Anchoring Imagination in Knowledge Systems
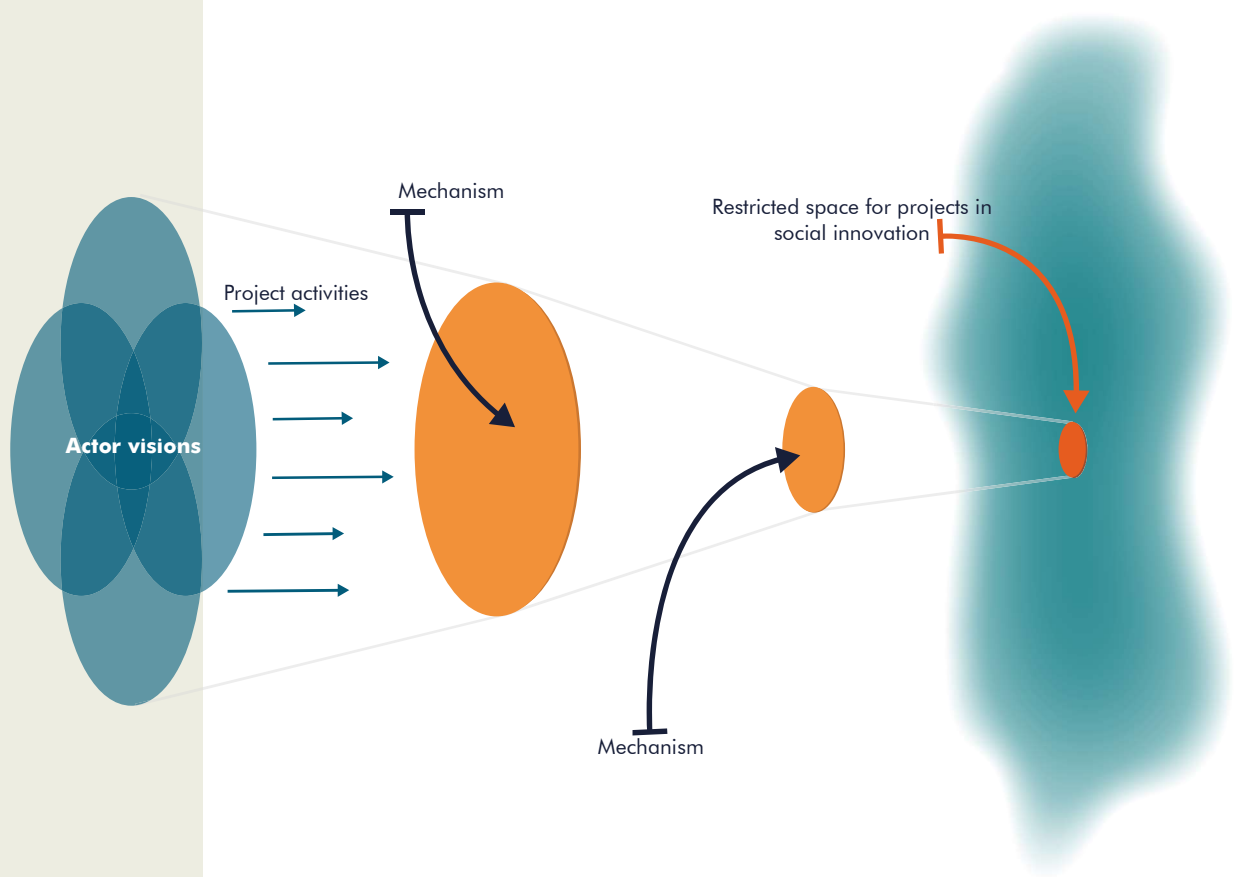
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        M.Sc in Engineering (Sustainable Design)

Mechanism

Restricted space for projects in
social innovation

Project activities

Actor visions

Mechanism

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Abstract

Facing societal challenges such as climate change, it has become increasingly relevant and crucial to address the future by making sustainable long-term decisions. In order to encourage more sustainable decision-making, radical and structural changes need to happen in socio-technical systems. Structural changes can be referred to as sustainable transitions of socio-technical regimes. By collaborating with the Danish Design Center (DDC), this thesis will take a case study approach, investigating the emerging field of social innovation within the regime of the social sector, of which DDC is a part. Following a transition theory approach and with the help of empirical research and semi-structured qualitative interviews, an analysis of the knowledge production within the regime will be conducted, studying its potential role in the transition of the regime to being more imaginative and collaborative. This analysis reveals that the knowledge system is locked into mechanisms that reproduce patterns hindering experimentation while short-term profit- and goal-orientated interests still pre-dominantly outweigh the need to make long-term sustainable decisions. Regime actors and their power structures stabilise these mechanisms. Following the analysis, a design approach will explore how to address the identified wicked problem of locked in knowledge systems through the lens of imagination infrastructure concerning the potential of implementing imagination in the knowledge system. With the help of the 'negotiation spaces' framework, co-designing potential solution approaches intending to define imagination as a resource will be explored through a series of workshops with the collaborator, DDC. Then, using brainstorming, ideation and design processes, the conceptualisation of tangible boundary objects is discussed. Based on the literature review, analysis and design work, we provide DDC in the end with a catalogue of tools consisting of boundary objects they can use to initiate the conversation around imagination and negotiate collaborations with actors. We will reflect on our experience and potential conflicts of interest during this thesis. Lastly, we will discuss the general learnings which can be derived from the case.

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1. Introduction

In our current time, we are facing a multitude of societal challenges, stretching from climate change, a decrease in physical and mental health, and a refugee crisis to others. Many of these challenges are complex, and the change needed can be hard to facilitate. In the field of transition design, these are tied to the structures in our society. Our society is built on a series of socio-technical systems, which are stabilised in the form of regimes (Geels, 2011). A regime is defined as the *"established practices and associated rules that stabilize existing systems"* (Geels, 2011, p. 26).

Creating transitions in society leading to a sustainable future is defined as sustainable transition. These deviate from other transitions throughout history by having a purpose (Geels, 2011). When designing to transition into a sustainable future, we need to be able to ideate past the structures in the current regime. Extrapolating the future from the present is insufficient, as it often reproduces unsustainability rather than challenges the current structures (Bendor et al., 2021). This leads to a need for imagination in the processes facilitated around change in our society.

However, imagination is not a part of the current knowledge systems in socio-technical regimes. Light (2020) states how the work of anticipating the future often has a positivist approach in trying to predict what potential outcomes could be. Knowledge systems stabilise the regimes' practices by facilitating the creation and application of knowledge, which often leads to a reproduction of patterns from the regime. We need to transition our knowledge systems to allow for more radical ideas if we are to facilitate the change needed in society. This includes changing the power structures controlling who has the ability to produce knowledge and the inclusion of imagination in the knowledge system (Fazey et al., 2020).

Therefore, this thesis is working on answering the following research question:

How can we support the transformation of the current knowledge system by increasing the agency and circulation of imaginative futures, thereby reducing barriers for radical systemic change?

This is addressed by collaborating with Danish Design Center (DDC) and using them as a point of departure to investigate the regime of the social sector. Therefore, they will be introduced in short here of creating a common understanding before describing them in detail in the section on interesting a collaborator. DDC is a foundation structured with a board of directors dependent on outside funding. Danish Design Center's main objective is to promote design as a tool and mindset to create sustainable innovation. They are working with a mission-based approach, which they are basing on the framework from Mazzucato (2018). This leads them to structure their activities around three main missions: a social mission, a digital mission and a green mission (Danish Design Center, n.d.-a). Their missions are shaped with the focus of having a societal impact and creating systemic change in society. In their mission playbook, they elaborate that in order to facilitate missions creating impact, we need to implement mechanisms that allow for flexibility and learning.

The project investigates the role of knowledge systems in the stabilisation and transition of regimes and the potential of integrating imagination into new knowledge systems. Taking a participatory design approach, the design group facilitated a series of semi-structured interviews to collect the data and co-designing processes to transform the knowledge into a design solution.

2. Literature review

This section reviews the literature on the role of imagination in governance of sustainable transitions. First, the relation between sustainability and socio-technical systems will be examined. Followed by an observation of how socio-technical systems are related to the concept of regimes and transition theory. After describing regimes and their dynamics, we will go into further detail with knowledge systems within these regimes. Here we argue this subject is significantly understudied by pointing out concerns with knowledge systems in regard to promoting sustainable transitions, and we substantiate the potential of imaginative knowledge systems for sustainable transitions. Eventually, exploring the state of the art in research about imagination infrastructure, a newly emerging concept and practice.

While our primary focus is on transition theory, the field of sustainable transitions is profoundly broad in scope. We have included research from other scientific domains than transition theory, where it is more precise. We argue that by providing a range of diverse perspectives, we can both broaden and sharpen the scope with scientific discussions. Because we want to cultivate interdisciplinary discussions in the design project, we also need to present a broader literary review.

2.1 Transitioning regimes

Over the past years, societal challenges such as the refugee crisis, mental health decline, biodiversity loss, and climate change urge structural and radical changes(Geels, 2011). These structural changes are referred to as transitions, as they *"involve alterations in the overall configuration"* (Geels , 2011, p.24) of socio-technical systems. These socio-technical systems deal with the social norms of society and organisational processes.

Unsustainable practices have increased the need for changes, and actively designing the future has become increasingly crucial over the past years to make sustainable decisions and transitions happen (Fry, 2009). Future studies is a field of research that, among other things, deals with how the futures can be designed, as Vähäkari et al. (2020) state, *"Futures studies aim to detect and understand expected societal changes, and in this way help people to prepare and react to them. […] It differs from other social sciences by deliberately aiming towards*

change and by contributing to transition processes. […] Even though we cannot reliably pre-dict the future or know the true impacts of our actions, it is certain that our decisions and even our outlooks will implicate changes" (p. 4). Researchers claim that relying on incremental change is insufficient to address the large challenges we face. Instead, transformative change needs to be implemented, also referred to as sustainable change (Bushell et al., 2017; Gar-duño García & Gaziulusoy, 2021).

To understand how we can create sustainable transitions, we need to understand the configuration of socio-technical systems which acknowledge the interactions between societal and technical structures and involve how societal infrastructures interact with human behaviour (Schot & Geels, 2007). Regimes manage these socio-technical systems. A regime *"forms the 'deep structure' that accounts for the stability of an existing socio-technical system. It refers to the semi-coherent set of rules that orient and coordinate the activities of the social groups that reproduce the various elements of socio-technical systems."* (Geels, 2011, p.28). Thus, the regime stabilises existing socio-technical systems by regulating mainstream activities and structures of society through beliefs and vague rules binding it together.

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When incremental changes are discussed, it often refers to changes that do not directly affect the regime itself. Instead, incremental change describes minor improvements to the conditions within the regime. On the other hand, systemic change changes the regime itself, although it rarely occurs as regimes are inherently resistant to change. Vähäkari et al. (2020) expand upon this by stating: **"***A major challenge for sustainability transitions is the dominance*

and stabilized position of technologies, actors and supporting societal structures (i.e. the regime) developed over a long period of time. Strong position of incumbent technologies, actors or ways of operating may act as an obstacle to new, more sustainable solutions (i.e. niches) break through." (p.3). For the regime to be displaced or transitioned, niches need to be cultivated by fostering radical innovations as budding alternatives to the system or parts thereof.

2.2 The role of knowledge production in the stability and transformation of regimes

Regimes consist of interactions among many socio-technical components (Geels, 2011). Some of these components have been more systematically investigated in transition research than others. While knowledge production is essential to ensure the regime's stability, Hirschman (2021) claims that knowledge systems are severely understudied, particularly their role in transitions and change.

Fazey et al. (2020) expand upon knowledge systems by stating that "*knowledge systems […] are closely intertwined with society, economies and cultures and are integral to shaping the way societies develop, function and mobilise resources*" (p. 5). The role of knowledge systems is to essentially gather knowledge, then format it, and then make it accessible to society. Hirschman (2021) is essentially saying that knowledge systems are *"lending legitimacy, cultivating familiarity, and thus increasing the "doability"* (p.740), thus shaping decisions which lead to future actions in the regime. The knowledge systems play a significant role in promoting or obstructing transitions towards a more sustainable future. Therefore, they are significantly important for us as designers to understand when trying to support regime transition.

While static knowledge systems are beneficial for the stability of the regime, the static nature, the control, and the regularity present an issue for sustainable transitions and radical change. Hirschman (2021) claims: *"These infrastructures (referring to knowledge systems) collect, process, and distribute data in ways that channel sustained attention to particular problems while rendering other potential observations out of focus. Like other infrastructures, they have signif-*

icant inertia: initial design choices become locked in and shape the kinds of data readily avail-able to future researchers." (p.743). Initial decisions concerning what and how knowledge is collected and how it is formatted are potentially consequential decisions that can lead to fro-zen structures that significantly impact how knowledge is produced. Set structures make it challenging to divert from prescribed knowledge formats.

These knowledge systems are locked in through their reproduction and inertia as Hirschman (2021) states that *"the capacity of a knowledge infrastructure (referring to knowledge system) to measure change over time entails a certain level of stability: to measure a trend, the same features of the social or natural world must be measured in the same way over the period of interest."* (p.746). Therefore, once the initial conditions are set, the knowledge systems re-main stable. This means the knowledge systems do not tend to change at all but are locked into patterns producing the same kind of knowledge in progressing world.

Fazey et al. (2020) also express that knowledge systems *"may also reinforce current patterns of thinking and action, limiting ability of societies to develop capacities for more creative re-sponses to challenges like climate change and energy transitions"* (p. 5). Knowledge is there-fore chiefly generated within a mainstream, limiting the impact of imaginative findings if the knowledge does not conform to the established structures. This limits the potential of imagi-native knowledge to be reproduced and circulated in the regime.

Angheloiu et al. (2020) make a similar claim based on their study that shows how multiple groups of actors with diverse backgrounds had similar depictions of an imagined future. These imaginaries, or imagined futures, can be identified as a regime internal type of imagi-nation. The imagination is somewhat limited to the knowledge circulated by the knowledge systems. The article illustrates that imagination is constrained by a perceived feasibility, which we have argued is largely determined by the embedded knowledge systems.

Jasanoff & Kim (2009) explain that sociotechnical imaginaries *"describe attainable futures and prescribe futures that states believe ought to be attained."* (p.120). This echoes how knowledge systems shape aspirations and expectations of society and emphasises how knowledge formatting is frozen in terms of what knowledge is produced and distributed to society shaping the mainstream academic way of thinking and thereby reproducing the knowledge.

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Light (2020) states that we shape the world through anticipation. Anticipation gives the future agency in our present time, and we use it to make decisions through narratives. But there are power structures which create an inequality in who gets to shape the narratives. The power structures controlling the knowledge systems arguably shape the future by determining which knowledge is available and which actions follow. Knowledge systems get locked in and path-dependent by reproducing a pattern of knowledge and influencing the future (Hirsch-man, 2021). Light (2021) argues that *"Futures are not remote, but actively participate in creating decisions now. It is therefore important that such speculation is not the preserve only of designers, futurologists and policy makers. Navigating and extending the futures open to us is a basic right of democratized life: for the future, but also for the ongoing being-shaped present."* (p. 2). She is addressing the importance of democratising futures and involving interdisciplinary actors in the process of futuring to avoid expert-led and preferential knowledge. This also means that changing the current knowledge systems might be a critical path to more democratic futures.

2.3 Promoting imaginative knowledge systems

As established in the previous section, knowledge systems are a substantial part of the stability of regimes. While benefitting society, they are also a part of creating the challenges we are facing (Fazey et al., 2020). Fazey et al. (2020) claim: *"Fundamental shifts will thus be needed if knowledge systems are to transcend the thinking and approaches that have led to many contemporary challenges like climate change and ensure knowledge systems can more effectively support wider societal transformations."* (p. 6).

Knowledge systems that allow for transformations should be flexible, imaginative, and need to be designed. Multiple sources have mentioned this as a crucial part of creating societal transitions (Bushell et al., 2017; DUNNE & RABY, 2013; Fotaki et al., 2019; Garduño García &

Gaziulusoy, 2021). Angheloui et al. (2020) extend that by claiming that they consider a lack of imagination more critical than a lack of awareness. Bushell et al. (2017) frame it as an imagination crisis, as we cannot imagine alternatives to the current structures in society. Fotaki et al. (2019) highlight the failure of imagination, indicating our incapacity to imagine alternatives to the current paradigm. Whereas Jasanoff & Kim (2009) elaborate on the *"growing recognition that the capacity to imagine futures is a crucial constitutive element in social and political life"* (p. 122). Current knowledge systems are locked into prescriptive and prearranged structures, whereas a knowledge system of imagination could develop the conditions for creativity and flexibility and for knowledge to facilitate change.

There is a need to move from calculations to design and from expertise to co-creation. Steen (2013) expresses that *"knowledge should be concerned with exploring alternative futures, with promoting communication and cooperation, and with organizing positive change"* (p. 20). He elaborates that there is a need to shift from predicting the future with locked-in knowledge systems to designing the future with knowledge systems of imagination encouraging exploration and experimentation (Steen, 2013). Rather than discussing probable and predictable futures, by starting to discuss desirable futures and how they can be realised, they are not unrealistic anymore, and they could be integrated in the future (Gümüsay & Reinecke 2022).

To base knowledge structures around imagination, the problematics in the language used to share knowledge among actors need to be addressed. Garduño García & Gaziulusoy (2021) claim this to be challenging to understand for all actors and suggest creating experimental futures to allow for actors to immerse themselves in alternative scenarios. They emphasise the importance of relatability and presentation of speculative artifacts in creating scenarios to change society's values, beliefs and behaviours. By travelling into these alternative stories, we are less critical and therefore allow for alternative ideas.

Bushell et al. (2017) also suggest the co-creation of narratives to align and mobilise actors. They claim the importance of co-creation to ensure the narratives are relatable enough for key actors to interpret and re-tell them. They define narratives as "s*tories which can explain the situation, define a problem that disrupts the order of the initial situation and then provide a*

resolution to that problem, which re-establishes order" (pp. 39–40). Storytelling is part of society's interpretation of the world, therefore, it can be more persuasive than numbers and charts (Ibid.).

Fotaki et al. (2019) emphasise *"The urgency to mobilize collective abilities of organizations in pursuing pathways that will challenge dominant modes of mis-representation and loss of meaning"* (p.8) and argue that, among others *"storytelling as base methodologies, marks the search for new ways and approaches to re-think and re-imagine, re-write and re-examine the role of organizations, organizing and managing in society – past, present and future."* (p. 8). They state the importance of mobilising actors to address the challenges the current regime produces and emphasise the use of storytelling as a method to do so. While it is clear that narratives and storytelling can have a significant effect, there is still a need for research on how these can be applied and if they would have long term effects (Bushell et al., 2017; Garduño García & Gaziulusoy, 2021).

2.4 The concept and practice of imagination infrastructure

Imagination infrastructure is an emerging term in the field of future studies, defined by Larkin (2013) as *"material forms that allow for the possibility of exchange over space"* (p.327).

Baumann (2018) states that *"Infrastructures of the imagination refers to both how we build our world based on our imaginations of the future as well as how we create infrastructures for people to participate in that act of imagining"* (p. 19). It is a concept combining the two terms *'imagination',* and *'infrastructure'*, where imagination refers to exploration and radical thinking and infrastructure indicates collaboration and capacity building. Blok et al. (2016) state that *"infrastructures are increasingly used for the production, distribution, and sharing of information"* (p.9) and add that infrastructures are often doing hidden work, hinting toward how knowledge infrastructures (or knowledge systems) can become locked-in without noticing (Blok et al., 2016). Imagination infrastructure essentially forms the capacity to work together, share knowledge and imagine the future more openly and radically.

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The concept and practice of imagination infrastructure is still establishing itself, however, there are a few case studies describing its implementation. For example, the Malmö living lab is a participatory lab with long-term, open innovation spaces for experimenting with everyday citizens and the aim of infrastructuring to extend collaboration and capacity building (Bau-mann, 2017). The project of participatory Chinatown in Boston in 2010 used technology to engage communities in planning the future of their own neighbourhood (Ibid.). Furthermore, the Sankofa City project in 2012 was developed as a design collaborative that uses co-design and rapid-prototyping workshops to empower community-student groups to imagine tech-nological interventions in the built environment (Baumann, 2018). These projects have collec-tive imagination and imaginative activism in common. The aim of initiating these projects was to use *"collective imagination to design new cities that are sustainable, pluralistic, and demo-cratic. It also means building better infrastructures for everyday citizens to collaboratively par-ticipate in the process of envisioning, designing, testing, and implementing the future."* (Bau-mann, 2017, p.1) and pushing the boundaries of socio-technical systems facilitating non-ex-pert participation (Baumann, 2018).

2.5 Sub-conclusion of the literature review

Faced with considerable social and climate challenges, we find that incrementally improving the regime functions is too slow. Structural changes to the socio-technical systems are needed.

Knowledge systems within the regime in promoting change and transitions are significantly understudied, although knowledge systems play a substantial role in the decision-making for future actions. Knowledge systems determine what and how knowledge is generated and to

whom it is distributed, and the stability of regimes predominantly depends on them. These knowledge systems reproduce themselves and thereby stabilise the regime. Current knowledge systems are hindering imaginative alternatives. We argue that restructuring the knowledge systems to embrace imagination would allow the regime to perform work with imaginative knowledge, leading to systemic change.

The emerging concept and practice of imagination infrastructure has potential to promote transitions through the production and circulation of innovative futures by moving from expert knowledge to co-creation and from calculations to design. Examples of imagination infrastructures that focus on collective imagination and radical experimentation already exist. In the following section, we focus on how to facilitate the circulation of imaginative futures.

3. The Design Process

In the literature review, we discussed how knowledge systems play a role in stabilising regimes. The knowledge systems accept knowledge which reproduces the patterns of the current regime. Therefore, it was argued that to allow the design of alternatives to the current regime, a transition of the knowledge systems needs to be facilitated. Two main conclusions are drawn from the literature review:

1. Knowledge systems are a stabilising part of regimes, reproducing their patterns. We need to change the knowledge systems to allow for more radical thinking and systemic change.
2. We need to anchor imagination in the system by redefining it as knowledge accepted by the current knowledge systems. Imagination is first valuable when circulated and informs activities within the regimes.

This section focuses on how we as the design group worked with knowledge systems as a design object. We initiated a collaboration with the Danish Design Center, which was already working with the idea of influencing structures in the knowledge systems they are a part of. Using a case study allowed us to apply the knowledge from the literature review to a socio-technical regime and transform this into tangible tools for our collaborator to use. The section will describe how we approach our design project and designed tools in collaboration with DDC.

3.1 The thesis scope

The scope of our project and design processes is limited to the field within our contact persons' work in social innovation and imaginative processes using imagination infrastructure as the main framework. While DDC has three missions, our focus is limited to the social mission due to our contact persons primarily working within the social mission. The project is focused on DDC as a specific case to use them as a point of departure to investigate the knowledge system of the regime of the social sector. The thesis will investigate the work that is already being done in the field of social innovation and how it could be supported and improved by implementing imagination infrastructure. As sustainable design engineers, our focus is on how we can work to create sustainable solutions that positively impact the actors involved. Our design role is not

to position ourselves as the expert but instead to investigate the circumstances, facilitate negotiations and translate that into solution approaches our collaborator can pursue. We want to rethink structures around social issues in society in a way where DDC can have an active role and benefit from the engagement.

The investigation of actors has been limited to the private sector, excluding the public and governmental sectors. We argue that our design approach is not targeting the transformation of the whole regime but rather how our collaborator can use what we find out and use it accordingly. For that, a narrow scope is beneficial to be able to get into more detail in a limited amount of time.

3.2 Methodology

This section will outline the different methodological approaches to different design activities used in this project. This overview will be useful for the reader to acquire a general understanding before they are employed. However, methods are theoretical approaches to real challenges, and there will be situations where the design group deviates from the prescribed method. These deviations and their potential impact are discussed where it is relevant, and the reader is invited to refer to this section for context if necessary.

Knowledge systems as a perspective

In the literature, knowledge systems are discussed in relation to the stabilisation of regimes. One of the main conclusions was the lack of research on knowledge systems' role in transition design. As our project revolves around knowledge systems, we need to have a theoretical understanding. This will help us as designers align on the object's definition under research and allow us to build upon the work of others.

As the analysis is built on the literature review, we use the theory around knowledge systems and apply it to the socio-technical field of our case. Knowledge systems are part of the structures that stabilise the current regimes and have a part in reproducing patterns. To work with the transition of knowledge systems, we acquired an understanding of what a knowledge system is and consists of.

Knowledge systems consist of practices, values, beliefs, structures, norms, rules, and cultures, affecting which types of knowledge production can occur. It affects knowledge production regarding how knowledge is produced, who gets to produce it, how knowledge circulates and to whom it is distributed. Another part of knowledge systems is elements (*Institutions, structures, assumptions, standards etc.),* functions *(the generation, validation, communication and application of knowledge),* and lastly, context *(Organisational, operational or political)* (Fazey et al., 2020a, p. 5).

As part of understanding the knowledge systems in the socio-technical context, we also need to understand the power structures. Not everyone has the same power to produce, validate, communicate and apply knowledge. As a specific part of our analysis, we are looking at transitioning knowledge systems to allow for more imagination. Based on Light (2020), the power to create a narrative of anticipation is not equally divided between actors. This is relevant to remember, as we need to pinpoint the power structures to allow actors to start the transition.

Negotiation space framework

In our project, we are working from the tradition of participatory design. Participatory design builds on the foundation of democracy and change. This leads it to be built on active involvement of actors, not only the end-users. The actors are seen as experts on their lived experiences, this both entails the profession, practices, cultures etc. (Pedersen 2020).

This changes the designer's role, from being merely the creative expert to having to facilitate processes between multiple actors. Pedersen (2020) explains the importance of negotiations between actors in participatory design. The negotiations do not need to end with a complete agreement between the actors but rather an alignment.

To facilitate these processes (Pedersen, 2020) defines the negotiation space framework. To do this, a theatrical metaphor is used. This gives an idea of the new role of the designer. The designer needs to stage and direct the negotiation space. She divides the framework into three steps:

- Staging to frame the 'space' and inscribe objects
- Facilitation of negotiations through the circulation of objects

- Re-framing of the negotiated matters of concern

Staging refers to framing the negotiation concerning the invitation of relevant actors, whether props such as design games are included, and the participants' expectations. This occurs before the actual negotiation takes place. Facilitating the negotiation space occurs during the negotiation and is about what can be defined as the negotiation and involves how the participants can be guided and the negotiation controlled. Re-framing of the negotiated matters of concern happens towards the end of the negotiation and can be seen as the result of the negotiation, as a new framing of the translated knowledge is negotiated with the participants.

Design games and boundary objects

To facilitate negotiation spaces with our collaborator, we used design games to structure the negotiations by establishing rules and order.

We aim to close the knowledge gap that exists between us and our collaborator and other actors during our collaboration. In the negotiation space framework, there is an emphasis on using objects which can help facilitate knowledge sharing during the negotiation (Pedersen, 2020). We are using boundary objects based on Carlile (2002) to facilitate the design games. Carlile (2002) states, "a boundary object establishes a shared syntax or language for individuals to represent their knowledge" (p.451). We use the boundary objects to facilitate the presentation and sharing of knowledge among participants of negotiation spaces.

Affinity Diagrams

To collect and organise our data for our analysis, we used an affinity diagram, as it is an easy tool to categorise a lot of information in a quick manner. An affinity diagram is described by Holtzblatt & Farnsworth (2017) as a method organising and arranging data into a *"hierarchy that reveals common issues and themes (…) relevant to the team's focus"* (Holtzblatt & Farnsworth, 2017). It usually involves post-its as a medium to create the affinity diagram taking advantage of its flexibility. We created it digitally to have even more freedom in creating and deleting post-its. It is a method to start drawing conclusions from large amounts of unsorted data, and the method is structured to avoid the designer's bias manipulating the data.

3.3 Defining design

Design is used in many different capacities, and the designer's role can take on many different forms. To provide clarity of the terminology and meaning, we will start by defining our approach to design. The definition of design in literature is multifaceted, and depending on the source and the fields within design, you might find different definitions of what design entails.

We are defining design based on the tradition of participatory design. The core of this design tradition is democracy and change. More specifically, in participatory design, the belief is that the actors impacted by the solution or change should participate in designing it. We, as designers, are not experts on other people's lived experiences, whether professional, cultural, social, etc. (Pedersen, 2020).

This implies a role for us as designers where we are not experts handing down a final design product or dictating the right solution. Instead, the role of the designer is not merely being the creative expert but also the facilitator of negotiation between the relevant actors (Pedersen, 2020).

As part of our design approaches, we are working within the field of transition design. As established in the literature review, transition is interlinked with practices, institutions, artifacts, rules, and norms. Transitions are long-term processes which require a long-term perspective, slow processes, and actions with delayed results. Therefore, we are attempting to design the final state of the transition, but rather on how we can create design solutions that can circulate and act in negotiations to start the transition process of the current knowledge systems.

As mitigation of the abstractness of working with transitions, we are framing transition design with the concept of the future. Light (2020) describes how the future takes shape in the present through narratives and anticipation. Not everyone has equal power to create the narratives and the anticipation, further arguing for the importance of democratising the future or future studies. There is an agreement in the literature that actors affected by the challenges of the current regime need to be enrolled in the design and transition processes if we want to create a new and more equitable regime (Angheloiu et al., 2020; Bushell et al., 2017; Gar-

duño García & Gaziulusoy, 2021). Light (2020) further suggests that instead of the design process resulting in objects that perpetuate a specific interpretation of the challenges, it should instead design objects which can be interpreted in numerous ways. She defines this approach as seeding, akin to plant seeds that initially do not act much but have the capacity to grow into something else entirely.

This design project aims to seed change in the knowledge system. It would seem unfeasible if we would take the role of expert designers and attempt to seed the change alone for multiple reasons. First, the complexities of the interactions between the actors who maintain the knowledge systems would be difficult to penetrate through an isolationist approach. We assert that a clear understanding of these complexities is required to propose a reasonable design solution. Secondly, we assert that seeding the transformation of the knowledge systems themselves will require continuous negotiation with regime actors and a method of circulation between them. As this design project is of limited duration, it is unreasonable to expect that the design group would be able to perform these negotiations. Additionally, we expect barriers to restrict us from participating in these negotiations, and one of these barriers would be to be part of the professional network that is performing the negotiations.

These considerations form the basis for the overall design approach and have informed the choice of design and the role we should perform as designers.

1. We need to enrol a collaborator to participate in the design of a solution that can change the knowledge systems and perform the seeding.
2. The design solution needs to have a capacity to be circulated amongst actors who are maintaining the knowledge system.
3. The design solutions need to be open to interpretations and should invite other actors to transform and adapt them to their own needs while maintaining the direction of transforming the knowledge structures.

An overall plan for the design phase could be drafted with the three guiding design approaches. In this project, five major design deliveries were identified and planned.

Design phase 1 – Interesting a collaborator

The first design phase focuses on identifying and interesting a collaborator in the design project. This will describe the reasonings and considerations behind identifying our collaborator. Followed by how the initial collaboration was established.

Design phase 2 – Analysing the knowledge systems

Unpacking the analysis of the knowledge systems playing a role in stabilising the regime activities that are relevant to the collaborators' work. Scoping and defining a design object.

Design phase 3 – Creating a shared design language

The processes of transforming the analysis and negotiating a shared design language with the collaborator.

Design phase 4 – Co-designing with DDC

Negotiating potential solutions with the collaborator, including planning and facilitating these.

Design phase 5 – Interpreting the knowledge into a design-solution

Retracting from the collaborative and co-creation processes to develop design solutions.

4. Design phase 1 – Interesting a collaborator

This section details the considerations and reasoning for enrolling and choosing a collaborator for the design project. Enrolling a collaborator was deemed important because they could provide insight into the knowledge systems they experience and ease our access to other actors in their network.

4.1 Identifying a suitable collaborator

As our design project is based on participatory design, we wanted to focus on a specific case, using our collaborator as a point of departure. To do so, we needed to identify and interest actors engaged in developing imaginative knowledge systems or at least open to doing it.

A participant in the design group had previously interned at DDC and knew that they had a project in the works. It is beneficial to work with a local actor, and DDC has demonstrated a willingness to experiment in their earlier projects which indicated that they would be willing to collaborate on this experiment.

Working with the knowledge system can be considered a meta-activity for many organisations' main services, which is also the case for DDC. DDC's main services are facilitating and doing design work often as experts in larger projects or as consultants, and their interest in imagination infrastructure was not staged as such. Engaging in working with the knowledge systems probably requires resources in addition to the main work and is only in few cases seen as critical. As DDC's work is often in collaboration with others, they might have experienced ways the current knowledge systems were limiting for their work, which might have sparked their interest in imagination infrastructure and thereby the embedded knowledge systems.

This led us to initiate contact with DDC. We managed to interest two contacts in DDC, who both were engaged in the potential development of imaginative knowledge systems. In negotiating the potential collaboration with DDC, they told us that they were interested in imagination infrastructure. By choosing DDC as a collaborator, we were able to treat the regime of the social sector and the emerging field of social innovation within that as a case, which is also the context in which they were exploring imagination infrastructures.

Danish Design Center

In order to be able to engage DDC and plant a seed that can be used to negotiate the transition of the dominant knowledge systems, we needed to understand both DDC's professional context in which they perform their work and their internal organisation. DDC has the objective of promoting design in our society, both in relation to evolving business and developing our society on a larger scale. On their webpage, they describe their objectives as:

"We're all about building capacity and giving the people we work with the tools and methods to pursue and realize new opportunities for sustainable growth. To the benefit of organizations, society, and the planet." – (Danish Design Center, n.d.a).

Danish Design Center (n.d.a) emphasises the need to "*think, do and act in new ways*" to create a sustainable local and global society.

As part of their objective, DDC is a self-leading organisation. They describe this to be based on the view of people. They believe people want to create change and positively impact the world. Based on this, they state that people thrive in an inclusive environment with shared responsibilities. This has led them to undergo an organisational change, to become self-leading, meaning every employee has the ability to lead themselves, removing the hierarchy between the people in the organisation. They are claiming to move away from the idea of being an organisation toward being an organism (Danish Design Center, n.d.a).

"That is why we have radically transformed our organization, doing away with middle management, teams, KPIs, and traditional hierarchies." - (Danish Design Center, n.d.b)

DDC has recently structured their activities around a mission-based framework to be a part of the change needed. This framework is inspired by Mazzucato (2018). Therefore, their work is centred around three main missions; a social mission, a green mission, and a digital mission (Danish Design Center, n.d.a). While this is a way they are structuring their activities around, it is also used in activities to create a new path in the knowledge system. They have published a mission-playbook as a tool for organisations to start work with the framework. The playbook emphasises how *"Creating impact means allowing room for the uncertainty that is an inevitable part of long-term missions."* (Danish Design Center, n.d.b, p. 6). They emphasise the need for flexibility in the governance structures and the implementation of learning as a core part

of knowledge production. "*To create impact, we must set up mechanisms that facilitate a constant flow of learning from the activities we put in place and, more importantly, have a system in place that acts on these insights*" (Danish Design Center, n.d.b, p. 6).

As a part of missions, they work with setting direction, to which they state, *"[…] setting direction is about awakening our shared imagination of what the future could be*"(Danish Design Center, n.d.b, p. 9). This is about co-creating a shared future we are striving for. They are working with building capacity and mobilising resources as a part of the activities linked to their mission-based work. They describe these activities as facilitating collaborative processes, implementing learning loops, and building the pathways to the future strived for on an operational level.

While DDC has the ambition of self-leading and structuring their activities without traditional and rigid approaches in project management, they might meet challenges in implementing the change. DDC is a foundation, which means they have a board of directors and guidelines to follow. Being structured as a foundation shapes the capabilities and the room for action. The board of directors must be enrolled in the change DDC wish to implement internally. The board members in DDC are regime actors, such as representatives from the business ministry and the Danish industrial fund. This, amongst other things, makes DDC as much a part of the regime as any other actor, even though they cultivate an image of being relatively radical. While this likely influences the knowledge DDC can produce, they might resist acknowledging it because it contradicts their image.

Our contacts role in DDC

Our two contact persons are situated in the social mission work within DDC.

Oskar Stockholm Østergaard - Design and Futures Lead at DDC

Sara Gry Striegler – Program Director at DDC

In addition to their work with the social mission, they are engaged with imaginative futures. While both Sara and Oskar are working in the same department in DDC, they have different roles in the organisation. Sara focuses on mission and a strategic perspective in her work, while Oskar facilitates processes and projects around the creation of alternative futures and has a more significant focus on creating the material and knowledge for the specific projects. As both of our contacts in DDC are working with the social mission, it was natural to scope the project to look at the knowledge systems within their field.

Sara and Oskar have already started the conversation about changing the current knowledge systems through negotiations and collaborations with foundations like Bikubenfonden and Rockwool Fonden's Intervention department. However, they are facing struggles facilitating the transition towards the goal of imagination infrastructure.

4.2 How our collaborative partner shapes the project

Working with DDC has some implications for how the project could develop. As mentioned above, DDC is, to some degree, willing to take risks in their organisation, they have for example attempted to transform the hierarchy in the organisation. In addition to being willing to take risks, the reduction of a formal hierarchy suggests that at least some parts of DDC are attuned to unconventional forms of knowledge. This indicates that they are working with knowledge systems internally and are thereby eliminating KPI's for example. We assert that by allowing the employees greater freedom to decide what projects to work on, they have recognised that the employees have knowledge about their work that was not being put to use in the more hierarchical system.

DDC is an organisation that prides itself on its ability to tackle complex challenges through design, and they employ and train expert designers to solve these challenges. This means

that DDC as a foundation probably shares a lot of our design vocabulary, methodologies and traditions. That can both be an advantage or disadvantage depending on different factors. The shared vocabulary, methodologies and traditions might ease the task of translating design between the design group and Sara and Oskar. But it could also serve as a hindrance because we assume that we have a shared understanding of design topics that often vary wildly between theory and practices, and we have only little direct knowledge about DDC's design practices. The shared profession could also insulate the collaboration from the main benefits of collaborating, an outside view. Most professions have their idiosyncrasies, and a broader, more nuanced set of perspectives might reveal a professional blind spot. There may also be a tendency to take a more patient approach when working with people from other professions because there is a shared understanding between the participants that they inhabit different worlds and therefore tend to reserve judgement of other capabilities. While there might be no qualms about judging the approach of someone from a shared profession, if judgement enters the design space, there is a risk of dismissing an approach out of hand.

5. Design phase 2

After a collaboration was in place, we could move to our second part of the design process. This phase presents two main objectives.

a. Define and analyse the regime of the social sector.
b. Analyse the current knowledge systems of the regime.

This is done to help us define our object of design and set a scope, which will allow us to continue the next phases in our design process and start to reveal ways to answer our research question: *How can we support the transformation of the current knowledge system by increasing the agency and circulation of imaginative futures, thereby reducing barriers for radical systemic change?*

This section will unpack how we investigated the regime actors and collected our data and analysis, and reflect on the approaches we used to do so.

5.1 Planning the negotiations

As we are working from the perspective of participatory design, we started the process of investigation by planning which negotiations would be relevant and how we could facilitate these.

To plan our negotiation, we used our preliminary knowledge from DDC and our initial conversation with them. We did this to set a preliminary direction for the negotiations with the actors DDC interacts with.

In our meetings with DDC, the focus was on gaining a better understanding of how they could work with implementing 'imagination infrastructure' in a way that would be beneficial for their project and their relations and society at large. To facilitate a design process around this, we needed to establish an understanding of the field our contacts and other related actors are working. This became the primary objective of our negotiation. Along with questions, "Which actors take part in the same regime as our collaborator?" "What activities are happening?" and "What shapes different outcomes and structures in the regime?"

To further scope the negotiations, we narrowed the pool of relevant actors to be anchored in our contacts' field of working with social innovation. Through our preliminary research of DDC and their activities, we got aware of actors with who they had done collaborations already and actors DDC specifically pointed out, thus, they became the starting point.

We used a snowball sampling technique in which we used the previous actor to point us to the next. Additionally, we sought actors through keywords, such as 'speculative design', 'speculative futures', 'future-oriented work', 'social innovation', 'systemic-change' on search engines to see if we were missing any etc.

Some of the actors DDC pointed us towards were closely aligned with DDC's activities in developing imaginative knowledge systems, and others were actors who had complications or challenges in former collaborations involving imaginative processes.

We did not have any further narrowing down of the actors, as we wanted a diverse group of actors involved in the project.

We planned the interview to have flexibility, allowing the actors to actively shape the negotiation while still having a structure that allowed us to set some direction in the negotiations. We, therefore, planned the interviews using the method semi-structured interviews. This gave us the option as a design group to align what negotiations we wanted before facilitating the meeting. We created a semi-structured interview guide with the main subjects we wanted to negotiate. To help us in case the negotiation stalled and allowed us to delegate the interviewing tasks, we also had a few prepared questions for each theme ready.

We wanted the actors we negotiated with not to be affected by other organisations, whether these were collaborators or competitors to DDC. We wanted to create a space for the negotiation where the actors felt comfortable pointing out challenges and positives in their current activities and structures, which shaped their work. Therefore, we planned the interviews to be with only one actor present at the time. We had considerations on whether or not we should be one or two facilitators at the interviews. The arguments being, that one facilitator creates a more equal representation, whereas us being two facilitators creates a space where we are the majority. However, having two facilitators in the negotiations allowed for a bigger division

in roles. Allowing for one being the main facilitator, with a primary focus on making the nego-tiation flow and actively listening to the actor. Whereas the sub-facilitator had the primary role of taking notes and had the option to follow up in case the main facilitator missed important aspects.

As both had its perks and challenges, we decided on a pragmatic approach, where factors such as time and the confidence of the designer's ability to facilitate a negotiation on their own would decide, so one or two facilitators facilitated the interview. While we will only invite representatives from each of the organisations, we will use them as spokesperson for the or-ganisation as an actor. We reached out to multiple actors through email, however, due to multiple different factors, it was not possible to plan interviews with all the actors we tried to interest.

Interviews were planned with the following actors:

Name of organisation	Organisation type	Role of the repre-sentative	Transcription:
Bikubenfonden	Foundation	Senior advisor and consultant in the social department	See appendix 02
Ungdombureauet	NGO	COO / CFO	See appendix 03
Akademiet for Social In-novation	NGO	Chief of Academy	See appendix 04
Foreningen Hjem til Alle	NGO	Program Manager	See appendix 05
Socialt udviklingscenter		Chief consultant	See appendix 07
VIVE	Government insti-tution	Chief Analyst	See appendix 08
Copenhagen Institute for Future Studies	NGO	Senior Researcher & Futurist	See appendix 09
Region Midtjylland	Political organisa-tion	Chief of concept de-velopment	See appendix 10

Transcription of the interviews

All interviews started with a verbal agreement of the interviews to be recorded and tran-scribed to use in our research and report. The interviews were done in either English or Dan-ish, depending on the preference of the actor and the facilitators doing it. The transcriptions have not been translated in their entirety, but the quotes used have been translated in the re-port. Additionally, some transcriptions have been edited to remove information of personal

character and other irrelevant details, or upon request from the interviewee." For an overview of the transcribed interviews refer to Appendix 00: Interview overview.

5.2 Facilitation of the semi-structured interviews

For the interviews we met with the actors at their respective offices, with the exception of one being facilitated through a videoconference, one being facilitated over a phone call and lastly, one being facilitated in a public café.

Most of the actors accepted the themes in the negotiations and did not challenge us in the premise of the negotiation. However, the interview with VIVE did end up with the actor pushing back. They accept the premise of them taking part in reproducing parts of the knowledge system. They had the perceived idea of being objective, which they did not want to challenge. This did affect the negotiation; however, it started a conversation about how other actors affect the work produced by VIVE, leaving to relevant negotiations.

Most of the actors we met with already had an established relation to each other through collaborations or other types of interactions such as funding. This was clear, as when they spoke about their activities, they often mentioned actors, who we had or were already planning to have an interview with.

The actors we interviewed were enthusiastic about creating systemic change and were very engaged in pointing out the activities in which they were working with the subject of systemic change. They also felt comfortable pointing out challenges they had faced and were open about projects that somehow failed or changed. With many of the actors, the interview succeeds in being facilitated in the shape of a conversation, allowing the invited representative to shape the negotiation. This allowed us the freedom to gain knowledge that could otherwise have been kept tacit had we kept to a specific series of questions.

5.3 Defining the regime

In order to be able to say something about knowledge systems in the regime, we first have to define the regime itself. The regime we are working with is civil society within the social sector. They serve three primary functions: as a producer of social services, as a proponent of

democracy and as advocates for vulnerable citizens (Boje, 2013). While those functions do not exhaust the functions civil society provides as a supplement to the state-sponsored activities, it exemplifies some of the services they provide. However, many of these services are not provided exclusively as services but are often constructed as public or private collaborations. The regime itself has a diverse range of actors, from public institutions, private organisations, and vulnerable groups in society.

The main function of the regime is to facilitate and support the functioning and perpetuation of the three primary services, which is not without flaws. In a report, VIVE evaluated collaborations between municipalities and civil society actors when partnering to provide services to the disabled. The report found tensions between civil society's aim to promote community and inclusion while the municipalities were focused on "solving the issue" (Espersen & Olsen, 2018). This shows that civil society and public institutions, while both working towards having positive impacts, operate under different sets of rules and aspirations.

The focus of our project is on the regime actors, who are trying to facilitate processes to change the regime of the social sector. These actors are often engaging with the idea of social innovation. Looking up the definition of social innovation, OECD states the following "*Social innovation refers to the design and implementation of new solutions that imply conceptual, process, product, or organizational change, which ultimately aim to improve the welfare and wellbeing of individuals and communities*." (OECD, n.d.).

This is also the regime DDC is situated in when they are performing their social mission. With the mission, they aim to "Rethinking our social structures and designing inclusive social solutions with human needs front and centre (Danish design Center, n.d.a).

As the actors trying to facilitate this change are already a part of the current regime, they are locked in to their practises and activities by structures in the regime. This leads them to be in a position, where the structures in the regime lock them into the current state of affairs and leave them to reproduce the patterns of the regime. This creates a contradiction in activities to change the regime and the frame around their ability to facilitate the change processes.

The focus of our design project is to engage the regime and device a process which can lead to seeding DDC ideas and tools for them to start negotiating the transformation of the dominant knowledge structures in the regime and thereby create a space for imaginative knowledge.

5.4 Scoping the analysis

The regime is complex, and understanding the details in all the structures enough to transform the entirety into an object of design would not be possible in the time we have available. The further analysis of the regime is narrowed to focus on actors from the private sector working with civil society actors addressing social issues.

DDC is already working with creating systemic change within the regime but is meeting barriers locking them into the current practises and patterns.

In addition to this, we distinguish between the public and private sectors. While both play a role in facilitating structured activities in the regime, they meet different frames and structures locking them in. Our focus will be narrowed to focus on the private sector working with social innovation to enable the change processes they are already trying to implement. This is primarily due to the complexity of governance institutions; therefore, we argue a relevance in mobilising the private sector as a point of departure. Governance institutions are often path-dependent, and due to their organisation, they are not easily changed (Dovers & Hezri, 2010).

Few of the actors in the analysis do not actively work with social innovation. Instead, their activities are defined by framing the activities of the actors working with social innovation. These are often knowledge-producing organisations, such as VIVE or Copenhagen Institute for futures.

5.5 The knowledge system's role in the regime

Our project focuses on the actors trying to promote societal change through social innovation. In our interviews with them, there was a focus on creating radical or systemic change. However, many of them meet frustrations and barriers limiting the change they were trying to implement.

Throughout the interviews, there is a focus on the ability to think outside the frames of the current regime, not just superficially fixing the flaws of the system. Another big theme is when the actors think outside the frames, how do they get the idea accepted by the regime to facilitate actions to implement the idea. This aligns with the conclusion from the literature review, pointing out that knowledge systems play a role in stabilising the regime, often leading to knowledge getting accepted, being the type that reproduces or supports the patterns of the regime.

Revealing mechanisms hindering imagination

The analysis of the knowledge systems aims to specify that the mechanisms in the knowledge structure reject imaginative knowledge. Our design object is to co-design processes to start transitioning the knowledge systems to allow for more imagination.

Through the interviews, the challenges in the knowledge systems could be tied to specific activities. This created our first design object. Mechanism, a definition, was created to allow us in the design group to be aligned in our language throughout our analysis and allow us to later communicate with DDC. Specifically, the term mechanisms is used to describe how knowledge is formatted to be applied in the current regime. The word mechanism itself stems from DDC's mission playbook, as they explain the need to implement mechanisms which creates room for learning loops (Danish Design Center, n.d.b).

By using the idea of mechanisms, we focussed on how inputs generated certain outputs in the regime. The mechanism cannot be understood as either good or bad, they are a simple reaction, which creates a result, however, it is often reproducing patterns from the regime. Therefore, the mechanisms need to be viewed as a part of the regime, where a potential change might lead to different outputs and thereby also potential trade-offs.

There are many mechanisms in the regime, however, we further scoped our analysis to focus on the mechanism, which creates explicitly hindrances in the actors' work with designing and implementing systemic change. We have tied this to their ability to imagine an alternative to the patterns and structures in the current regime.

5.6 Stabilising structures in the mechanisms

This section will present each of the mechanisms we have identified in the regime that hinders the ability for imaginative knowledge to be circulated between actors and to be anchored in work processes.

Each mechanism consists of certain inputs in the form of intentions and actions, which then is formatted with the results of activities linked to the input. Like knowledge systems, the mechanisms consist of elements, functions, and a context. The mechanisms are contextual in the sense that they exist between specific actor groups involved in specific activities. While all actors involved in the mechanism, take part in the reproductive pattern, some are more affected by the output from the mechanism than others. To understand how we can start to change mechanisms in the knowledge system, it is important to understand what structures are stabilising them. In this subsection, the mechanisms will be unfolded to elaborate on how they are stabilised.

We have categorised the actors we have interviewed into four groups to simplify the understanding during the analysis discussing the findings: passion-driven actors, relation-creating actors, reality-framing actors and direction-setting actors.

Passion-driven actors	Relation-creating actors	Reality-framing actors	Direction-setting actors
Ungdomsbureauet

Hjem til alle

SUS | Akademiet of Social Innovation | Copenhagen Institute for Future Studies

VIVE | Bikubenfonden |

 Figure 1Showing the groups of actors and who are a part of them.

Project governance models

In this mechanism, knowledge is transformed through a project governance model to be applicable in specific context. This is done with the perspective of arguing for the allocation of resources and the use of those resources.

Project governance models are a part of the funding processes. This mechanism is directly tied to knowledge production, as the project governance models format knowledge through a rigid plan for applying or generating new knowledge.

Project governance models are the planning of the projects, experiments and research the actors want funding to facilitate. These are considered rigid in their shape, not allowing for the flexibility of changing the hypothesis, actor-landscape, time-plan and more when first they are established. This sets a narrow frame for the actors to work with facilitating imaginative processes.

There often is a focus on minimising the risk of the invested funds. This leads to the creation of project governance plans based on planning how the allocated funds are to be used. It also minimises the room for imagination, as the room of possibility is narrowed down to fit the plan. These plans restrict the possibility to change as the project evolves with new knowledge.

"There is clearly barrier to gaining capital to carry out innovative experiments, you would have to, to a very large extent determine activities, objectives and everything possible in advance, there is a built-in paradox in here, and sometimes we would like to be able to get some funds for a more exploratory process" (See Appendix 07: Chief consultant in SUS, 00:26:41).

The elements in the mechanism consist of:
- Foundations as an institution
- Project-organisation (NGO or other)
- The value of proving knowledge before applied

The function of the mechanism is both creating a way to validate the knowledge created, plan the generation of knowledge and how to apply the knowledge. Often the context of this mechanism will be operational.

Specifically, this mechanism is structured to ensure the project to produce a certain knowledge or apply specific knowledge to solve a specific problem. Having a rigid governance model, can be efficient when it has to be evaluated if the project or experimentation is going to plan and to evaluate the outcome. It also allows the funding part, from the beginning to showcase, how their resources are to be allocated.

"I think it is an exciting problem that on the one hand you have a number of projects that are dependent on fund-related support and on the other hand there are some funds that must be able to legitimize to a board that money has been given to this project and there is laid out a really good plan where you can say that there may be a great need to be able to let fund-financed support to be able to explore some of the more complex issues in a more dynamic way" (Appendix 07: Chief consultant in SUS, 00:09:01).

This mechanism often creates a tension between the actors in the passion-driven group and the direction-setting group. As the passion-driven group must adapt to the current knowledge systems. However, a shift is slowly emerging in the group of direction setting actors, where they are more open to allocating funds with a more experimental process.

KPI's

While the KPI's can be added to a project plan, however, they are a mechanism by themselves. This is due to the ability to have rigid project plan not leading to the need to deliver certain goals. KPI's formats knowledge to become applicable through a range of indicators.

KPI's structure projects around a set of indicators, which need to be fulfilled by the project to claim it as a success. Often these are measurable and already reproducing patterns from the current regime. This minimises the frames for experimentation and learning to be anchored in a set direction. KPI's have a hindering effect on imagination, as it can be hard to predict indicators for experimentations and open-ended projects.

However, a shift is emerging, where the direction-setting actors are moving their focus from being rigid in choosing specific goals for projects to moving towards a focus on projects working towards their vision.

"[…] they're softening up on the rigidity of what kind of donations can contribute to the vision they want to realise? So, I think they're opening up new avenues or ways of justifying to themselves that what they're doing is working towards the goal that they've established. I don't think they're dismantling their obligations or goals. But I just think they're working differently with realizing them compared to before. And that is closer partnerships, for example, where it's much more dialogue based and systemic change" (Appendix 03: Organizational director in Ungdomsbureauet, 00:30:58).

Short term and measurable goals

Often, the funding is allocated to implement a specific value within a specific timeframe. This mechanism formats knowledge to be applicable by setting a set of timeframes to guide the application of knowledge. This stops imaginative processes focussing on transitions, as the results of the activities can be delayed.

Short term goals are a way to allocate funding. This often ties the production of value to be more important if it can be proved within a short time frame. This can be a challenge when working with wicked problems. Often there can be a delay between actions with wicked problems and the visible result of the action. This can distrust the narrative around the actions taken and the actors working with the wicked problem. Therefore, short term and measurable goals are often valued as more important (Bushell et al., 2017).

As soon as the goal is reached the funding is not extended further.
"we always try to make it continuous, but within our field that can also be a challenge because when a lot of your funding is from private funds, they often do time constraint projects when it's like a donation of two years or whatever. And I mean, private funds are always interested in kind of anchoring those projects so they can live on. How can they become part of whatever network that project is rooted in? But a lot of the times that's not always realistic within like one donation from a private fund, because a lot of the times you just have to prioritise the funds you get to actually doing project related activities here in the now. So the work with establishing the knowledge that comes from those projects long term tends to get deprioritized in relation to other work." (Appendix 03**:** Organizational director in Ungdomsbureauet, 00:16:32).

This minimises the ability to circulate imagination. It would depend on the actors to be given the resources to translate learnings from their project (local level) into general learnings that can be used on an infrastructure level.

This mechanism is further stabilised by power structures, as some actors depend on funding to survive. They do not have the resources to continue the knowledge production after the funding is terminated. There is a clear tension, as some foundations partaking in the actor group of direction setting are changing their perspective.

"Whereas what we are trying to support in the foundation is more like what kind of experiments can make us smarter on desired futures. So an experiment is more like a means to becoming smarter or sparking social imagination than implementing something." (Appendix 02: Senior advisor in Bikubenfonden, 00:21:16)

Bikubenfonden as an actor has moved the focus towards learning as a practice, but they are still often re-producing the current knowledge system, with the duration of their funding e.g. they are partly funding Akademiet for Social Innovation, for three years at a time. This is also the case for other actors in the direction-setting group, who set long-term visions but still allocate resources for shorter periods at a time or for specific goals.

Objective knowledge

This mechanism describes the role of a positivist approach in the regime. Knowledge is formatted to be applicable by it being defined as objective knowledge. This is often in the argument of it being a knowledge which is generally applicable or by the knowledge being produced by an actor perceived as an object.

In the current regime, certain types of knowledge are viewed as more precise and acknowledged as the foundation for many of the projects or direction set by actors. This knowledge is often produced by organisations claiming to be objective, with positivist approaches to knowledge production. This is contradicting in relation to actors working with social innovation putting an emphasis on user-involvement in their projects. Objective knowledge is a mechanism where knowledge is formatted through a positivist approach to broadly applicable in the knowledge system.

In the current knowledge system, the actor-group reality-framing has many agencies. This stems from how the other actors in the system widely accept their production of knowledge. It shapes many of the practices and is often used by other actors to translate the agency from the reality-framers into their own projects. The direction-setting actors translate the products from the reality-framers into agency to support their vision and set frames for further knowledge production. The passion-driven actors use the perceived agency from the reality framers to argue for funding.

Sometimes actors in the system collaborate or pay the reality framers to produce knowledge within a certain area. While the reality-framers perceive themselves as completely objective, using scientific methods, their research is shaped by many of the mechanisms identified in the knowledge system. Where the transferral of agency reproduces the power structures and the acceptance of a specific type of knowledge is valuable.

The actors transform the knowledge into agency, which they use to set a direction or gain funding to conduct a project.

"we just distinguish between partners who can act and partners who can help them the partners who can act to act smartly. So we engage with knowledge organizations a lot because they have enough knowledge that the actors, the acting partners should take into consideration when designing new experiments." (Appendix 03 Organizational director in Ungdomsbureauet, 00:50:21).

In addition to this, there is a focus on creating knowledge accepted by the current system. In CIFS, they are trying to see past what might seem radical. However, they often only do this while brainstorming, whereas they then transform it into something acceptable and realistic.

This will often lead to the re-production of patterns from the regime in the direction and project. It also leads to knowledge production to be an activity valued more by some actors than others. Minimising the room for exploring ideas from a more diverse perspective.

The lack of inclusiveness

This mechanism describes how knowledge is formatted to be applied through the involvement of actors with agency leaving out actors who are not perceived to have the same power to act on knowledge.

In relation to the mechanism objective knowledge, the lack of inclusion is bound to the idea of some knowledge being more valuable. However, here the knowledge formatted through user-involvement in a reductionist approach. Not directly involving a diverse group of actors in the processes, but only doing user-surveys or inviting them in for storytelling sessions. This is also tied up to the focus on inviting in actors who are anticipated to have the power to apply knowledge. Often the perspective is mobilising people in high leading positions to work

with designing or implementing solutions based on interactions with the people impacted by the challenges from the current regime.

The relation-based actors have established themselves around the concept of gaining agency to facilitate change. In our interviews, there are two clear examples of this. Foreningen Hjem til alle, who is a network of actors in leading positions in organisations evolving around the problem of youth homelessness and organisations that see themselves as taking part in the solution. The other actor, Akademiet for Social Innovation, is also based around people in high-leading positions. However, the perspective is different, as they are focussing on a more abstract end goal of accelerating and facilitating systemic change in social innovation. For both types of actors, organising themselves to gain agency leads to obstacles.

"There has been a very clear notion that one could activate the organisations, that is, that the leaders would set the framework, and then they would in fact throw their employees into some working groups that could work with something. So we started, when we start the academy in the spring of 2019, to establish some innovation groups, the idea was that the idea was that it would happen automatically that they would pull their employees in instead of themselves, because they themselves are too busy. And it did not happen, and it is not very strange that it did not happen." (Appendix 04: Chief of Academy in Akademiet for Social Innovation, 00:05:23).

"The downside of it is that sometimes anything can happen when you're a director. Everything is possible and trickling down the system and getting into practise can sometimes be a long way. But then we're trying to work on how we can then engage other levels of the organisation in a different way. But when we're talking partners, it's mainly directors, CEO level represented." (Appendix 05: Program Director in Hjem til alle Alliancen, 00:26:03).

This clarifies that the agency from high-leading positions does not translate directly into structures that allow to implement change.

In the interview with SUS, the chief consultant emphasised the importance of including the actors who are continuing the projects afterwards from the start of the projects.

"What we at least do is that we become more and more skilled at thinking from the start, how to work to get these things anchored when we start. What are some prerequisites that from the very beginning do, this can continue when the project period ends" (Appendix 07: Chief consultant in SUS, 00:17:29).

In that way they have a better understanding of the projects, and they gain the ability to take part in transforming the knowledge into something they can apply and circulate afterwards.

This mechanism leads to imagination beginning an untapped resource many actor possess and creates the idea that imagination is something you are born with instead of seeing imagination as a tool and resource.

5.7 The power structures

Throughout the analysis, some power structures were more prominent in their effect on stabilising the mechanisms in the knowledge systems. This also created a clear tension between the some of the actor groups.

On having a particular impact, is the relation between the foundations and the NGO's depending on funding. Not only to conduct projects and experiments, but they depend on funding to survive. As the foundations have the power to allocate resources, they decide which organisation survives. The NGO's, therefore, have to fit into the structures set by the funds. This leads to some NGO's adapting to fit into the frames set by the funds.

In the interviews, it also became evident that it is also the foundations that in many ways, get to dictate and set the narrative. They do this based on knowledge produced either by consultancies, analysis organisations, or similar organisations focusing on knowledge production. The foundations then shape a vision based on their perception of themselves and the knowledge produced. They have a power position where others might change or adapt their imaginaries of the future to fit into the narrative of the foundations.

Another power structure is the perceived agency of some organisations. VIVE is a renowned organisation doing analysis work. They are claiming to be objective, but they are still faced with KPI's and goals from their clients. Their work is translated into the narrative transferring the agency VIVE have, into the vision from the Funds or the project description from actors

seeking funding. VIVE can be seen as part of the formalised knowledge systems we have in society, their approach to knowledge and production of knowledge is widely used and accepted by public to private actors. Fazey et al. (2020) state that the current regime often accepts knowledge which reproduces the regime's patterns. This can be seen as the case here as well.

5.8 Reflection on the interviews

The interviews represent the vast majority of the data used in the analysis of the regime of the social sector and the knowledge systems within it. As they create the foundation of the analysis, a reflection has to be done in regard to the number of actors interviewed. The regime does not consist only of the nine actors with whom interviews were facilitated. This can lead to some part of the regime being underrepresented or left out of the final analysis. However, the data collection gives insight into relevant perspectives, activities, and beliefs present in the regime. Therefore, allowing us to work with the parts of the regime and knowledge systems present in the interviews. And the option for DDC to continue investigating the knowledge systems is still open to them.

Many of the actors in the interviews are very aligned in their statements. While this could point to the challenges being broadly acknowledged as a hindrance for imagination, this could also be the effect of a less diverse group of actors. As stated, many mentioned each other as former collaborative partners, therefore already being interlinked. It could be that the actors interviewed are a faction of the regime and do not represent the regime as a whole.

While we do need to make some general assumptions based on the data collection, the small number of actors affects the outcome of these. We cannot state for a certainty that the challenges Bikubenfonden is facing will be the same as another foundation. We try to be aware of this in our analysis and acknowledge this as being a small part of the regime in which we are doing our project.

While the group of actors, to some extent, does have a tendency to be less diverse, there are also significant differences between some. Copenhagen Institute for Future Studies and VIVE are examples of two actors not actively trying to change the current knowledge systems. In

the interviews with Copenhagen Institute for Futures and VIVE, a discontent with the knowledge systems is not as explicit. Other actors are more verbal about actively wanting to create change to the current processes, this is actors such as Akademiet for Social Innovation.

5.9 Re-framing the negotiation

As part of the negotiation, we as designers have to re-frame the knowledge from the negotiation to facilitate new negotiations later in the project. Before we can plan the next negotiation, we need to re-frame the knowledge. The transcriptions of the interviews were processed through coding. We used affinity as the main concept for our approach. The idea of affinity is to remove our pre-existing ideas, assumptions and beliefs, by not trying to get the data to fit into existing boxes set by us. Rather affinity builds on the idea that the data should be grouped by matching it to each other. First, after the groups are created, the design group transforms it into a thematic present in the data. This should minimise the bias and pre-existing ideas from the design group, giving them the option to see new perspectives on their data. This also allows for thorough knowledge sharing within the design group, as it is a collective process. It takes one statement at a time and discusses which other statements it fits with. In addition, it is a re-iterative process, as the groups are not set before the processing is done. This entails explicitly re-group data as needed throughout the work with the affinity diagram.

5.10 Sub-conclusion of Design 2

Through the facilitation of interviews and the processing of the data, we managed to scope our design process. This led to a focus on actors in the regime of the social sector, more specifically the actors situated in social innovation. These are actors wishing to create systemic change but are locked into the current regime. Knowledge systems got defined as the object of design, with the role it played in the challenges identified in the interviews. This led the design group to further research which specific activities were linked to the hindrances created by the current knowledge systems. To do this, mechanism was introduced as a design term. Letting the design group focus on how knowledge through specific activities was formatted to be applicable.

This led to the conclusion of mechanisms being identified as potential areas for change. To facilitate a process of co-designing, the mechanism was set in connection with structures stabilising them. This allowed for the understanding of how different actors have different positions of power in the current knowledge system. Certain groups of actors have more power to enforce the current knowledge practices, whereas other actors are reproducing the current patterns by following the set practices.

With the mechanism defined as a design term, it created a foundation for us to move into establishing a shared design language with our collaborator.

6. Design 3: Creating a shared language

In the former design phase, we created an understanding of the mechanisms and power structures which stabilise the current knowledge system. This allowed us to gain an understanding of where there are domains of action, which can be changed to allow for imagination to be accepted as a knowledge product in the system.

We scheduled a meeting with our contact in DDC to conduct a workshop with them concerning the translation of our findings from the analysis into a shared design language with DDC. With our design approach being a part of the participatory design tradition, we had two main goals with the negotiations. First, we wanted to create a shared language, to allow us to move past the language and knowledge barriers there might be. After having created a shared syntax, we wanted to understand better the practices in DDC and the perspective on the project.

This section will discuss the preparation, facilitation, results, and reflection using the negotiation space framework from Pedersen (2020).

6.1 Preparing and planning of the negotiation space

Deciding on the negotiation

We decided to facilitate the negotiation space through a workshop with no designated facilitator to keep the negotiation open and organic. First, we as designers had to decide on the negotiation of creating a shared language and obtaining more information about DDC and how to steer the conversation in the workshop. Before deciding what to put up for negotiation, we researched DDC.

We used the resources available through their website, their playbook and articles we could find written about their work. This gave us a limited insight into who DDC is as an actor. It did give us some sense of the field of expertise in DDC and the approaches and frameworks they use in their work. We used this as our starting point for the negotiation to create a shared language and understanding. This included negotiating knowledge from the analysis to DDC, observing their reaction, and gaining their perspective on the analysis. We also wanted the

transferral of tacit knowledge our contact persons had about DDC as an entity and their role in the knowledge systems.

We ended with three main purposes for the negotiation:

1. To give them an understanding of the knowledge found in the analysis. Presenting our knowledge position.

2. To acquire more knowledge about DDC and their social mission, as they are presenting their knowledge. To understand practices in DDC and their role in the identified mechanisms allowing us to gain their perspective on the knowledge systems.

3. To align our view of the knowledge systems and develop a shared understanding and design language moving forward in the project.

Based on our preliminary research of DDC, we ideated on how the negotiation could be staged.

Designing boundary objects to help the facilitation of the first workshop

First, we wanted to design a boundary object that represented the knowledge system as an actionable design object, transferring the knowledge about imagination and path dependencies in the current knowledge system from actors we met with. Delivering the knowledge of the challenges in the current knowledge system and the role the different actors played in stabilising specific mechanisms. We wanted to use prepared questions to start a reflective conversation about the identified structures to support this.
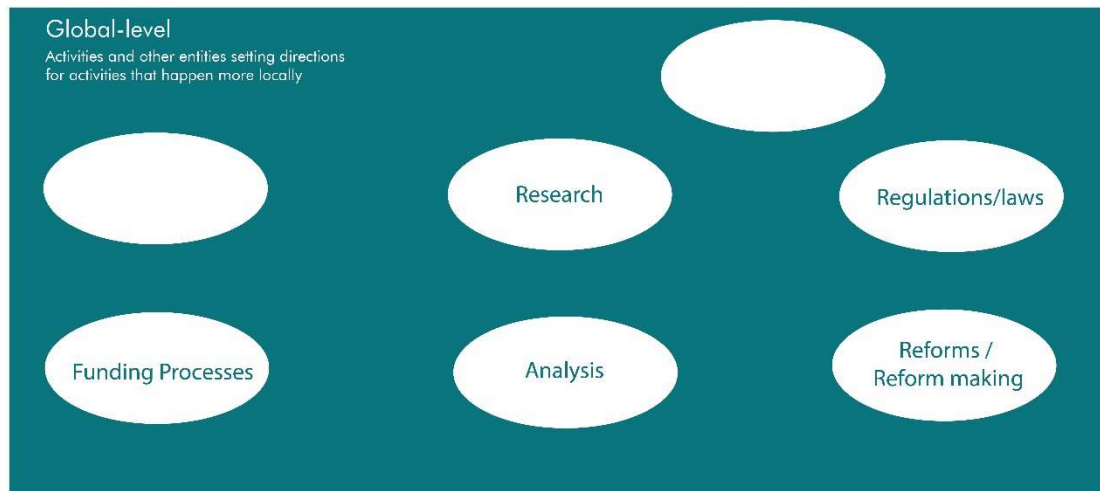
In the workshop, we wanted to include an ideation process, where our contact persons could express their opinions, concerns, and ideas regarding what imagination infrastructure could be. This was based on our first conversation with our contact, where they had a hard time articulating exactly what they wanted to gain from the imagination infrastructure. We assumed our contact persons were still figuring out why they wanted to promote imagination within the established knowledge system. Based on the assumption, we thought of using our own version of the Golden Circle model, which depicts three growing circles on top of each other

labelled with what, how and why. We wanted to use it not only for our contact persons to become more explicit in their own reflection but also for us to understand their view on imagination infrastructure better. The model allowed us to go from the reasons (the ideology DDC wants and the core issue) to how mechanisms need to be different and lastly the value and products they wanted the new system to produce.

We decided against using multiple boundary objects during the workshop and came up with the final concept of transforming the main findings of our research into one boundary object that serves as a game board for our contact persons to interact with. The boundary object would then represent our view of the knowledge system compressed into an actional design object. The game board depicted our own version of a niche management model consisting of two layers, the global level, where strategic activities occur, and the local level, where operative activities take place. In between these two layers, we displayed the tensions and barriers we discovered, hindering the system from working together and using imagination more radically (see Figur 2).
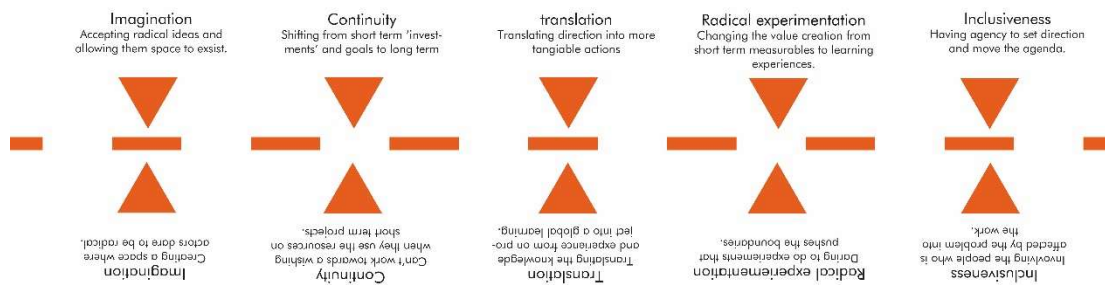
Mapping
Mapping of the activities happening on a global level and on a more local level and how they affect eachother.

Global-level
Activities and other entities setting directions
for activities that happen more locally

Research

Regulations/laws

Funding Processes

Analysis

Reforms /
Reform making

Tensions
Issues that creates a potential hurdle
between the global and local level.

Imagination	Continuity	translation	Radical experimentation	Inclusiveness
Accepting radical ideas and allowing them space to exsist.	Shifting from short term 'investments' and goals to long term	Translating direction into more tangible actions	Changing the value creation from short term measurables to learning experiences.	Having agency to set direction and move the agenda.

Imagination
Creating a space where
actors dare to be radical.

Continuity
Can't work towards a wishing
when they use the resources on
short term projects.

Translation
Translating the knowegde
and experiance from on pro-
ject into a global learning.

Radical experimentation
Daring to do experiements that
pushes the boundaries.

Inclusiveness
Involving the people who is
affected by the problem into
the work.

Local-level
Activities happening on a local level.

Comunity/alliance building

Learning activities

Small scale experiments

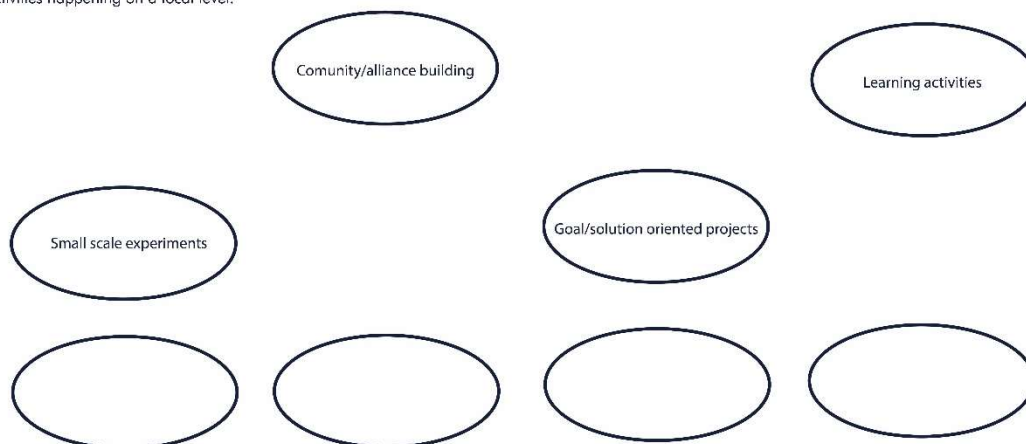Goal/solution oriented projects

Figure 2 Game board planned as part of the facilitation of our first workshop with DDC. Based on the Niche management model.

6.2 The facilitation of the workshop

The workshop was conducted in person at the premises of DDC with a duration of two hours. We started the workshop by getting verbal consent to record and transcribe the workshop (See Appendix 06: DDC workshop 1). After a brief introduction to the workshop's agenda and us as a thesis group, the negotiation was facilitated by laying out and presenting the findings displayed on the game board. The participants were handed pens and post-its to engage with the game board by writing on it or voicing their thoughts verbally. The game board can be described as a boundary object, as it represented our matter of concern for this workshop, and it was transformed by interacting with it and placing post-its.

In agreement about the complex nature of the knowledge system

Our contact persons from DDC showed their motivation towards pushing the concept of imagination infrastructure, but it was apparent that they were representing a small faction of DDC itself, and they were not entirely sure how best to approach action towards imagination infrastructure both internally as well as externally. During the conversation about the knowledge system and our presented findings, it became clear that our contact persons were very much aware of the complex nature of the knowledge system and the problem areas displayed as barriers and tensions. They recognised some of the tensions and verified their existence by realising how these tensions influenced their work practices. One of the contact persons stated how they themselves are "impacted by short term goals" (Appendix 11: DDC workshop 2 at 00:58:32) in the form of struggles with KPI's, recognising the power structures enforced by the foundations.

Boundary object causing mental block for DDC

While we did gain a deeper insight about DDC's ways of working and manage to facilitate some of the desired negotiations, the boundary object presented problems in the ability to transfer knowledge from our analysis in a manner that DDC accepted. The negotiation struggled to move passed the specific choice of wording used on the boundary object. While we tried to overcome this struggle by replacing, changing, and removing specific wordings with the material available, the negotiation circulated back to it again. The participants from DDC connected the wording to the visual communication in the boundary object. We had used a

model to simplify the knowledge from the analysis. This left the participants with the interpretation that we, as the design group, had an idea of the reality of the knowledge systems to be simplistic and clearly divided into different levels. This led to a negotiation around how the elements communicated through the boundary object were all interlinked. For the purpose of facilitating the boundary object, we distinguished between an infrastructure level and a project level. Our assumption was that this presentation would allow us to focus on the tensions in between the two levels. In order to negotiate the mechanisms at play in the knowledge system. The visual presentation of the knowledge systems compressed details into a structured, summarized model missed its point and, in the end, this presented a mental block for DDC to communicate their potential role in the infrastructure.

Figure 3 Picture from the facilitation of the first workshop with our collaborators.

Deviation attempts

Therefore, we had to deviate away from the game board and refer back to some of the boundary objects we initially thought about using during the preparation of the workshop. By drawing the Why, How, and What model on a piece of paper, we tried to facilitate the negotiation more flexibly. When that did not help, we tried to move away from a structure altogether by simply drawing an abstract representation of the fluidity of the knowledge structures present in the regime. In these drawings we used the expressions and ideas from DDC. This led to an open conversation only facilitated by some questions in regard to imagination infrastructure and their potential role.

Our contact persons stated a wish to create a better connection between the actors in the knowledge system as a potential overall goal, getting rid of the barriers in the system and facilitating a stronger collaboration. However, the conversation also led to conflicting opinions expressed by the contact persons regarding how the transition could and should be facilitated. On the one hand, they claimed they wanted to create radical change leading to a new system. On the other hand, they talked about breaking down the barriers working with incremental change in the system, adjusting it to allow for more imagination. This contrast became clear that throughout the whole conversation, there was a fear that working with the existing barriers and mechanisms would lead to a reproduction of the current knowledge system. They kept stating how radical change took time and a lot of work, acknowledging how we need to work with the action domains identified, while not accepting our view of the knowledge system, as they did not see it as being a radical change at present. Oskar stated: "I would love for the idea of Imagination infrastructure to be incompatible with the system that we have today, so it enforces the idea that something needs to change for things to flourish" and immediately continued with: "And I feel like we're trying to see how can we work within what is instead of going with the more radical approach of trying to see what would it take to make that flourish and not be so caught up in the existing structure?" (Appendix 11: DDC workshop 2 at 01:08:40)

Concerning the position of DDC in relation to the knowledge system and their potential role in an imagination infrastructure, they both agreed on not being "very keen on being the centre" (Appendix 11: DDC workshop 2 at 01:18:26) and being responsible for its maintenance,

rather imagination infrastructure needed to be "something that is sustainable on its own without us" (Appendix 11: DDC workshop 2 at 01:21:50). They claimed that DDC could see themselves using their power to empower others and supporting existing networks of actors to release creative energy and build infrastructures to connect.

Figure 4 Picture from the facilitation of the first workshop. Showing the faciliator and collaboator engaging with the game board.

6.3 Reflection after first workshop

We experienced some unexpected challenges with the prepared boundary object and the facilitation of the workshop, leading to an uncomfortable but necessary process of renegotiation. This unexpected challenge led to a broader negotiation about the shared language in the project, guiding us to take on a stronger facilitation role for the next workshop, if we wanted to transfer knowledge in a way they would accept. The workshop confirmed the course of the project, with a focus on the challenges created by the mechanisms in the current knowledge system. This allowed us to proceed with the design process and gave us a direction to move in.

The contradictions in what the participants expressed, showed a need to further negotiate the strategic role of DDC. While their views on what are obstacles and needs to change in the current system are quite clear, they have a less clear idea of what they want to replace it with. As it was stated in the workshop, "we don't have the clear image of what exactly it looks like, but we have some kind of values that underpin our interest in creating that" (Appendix 11: DDC workshop 2 at 01:39:16). Therefore, we as designers see a possibility of helping DDC clarify what role they could take on and how they could shape and transform the knowledge system. It also shed light on the position of our contact persons, as only representing a faction of DDC that is trying to create change internally. This could make it hard for our contact persons to see the potential roles for DDC in the future, as they are basing the negotiation with us on their own interests for the time being.

As part of the planning, the workshop was scheduled to be facilitated in the office space of DDC. This was due to the convenience of our collaborator, allowing for them to use more time on the workshop, as they did not have to plan for transportation time. At the same time, this also allowed us to facilitate the workshop in a private room, setting the physical frame of the workshop to present the 'boundary object' to our contact in DDC. However, although it was pleasant to be able to hold the workshop in person at DDC's office space, being able to set the stage and transfer control over the negotiation would have been preferred, but we did not have adequate facilities at the university.

6.4 Sub-conclusion of Design 3

We managed to negotiate a shared language with our collaborator with the workshop, which we will use to shape further negotiations. The workshop created the basis for a shared language, as our contact persons rejected our initial communication of the knowledge systems and forced us into a negotiation around our collective understanding of the project. This led us to gain insights into the language of DDC, both written, spoken, and visual.

As part of the workshop, our role as designers in this project got challenged, forcing us to re-evaluate and specify it. This happened as our understanding of the challenges DDC is facing in the current knowledge system, why they seek to change them and for whom they want to change them deepened. They do not have the time and resources to investigate the knowledge system and identify areas for change affecting their ability to act on their incentive to change. They have a hard time clarifying and communicating the value of the change. Therefore, they are seeking knowledge and objects, which they can use as leverage in negotiating the change in knowledge systems both internally and externally.

The workshop showed that our contact persons within DDC see imagination infrastructure to have a certain fluidity to it. They did not have an idea of the shape the final solution should take. However, instead of seeing our role as designers, to design the final solution for them, our focus is on designing objects that can further the conversations and negotiations around the transitioning of the current knowledge systems. Therefore, DDC needs to be provided with a vocabulary about the knowledge system that provides them with agency.

7. Design 4: Final co-design workshop with DDC

A few weeks after the first workshop with our collaborator, DDC, we held the second and final workshop. The goal was to facilitate a co-design process with them to develop tools and methods to engage the transformation of the knowledge infrastructure. The workshop was based on the negotiation space framework. This section describes and discusses how we continued our design process based on our former work. The final workshop in our design process will be described as we reflect and discuss the planning, facilitation, and results of it. This will be continued with how we then interpreted and transformed the results from the final workshop into our design objects.

7.1 Preparation and planning of the co-designing with DDC

Based on our experience from the first workshop with our contact persons from DDC, we planned the second workshop to be built on the defined shared language from the first workshop. Therefore, we used facilitation frameworks our contact persons were familiar working with, such as action plan and prioritisation game boards, to ensure their ability to put them at ease and ensure a more active engagement in the negotiation. We assumed this would lead to the acceptance of our concept, encourage more collaborative effort and make the facilitation of the workshop more smoothly. In the first workshop, there was no designated facilitator. We agreed on who was in charge of different roles throughout the workshop for this workshop. This not only allowed us to prepare more thoroughly, but it also allowed for a faster change in course in the workshop if needed.

Deciding on the negotiation

We wanted to set the stage, to move the participants into the mindset of imagination infrastructure and facilitating a space for creativity. To do so, we first needed to ensure we had established a shared level of understanding of the knowledge systems. In preparation for the second and final workshop, we ideated about inscribing multiple different boundary objects in the attempt to avoid a fixation on the visual presentation of the knowledge and direct the negotiation towards the communication and translation of it. We also created an agenda, to attribute more control of the movement of the workshop to us. By sending this beforehand, we took charge of the time and enabled us to decide when to move to the next exercise during the negotiation.

Preparation and presentation of the boundary objects for the workshop

We, therefore, divided the workshop into different parts. The first part aimed to create a diagnosis of the knowledge system of the regime. This was done by presenting the main findings from our analysis, this time using a different language to communicate it. Here the negotiation was focused on the challenges and action domains identified. To avoid focusing on debating information we knew they were seeking, we started the presentation with the knowledge our contact persons in earlier conversations had asked for. This allowed us to regain a better connection to our contact persons after the last workshop had created an impression of misunderstandings.

The information from the actors and how they perceived themselves in the knowledge system network, was particularly requested by our contact within DDC. We converted this into cards, where the actors were divided into groups. Simplifying the knowledge enough to move the focus onto the challenges and positions created by the mechanisms.
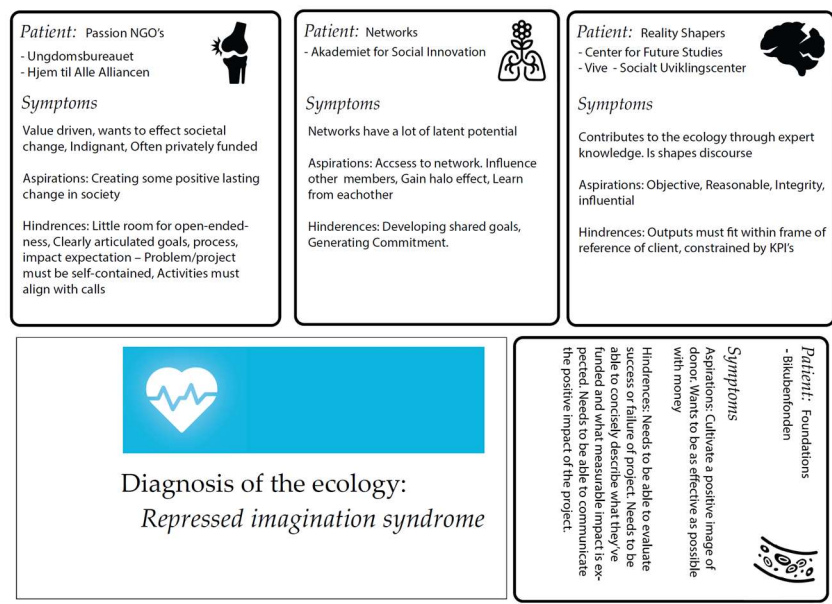

Figure 5 Diagnosis cards used at the second workshop.

The cards displayed the results from the analysis as a diagnosis (see figure 5), using metaphors from the medical field to visualise the knowledge system as an organism and hindrances in the system as symptoms. Presented on the cards were the actors who were part of

the group, their aspirations and their hindrances in terms of utilizing the potential of imagination. The aim of using these actor cards was for our contact persons to learn more about the actors and envision how they could approach them in potential collaborations.

The second part of the workshop was designed to facilitate a reflection on how the ideal conditions for imagination and radical thinking would look like in the new knowledge structures. To support this, we got them to consider the term imagination infrastructure and envision a future that would allow imagination to take on a more prominent role in the knowledge systems.

The boundary objects consisted of a game board for the negotiation, which displayed an empty thought bubble, encouraging the participants to voice their unconstrained thoughts (see figure 6). To create a negotiation of knowledge between us and our contact persons from DDC, it was planned for the facilitator to actively take part in the exercise. This would allow for the design group to apply knowledge identified during the previous design processes.
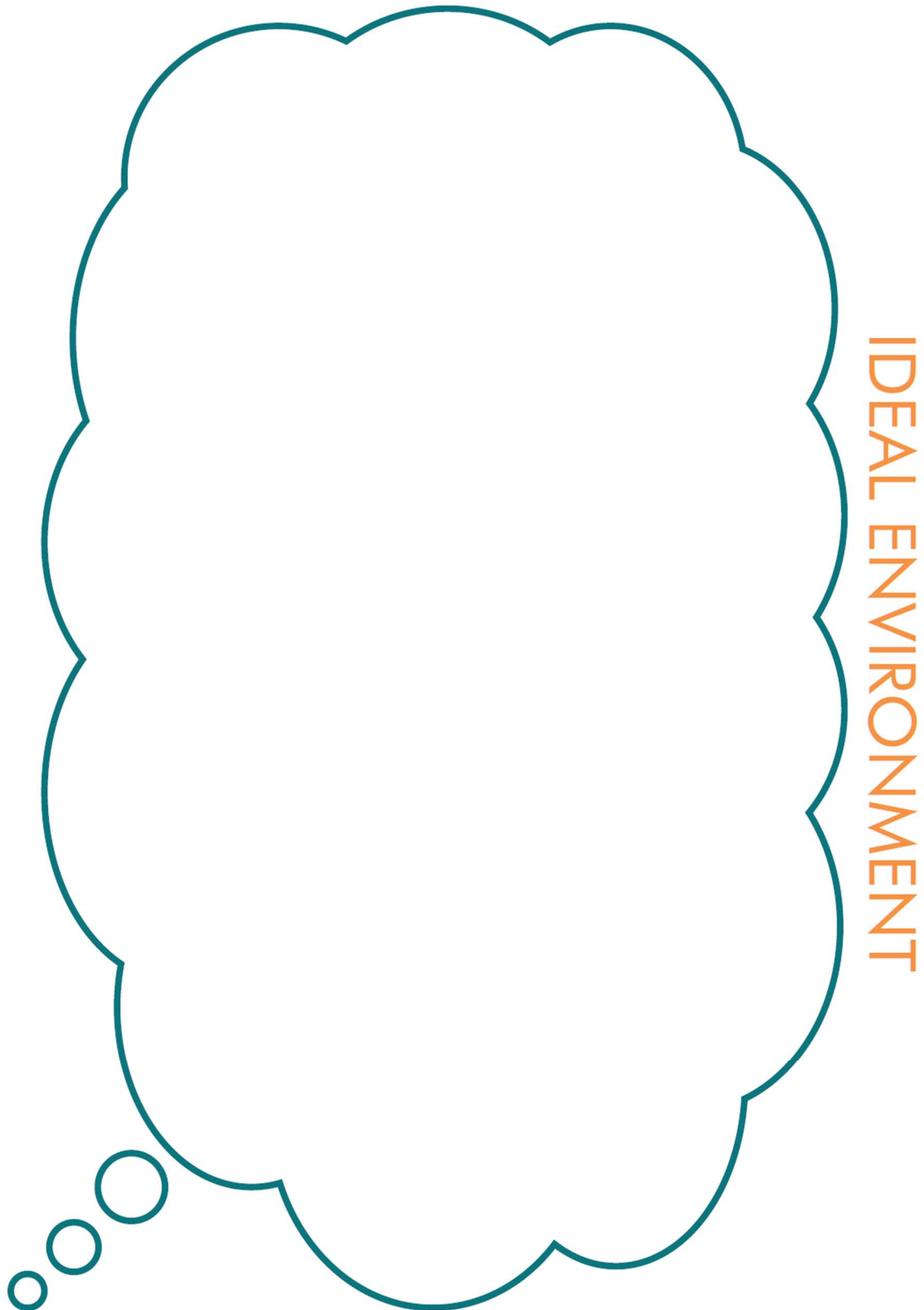
IDEAL ENVIRONMENT

Figure 6 The ideal enviroment, gameboard designed as part of the seccond workshop with Danish Design Center.

The third part of the workshop was planned to use back-casting as a method to move from the ideal environment of imagination infrastructure to establish areas where actions could be taken. To allow our contact persons to go into detail about designing tangible actions that could be started to initiate the transition, we added an extra step. We created a space between present and future (see figure 7).
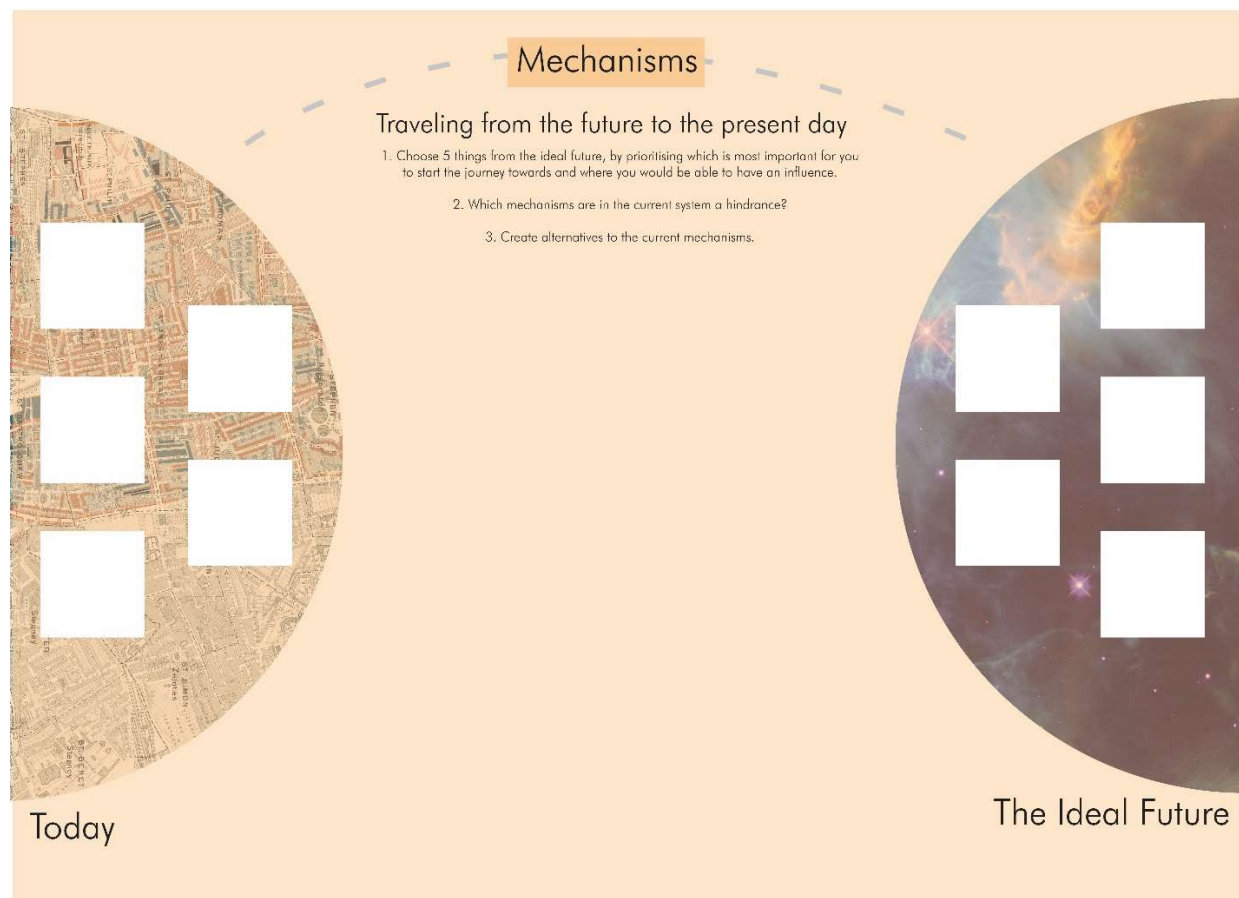

Figure 7 The developed board to facilitate the negotiation in the in between space of present time and the future.

We planned for the current mechanisms to initiate reflections shaping alternatives. While we had created an analysis identifying mechanisms in the knowledge systems, which hindered imagination, this part was planned to allow the participants to actively identify mechanisms they have encountered in their work with social innovation and imaginary futures in the current regime. We had our identified mechanisms prepared and hand-written to initiate the conversation with our contact persons and to be able to work as a buffer in case they could

not identify mechanisms on their own. We planned for a reflection on what created hindrance in the current mechanism to identify what could be changed to reduce or remove the hindrance.
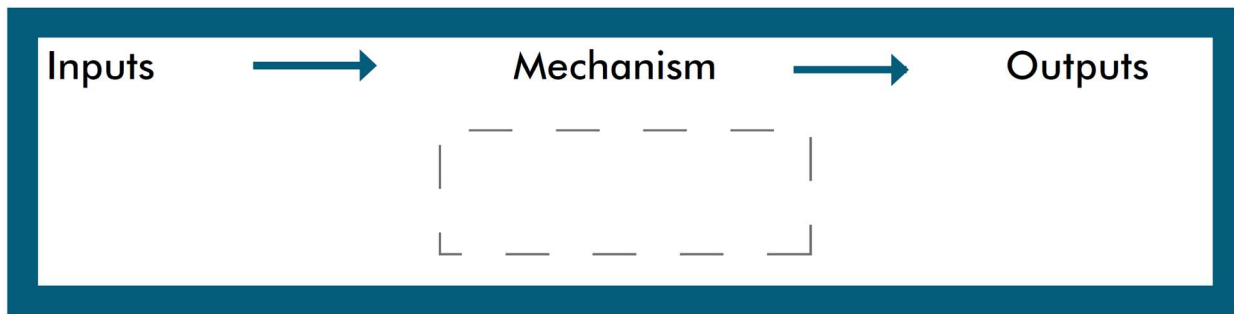

Figure 8 The cards used in the workshop to facilitate a negotiation around mechanisms.

The last part of the workshop was planned to negotiate an action plan. A boundary object was designed, with a game board depicting an empty action plan (see figure 9). The game board was designed to prioritise the mechanisms they wanted to work with. This was due to a time limit, therefore, ruling out the option of working with all the mechanisms at once. The exercise was then to break down the mechanisms into actions which DDC could take. Lastly, the actions were to be prioritised by short term, mid term and long term, to give an overview of when they could potentially start different actions.
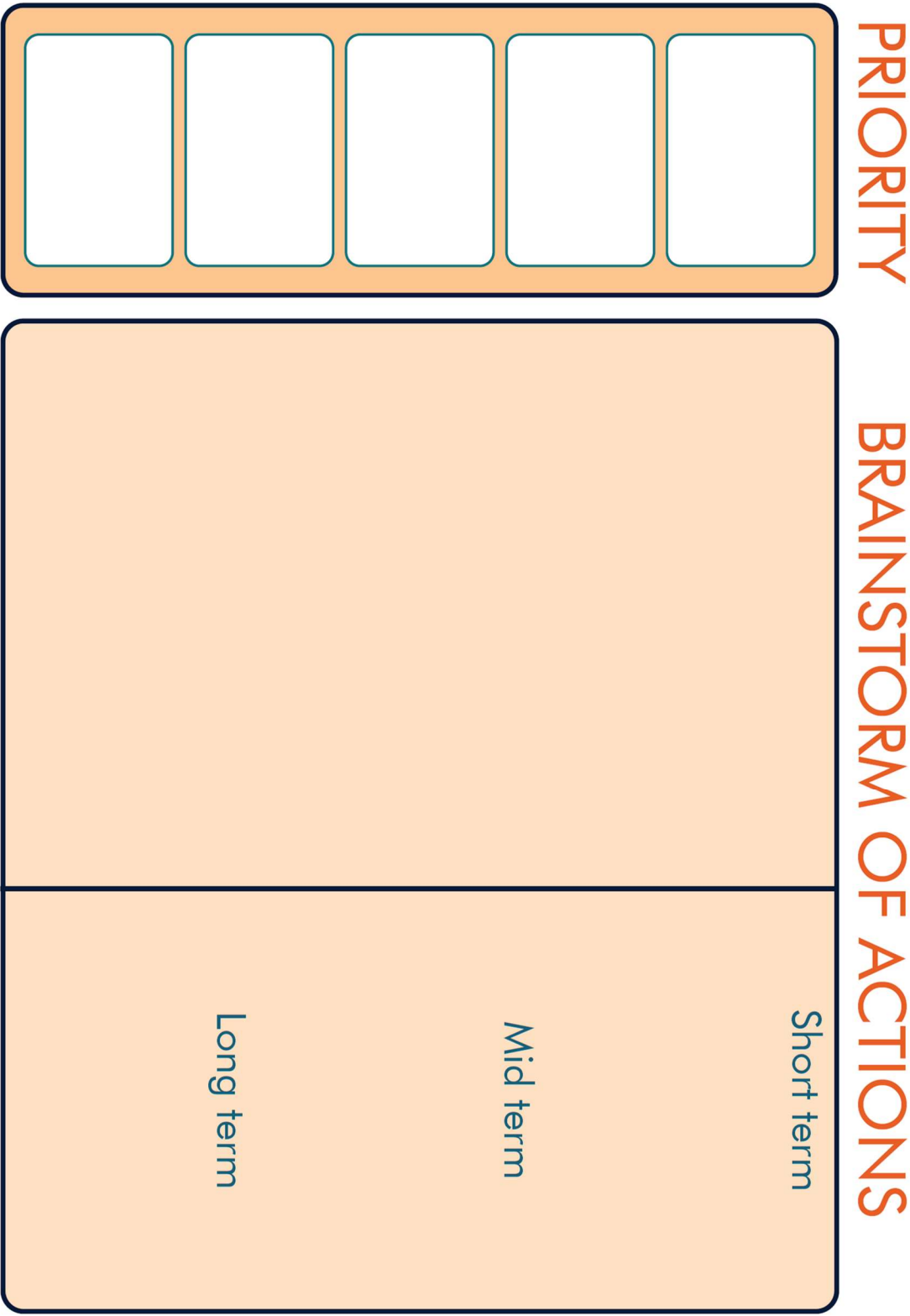
PRIORITY

BRAINSTORM OF ACTIONS

Long term

Mid term

Short term

Figure 9 Showing the action plan, prepared for the second workshop with DDC.

7.2 The facilitation of co-designing with DDC

The workshop took place in a meeting room in DDC's office space and was facilitated for approximately 2 hours. As with our other workshops, we started by getting verbal consent for recording and transcribing the workshop, see Appendix 11: DDC workshop 2.

Discussing tensions with the diagnosis cards

After the introduction of the workshop's agenda, we started the presentation of the main findings from the analysis. Our contact persons were both given a set of the cards displaying the diagnosis. The cards served as visual presentation to our contact from DDC, while we elaborated on the analysis. This allowed them to follow the presentation and engage more actively with the knowledge presented. The hindrances and tensions between the actor groups were especially acknowledged by them. Oskar stated, "The tension is clear" (Appendix 11: DDC workshop 2 at 00:07:33). The tensions and hindrances illustrated through the diagnosis cards sparked a reflective conversation about mechanisms in the current system. We had the impression that this conversation worked well as a support for the exercise going into the details of the mechanisms.
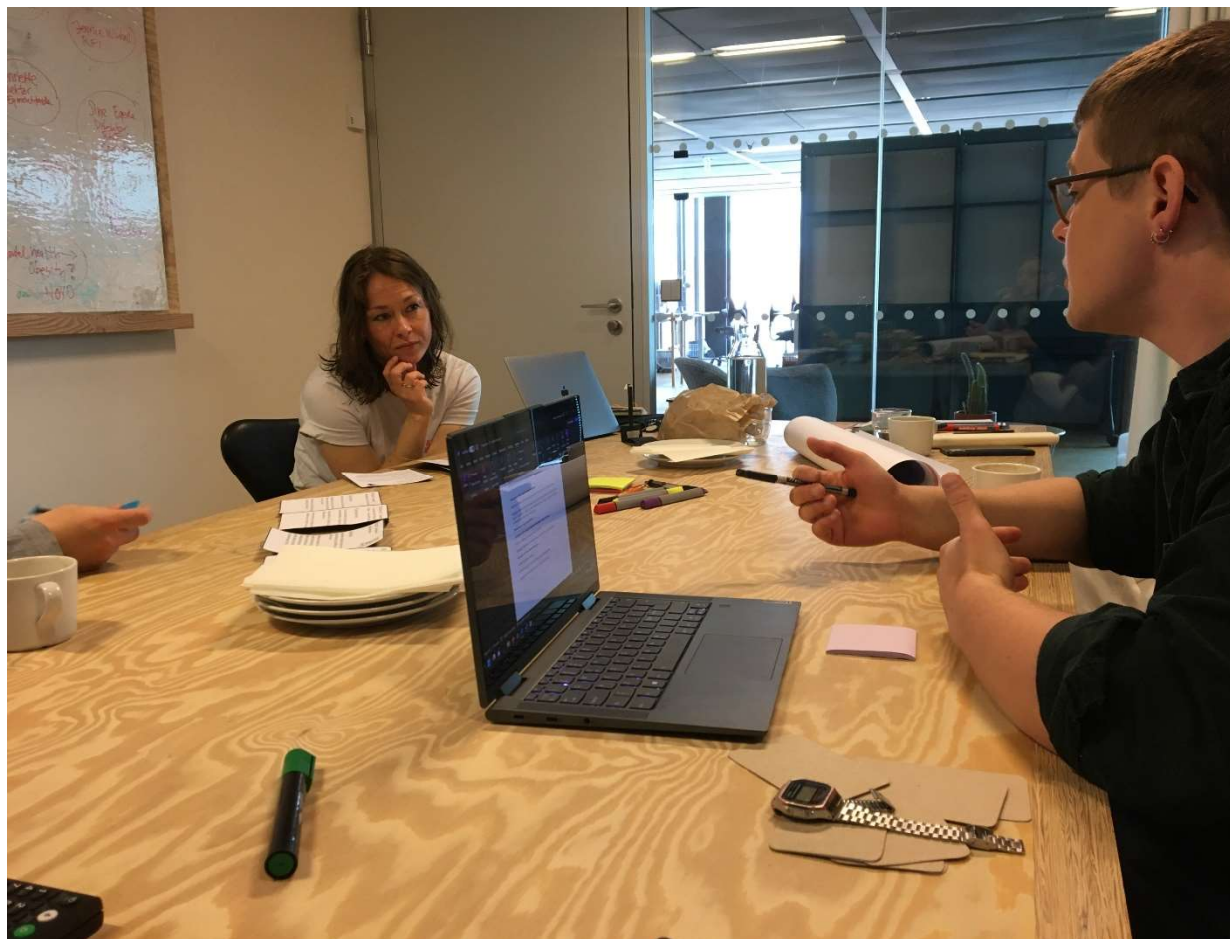
Figure 10 Picture from the second workshop with DDC, showing the faciliator enaging with our collaborators about the diagnosis.

One tension was more prominent during the negotiation. The tension between the foundations and the NGO's. First Oskar stated, "There is so much tension between these two, it really shows" (Appendix 11: DDC workshop 2 at 00:16:33). Sara continued by recognising how the relation of these actors "binds in a lot of imagination because they have these very strict areas to work with" (Appendix 11: DDC workshop 2 at 00:17:04). Oskar supported this with the statement about how it "kills off the imagination and the exploration with the projects that they fund" (Appendix 11: DDC workshop 2 at 00:17:21). In relation to this, they also acknowledged the challenge of funding open-ended projects, as they themselves often meet restriction in the form of KPI's and strict project management.

Discussing the ideal environment for imagination infrastructure

We moved to the second part of the workshop by introducing the exercise and boundary object tied to the creation of the ideal environment envisioned as the future. The game board served as a space to collect thoughts about what imagination infrastructure could look like in the future, and the contact persons were encouraged to voice their opinions using post-its. The facilitator placed the first post-it to give an example to start the negotiation.
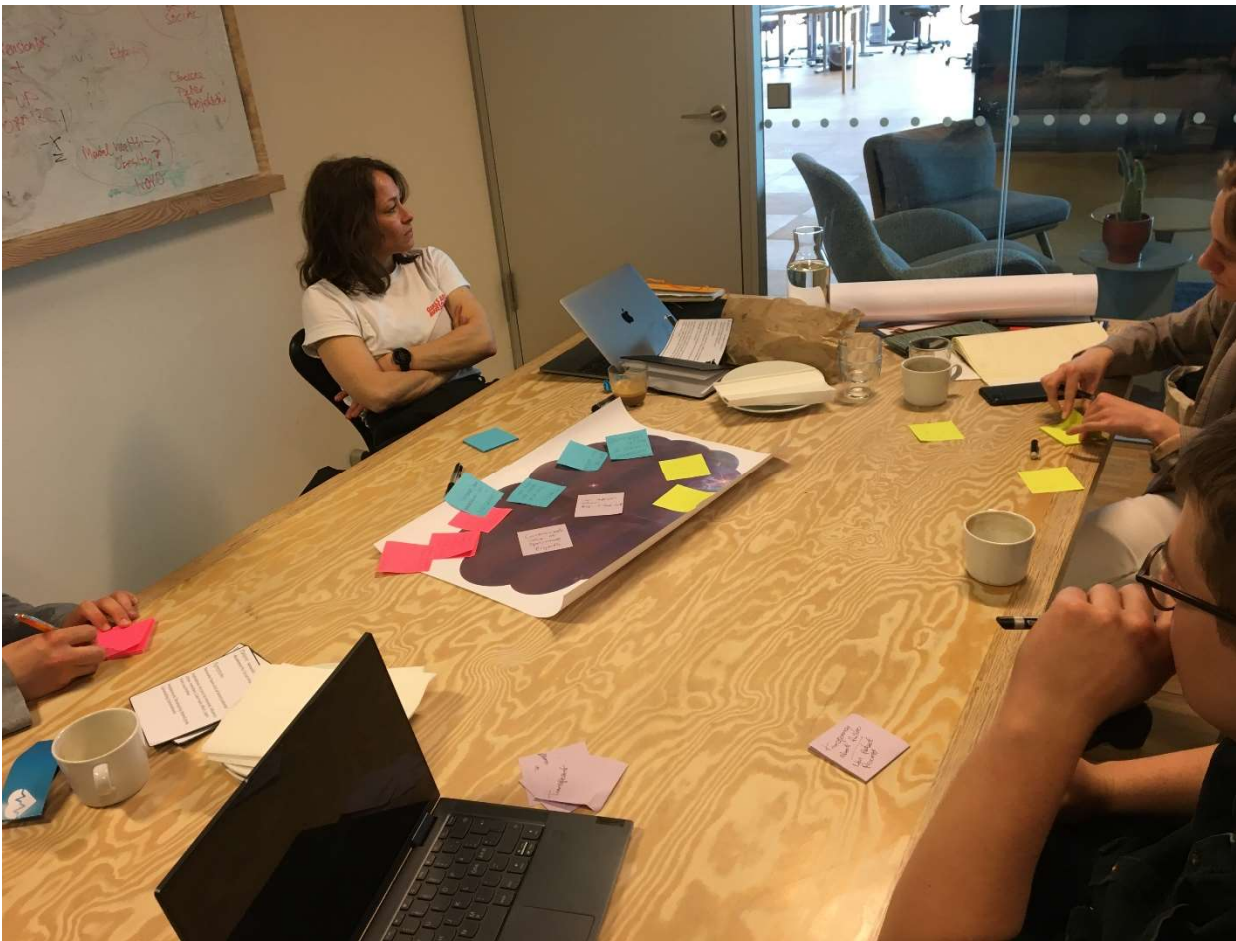

Figure 11 11Picture from the faciliation of the ideal enviroment in the second workshop with DDC.

They quickly warmed up to the exercise and engaged with the boundary object with enthusiasm. As they took ownership of the boundary object, the conversation transformed into valuable information on important elements of a potential imagination infrastructure. By continuously building on each other's ideas, it created a clearer picture of what DDC desired new

mechanism to support in imagination infrastructure. We aligned on the overarching goal of transitioning the knowledge systems. Furthermore, the conversation led to the identification of ideal conditions of imagination infrastructure (see figure 12).

Figure 12 12 The ideal conditions for imagination infrastructure. The data is from the workshop, transformed into a digital version for the report.

Losing the facilitation role to our contact persons from DDC

The time constraints of the workshop led us to shift to the next exercise. Here the aim was to negotiate the identified mechanisms and start co-designing alternatives. The negotiation did not go as planned. We introduced the boundary object related to the negotiation, the game board and the mechanisms. The engagement with these objects was lower than with the first parts of the workshop. As we were halfway through the workshop, our contact persons might have become tired. Another reason for the lack of engagement could be the level of abstraction. We did not specifically state why we wanted to engage in this specific negotiation, which led to our contact persons to question the premise of the exercise. They kept referring to how

we had already engaged in conversation about mechanisms, as Sara stated: "I feel like we already discussed a lot of them" (Appendix 11: DDC workshop 2 at 01:29:18) and Oskar said: "I don't want to skip them, but what else is on the agenda to make sure that we get through the agenda" (Appendix 11: DDC workshop 2 at 01:29:22). While this was true, the conversation about mechanisms had been kept to a low level of detail. As we wanted to start co-designing alternatives and transforming them into actions, we wanted to negotiate mechanisms in greater detail. In relation to this, they started to take on the role of the facilitator, which we then struggled to regain.

Desperate last attempt to regain the facilitation role

Figure 13 13 Picture of the two contact persons and the faciliator negotiating the mehcanisms.

After circling around and negotiating the exercise a few times, we placed all the identified mechanisms onto the game board, to either get their approval or rejection of them. Then we

tried to initiate the conversation of how they could be shaped to alternatives, focusing on moving towards the ideal environment. However, this again led to the feeling of repeating earlier conversations. We shifted course, and we, therefore, did not facilitate the last planned exercise. As the participants had already prioritised which parts of the ideal environment were of prioritised importance for them, we used this to structure a conversation around mechanisms, but more so on the actions, DDC is already taking. This led to the opportunity to discuss the challenges DDC is facing when trying to influence and start the conversation about the transition of the current knowledge structures.

We ended up with them at least prioritising five conditions from the ideal environment: giving more agency to the communities, co-created missions, long term funding for open ended experimentation, humble government and less measurable goals and more shared learning. They are already working on co-creating missions and Sara also mentioned that "for exploration and experimentation, I think that to some extent this is something that we try to do through our future design work. We try to give new frames and we try to give them perspectives on a challenge." (Appendix 11: DDC workshop 2 at 01:33:05). Sara also claimed that they "have resources and we have knowledge and we actually in some way I would claim that we have imagination" (Appendix 11: DDC workshop 2 at 00:55:53). This identifies the need to redefine what is viewed as resources to include more than money. As DDC have already initiated some transition, and they claim to have imagination as a capacity in the organisation, we as a design group, can use this in our further design.

7.3 Reflecting on the co-design workshop

The use of methods and language DDC was familiar with, enabled us to engage them in the conversation and regain their trust. While the knowledge from our analysis was repeated from the first workshop, the reformulation in both the words and visual communication allowed for our contact persons to better accept and engage with it. Our boundary objects from the first two exercises successfully managed to create a shared syntax by ensuring that our contact persons could see themselves in it. Using multiple boundary objects served its purpose of allowing us to manage the arising challenges and navigate through different conversations.

However, we did meet challenges in the latter half of the workshop, resulting in the need to re-navigate the space. One of the negotiations was not a success, and since the next negotiation was planned to build on top of it, we could not finish the last exercise with them. One of the big challenges was the communication of why the exercise was relevant, we could have stated that more clearly both at the beginning of the workshop and during the exercise. This would have created a better sense of the context we were trying to build from the beginning. The participants had the feeling of repeating the first half of the workshop. This could be due to us shifting to a new boundary object, giving the illusion that we were moving to a completely different subject. Instead, we could have used the first part of the workshop more actively and engaged with it in greater detail, by getting them to transform and specify mechanisms as they met them in the conversation. In our planning, we valued the identification and co-creation of alternative mechanisms as the main negotiation. Therefore, we planned to use the exercise about the future ideal environment to create the space to think radically and outside the box. We had not anticipated that they themselves would begin to already point out mechanisms right from the start of the workshop. However, with the re-navigation of the space, we still managed to have a negotiation around mechanisms, with simply less structure and details. This also led to the negotiation of actions, with the perspective of what DDC is already doing to influence the transition.

Our contact persons took over the role of the facilitator when we shifted between the ideal environment and the mechanisms. This could be due to us not clarifying the context. However, we also shifted from one facilitator to the next for this exercise. The facilitator for this exercise was a former intern at DDC, which might have affected the roles and relations in the exercise, giving DDC their old role as supervisors and educators.

The co-design of alternatives with our contact persons failed. Therefore, we as designers had to continue the design process in a different direction than initially anticipated.

8. Developing design solutions

Following the co-design workshop with DDC, we continued our design process by ideating about alternatives to the current identified mechanisms. We did this by playing a design game in our design group, structuring the ideation, and allowing us the freedom to be creative. Working with one mechanism at a time and forcing ourselves to be specific with the inputs and outputs of the mechanism, we continued to identify relevant mechanisms and alternative inputs and outputs.
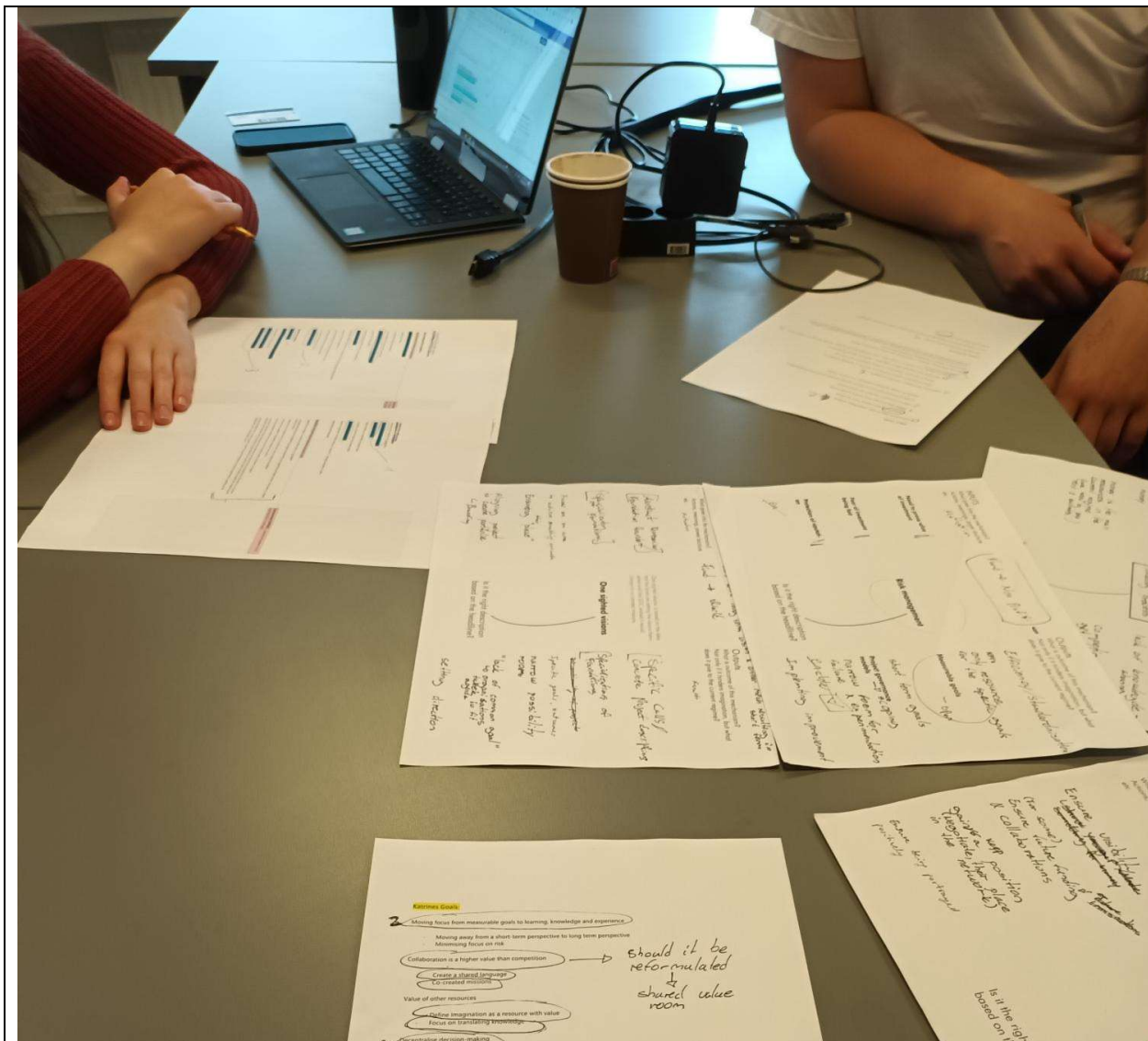

Figure 1414 The mechanisms in development by the design team.

After ideating on mechanisms, we determined the overall purpose of our solution to set a direction. This allowed us to be aligned in the last part of the design process. We therefore went from co-designing with our collaborator to expert-design within our design group to develop a solution.

From the analysis we know that knowledge systems are characterised by a series of mechanisms that currently hinder the production and circulation of imaginative knowledge. We want to move the path-dependent knowledge system to a knowledge system that promotes imagination. We determined that this can only be done by changing the mechanisms, as they are locking the system into patterns. We found out that these mechanisms are stabilised by regime actors and their complex power structures, reproducing a continuous cycle of conservative and predictive knowledge system. In order to change the knowledge system, this project can have an impact by encouraging communication and negotiations about why we need to transform the knowledge system. This project can attempt to do that by seeing our collaborator, DDC, as being central to the discussion of imaginative knowledge, equipping them with tools to approach this wicked problem.

We decided that in order to turn our findings into a tangible communication object, which DDC can use to discuss this problem, we can design boundary objects DDC can bring to negotiations to facilitate negotiations. We want to design a solution that enables DDC to communicate and discuss how these mechanisms may be transformed to become less hostile to the production and circulation of imaginative knowledge with other actors in the knowledge system. The design solution aimed to put imagination on the agenda and allow for it to be manifested and circulated in the current knowledge system. In addition to this, we wanted the boundary objects to be able to help facilitate the negotiations DDC has to start and give them some tools to initiate the change. We are not designing the new knowledge systems for them, as the actors affected by it should do it through multiple negotiations.

In the workshop our contact persons from DDC argued to be "an action-oriented think tank" (Appendix 11: DDC workshop 2 at 01:08:36). As DDC has already started to mobilise actors and is working on building capacity and setting direction for change, they would be a good candidate to continue the conversation about imagination. To do so, DDC needs to both be
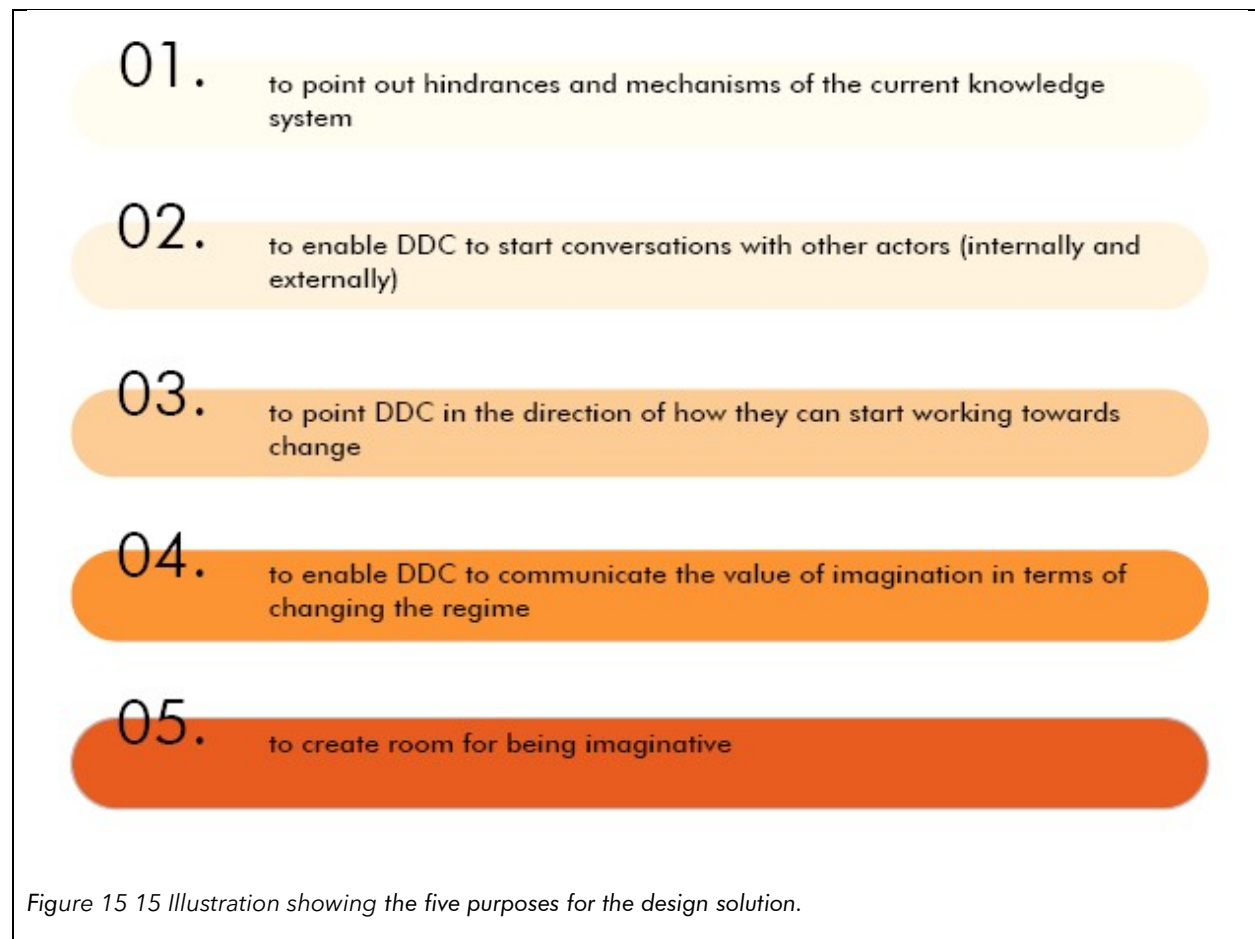
able to point out the domains of action and communicate the value of starting the transition in negotiations with other actors.

In our design work, we narrowed down the range of solution possibilities further. We view the final concept as a series of tools for DDC to use. As our role is not to dictate the alternative mechanisms, we will only work with three to show an example of how this can be done. This will allow actors to transform them according to their needs and keep the ideation open. We are basing this on the idea of creating seeds (Light, 2020), to avoid giving them our interpretation of the solution but creating boundary objects which allow for multiple interpretations by the actors engaging with them.

We chose to have one mechanism to work as an example to create this. KPI's was chosen as this was a mechanism the actors in the interview had mentioned as an hindrance and was something Danish Design Center was already trying to remove in their process to become a self-leafing organisation. We also chose to use three of the goals from the ideal environment exercise conducted with DDC during the final workshop, to implement in the design of our solution.

1.   Build capacity for imagination and define it as a valuable resource.
2.   Decentralize decision making.
3.   Redefine the way we look at measurable goals.

The design specification of our design solution was not to encourage knowledge production that reproduces the current system, to give an understanding of the current regime and to provide something DDC can use in the transition process. We determined and specified precise purposes the solution needed to fulfil visualised in the following illustration:

01. to point out hindrances and mechanisms of the current knowledge system

02. to enable DDC to start conversations with other actors (internally and externally)

03. to point DDC in the direction of how they can start working towards change

04. to enable DDC to communicate the value of imagination in terms of changing the regime

05. to create room for being imaginative

Figure 15 15 Illustration showing the five purposes for the design solution.

Hereafter we moved on to the ideation of how the solution could be shaped. Our brainstorming session was based on both our specifications and our research question; *How can we support the transformation of the current knowledge system by increasing the agency and circulation of imaginative futures, thereby reducing barriers for radical systemic change?*

To facilitate the ideation, we started with individual brainstorms. This allowed everyone in the design group to let go of expectations from each other, creating the opportunity to get into a creative space. To ensure we did not get hung up on details and the applicability of the ideas, we set a time limit for the brainstorming phase. Afterwards, we shared our ideas with each other, first without imposing judgment. We then proceeded to start narrowing down the number of ideas. This was done by using the technique of dot voting, which essentially consisted of all of us placing a dot on the ideas we saw the most potential to be consolidated into a tool communicating the information we wanted from the perspective of the decided

purposes. Ideas with less than two dots got eliminated. Ideas with only two dots were explained to see which specifically had potential and ideas with three dots were taken directly into the next phase. This led to the following ideas:

- Maps of the knowledge systems, with different levels of fidelity and perspective
- Mechanism cards that were already used with DDC during a workshop
- A map of potential actions and alternatives

We discussed the form and shape as a group before dividing the three types of objects between us. We then shaped them into prototypes which we could discuss with each other in greater detail. This led us to the idea of combining them into a flyer or catalogue, to allow for DDC to have a physical product they could print and bring with them into negotiations. The finalised form and function of the solution will be discussed in the next section.

8.1 The design solution

Our design process resulted in us creating a range of boundary objects to help DDC in the facilitation of transitioning the knowledge system of the socio-technical regime of the social sector. We have combined them into a catalogue, a physical object, that provides DDC with an object of discussion to bring to and utilize in negotiations with other actors. In this section our proposed solution consisting of this catalogue of boundary objects will be described including the catalogue's overall purpose and the boundary objects' individual purposes.

The circulation ability of the design solution

When we deliver the catalogue to DDC after our project, they have a multitude of possibilities in how to use it. Although the intention of the boundary objects is to start their lives after letting go of the project, we cannot ensure this will happen. But we see potential in DDC bringing the catalogue along to meetings with other actors, for example Akademiet for Social Innovation, who is an actor that also has an interest in starting a transition like DDC. In this case, the boundary objects could work as a tool to communicate the analysis done by the design group, as there has been a lack of resources for actors to do this specific work. This will allow them to start a negotiation about the action domains identified through the mechanisms and how they can take part in facilitating some of the processes. As Akademiet for Social Innovation is a community of leaders, the catalogue can be circulated after the negotiation, giving the actors the opportunity to circulate the idea of imagination infrastructure in their respective organisation. Another option for DDC to apply the boundary objects is to use them directly in negotiations concerning funding and project management, for example in a negotiation with a fund about raising resources and setting the frames of projects. In this case, the negotiations could potentially be facilitated around how a change in the project management could allow for a more experimental process.

The concept of a catalogue

The reason to provide DDC with a catalogue as a toolbox of boundary objects, is to collect the boundary objects in the correct sequence of application. The different purposes of the boundary objects are to communicate different aspects of the wicked problem, starting with the mechanisms and why the knowledge system needs to be transformed and leading to potential action suggestions in the end. Thus, the boundary objects can be applied in the order they are placed in the catalogue during negotiations with new actors, that are unaware of the wicked problem. In a way these boundary objects are built on each other, exposing more and more the deeper you go into the catalogue. However, DDC can just as well only choose to involve one the boundary objects in a negotiation.

It is also natural for catalogues to be left behind, thus, it would be natural for DDC to leave it with the actor after they leave and thereby continue the negotiation while being absent. Thereby, these objects could spark the conversation around imagination infrastructure internally in other organisations as well. So that even though DDC may only include a single design object in a negotiation, it alludes to more and thereby invites that actor to explore further by themselves and even circulate the catalogue further.

While we do not wish to prescribe a detailed interpretation on how the future system should be shaped, collecting the objects in a catalogue opens the possibility to provide sufficient information and short accompanying descriptions of the design solution, which can help to understand the context for the conversations they aim to provoke. If the objects are misunderstood by a recipient, the risk of the design solution being disregarded and the risk of reproducing current patterns of knowledge structures increases.

8.2 Defining a language

We will first discuss what we intended the catalogue to achieve with the individual boundary objects and then we can present the final version of the catalogue as a whole, at the end of the section.

To start talking about the wicked problem and use boundary objects to initiate a negotiation, we first need to define a shared language with the catalogue. Our design processes emphasised the importance of defining a shared language and understanding with DDC. This is important both to get other actors to accept the context of the negotiation and the acceptance of the knowledge presented during the negotiation. In our final workshop with DDC, they emphasised the struggle in communicating the value of starting a transition with no alternative ready and enrolling other actors to join them on a shared journey based on experimentation and leaning towards an alternative knowledge system. As we want the design solution to allow for its circulation, a shared language should be integrated directly into the catalogue. This will allow actors receiving the catalogue to continue the negotiations within their organisation and invite others into the negotiation as well. While some of the shared syntax is established in the visualisation of the knowledge, an introduction should be added to create a foundation from the beginning. The introduction is primarily consisting of text, starting the reflections on the potential negotiations.

Value creation

Following the definition of a shared language, the catalogue should aim to show the potential of transitioning the knowledge systems to allow for more imagination to be implemented and circulated. A balance has been kept between trying to communicate the potential value, while simultaneously trying not to dictate specific actions for the actors. The value creation is based on statements from actors concerning the value they desired during the actor meetings. However, the primary focus is on the value DDC is trying to communicate. Actively using their perspective as the initiators of the negotiations, while allowing the other actors to resonate with the communicated value. The challenge for us as a design group has been to visualise the value and the alternative mechanisms to not seem like the only solution, but rather

to encourage actors to indulge in a conversation about what value they want to gain from the transition.

Design solution: A knowledge system catalogue

The design solution takes the shape of a catalogue with boundery objects, that can be used in negotiating the mechanisms in the knowledge system. The four boundery objects serve to each facilitate the negotiation on different levels of abstraction. The first, Obstructions to imagionation, should support DDC in communicating the presence and severity of the problem. While the second, How mechanism are killing imagination, zooms all the way in, on a specific example, to facilitate the negotiation of weather it is feasible to change the mechanism. If DDC's negation partner accept that it might be possible, it is time to introduce the complexity. The third and fourth objects both zoom out from the mechanism and expose how the mechanisms are thoroughly embedded in the knowledge systems and power relations between the actors.

Boundary object 1: Obstructions to imagination

With the help of the first boundary object, why the regime needs to be transformed to allow for more imaginative knowledge to be produced and circulated can be communicated. It is necessary to show DDC and other actors what is obstructing the circulation of imagination, namely what the mechanisms are doing. We need to illustrate how the mechanisms are hindering the transition of the regime, upholding the current practices and essentially killing the imagination. To communicate that, we designed a boundary object illustrating how room for opportunity and possibility is continuously being reduced going through the mechanisms of the system.
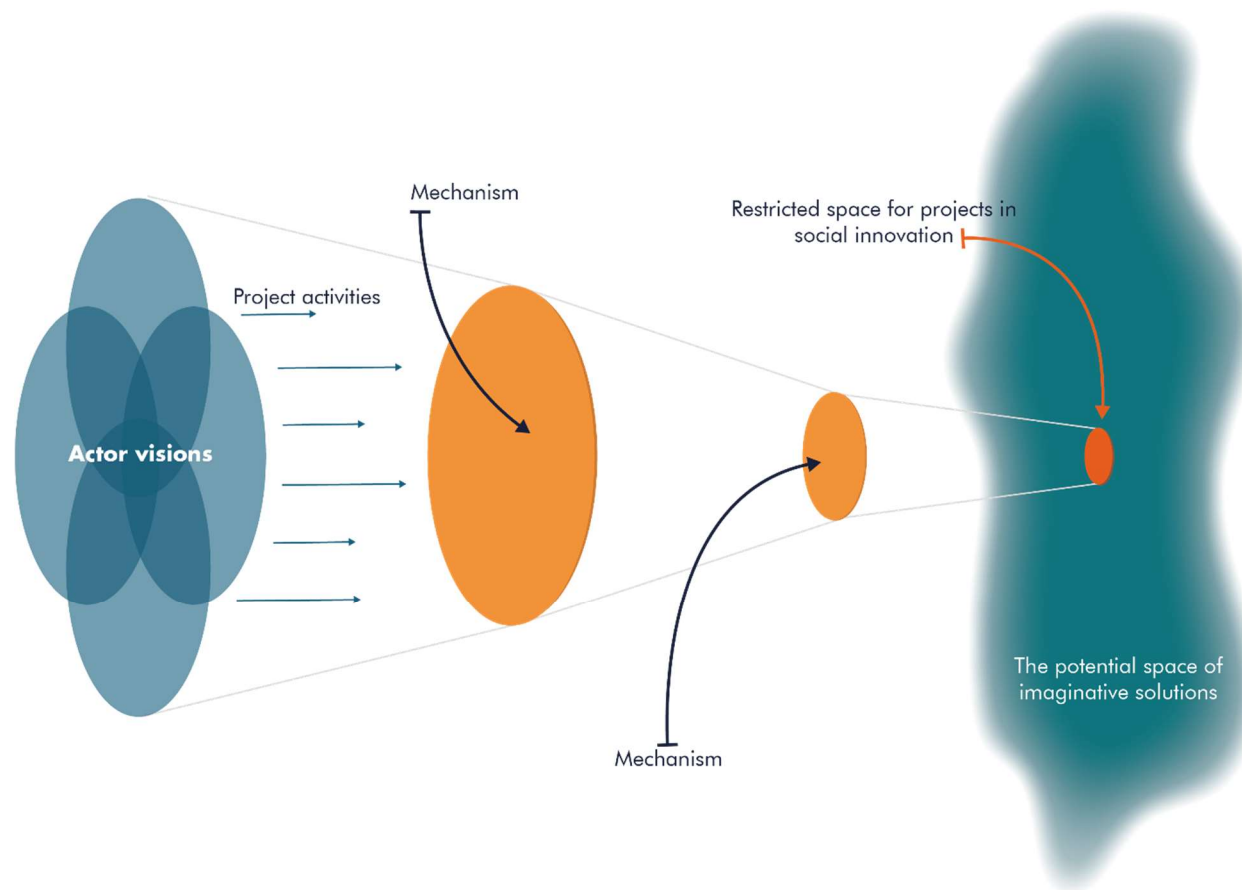
Figure 16 The illustration of the imagination funnel.

The imagination funnel (see figure 17) illustrates how consecutive mechanisms narrow the possible scope of activities in the regime. As actors in civil society produce visions, they will be sieved through the funnel until only visions that replicate the current knowledge systems remain. The visions that do not conform to the mechanisms are either going to be hard or impossible to fund. One of the mechanisms illustrated could be KPI's but they are kept unnamed in the funnel to illustrate that it Is not limited to KPI's. The imagination funnel is not a guide for actors to value, by conforming their visions, but a argument against the mechanisms. The funnel illustrates how this could be changed by transitioning the knowledge systems, and by removing just a few mechanisms, a far more imaginative project could come to light. The idea is to help create an understanding of why there is a general value in transitioning the knowledge systems present in the socio-technical regime of social work.

Boundary object 2: How mechanisms are killing imagination

This boundary object illustrates a specific mechanism and details how a mechanism is formatting knowledge. The illustration shows how the mechanism KPI's are formatting knowledge (See figure 18).
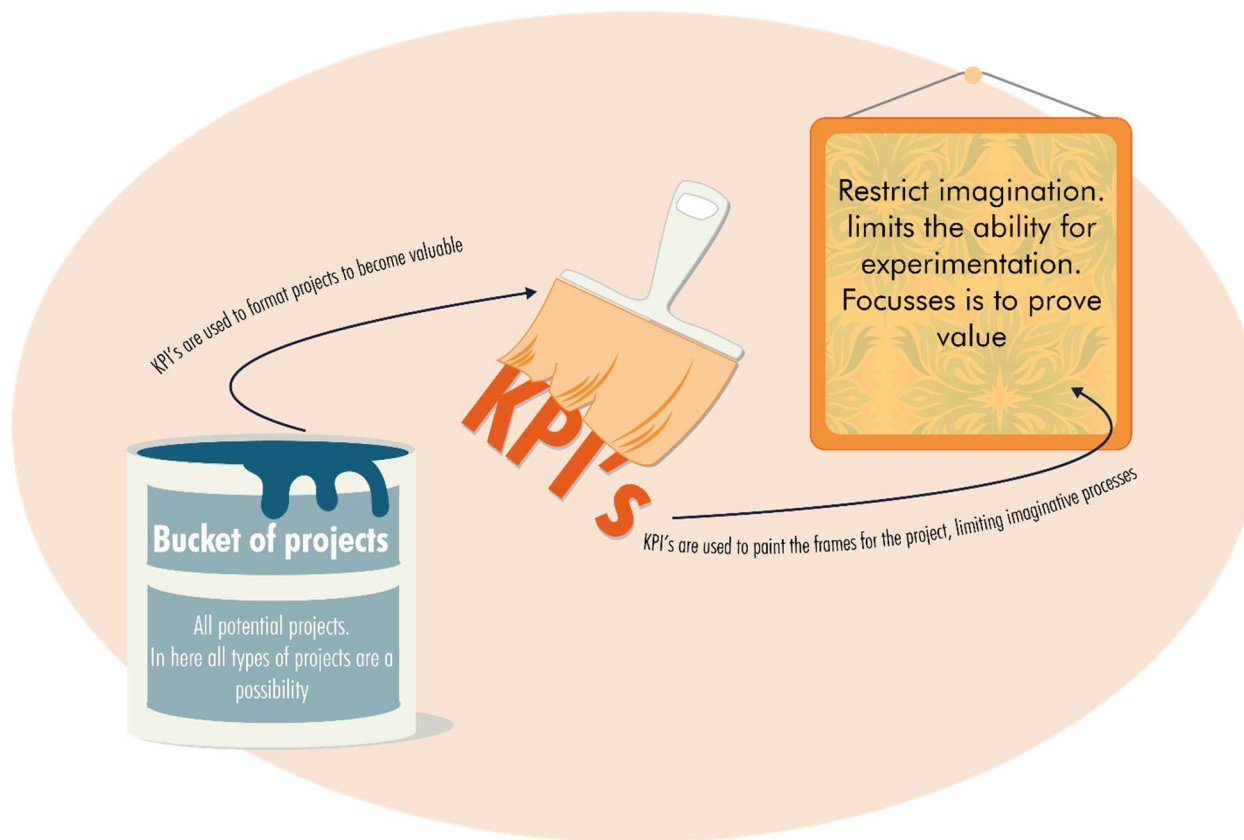

Figure 17 illustration of the boundary object showing a mechanism.

We decided to use a paintbrush as a metaphor for the formatting of knowledge. In this example projects, or the paint, have to let themselves "smear" through the bristles of KPI's to enable it to alter the canvas of society.

The intention was to leave the conversation open to allow for the identification of other mechanisms in the knowledge system. It is impossible to ensure that we cover every mechanism in every context, we have left it vague so important mechanisms can be discovered by other actors to negotiate on their own, and thereby create a sense of ownership.

To illustrate that the mechanisms work in context, we illustrated a context in which KPI's are obviously hindering imaginative knowledge (see figure 19). It shows the actors affected, their role, and the mechanisms' result. This also shows the complexity of mechanisms, allowing for a more nuanced negotiation. However, we are still maintaining a certain simplicity to keep the mechanisms open for interpretation.
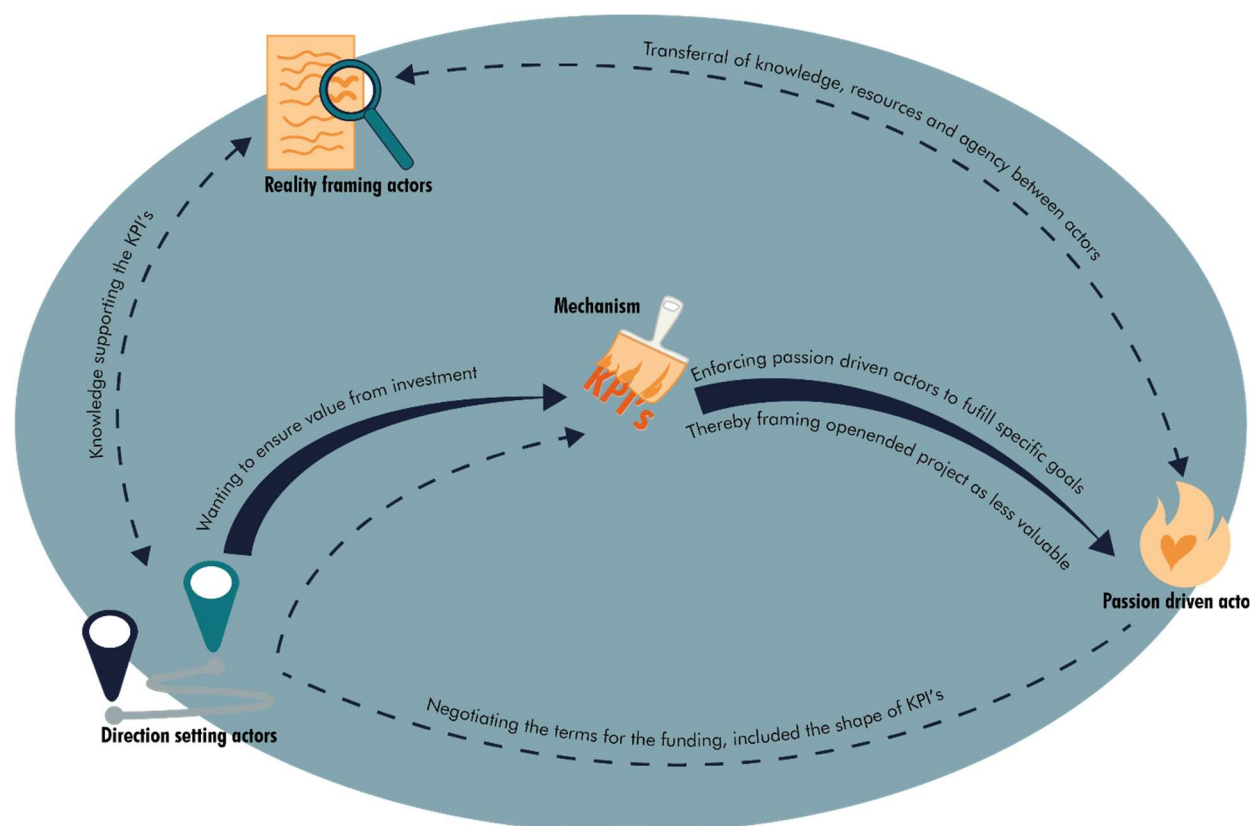

Figure 18 A illustration of the stabilising factors in the mechanism KPI's

Boundary object 3: How actors reproduce knowledge systems involved

As presented in the analysis, we know that mechanisms are stabilised and upheld by actors, who are actively participating in them. Therefore, in order to understand the mechanisms, we need to visualize the power relations between the actors

Based on the analysis of the actor interviews, we created four categories and accompanying descriptions of the different types of actors who are active in the regime of the social sector.

The categorisation is a way to show the uneven power structures between them, in a way that emphasises the contrasts and conflicts between the actor groups (see figure 20). With this choice, we hope to provoke and spark interesting negotiations around the power structures in the system.

The actors

Multiple actors are taking part in enforcing mechanisms. These are divided into four main groupings.

Direction setting actors
These are actors with more power to set the direction. This is often done through visions (future goals), which are not co-created.

Aspiration: To be visible in creating societal change. Often connected to a perspective of branding.

Power: Set direction and allocate resources

Hindrences: Needs to be able to evaluate sucess of project. Creates contradictions between wanting to fund experimental projects and showing short term outcome.

Reality framing actors
These are actors which creates knowledge, broadly accepted by the other actors. This knowledge is used to frame the reality the projects are created from.

Aspiration: To be objective, have integrity, being reasonable and influential.

Power: Agency to create knowledge

Hindrences: The analysis is created based on the same mechanisms hindring imagination in other processes. This reproduces the current patterns.

Passion driven actors
These actors are driven by the motive to create change for certain groups or in certain areas in society. The main difference from them and others is their dependency on funding.

Aspiration: To create change and facilitate systemic change.

Power: Have the power to mobilise action.

Hindrences: Depending on funding. This allows actors with resources to set frames, the passion driven actors have to adapt their projects and long term visions to.

Relation creating actors
These actors are created around communities and networks. These are mobilised and are working towards a shared wish or goal.

Aspiration: Mobilse change through relations to other actors.

Power: Have agency through their members.

Hindrences: The have a hard time faciliating a shared goal or narrative. Some actors in the network are more lock-in to structures and practises reproducing patterns.

Figure 19 Illustration of the description of the actorgroups.

In this illustration, the actors are presented in the context of of their relations in the knowledge system (see figure 21). This creates a connection between the power structures and how the different mechanisms are facilitated. We have chosen to keep the visual communication simple and comprehensible. The map intends to create a quick overview of how the mechanisms are shaped between the actor groups. In creating this map, we wanted to visualise where the power in the mechanism is placed, to give a sense of who enforces it and to who it is applied. In the map we can see that depending on context, to actors might both be enforcers and recivers.
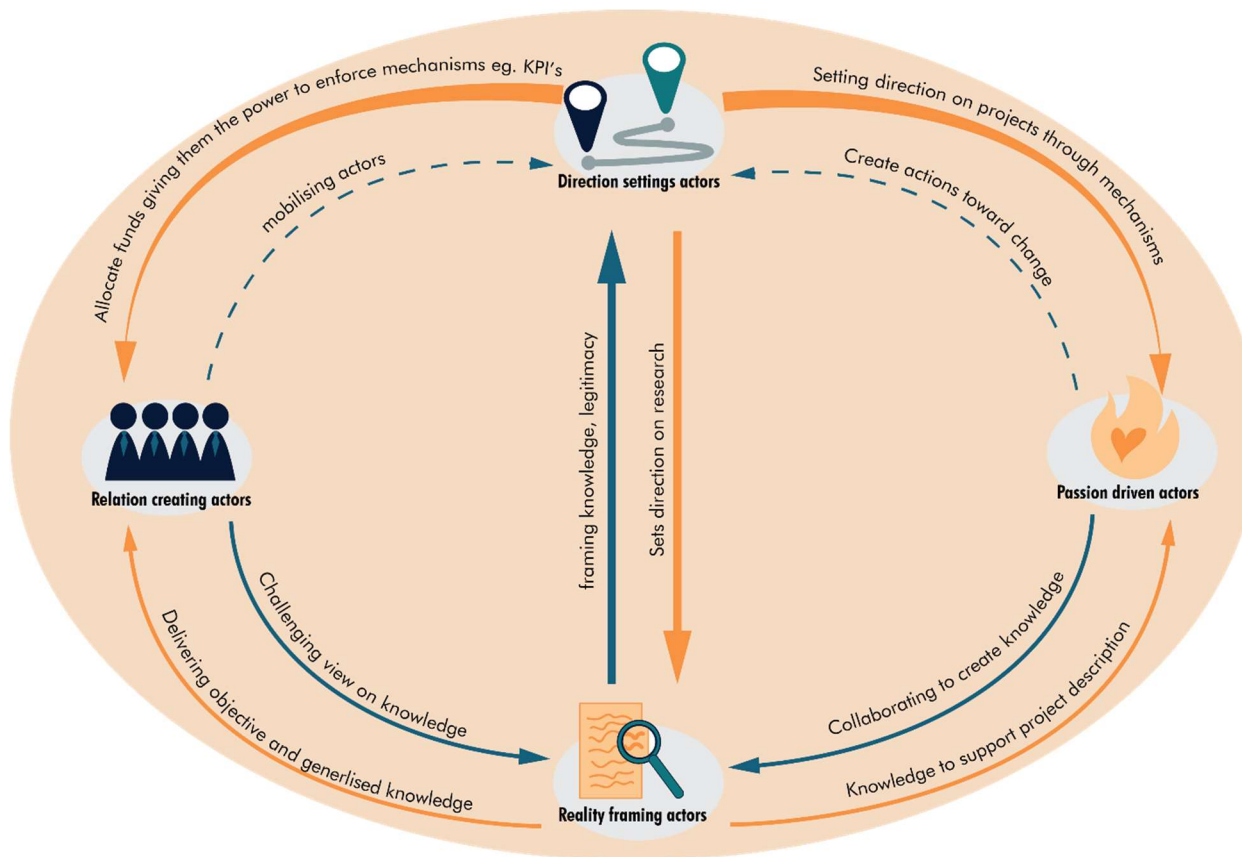
Figure 20Illustration showing the context between the actors.

Boundary object 4: Suggestions for action

After identifying the mechanisms and how the knowledge system reproduces them and illustrating that the regime actors keep performing the knowledge formatting, we present a tableau of actions that could help destabilise these. To inspire DDC and other actors to take action towards destabilising these.
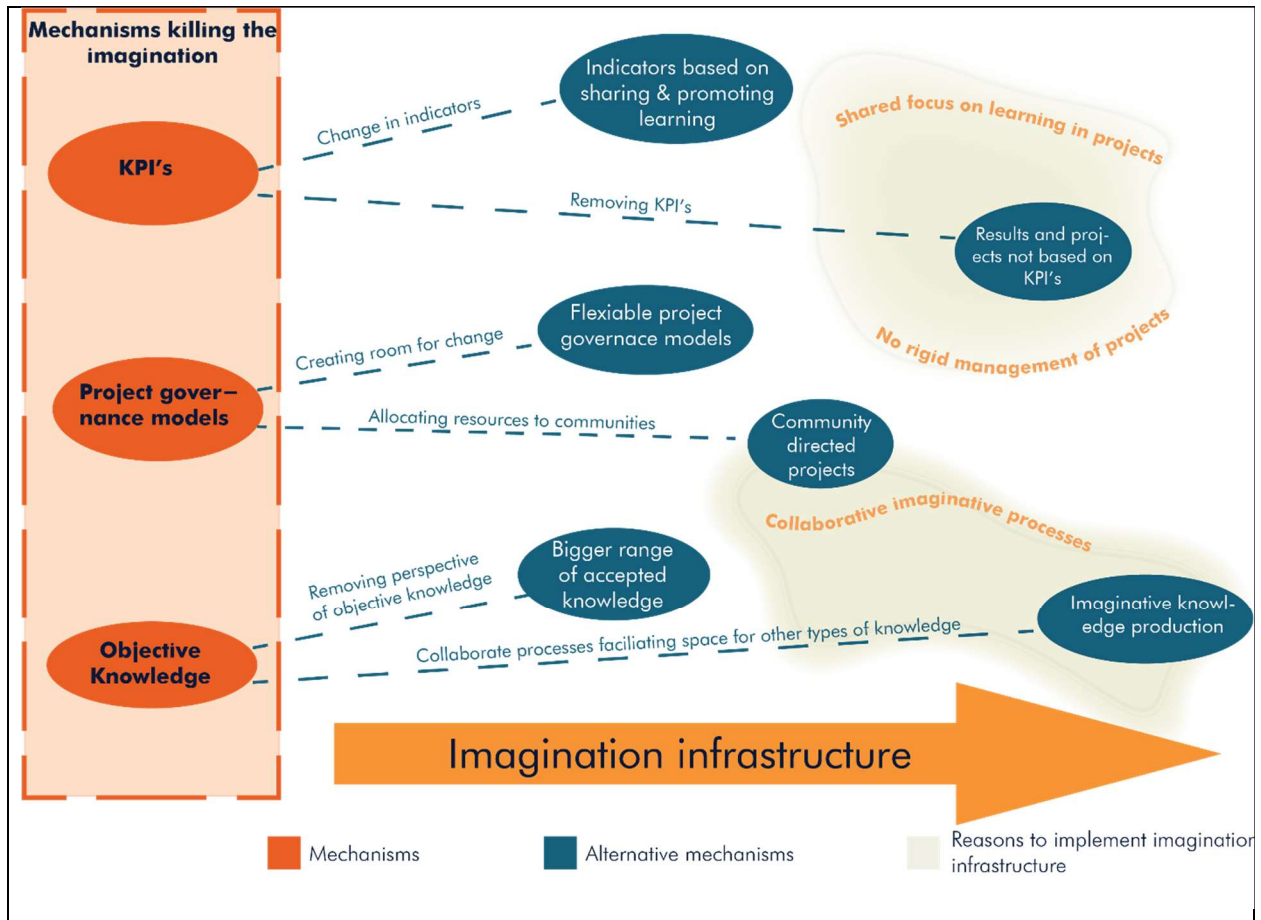
The action map aims to connect a change in the current knowledge systems with a new value. This is done by first displaying the mechanisms that have been identified in the knowledge system and then tying them to an action that would facilitate imagination infrastructure. Doing this will close the room of interpretation and create a stronger connection between a potential change and its value. The aim is to facilitate a dialogue around the value the actors wish to create by transitioning the knowledge system. To demonstrate the nuances, we have visualised how some values and goals might be interpreted as more radical, indicating the

potential of the implementation timeframe to be longer. Other goals and values might be easier to reach within a foreseeable future. This boundary object should spark a certain curiosity about the actors' desires for the future and start a conversation about how they can manifest that in their current practises.

8.3 Reflection on design solution

While we were able to identify multiple mechanisms hindering the circulation and proper formatting of imaginative knowledge, we decided to only include one in the catalogue. That decision is contentious because it would seem natural to present all the mechanisms in such a catalogue. It would provide DDC and the actors who interact with the catalogue with the best possible starting point to dismantle the mechanisms.

Restricting the catalogue only to include a single example of a mechanism could on the other hand minimise a critical risk to the overall success of the catalogue's ability to function as a boundary object. The fear is that if the catalogue presents a thorough selection of mechanisms, actors might assume that they constitute the entirety of all existing mechanisms. One of the strategies we as designers wanted to employ to support the ability for imaginative knowledge to circulate in the regime is to entice other actors to participate in the search and circumvention of the mechanisms. If we can entice actors to experiment with circumventing mechanisms by themselves, they have been empowered to negotiate how knowledge is formatted.

9. Conclusion

The aim of the thesis project was to address the research question:

How can we support the transformation of the current knowledge system by increasing the agency and circulation of imaginative futures, thereby reducing barriers for radical systemic change?

The design project was initiated with a collaboration with Danish Design Center. DDC served as a case for the project, being a professional organisation aspiring to use more imaginative processes.

This project aimed to encourage a transition of the regime to imaginative and collaborative knowledge production, ultimately aiming to define imagination as a valuable resource in sustainable decision-making.

This thesis took a look at the regime of social work using a transition theory approach, investigating the concern pointing to the handling of knowledge production and its potential role in transitioning the current regime of the social sector. Our findings confirm that knowledge production is locked into reproducing conservative and predictive patterns and is essentially understudied and disregarded in regard to transition attempts of regimes.

In addition, it became apparent that specific actors working within social innovation are, to a certain extent, aware of the consequences of reproducing the system and are making an effort to implement imagination and radical thinking. But the regime's resistance to change reinforced by identified mechanisms hindering structural change of knowledge production is obstructing a transition. The actors pointed towards the challenges they were facing when conducting imaginative, innovative, and/or experimental work. Often these challenges were tied to specific mechanisms in the knowledge systems. These mechanisms are supported and stabilized by the regime actors and their complex power structures. We concluded that to change how knowledge is produced and circulated in the regime, those mechanisms need to be transformed.

Therefore, the design group attempted to provide inspiration for a long-term sustainable solution arguing that the current regime needs to recognize the potential of implementing imagination as a way to move from predictive and conservative knowledge production to imaginative and collaborative knowledge production.

During the project, it became evident that our role as designers, in this case, was not to establish how the mechanisms should be shaped in the new knowledge system. Considering our limited time frame, we concluded that the most significant impact of our project could be made by focusing on the negotiation between our collaborator and other actors within social innovation, who are already engaged in encouraging systemic change. With our solution, we intend to set the stage for negotiations and conversations to target the mechanisms and eliminate hindrances to initiating changing knowledge production, ultimately leading to a transition of the regime of social work. We came up with multiple different boundary objects facilitating DDC's future negotiations regarding imagination infrastructure for our solution. Our proposed boundary objects can essentially be used to initiate a conversation or negotiation by giving an understanding of the current regime and pointing out the limiting mechanisms, as well as suggesting potential actions toward change and communicating the value of imagination in that. By transforming the series of boundary objects into a catalogue, we illustrated a proposed vision of imagination infrastructure and the necessary steps to get there, ultimately equipping our contact in DDC with the tools to facilitate the initiation of negotiations and collaborations surrounding systemic change

The catalogue aims to support the transformation of the current knowledge systems by exposing the mechanisms barring imaginative projects. We assert that we support that transformation by enabling the negotiations about these mechanisms and their formatting effect on the knowledge produced. DDC is interested, if not completely enrolled, so we have seeded the idea even if they ultimately prove unwilling to negotiate the mechanisms in their networks. Supporting the seeding is that we appropriated the word *mechanism* from DDC's vocabulary, which should serve to embed the idea. We have made DDC aware that strengthening collaborations and initiating negotiations to align intentions is the first step toward systemic change. Additionally, the concept of structural mechanisms is being sent to the organizations who participated in the interviews, so regardless of DDC's willingness to participate they do not become gatekeepers. Understanding the functioning of the mechanisms inherently increases the

agency and potentially circulation of imaginative futures, as project owners can use them to argue in favour of imagination.

This thesis project focused on the regime of social work and the area of social innovation surrounding our collaborator, DDC. However, the concept of imagination infrastructure and the role of knowledge production regarding obstructing or promoting transitions of regimes could be taken to a broader scope.

We argue in the literature review that the knowledge systems are hostile to imaginative knowledge and that state of the art provides only few strategies to start mitigating that. Instead, it is focused on creating imagination. In this project, we propose a new way to negotiate these knowledge structures from the practitioner's point of view. Even though we have designed the solution objects for DDC to facilitate negotiations, the mechanisms are specifically chosen to be useable by the passion-driven actors as well. In our interviews with them, we saw a consistent lament about the never-ending search for funding for three more years. This was a major detractor from what they saw as their actual mission. We chose to specify mechanisms that could be used in negotiating the financing of a project. Because we expect the passion-driven actor group to be the most willing to test and use the mechanisms in negotiations, as they experience a lot of pain by a constant search for funding.

10.   Reflection

In this section, we reflect on three different episodes from the process of this design project and try to distil some of the lessons learned that might be of interest to other designers and students. These episodes are not chosen for their relevance regarding the design project itself but are instead exemplars of situations that might arise in many types of projects and are therefore of more general interest. The first subsection points out that even though no traditional conflicts of interests are declared, that does not exclude the possibility of ulterior motives impacting the work. The second discusses the question of completeness and why we think this thesis can be a valuable contribution despite working with a limited perspective on an interconnected field. The third subsection deals with how to handle the challenging part of design work, where the project needs to converge, and the designers exist in an uncomfortable space killing off their darlings to reduce the project to something achievable.

Personal interests

One of the participants in the design group had done an internship with DDC prior to the start of this project. In most cases, prior engagement would not constitute a potential conflict of interest. However, this project is the final thesis project of the students, and the group participants, therefore, need to seek employment upon its conclusion. DDC will be provided with a copy of the thesis at the end of the collaboration and could be seen as a potential employer for sustainable design engineers. This might incentivise the design group to conform the thesis to fit within DDC's paradigm and self-perception.

The question of how to construct the narrative of the thesis in relation to DDC was raised on three occasions; after the first workshop with DDC, in preparation for the second workshop with DDC, and in the process of creating the proposed design solutions. Framing the narrative of the report for DDC was an explicit design task in this project, as the project is intended to be a strategic aid for the organisation. However, the project might challenge DDC's practices less than it potentially would due to ulterior motives.

When considering research and design, care is often taken to evaluate if the authors are in a conflict of interest. Due to recent scandals in research relating to universities being caught fitting data to the liking of sources of finance, this question is of heightened interest (Knudsen, 2018). There is a tendency to partly exempt students from these evaluations due to them being positioned outside of the power structures that might give rise to these conflicts of interest. Students have traditionally been seen as rebellious challengers of established structures, but we assert that a competitive job market increasingly incentivises students to limit the critique to a degree that they do not fear will interfere with their ability to get a job.

While we do not think a potential prospect of a job offer in DDC or one of the other organisations featured in this project has significantly impacted the results of the project, we would however urge other students to seriously consider the potential for these conflicts of interest in their project and seek out resources to mitigate their impacts.

Advocating change from within

No one is unaffected by the prevailing socio-technical imaginaries and by the engagement and activity of trying to design for transitions. Therefore, we have to handle the question of how we can know that we are not actually proposing to reproduce the regime, as the nature

of the knowledge system is that it is exceedingly hard to see what is outside the box, as we see in Hirschman, (2021).

The report argues that to change the current system, we need to bring in outsiders and allow for longer duration projects, open and imaginative processes. However, this project is itself struggling to follow those recommendations. The foundational interviews for the design exclusively featured successful regime actors. The report is written within the allocated timeframe of a master's thesis and while it is technically an option to extend the project, this was never considered. The overall goal for the project was to a large extend prescribed, as the overall research question was turned in at the onset to get the project approved. The overall intention of the project is to empower civil society and hopefully inspire actors to democratize the future, but never once do we question the fact that private equity is the main source of funding for these activities. We tacitly assume that wealthy philanthropic foundations are an ally in democratizing the future, and do not deal with the implications of this centralization of power.

Some might say that we are being hypocrites by assuming that we can initiate a transformation of the knowledge systems while participating in them ourselves, and we wanted to address that. First of all, we do not know that it is impossible to effectuate change from within the knowledge system, and it would be hard to define a position that could reasonably be argued to be outside it. But most importantly, we argue that if the work needs to be done, in this case initiating a transformation of the dominant knowledge systems, there is only one thing to be done, and that is to initiate the start of said work. A lot of nuances and intricacies went unexplored and scoped out of the project for one reason or another. One example of this is that we scoped out the entire public sector and activist groups from our analysis and focused solely on private organisations. In this project, we had to take a pragmatic approach to the design task. That is the only way it was possible to start the discussion about how we can transform knowledge systems with the available resources.

Working with ambiguous ideas – Killing off darlings

Working with an actor who does imagination or claims to do imagination exposed the need to find ways to anchor imagination in work processes. In the preparation for the workshops with DDC we did not expect that there would be a need for stringent facilitation. DDC is an expert in design, design processes and in facilitating design work with others. We assumed

that because our collaborator was an expert in these processes, we would automatically rise above the need for common facilitation.

The actual experience of the first workshop persuaded us otherwise and exposed a bias that we did not know we had. The bias was that the reason for facilitating design processes is due to the fact that non design experts need guidance to understand how to operate in a designerly space. It is based on a lack of trust towards participants. And that DDC and the design group, as professionals, is already aware of expectations and can therefore perform without a script.

However, we realized that facilitation is not only a method designers employ to express preferred ways of working with a design object. It also serves to guide both the facilitator and the facilitated through the demanding processes of doing design. In this specific case, we saw our task as one of exploring ways that DDC could affect the knowledge systems collaboratively. While we saw their role as being our guides through their world, where they could help us direct some mechanisms to explore further or specify. But we did not foresee that because DDC has strong ambitions about changing these structures, but not yet started to specify themselves, and because we did not guide them through that process, we ended up in a situation where we had tried to skip the pain and confusion that comes with taking an abstract vision and making it concrete.

If an idea or vision stays in the abstract, there are endless possibilities to change the world, but as soon as you start moving the idea towards realisation you are actively killing off a lot of the vague potential it once had. The idea losses its magic as you trade away potential agency and impact and scope, for a concept that is closer to reality and all the benefits and possibilities that made the idea attractive in the first place become opaquer and more distant.

After the first workshop was finished, we were defeated, because it had not felt like we gained sufficient ground and that the collective confusion had only increased as a result of the workshop. Concluding the second workshop still did not feel like a win, but it felt like we had gained common understanding in the negotiations. The takeaway is not that we overestimated DDC's ability to exist in the designerly space, but instead that the pain and confusion is unavoidably a part of the process. The ability to navigate and stay in that uncomfortable space is a valuable tool for designers.

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12.   Table of figures

*Disclaimer all illustrations are made by the design group unless else is stated in the description.