figure 50: An Annual Briefing Session from the Form Us With Love collaboration with +Halle

Figure 51: A Prototypa event hosted by Form Us With Love

3.3 Case Study Annual Briefing with +Halle [4]

Together with the Danish furniture producer +Halle and the design strategist Lia Forslund FUWL developed a new way of collaboration between a client and a design studio, called „Annual Briefing“ (Figure 50).

- Instead of a detailed brief, or the opposite, a carte blanche for the designers, the briefs include only a behavior +Halle wants to investigate in the upcoming collection. In the past, these behaviors have been “dwelling”, “sharing” and “producing”.
- As opposed to briefing a studio (or different studios) studios individually, multiple studios are briefed together. The kick-off for the project happens collaboratively as well as a few follow-up meetings throughout the year, in which the studios come together to share their work and collaborate and inspire the others, before ending up with distinctly different design outcomes to a shared brief. The composition of these studios changes every year.
- At the Annual Briefing, the kick-off, experts – depending on the brief these could be anthropologists, human resource professionals, urban planners, etc. – provide opinions, input, and insights to support the designers in the process.

3.4 Case Study Prototypa [3, 5]

Prototypa is a platform for exchange between different creatives around the topic of prototyping (Figure 51) and is currently in its 29th issue. While not directly linked to a client, Prototypa showcases important aspects of the design process and gives them a new spin.

- Prototypa started as an internal event at FUWL but soon was developed into a platform or “forum” in which a creative studio hosts an event and invites the public in to have a dialogue about ideas in their testing phases. Often in these phases, especially the early prototyping phases, studios don’t share their ideas with the public or other designers. Prototypa deliberately invites collaboration and inspiration by exhibiting unfinished products in their process and facilitating a conversation during those fragile stages.

- Additionally, this format highlights the importance of prototyping in the design process: the different stages of making concepts tangible and the crucial practice of creating suggestions for solutions, setting in motion a dialogue between solution space and problem space. Prototypes function as powerful conversation tools because they visualize concepts and make them tangible. By creating these tangible prototypes the problem and the solution become simultaneously clearer and through iterations and testing an appropriate solution can be determined.

3.5 Impact and Results

By exploring and challenging how collaboration in design processes and client relationships looks like and by reimagining these, FUWL manages to create new ways of interaction and creative facilitation. This flexibility and pushing of boundaries benefits FUWL and their lean, strategic approach to design, because it renegotiates the relationships design studios traditionally engage in with their clients. It allows FUWL to become more of a collaborator in the development of new products than just a service provider that fulfills a narrow brief. Furthermore, FUWL dives into the power of collaboration and exchange with other creatives, understanding that these interactions have fruitful outcomes.

3.6 Key Success Factors

This case study suggests that the success of FUWL's business model builds on the following factors:

- The combination of creative processes with a lean, strategic approach that allows FUWL to set up its own ventures, platforms, and projects. This infusion of an entrepreneurial mindset into an originally more traditional industrial design practice [6] elevates the impact their projects can have
- At the heart of these success factors lies collaboration in many different forms and facets. This can be collaboration with clients, collaboration with experts, the public, or collaboration with other creatives. It's about an exchange of ideas and the potential that lies in that cross-pollination and exposure to different viewpoints and approaches
- FUWL is continuously redesigning its own processes and services. Too many design practices neglect to (re-) design their own processes and services and get stuck with established models. But by challenging their own practice through exposure and collaboration with others as well as reimagining how for example a client relationship can look like, FUWL manages to be more strategically involved in projects.

3.7 Conclusion

Form Us With Love showcases that bringing a more strategic approach to industrial design allows the designers not just to create more holistically conceived products and services, but furthermore, allows the design practice itself to adapt better to changes and to innovate their own approach, design process, and business model. While generally it is well understood that collaboration is fruitful, even necessary, for successful project outcomes, this collaboration usually only involves the client and maybe the intended user. To collaborate and open up to what is normally considered competition e.g. other design studios, shows FUWL's willingness to challenge and reframe established conventions.

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DESIGN CONCEPT

To reduce complexity and create a more coherent model than the previous iteration I decided to build this model as a response to the three most interesting takeaways from the research. I integrated the insights from the previous iterations and the case studies into an updated worldview and the, previously mentioned, following statement: “I want to enable reciprocal strategy formulation and execution by designing interventions that reenvision the consultancy model and utilize creative ecosystem collaboration.”

The three insights this concept responds to are described in the following sections:

1 Concept

1.1 Strategy Formulation And Strategy Execution

The creation of strategies is often still internal work done by the leadership team (Figure 52). Sometimes external management consultancies are brought in for support for that particular task. Lately, design consultancies have as well increasingly contributed to strategy creation. From a designer‘s perspective, this is a welcome development. However, designers are in such instances mainly utilized in two ways: Either in a similarly limited role like a business or management consultant, or they were originally hired for strategy execution tasks (Figure 53), but get the freedom to challenge the brief in some way.

Research suggests that organizational strategy creation is done best in-house when it is embedded in organizations and a long-term involvement is possible. This helps guide the implementation and strategy execution. In that way, strategy formulation and strategy execution can interact more and better with one informing the other and vice versa.

This is not the case when external organizations are responsible for only one part of the two (Figure 54).

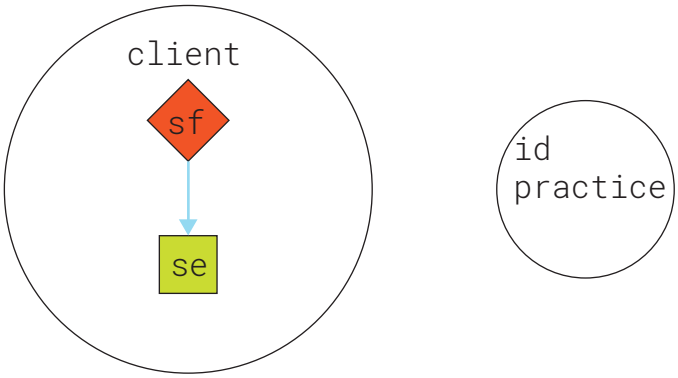


Figure 52: Strategy Formulation and Execution are done by the internal teams

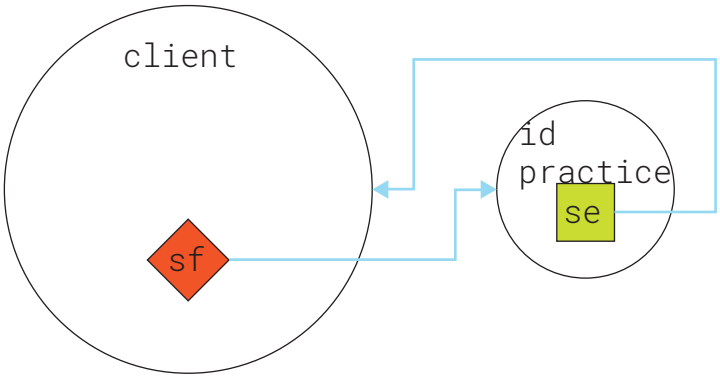


Figure 53: Strategy Formulation is done internally, Strategy Execution is outsourced

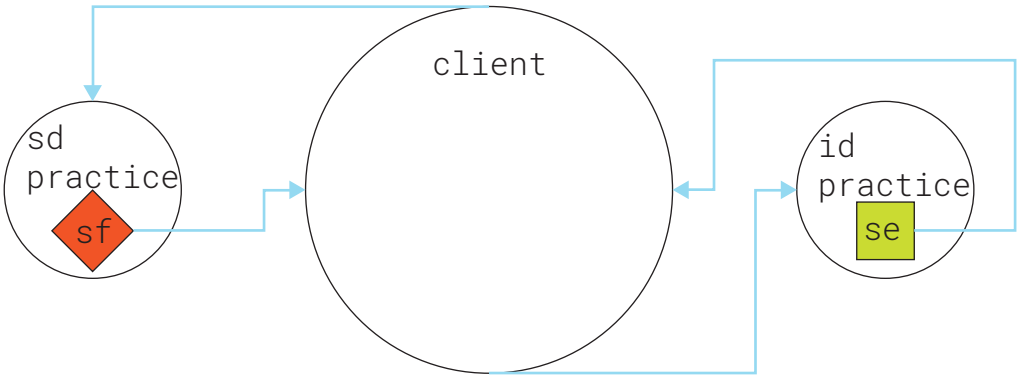


Figure 54: Strategy Formulation and Execution are both outsourced,but to different service providers

sf = strategy formulation
se = strategy execution
id = industrial design
sd = strategic design

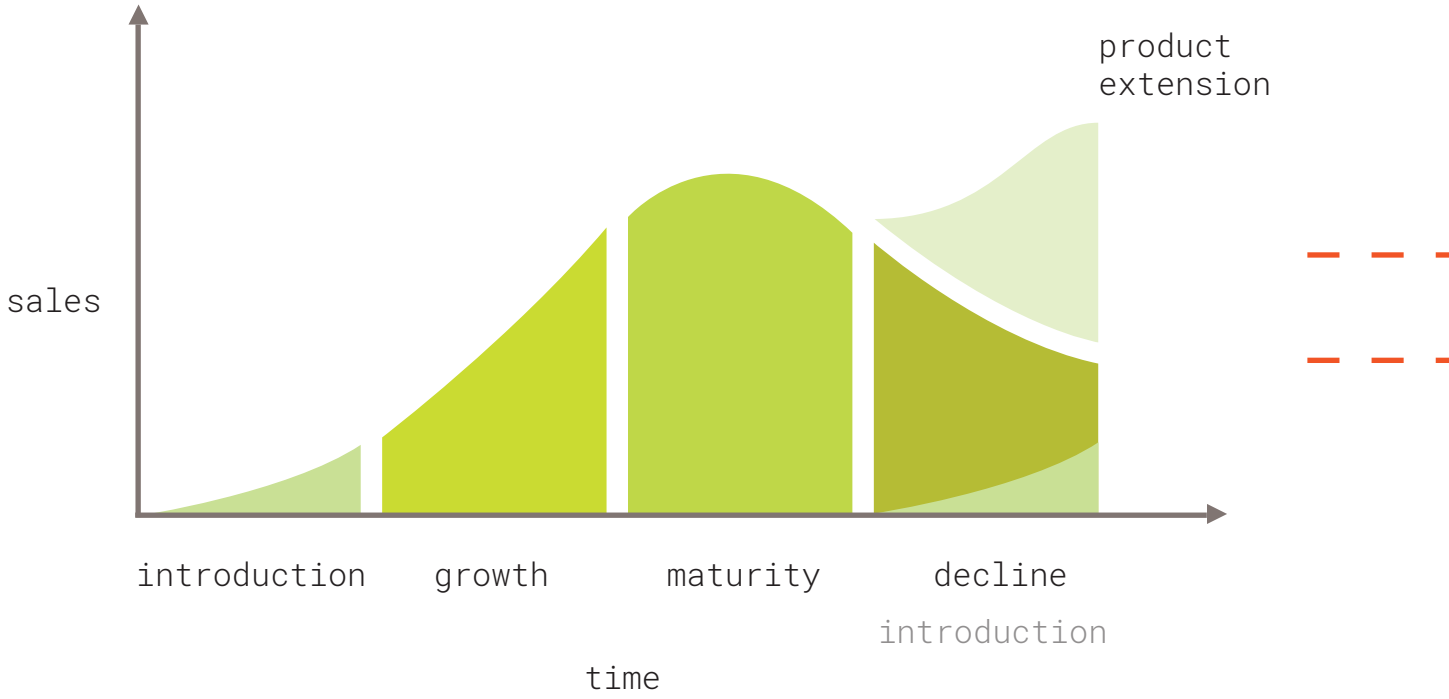


Figure 55: The typical lifecycle of a product (in sales)

1.2 Consultancies And Their Mode Of Working

Every product goes through a life cycle (Figure 55), that needs to be followed by either a product extension or the introduction of a new product. An organization needs to find a response to that life cycle in time to not lose out on sales or market share. As discussed on the previous page, this would be done best internally.

However, organizations struggle with triggering the necessary impulses. They tend to build some sort of “immune response” to change since the internal structures are built to create stability and increase effectiveness. To survive in the market it is imperative to innovate and develop new offerings. In this contradiction of the internal tendency to remove risk and instability, versus the external need to innovate, lies the raison d’être for external consultancies. They are in a position to trigger change and unsettle an organization as needed (Figure 56).

Nevertheless, in reality, both these sides of consultancy work can be true at the same time. Consultancies and their work are needed because the internal teams are bound by the internal structures of the organization, while at the same time, at least in theory, the work they do would be better done internally.

1.3 Capabilities Within Design Practices

Research suggests as well, that (industrial) designers are well-equipped to address strategic challenges. This seems to be true for strategic work they encounter as part of their more traditional briefs, but, interestingly, also for strategic work unrelated to their traditional expertise. The methods and tools designers

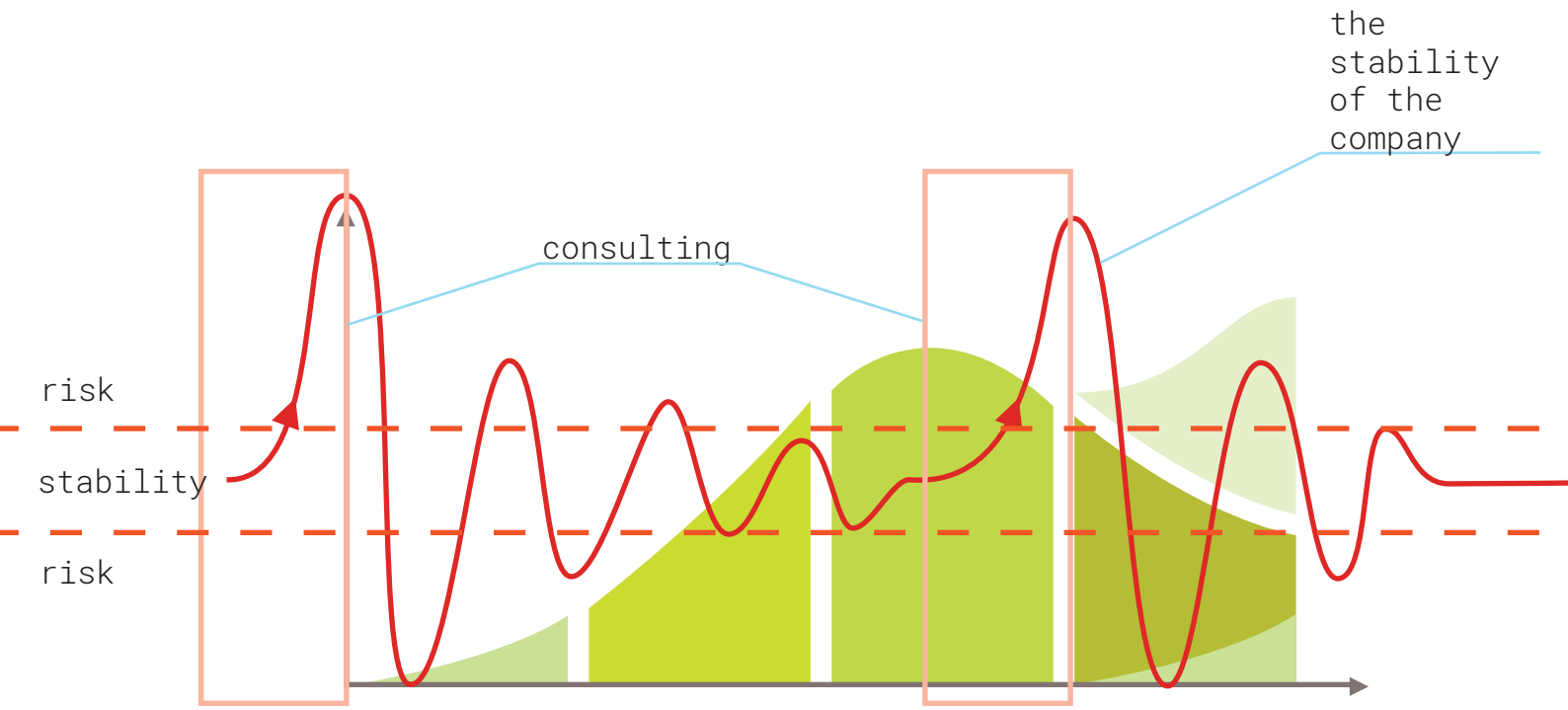
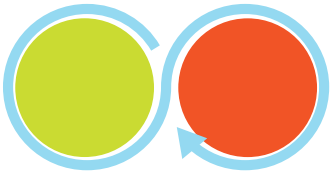


Figure 56: The stability curve of an organization mapped onto a product lifecycle graph. Indicated are the moments in time in which a consultancy is needed to trigger change

have lent themselves as well to strategy formulation. While it is beneficial to adopt some additional methods and tools, the research suggests it is more a matter of interest and motivation. Especially in situations when faced with a complex challenge, designers seem to be particularly well-equipped to develop responses to the ambiguous questions at hand.

1.4 Concept

This design concept for a framework aims at proposing a new way of working together with clients that enables reciprocal strategy formulation and strategy execution by reenvisioning the consultancy model and utilizing collaboration within a creative ecosystem (Figure 57).



1.4.1 Combined Strategy Formulation And Strategy Execution

A central part of this concept is the reciprocal nature of strategy formulation and strategy execution. Combining the two and letting them interact with each other creates better outcomes for the process. Since the knowledge from the execution part informs the formulation in the first place, makes a successful implementation more likely. Similarly, understanding (or better yet, being part of) the formulation stage guides the implementation better because the reasoning, goals, and objectives are already part of the process.

1.4.2 Reenvisioned Consultancy Model

The interaction and collaboration with the client get strengthened through closer exchange and teamwork. By being part of both strategy formulation as well as strategy execution, the design practice is no longer only involved in short parts of a project but can provide consistency throughout the project. At the same time the design practice has now more “skin in the game” than before, therefore they also feel more ownership over the whole process.

1.4.3 Creative Ecosystem Collaboration

Essential for this concept is harnessing the creative power that can be found in collaboration. Especially combining a diverse range of participants enables the creation of innovative design outcomes.

This concept also enables the design practice to remain relatively small and agile. It is through the network and the collaboration of different actors within the network that a potential absence of specialized skills and capabilities is balanced out.

1.5 Concepts, Approaches, Tools

Important in this iteration was to start the development with actionable tools and interlink these with approaches under a unifying concept. Reducing it to four of these concept-approach-tool columns allows further for easier implementation. These four columns are: platforms - be collaborative - temporary platforms; futures - be explorative - scenarios; micro-macro - be agile - zoom; matter-meta - think systemic - strategic artifacts (Figure 58).

- The concept is the guiding principle overarching the approach and tool. It describes on an abstract level the concept from which the approach and tool were developed.
- The approach describes the attitude derived from the concept, that best supports the use of the tool. It is also a more general application of the concept.
- The tool is a way to use the concept and the approach more targeted. Additionally, it illustrates the concept and approaches more explicitly.

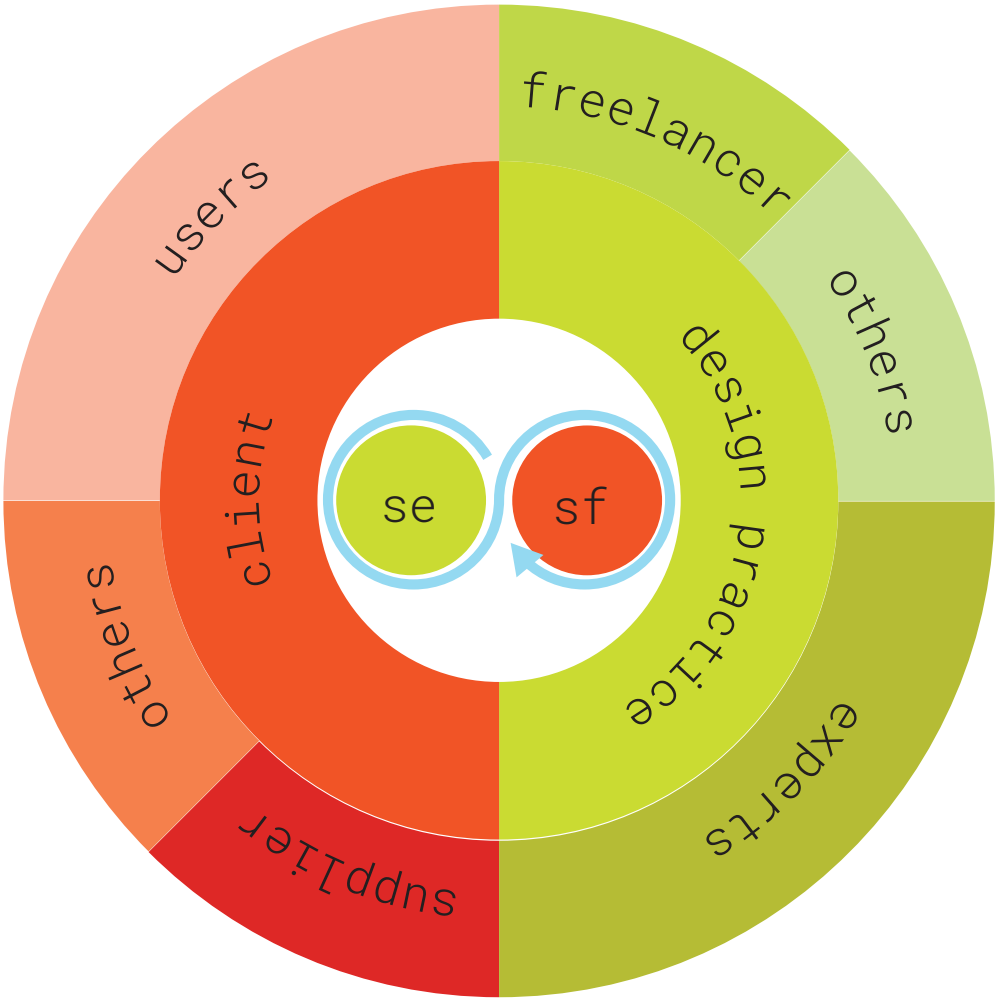


Figure 57: The framework developed during this thesis

Figure 58: The organization of the interventions developed during this thesis

	The proposed practice			
concept	platforms	futures	micro-macro	matter-meta
approach	be collaborative	be explorative	be agile	think systemic
tool	temporary platforms	scenarios	zoom	strategic artefacts

2 Playbook

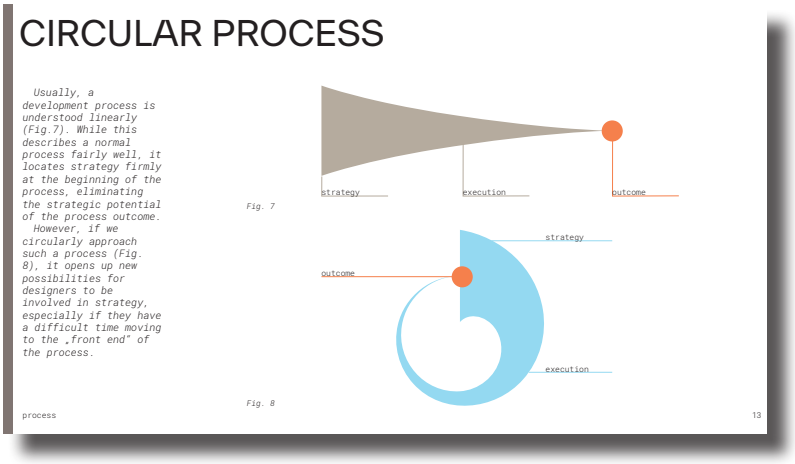
The images shown in this section are full pages from the design outcome of this thesis. For full scale images pllease reference the playbook.

2.1 Process

2.1.1 Circular Process

Usually, a development process is understood linearly. While this describes a normal process fairly well, it locates strategy firmly at the beginning of the process, eliminating the strategic potential of the process outcome.

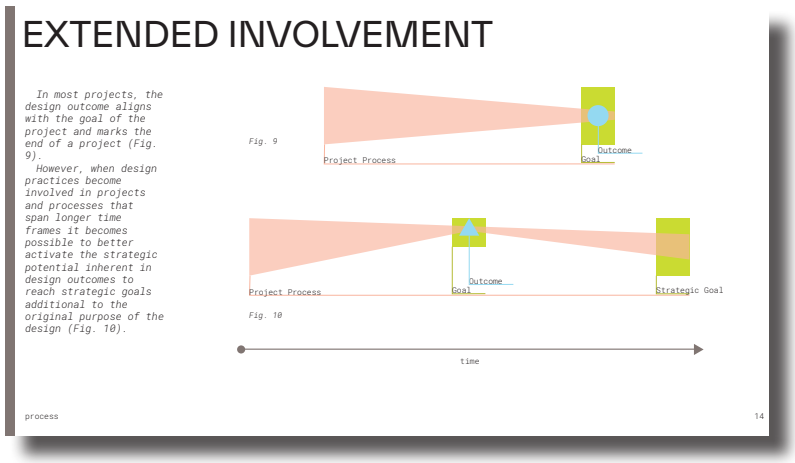
However, if we circularly approach such a process, it opens up new possibilities for designers to be involved in strategy, especially if they have a difficult time moving to the „front end“ of the process (Figure 59).



2.1.2 Extended Involvement

In most projects, the design outcome aligns with the goal of the project and marks the end of a project.

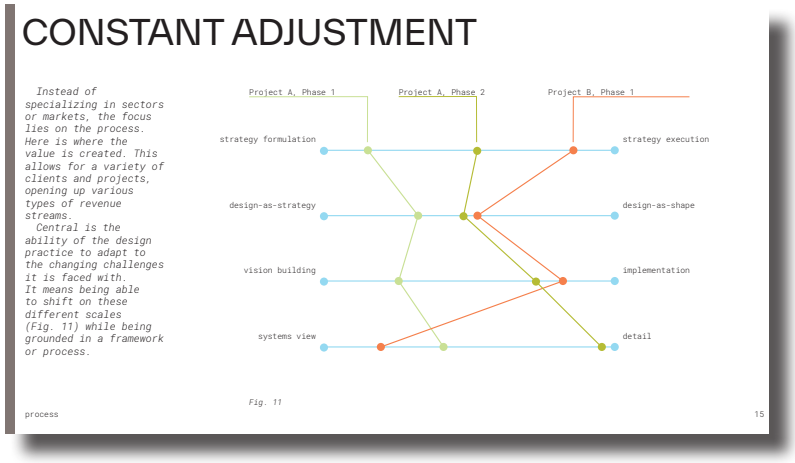
However, when design practices become involved in projects and processes that span longer time frames it becomes possible to better activate the strategic potential inherent in design outcomes to reach strategic goals additional to the original purpose of the design (Figure 60).



2.1.3 Constant Adjustment

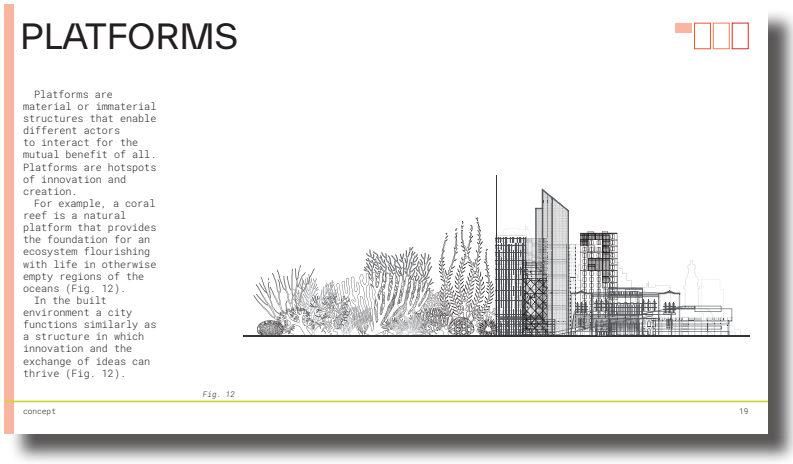
Instead of specializing in sectors or markets, the focus lies on the process. Here is where the value is created. This allows for a variety of clients and projects, opening up various types of revenue streams.

Central is the ability of the design practice to adapt to the changing challenges it is faced with. It means being able to shift on these different scales while being grounded in a framework or process (Figure 61).



2.2 Platforms

2.2.1 Concept

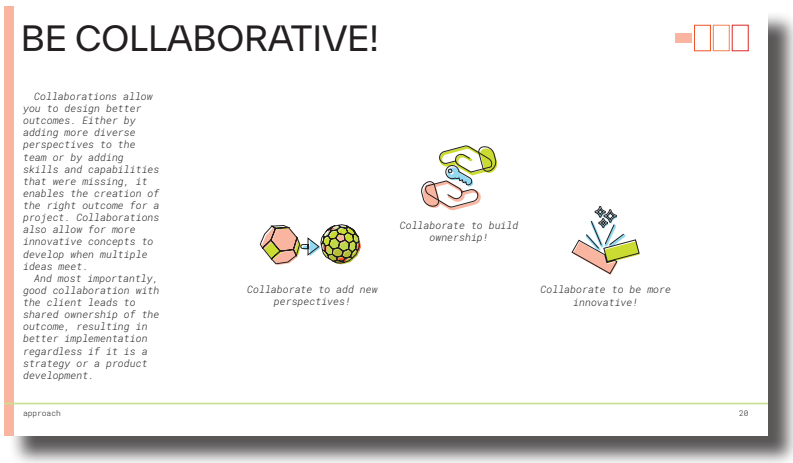


Platforms are material or immaterial structures that enable different actors to interact for the mutual benefit of all. Platforms are hotspots of innovation and creation.

For example, a coral reef is a natural platform that provides the foundation for an ecosystem flourishing with life in otherwise empty regions of the oceans.

In the built environment a city functions similarly as a structure in which innovation and the exchange of ideas can thrive.

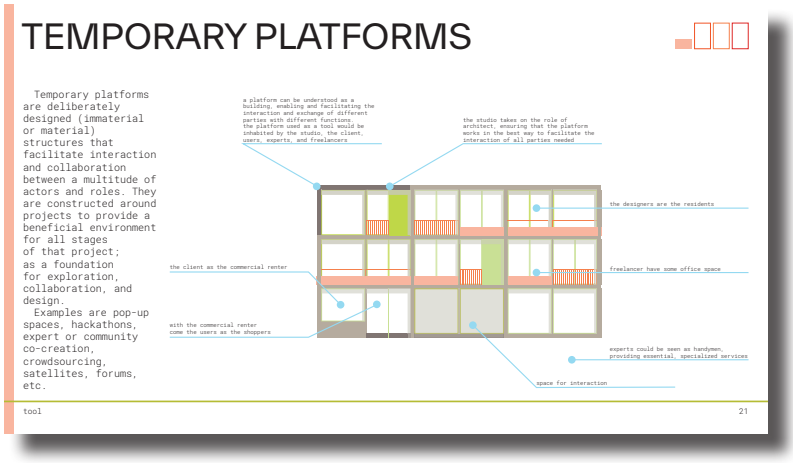
2.2.2 Approach



Collaborations allow you to design better outcomes. Either by adding more diverse perspectives to the team or by adding skills and capabilities that were missing, it enables the creation of the right outcome for a project. Collaborations also allow for more innovative concepts to develop when multiple ideas meet.

And most importantly, good collaboration with the client leads to shared ownership of the outcome, resulting in better implementation regardless if it is a strategy or a product development.

2.1.3 Tool



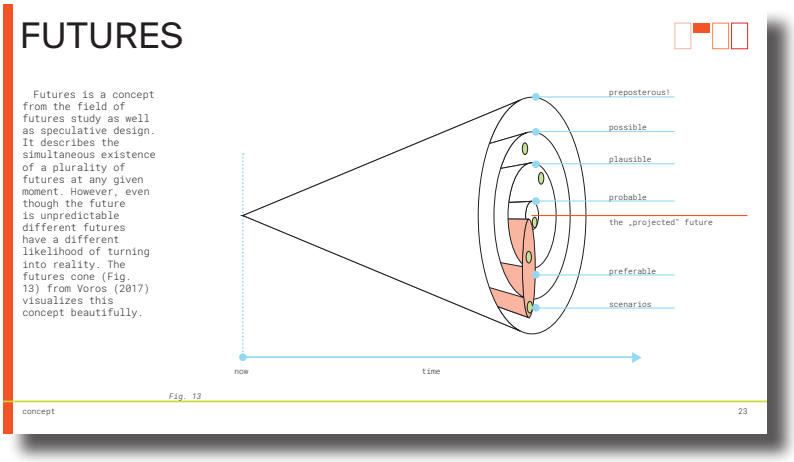
Temporary platforms are deliberately designed (immaterial or material) structures that facilitate interaction and collaboration between a multitude of actors and roles. They are constructed around projects to provide a beneficial environment for all stages of that project; as a foundation for exploration, collaboration, and design.

Examples are pop-up spaces, hackathons, expert or community co-creation, crowdsourcing, satellites, forums, etc.

2.3 Futures

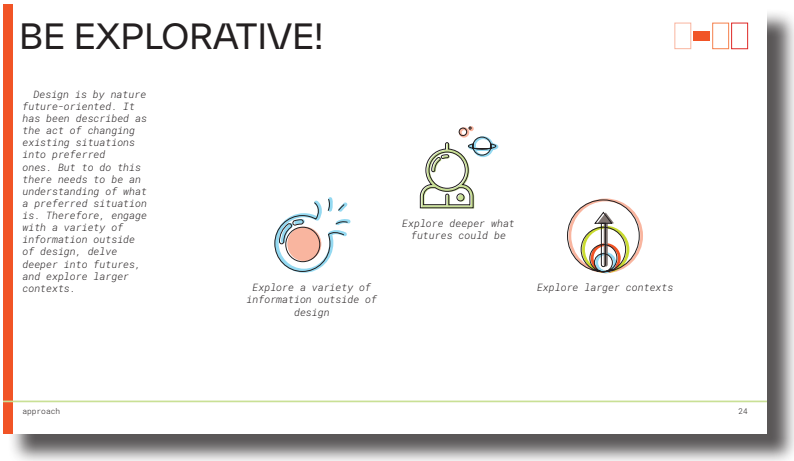
2.3.1 Concept

Futures is a concept from the field of futures study as well as speculative design. It describes the simultaneous existence of a plurality of futures at any given moment. However, even though the future is unpredictable different futures have a different likelihood of turning into reality. The futures cone visualizes this concept beautifully.



2.3.2 Approach

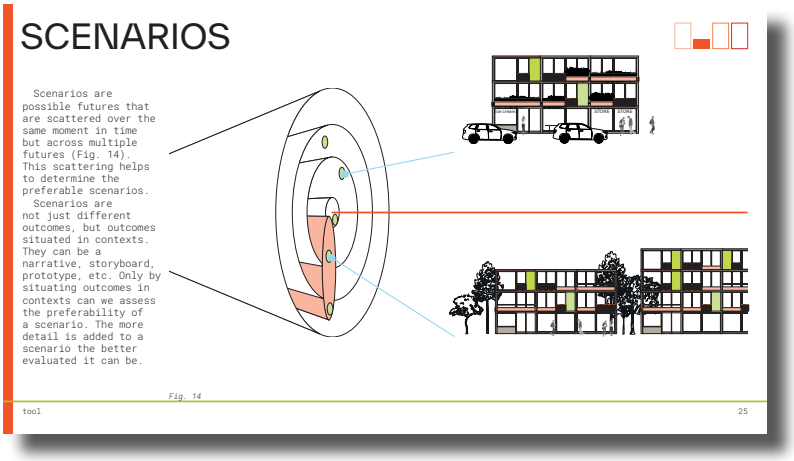
Design is by nature future-oriented. It has been described as the act of changing existing situations into preferred ones. But to do this there needs to be an understanding of what a preferred situation is. Therefore, engage with a variety of information outside of design, delve deeper into futures, and explore larger contexts.



2.3.3 Tool

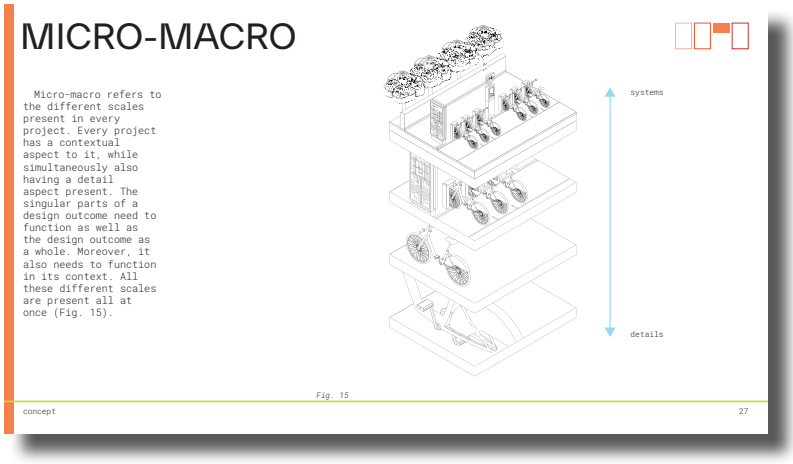
Scenarios are possible futures that are scattered over the same moment in time but across multiple futures. This scattering helps to determine the preferable scenarios.

Scenarios are not just different outcomes, but outcomes situated in contexts. They can be a narrative, storyboard, prototype, etc. Only by situating outcomes in contexts can we assess the preferability of a scenario. The more detail is added to a scenario the better evaluated it can be.



2.4 Micro-Macro

2.4.1 Concept



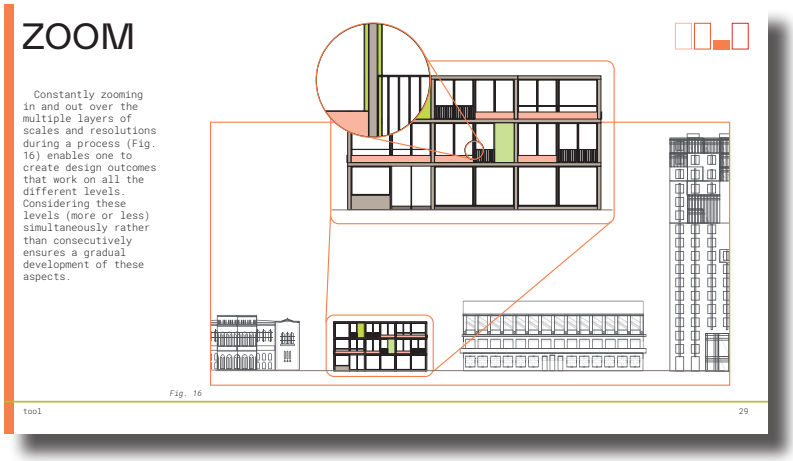
Micro-macro refers to the different scales present in every project. Every project has a contextual aspect to it, while simultaneously also having a detail aspect present. The singular parts of a design outcome need to function as well as the design outcome as a whole. Moreover, it also needs to function in its context. All these different scales are present all at once.

2.4.2 Approach

We can easily get lost in the details of a project and forget about how our design is situated in its context. Making a habit of considering your project in different scales and resolutions will help you develop design outcomes that function within their contexts as well as in their details.

And if you get stuck in a process, changing the scale in which you are working can loosen it up again.

2.4.3 Tool



Constantly zooming in and out over the multiple layers of scales and resolutions during a process enables one to create design outcomes that work on all the different levels. Considering these levels (more or less) simultaneously rather than consecutively ensures a gradual development of these aspects.

2.5 Matter-Meta

2.5.1 Concept

This concept refers to the interaction of matter (or observable matter) and meta (or dark matter). Designers are in their work very familiar with the matter part, however, the meta part is neglected. In a design context meta refers to the underlying systemic and intangible structures and forces that shape a design outcome as well, like laws and regulations, as well as the (client) firm. Reversely, matter shapes meta as well, as this is an interdependent relationship.

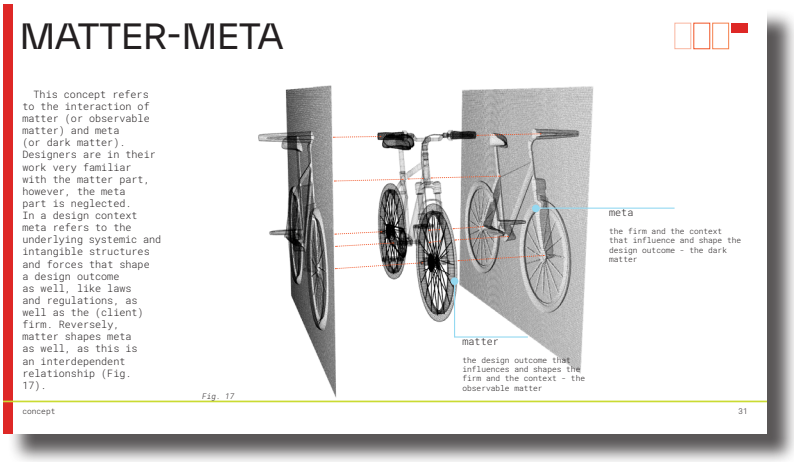
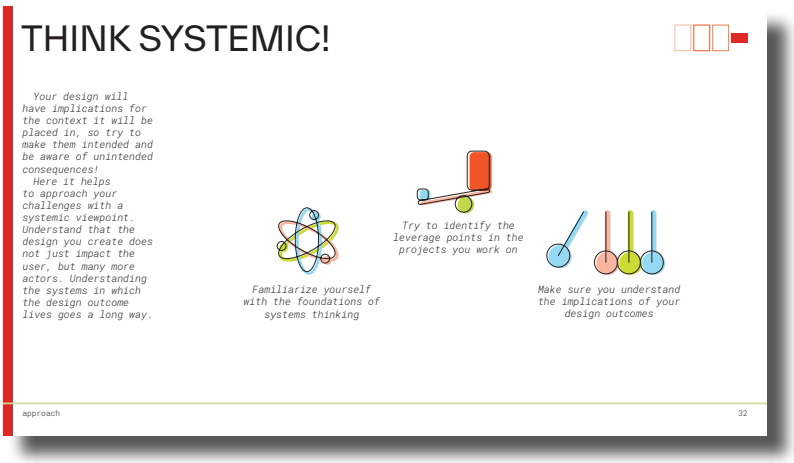


Fig. 17

2.5.2 Approach

Your design will have implications for the context it will be placed in, so try to make them intended and be aware of unintended consequences!

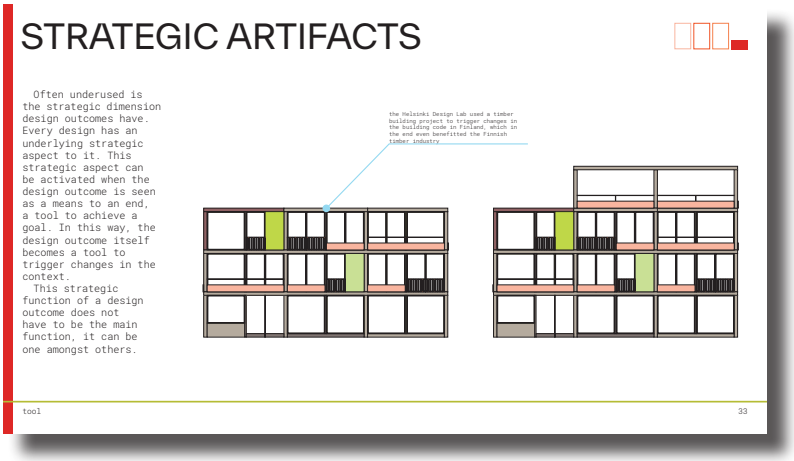
Here it helps to approach your challenges with a systemic viewpoint. Understand that the design you create does not just impact the user, but many more actors. Understanding the systems in which the design outcome lives goes a long way.



2.5.3 Tools

Often underused is the strategic dimension design outcomes have. Every design has an underlying strategic aspect to it. This strategic aspect can be activated when the design outcome is seen as a means to an end, a tool to achieve a goal. In this way, the design outcome itself becomes a tool to trigger changes in the context.

This strategic function of a design outcome does not have to be the main function, it can be one amongst others.



3 Validation

3.1 Overview

The final step in the design process was to validate the proposed design outcome. Since user testing with this design outcome is not as straightforward as, for example, with a physical product prototype, I used multiple approaches to validate my findings. Firstly, I talked to people that have some form of expertise and are not involved with this project to get their feedback and assessment. Secondly, I created a use scenario that would represent a situation in which the playbook would be of help, to assess what would be needed to assist the stakeholders in such a process.

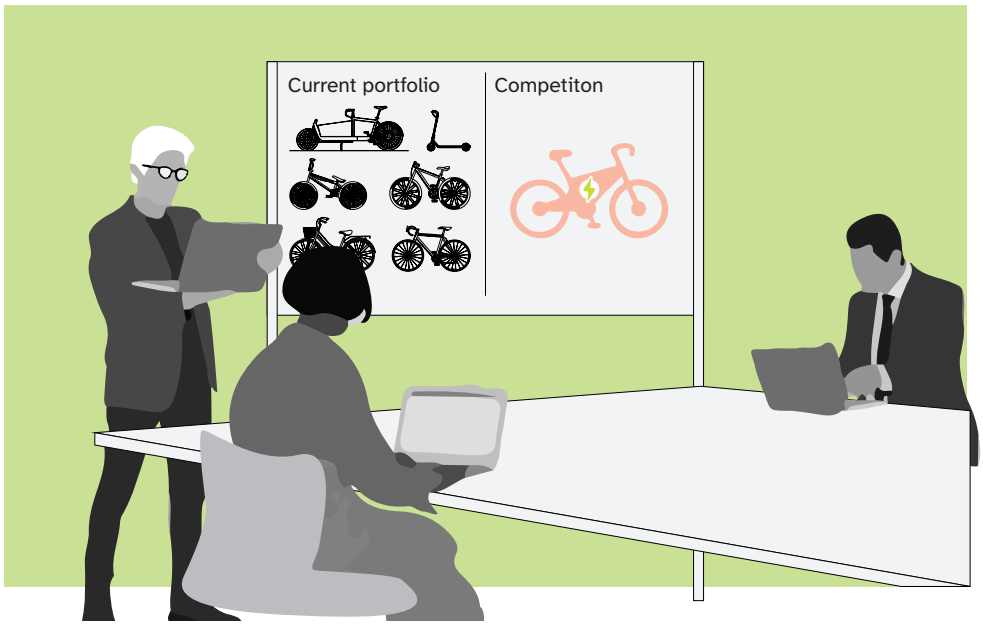
3.2 Feedback

In the feedback conversations, I talked to a Ph.D. candidate from Politecnico Milano who works on the topic of the role of Design and designers in corporate business strategy. The feedback focussed mainly on clarifying some terms and concepts, as well as more detailed adjustments. Overall they gave a positive response to the concept and proposed outcome. However, they strongly suggested creating a scenario to understand better how the design outcome would perform, as well as to clarify who the stakeholders are.

Additionally, I talked to a design professional who works at a small multidisciplinary design agency. They noted not all visualizations were fully understandable without the accompanying text and that reading the texts in the playbook was often necessary, which could be an obstacle in the adaptation by designers. However, the concepts, approaches, and tools piqued their interest and they would like to try them out in their practice as they can see them adding value to their process.

3.3 Scenario

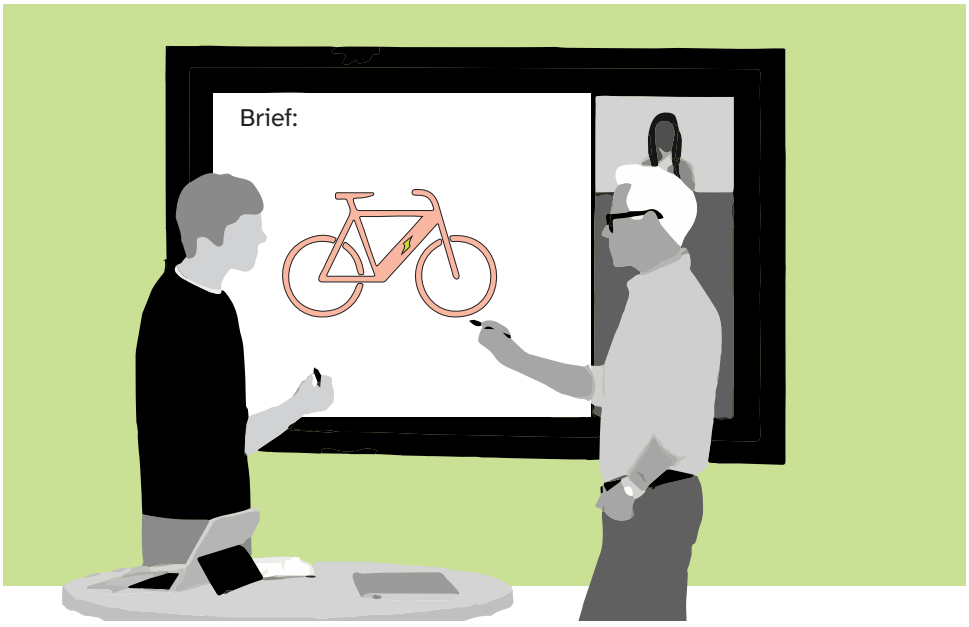
One of the proposed tools in the playbook is scenarios. Therefore, it felt very logical to use this tool as a way to validate the playbook, especially after getting the feedback that this could be a good way to validate my design outcome. Scenarios are an “explicit description of the hypothetical use of a product or service” and can be a “narrative, storyboard, animation, role-play or any other representation that shows the interaction between a specific user and a specific product in a specific context of use” (van der Bijl-Brouwer, M., & van der Voort, M. C., 2013). For the validation of this project, I decided on a mixed approach of a storyboard, with an extended narrative component to it.



3.3.1

The client in this scenario is an SME from the manufacturing sector. They produce and sell bikes. Especially during the pandemic the demand for bikes was high and business was good. However, e-bikes have become more and more popular and therefore the SME wants to offer a product in that segment to satisfy that demand as well.

Being well established in the traditional bike market as well as the high demand during the pandemic made the SME react slowly to the emerging trend of the growing market of e-bikes and e-micro mobility. Now they feel pressure to catch up on this development and approach an industrial design practice with a finished brief and a desire for a quick execution without a lot of questioning and reframing at the beginning of the process.



3.3.2

The initial brief is to develop an e-bike, fitting in the portfolio of the SME. The IDP accepts this project, seeing its potential to grow into a long-term relationship, in case the SME wants to add more e-micro mobility vehicles in the future. Usually, it is difficult to challenge a brief at the beginning of a project with a new client. However, the IDP is aware that strategy does not only happen at the beginning of a project but that there is a continuous exchange of strategy formulation and strategy execution.

3.3.3 Platforms

The IDP assigns two of their Industrial Designers to the project, a senior designer with more expertise to handle the strategic challenges and a junior designer who will focus more on the execution part of the project. A lot of their tasks will be to facilitate the co-creation between the freelance designers, experts, and representatives of the client SME.

Since the IDP lacks experts in the design of electronics they activate their network and hire a freelance designer to support the team for the duration of this project. They also add their design intern to the team to infuse the project with a younger perspective. Furthermore, they reach out to experts on the topic of urban mobility, e-mobility, mobility transitions, traffic, urban planning, and other relevant topics , as well as potential customers to be able to incorporate their perspectives.

3.3.4 Micro-Macro

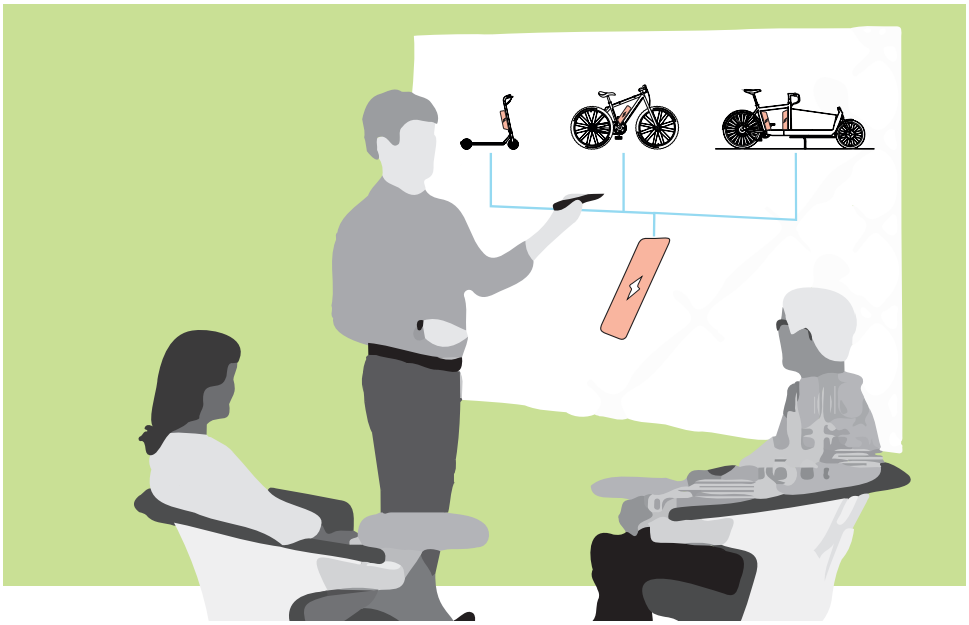
At first, the project team investigates the context of the project as well as the details that they will have to address further down the road. They try to understand the project on multiple scales from micro to macro. In doing this they make sure to consider the potential design outcome in its next larger context. For this, they zoom constantly in and out between the scales and resolutions, while making note of the connection between the layers. At the same time they consider multiple time frames in which the design outcome has to function: when it will be introduced in the market, how it will be used on a single use versus how it will be used throughout its life cycle, and how its function and meaning will change over time.

3.3.5 Futures

These considerations lead the team into developing multiple future scenarios. They investigate trends and use the input of experts to create a variety of possible futures. During the process, they ensure to look outside of the directly connected fields to get richer data and contextualize their visions.

The scenario which they deem most likely and most preferable suggests that e-mobility will play a much bigger role in an increasingly climate-change-aware society and with that the demand for e-mobility solutions will only grow.

This challenges the goal of the project and reframes it from trying to “catch up to the development of e-bikes” to “developing the first step in establishing this SME on the e-mobility market”.



3.3.6 Matter-Meta

When viewing the e-bike now as part of a product range, and therefore a system, it makes sense to develop the battery exchangeable to have it fit other potential future products as well. This idea of a modular hardware platform can also be found in ranges of power tools that share the same batteries.

The brief itself does not get changed significantly here, the system that would need to be in place as well as the other potential products are not being designed (yet). But changing the scale in which the product is viewed and placing it in its spatial and timely context allows for a strategic perspective. This change opens up the possibility to develop a system based on the initial product, as well as a diverse range of e-micro mobility solutions that can be integrated into this system. Furthermore,

3.3.7

it allows the design team to charge the design outcome with strategic potential that goes beyond developing purely a product. Designing an e-bike with a modular instead of a built-in battery will also have consequences for the design of the SME. It will have to transform into an SME that can produce a system solution as a result of a product development process.

By challenging the goal of the brief and not the brief itself the IDP team manages to create buy-in with the SME. The IDP will still deliver an e-bike, but they charged the design outcome with strategic potential. It helped that the SME was part of the process so far and therefore feels ownership over the development direction. The SME agrees to the changes that come with this evolution and the IDP proceeds with the development.

3.3.8

The industrial design team ends up delivering an e-bike that will act as a flagship for the new e-mobility product range. However, the battery and other necessary technology are not integrated into the bike but act as a hardware platform. Now the SME does not need to develop a completely new range of products, but by developing this battery system further, they can electrify their existing product range, should they choose to do so.

3.3.9

Every new product triggers changes in the organization: New processes need to be established and new suppliers and producers sourced, revenue models and internal structures might change, and maybe even the whole business model needs to adapt. This is in this example no different. Therefore the IDP must consider this stage after the delivery of the design outcome as part of the development process.

In the design process, the client SME was instrumental in the design outcome. Their capabilities, resources, connections, channels, and customers were influencing the design outcome as well. However, all these influences were fine-tuned for the existing product range. This means they need to be adjusted to be able to deliver the new product(s) as well.

Now, depending on the success of the first initial development process, this phase of change management can seamlessly transition into the early development phase of a new project. However, now we are still in a phase before a new brief is formulated, enabling the IDP to participate in the traditionally strategic phase of a project.

3.4 Conclusion

Building this scenario helped me adjust the concepts, approaches, and tools I have collected in the playbook, as well as sharpening the framework. Most importantly, however, it demonstrated to me that there are multiple ways to take part in strategic decision-making throughout a process. Traditionally, in a linear understanding of a development process, the strategic part is situated at the beginning of a process, at the “fuzzy front end”. Therefore designers try to move up to that part of the process if they want to be involved in these strategic decisions. Too often this is not successful for Industrial Design practices, be it for a lack of knowledge that the client has about the value designers can add to that part of the process, or if it is simply a question of money, to keep a process as short and undisturbed as possible. This scenario shows that strategic work is not just limited to that front end. While it might not be the case for each and every scenario/process, it certainly is for some and the interventions collected in the playbook can enable Industrial Design practices to engage in strategic questions throughout a design process.

CONCLUSION & RECOMMENDATIONS

This project set out to investigate how small to midsize industrial design practices address strategic challenges. For this a literature review was conducted, as well as complementary desk research and an interview study with design practitioners. Later on three small case studies helped set the direction of the project. The findings and insights were translated with the ViP method into a playbook containing interventions industrial design practices can use to connect their work closer to strategic design.

1 Conclusion

1.1 Research

The literature research revealed a gap in the literature in the area of strategic design in settings outside of internal design teams of large organizations or as part of larger consultancies. This was true for small to midsize design practices employing strategic design or design in a strategic way, as well as for offering strategic design services for SMEs.

Therefore, the literature research was widened and served more to establish a solid foundation in organizational strategy, the development of design, and the value design can add to organizations. Furthermore, design thinking and strategic design were investigated.

The research suggests that:

- Strategic Design works best when it is embedded in organizations and consequently, the consultancy model needs rethinking
- there was a surge of design in businesses due to Design Thinking, accompanied by increased criticism of Design Thinking, especially from academics and design professionals
- there is a lack of theory, methods, and tools for strategy creation in traditional organizational strategy, a gap that design seems to be well suited to fill
- the role of designers and the way design is practiced and design business operate has changed significantly and continuous to do so

Additional desk research accompanying the preparation of the interview study showcased the change industrial design practices underwent over the last decade in the services they offer and the way they position and market themselves.

The interview study itself added the perspective of currently active design practitioners to the project. The focus of their practices varied from industrial design

to strategic design as well as the size, with designers participating from solo design practices up to a design practice with currently 27 employees. This variety offered different perspectives to the research question “How can small to midsize industrial design practices address strategic challenges?”. As varied as the insights and perspectives were, there were also overlaps and patterns in the recorded responses.

The main insights were:

- Strategy formulation and strategy execution are interdependent
- Context shapes the outcome shapes the context, meaning context does not have only a one-directional influence on designs, but designers can use the outcomes of design processes to influence context, they are means to an end
- “Pure” strategy is incredibly hard to sell, therefore it is often practiced as something industrial designers have always done: questioning and reframing a brief
- Industrial designers seem to have already the capabilities needed to address strategic challenges

1.2 Design

At the end of the research phase, the findings were translated into factors, categorized, and clustered following the ViP method, before arriving at a worldview and subsequent design statement.

Through several iterations, a framework and multiple interventions were designed to reenvision the consultancy model and utilize creative ecosystem collaboration with the goal to enable reciprocal strategy formulation and strategy execution. They were collected and tied together in a playbook. Each intervention consists of a concept, an approach, and a tool.

The interventions are:

- Platform
- Futures
- Micro-Macro
- Matter-Meta

This design proposal was ultimately evaluated through feedback conversations with a Ph.D. candidate and a design professional and through the creation of a scenario.

1.3 Conclusion

This project aims to contribute to the existing literature by investigating the current ways small to midsize industrial design practices address strategic challenges and proposing interventions on how these practices can venture further into strategic design, by unlocking the strategic potential inherent to the design. By emphasizing the intersection and interconnectedness of Strategy Formulation and Strategy Execution the fit of the capabilities of Industrial Designers for both areas get highlighted. Through showcasing that Industrial Designers have the capabilities to address strategic challenges this project intends to connect Strategic Design again closer to (Industrial) Design as opposed to Business and Management, thus sharpening the profile of Strategic Designers in comparison to more traditional strategists.

By advocating for the interconnectedness of Strategy Formulation and Strategy Execution this project also advocates for a long-term engagement of external (industrial) design practices with their clients. Through long-term engagement, the activity of these practices changes from consulting and supporting to stewardship.

Approaching Strategy Formulation and Strategy Execution as reciprocal changes the traditionally linear approach to a circular one. This gives designers who are struggling to be involved earlier in development processes a way of influencing Strategy Formulation as a result of their work on Strategy Execution.

2 Recommendations

2.1 Limitations & Recommendations

Since this project relied on an interview study that had a limited amount of participants, it would be beneficial to confirm the findings through a qualitative study. Especially because the gap in the literature is not closed with this thesis. While there were overlaps in the responses of the participants a thorough overlap and repetition of answers could not be established.

Furthermore, due to the nature of the design outcome and the limited amount of time available the playbook has not been tested “in the field”. The insights that could be gathered here would be incredibly valuable for the further development of the interventions proposed.

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