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RESEARCH ARTICLE



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Navigating value networks to co-create sustainable business models: An actionable staging approach

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Abstract

Sustainable transitions typically require collaboration between multiple actors in the value chain or value network. Recent research has emphasized mapping of stakeholders and values as a starting point for identifying opportunities to realign these relationships, followed by business model experimentation to enable change. However, a simple mapping exercise does not consider the interplay between actors' concerns, business models, and interpretations of sustainability. Pedersen et al. (2022) advocated that aligning concerns is essential to collaborative design and innovation, and requires continuous negotiation between multiple actors. Here, we present a microlevel in-depth case study to examine how alignment across central value chain actors may be facilitated through the staging of numerous negotiations during the innovation process. Drawing on the staging negotiation spaces co-design framework, we provide insight into the content of multiple negotiations concerned with different aspects of sustainability during the development of a more sustainable laundry service system on the Danish island of Bornholm. Our findings illustrate how both value chain actors and a third-party intermediary stage negotiations, and elaborate the framework by attending to the strategic navigational efforts of network alignment through negotiations.

KEYWORDS

business models, circular economy, collaborative design, negotiation, staging

1 | INTRODUCTION

Many scholars have discussed how business model innovation may be an essential building block to achieve a sustainable transition. In particular, product-service systems (PSSs) and their associated business models are seen as opportunities to achieve this transition towards a circular society (Kühl et al., 2018). Therefore, one way to reach this goal may be to engage in business model innovation to implement PSSs successfully (Reim et al., 2015). However, business model innovation to accommodate PSSs and support a circular economy

presupposes changes in relations between multiple actors in the value network. In contrast to designing products, designing PSSs requires paying more attention to and considering multiple actors in the value network. For instance, the new system may involve shifts in ownership structures and relations with customers, suppliers, etc. Although most scholars agree on the importance of considering actors from the entire value chain to create joint value and enable sustainable transitions, the most common approach seems to be passively *mapping* stakeholders rather than actively engaging them in co-creation activities. For instance, several tools for mapping value, such as the

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“multiple stakeholder value perspective,” have been introduced (Bocken et al., 2015). Likewise, in the traditional management literature, researchers advocate that various actors and their perspectives should be considered by conducting stakeholder mapping or stakeholder analysis exercises (Bryson, 2004; Guertler & Sick, 2021). However, such mapping exercises presuppose that stakeholders have already defined value propositions that can be identified and mapped.

On a more collaborative and engaging note, several authors promote the viewpoint that what counts as sustainability is negotiated among multiple actors in the value network (Goodman et al., 2017; Hall et al., 2003; Klewitz et al., 2012). Such negotiations are often framed by PSS and circular economy perspectives that primarily draw attention to environmental and financial aspects of sustainability but fail to consider the social dimension (Geissdoerfer et al., 2017; Pieroni et al., 2019). This means that the focus is directed primarily towards material flows and the so-called 4Rs (i.e., reducing, reusing, recycling, and recovering) to prolong the useful life of products and raw materials (Barreiro-Gen & Lozano, 2020). However, sustainability is a highly situated phenomenon, meaning that there are no standard sustainability solutions that work everywhere. Therefore, we must investigate the processes of developing new sustainable products, services, and systems (Wicki & Hansen, 2019).

Several authors have promoted a learning perspective whereby experimentation plays a central role in developing situated, local solutions (Bocken, Boons, et al., 2018; Wicki & Hansen, 2019). Some researchers have investigated the development of one or several value propositions through experimentation in sustainability-driven start-up ventures (Keskin et al., 2020). However, these studies are often firm-centric, meaning that they do not explore the situation from the perspective of different actors (Freudenreich et al., 2020). Therefore, they fail to address the negotiations between multiple actors to determine what may constitute value for them.

While the innovation literature provides examples of mediators or sustainability promoters and their role in fostering collaboration and synergies with a potential learning outcome, a learning perspectives approach offers only limited insight into stakeholders' diverse perspectives and little actionable knowledge. While Geissdoerfer et al. (2016, 2020) claimed to provide a network-centric rather than a firm-centric perspective on value by combining value mapping with design thinking, it is not clear how stakeholder concerns are actively translated and realigned into new network configurations (De Giacomo & Bleischwitz, 2020). Furthermore, multiple researchers have called for in-depth case studies at the microlevel to investigate and understand business model innovation to support the transition towards a circular economy (Hansen & Schmitt, 2021; Loon et al., 2021).

In this article, we investigate microlevel negotiations during collaborative endeavors to innovate new business models and transition a laundry value chain on the Danish island of Bornholm. We do this by drawing upon and further developing the staging negotiation spaces (SNS) framework (Pedersen, 2020) rooted in collaborative design and actor-network theory (ANT). This framework enables us to

investigate the collaborative design and innovation efforts in Bornholm by studying negotiations staged with and by diverse actors from the value network with the aim of (re)aligning the network through collaborative conceptualization of sustainable transitions towards a circular economy. The framework is both analytical and actionable, since it provides an analytical frame for understanding the negotiations taking place by considering sustainable transitions through the lens of (value) network translation. At the same time, it offers the reader a repertoire of strategic staging moves that may inspire sustainability innovators, designers, researchers, and project managers in their navigational efforts when engaging in collaborative sustainability-oriented innovation processes.

In section 2, we review the literature concerning the redesign of business models to facilitate the transition towards a circular economy, which entails the realignment of actors across the value network. In section 3, we introduce the empirical methods used to investigate a case of staging co-design for a circular economy and the principles of action research applied. In section 4, we present the case analysis based on the SNS co-design framework. In section 5, we discuss the analysis and suggest updates to the framework to reflect a sustainability project. We conclude by discussing limitations and calling for additional in-depth experimental cases in section 6.

2 | THEORETICAL BACKGROUND

2.1 | Sustainable business model innovation

In the management literature, sustainable business models are widely understood as “business models that aim at solutions for sustainable development by creating additional monetary and non-monetary value by the proactive management of multiple stakeholders and incorporate a long-term perspective” (Geissdoerfer et al., 2018, p. 713). Within academia and the industry, business model innovation is seen as a promising means to integrate sustainability into business, support sustainable transitions, and initiate processes of change (Chesbrough & Rosenbloom, 2002; Geissdoerfer et al., 2020, 2018). Updating existing business models or potentially developing new ones thus holds the potential for sustainable value creation for and with a multiplicity of actors (Evans et al., 2017; Lüdeke-Freund, 2020). However, changes in strategies and business models may affect not only a specific focal company but also a range of stakeholders within the value chain (Sousa-Zomer & Cauchick-Miguel, 2019). Business models organize stakeholder relations and their corresponding value exchange (Chesbrough & Rosenbloom, 2002; Lüdeke-Freund, 2020) and reconfigure the distribution of assets that may be subject to inertia (Zott et al., 2011). Therefore, conflictual and inherently political aspects of business model innovation also need to be considered (Babri et al., 2018). Yet current literature is less clear on how different stakeholders and vested interests should be handled, and how a realignment of multiple actors could be enabled in the design process.

Zott and Amit (2010) defined business models as activity systems, where commitments from different stakeholders (e.g., firms, customers and partners) serve to accomplish an overall goal. Accordingly, “business model innovation may happen by adding new activities or linking new activities in new ways, and/or by changing one or more stakeholders to perform activities” (Hernández-Chea et al., 2021, p. 3). Examples of such proactive stakeholder strategies can be observed in situations involving co-creation with customers (Baldassarre et al., 2017). For example, end users may be involved as early as the exploration stage, since these actors are expected to benefit directly from the improved value offers. Furthermore, end users' opinions are perceived as the key to defining what counts as value. For instance, studies of open innovation show how users can contribute to the development of new products, services, and systems (Hienerth et al., 2011) by being invited to collaboratively design such new value offers (Bogers et al., 2010; Randhawa et al., 2016). While involving end users may be of crucial importance in redefining what counts as value (Pedersen et al., 2022), co-creation efforts are not limited to end users but often depend on the involvement of or draw on broader ecosystems of innovation.

2.2 | Ecosystems for sustainable innovation

Thus, companies need to consider their value propositions and interpretations of sustainability and the diverse perspectives offered by the entire innovation ecosystem (Bogers et al., 2020; Pedersen & Clausen, 2018). Contributing to this line of thinking, Antikainen et al. (2016) considered the challenges of redesigning business ecosystems to find the “win, win, win” situation that balances the self-interests of involved actors and sustainability impacts. This again points to the involvement of a multiplicity of actors in the design of new business models where stakeholders act in their capacities as both creators and recipients of value, and build mutual relationships (Freudenreich et al., 2020) that go beyond a traditional stakeholder management perspective: “Business models should be designed, developed, and realized in relationships between a business and its stakeholders” (Freudenreich et al., 2020, p. 8). This also implies “changes in the way business models are conceptualized in regard to their exchanges and relations with stakeholders” (Evans et al., 2017, p. 600). However, empirical studies on the development of such new relationships with and among stakeholders point to several difficulties. For instance, Reim et al. (2022) empirically identified several alignment problems as a consequence of interactions between different elements of sustainable business models. Other empirical studies have pointed to the need for better collaboration with stakeholders involving broader product ecosystems (Barreiro-Gen & Lozano, 2020; Diaz et al., 2021). Oskam et al. (2021) addressed the difficulties of collaboration in innovation ecosystems across the public and private sectors, suggesting that ecosystems engage in a process of valuing value searching for solutions that satisfy all stakeholders. Others have pointed at the variety of different roles stakeholders can play. In

particular, secondary stakeholders, such as consultants, governmental bodies, etc., may contribute the most innovative ideas (Goodman et al., 2017), while others, such as technology suppliers, may exert pressure and influence circular product design (Pinheiro et al., 2022).

This points to the complexity of co-creating new business models, since the involved stakeholders often have multiple agendas and interests (Evans et al., 2017) which cannot simply be mapped in advance. Still, several tools have been developed for mapping potential value, such as the “multiple stakeholder value perspective” (Bocken et al., 2015). Also, traditional management literature advocates that various actors and their perspectives should be considered in stakeholder mapping or stakeholder analysis exercises (Bryson, 2004; Guertler & Sick, 2021). However, this presupposes that stakeholders have already defined value propositions that can be identified and mapped, which we argue is seldom the case.

Thus, while there is a common understanding in the literature that sustainable business models should be designed in a process of mutual alignment across a multiplicity of stakeholders playing a variety of roles, it is still not clear how these co-design processes may take place and be facilitated, and how non-human elements such as PSS and the circular economy recipes may contribute.

2.3 | Designing sustainable PSSs to support a transition towards a circular economy

Designing sustainable PSSs is suggested as a way to provide value to customers in a sustainable manner, as the PSS business model is anticipated to foster a circular economy and sustainable transitions (Kühl et al., 2018). Combining products and services in PSSs by selling the rights to use products (e.g., through leasing and service agreements) instead of products themselves has the potential to reduce the production of material products and thus help partially decouple economic growth from resource consumption (Ghisellini et al., 2016; Pieroni et al., 2019). However, PSSs do not inherently contribute to a positive environmental impact or reduced resource consumption (Kjaer et al., 2019) unless they are intentionally designed to do so (Michelini et al., 2017).

A wide range of tools and methodologies have been developed from a design perspective to support decisions in designing PSSs. For instance, researchers and designers promoting eco-design strategies typically focus on technical and environmental aspects and decision support but often direct little attention towards user-related and social aspects of sustainability (Ceschin & Gaziulusoy, 2016). Andrews (2015) suggested that designers should take a leading role in the transition to a circular economy by designing products and services that slow, close, and narrow resource loops, essentially focusing on designing for disassembly and waste recycling. While these approaches focus on products as objects of design, Ceschin and Gaziulusoy (2016) noticed that design approaches have progressively expanded their focus from object-based thinking to systemic approaches such as PSS for sustainability which place and challenge

the designer in taking a strategic role, facilitating strategic dialogues between actors and co-design processes. Yet, despite a growing number of studies stressing the importance of including the design of value chain and systemic solutions in PSSs (Kühl et al., 2018; Michelini et al., 2017; Sousa-Zomer & Cauchick-Miguel, 2019), there is very little empirical evidence concerning how such system oriented co-design processes are carried out and facilitated.

2.4 | The design-implementation gap

Strategies focused on adding new dimensions to PSSs or circular economy business models often fail due to the dominant business logics of established linear business models (Huulgaard et al., 2020; Unruh, 2002). This challenge is referred to as a design-implementation gap (Naor et al., 2018; Pieroni et al., 2019).

To escape the constraints of such dominant logics, Zott and Amit (2010, 2015) suggested a generalizable normative process model of business model innovation that draws on design thinking. They suggested that redesign efforts may target any part of the business model: the value or business offer (product or service), how it is manufactured or delivered, or how the value is captured and distributed. Based on case studies in larger firms, Guldman et al. (2019) suggested extending the design thinking framework to include an alignment space to engage a company's internal stakeholders in cross-organizational dialogues about potential implications of a circular business model. While Zott and Amit (2015) and Guldman et al. (2019) proposed a design thinking-inspired approach to business model innovation, Huulgaard et al. (2020) pointed out that while design thinking offers a number of relevant tools for circular business model design, the performance of such tools depends largely on the contextual situation and the navigation of different stakeholder interests.

Sustainability is a highly situated phenomenon, meaning that there are no standard sustainability solutions that work everywhere. This points toward a need to investigate specific processes involved in collaboratively conceptualizing new sustainable products, services, and systems (and thus new business models) from a value network perspective (Wicki & Hansen, 2019). Along these lines, Guldman and Huulgaard (2019) recommended business model experimentation as a way to escape the constraints of a dominant business logic and "lock-in." Several authors have promoted a learning perspective whereby experimentation plays a central role in the development of situated, local solutions (Bocken, Boons, et al., 2018; Wicki & Hansen, 2019). For instance, based on their study of eight companies' experimentation with circular economy business models, Bocken, Schuit, et al. (2018) recommended a learning strategy as key to the development of sustainable innovation capabilities. This strategy includes internal and external engagement, testing assumptions, setting experiments, and establishing learning cycles. Along these lines, multiple authors view business model innovation as an iterative process of experimenting, piloting, debriefing, learning, and scaling up (Boons & Lüdeke-Freund, 2013; Ritala et al., 2018).

2.5 | A current focus on learning and experimentation

The few current empirical studies on experimentation for sustainable transitions show, however, that companies tend to limit their experimentation with new business models to dialogues with a few trusted external stakeholders, such as customers or suppliers (Bocken, Schuit, et al., 2018). For example, Keskin et al. (2020) focused on sustainable product innovation in iterative entrepreneurial processes concerned with market testing one or several value propositions. This research is quite interesting in terms of investigating two different approaches of either sticking to a set value proposition and performing high fidelity experiments, or continuously evolving the value proposition by performing several low fidelity experiments. However, the result is a classification of processes with few insights regarding process dynamics and network formation, making it difficult to translate such insights for more established firms influenced by path-dependent and linear thinking (Garud & Karnøe, 2001; Huulgaard et al., 2020). Following this critique, our perspective on innovation is more in line with Wicki and Hansen's (2019) paper on green innovation in mature firms seeking to use their core competencies to diversify their business by developing green technologies. They adopted a process view on innovation based on the so-called "fireworks" model (Van de Ven et al., 2008), stressing the nonlinear aspects of innovation with a focus on how learning may occur along and across explorations of multiple nodes of failures. Single-loop and double-loop learning from experiments are explored in relation to how these learnings facilitate opening or closing the solution or innovation space according to the technologies and markets at play.

Thus, several strands of research (Bocken, Schuit, et al., 2018; Huulgaard et al., 2020; Keskin et al., 2020; Wicki & Hansen, 2019) point to the iterative character of sustainable innovation and its implications for change in the form of experimentation and learning. In these cases, experimentation is encouraged with a sensitivity toward the exploration and identification of problems and the development of new sustainable solutions. While current research points at situations where learning can take place (Wicki & Hansen, 2019) (e.g., between innovation pathways), studies offer limited insight into the content of the microlevel experimentation process and little actionable knowledge on the strategic aspects of staging learning experiences/loops (Hansen & Schmitt, 2021; Loon et al., 2021). Still, most of these studies are quite firm-centric, meaning that they do not explore the situation from the perspective of different actors (Freudenreich et al., 2020; Oskam et al., 2021) and neglect to address the negotiations between them. Geissdoerfer et al. (2016, 2020) claimed to provide a network-centric rather than a firm-centric perspective on value by combining value mapping with design thinking, but it is not clear how stakeholder concerns are actively translated and realigned into new network configurations (De Giacomo & Bleischwitz, 2020). Hansen and Schmitt (2021) showed how individual promoters of cradle-to-cradle innovation engage in collaborative efforts across intra- and inter-organizational boundaries from a

microfoundations perspective. Although these community networks may help facilitate translations of sustainable knowledge, they do not define or conceptualize the content of a core product, service, or system.

2.6 | Negotiating sustainability and value

While experimentation may be highly beneficial, dialog and negotiations between actors from the value network are essential for developing a beneficial system of products and services. Thus, it is important to successfully *engage* multiple and diverse actors in deliberate interaction, partnering, networking, and learning activities (Evans et al., 2017). One way to understand such successful engagement would be to ensure that value is created for all participants in the network (den Ouden, 2012). However, value may be perceived differently by different actors (Oskam et al., 2021). Thus, a starting point would be to investigate how understandings of value and sustainability are related.

For instance, the PSS and circular economy perspectives primarily draw attention to the environmental and financial aspects of sustainability but typically fail to consider the social dimension (Geissdoerfer et al., 2017; Pieroni et al., 2019). In contrast, discussions about sustainable business model innovation are not limited to, for example, circular economy considerations, since the social aspect also plays a central role. As Evans et al. (2017, p. 600) put it, “a firm’s value creation logic should consider the integration of social and environmental goals into a more holistic meaning of value.” To that end, De Giacomo and Bleischwitz (2020, p. 3361) proposed focusing on stakeholder theory to consider the social outcomes of a circular economy (e.g., public value). Sustainability is a multi-dimensional concept that cannot be defined by managers alone but instead should be continuously negotiated between the various actors involved (Geissdoerfer et al., 2017; Goodman et al., 2017; Hall et al., 2003; Klewitz et al., 2012). However, only limited research exists on such microlevel negotiations among actors from the wider value network concerning the meaning of sustainability and value.

2.7 | The staging approach

While the literature on circular business model innovation has increasingly attended to the challenges of (re)aligning business relations across value networks (Hansen & Revellio, 2020) in order to promote a circular economy, the question of how to identify relevant actors, motivate them, and translate their concerns across these value networks remains unanswered. To address these challenges, we suggest a staging approach to collaborative design and innovation (Clausen et al., 2020) focused on SNS (Pedersen, 2020) that enables value and business relations across multiple actors to be addressed. This staging approach explicitly attends to the navigation of particular conditions of possibilities, for instance, which actors might be relevant to include in which discussions at which times in the process, as well

as the production and circulation of material objects and how these may enable a particular exchange of perspectives and facilitate reframing.

2.7.1 | Staging negotiation spaces

The *SNS framework* (Pedersen, 2020; Pedersen et al., 2022) proposes such an approach to sustainable collaborative design and innovation. According to Freudenreich et al. (2020, p. 15), “If a framework is to be analytically useful, it needs to provide a more differentiated picture of the stakeholders involved in their specific mutual value exchanges with a focal business.” The SNS framework does exactly that, as it synthesizes useful concepts from ANT and participatory design to allow for an analysis of negotiations during complex design and innovation activities, and focuses on network alignment across multiple actors.

The SNS framework introduces the role of a stager of negotiations in a collaborative process. In sustainable transition efforts, internal managers, researchers, designers, or external intermediaries such as universities, governmental bodies, or consultancies (Klewitz et al., 2012) may take on the role of stager to foster engagement, new knowledge, and alignment of actors as central aspects of facilitating the identification of concerns or challenges and the resulting sustainable value offers.

According to Pedersen et al. (2022), staging often involves the following repertoire of staging moves (see Figure 1):

- a. *Interpreting* the problem/situation/value creation opportunity (matter of concern), which also entails paying attention to the objects that may frame the negotiations such as business models, strategies, budgets, etc.;
- b. *(Re)framing* negotiations to motivate specific discussions (e.g., understanding concerns actors may have in relation to the problem);
- c. *Producing objects* by inscribing this framing into different “props,” for example, in the form of design objects such as storyboards or design specifications intended to represent the investigated problem; and
- d. *Inviting* other relevant actors to the negotiations, such as users, customers, and project managers.

Negotiation may entail the circulation of different props as well as their potential enactment to facilitate the exchange of concerns.

In this article, we use the SNS framework to investigate a service-based PSS to understand the evolving relationships between products, users, manufacturers, services, and business models in a case of promoting a circular economy and sustainability on Bornholm. Specifically, we follow central negotiations to surface and investigate concerns, motivations, and reflections of the involved actors. A central aspect here is to investigate the staging moves used to create network alignment—that is, inviting different actors from the value network and producing different objects in the form of narratives,

FIGURE 1 The staging negotiation spaces framework

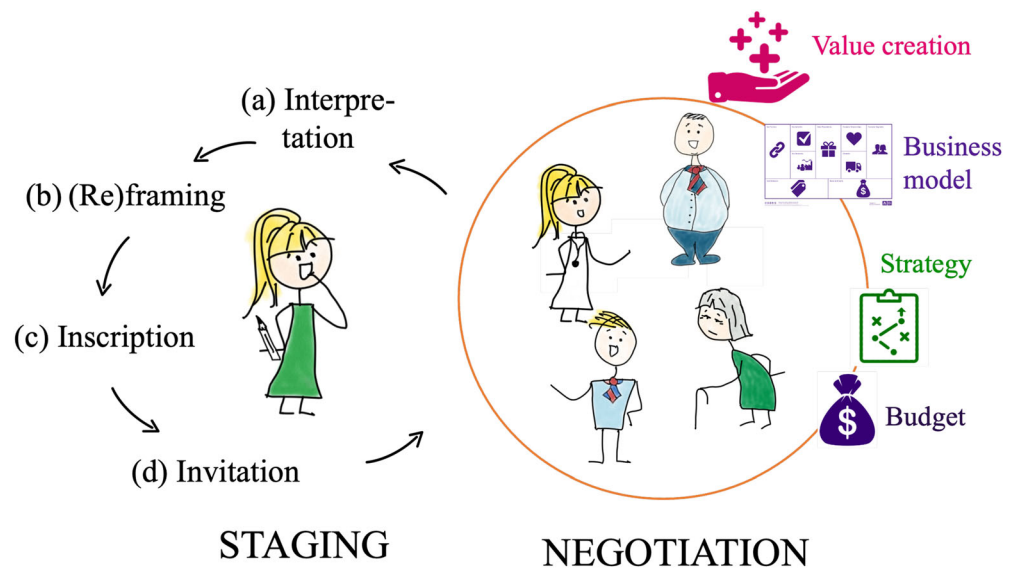
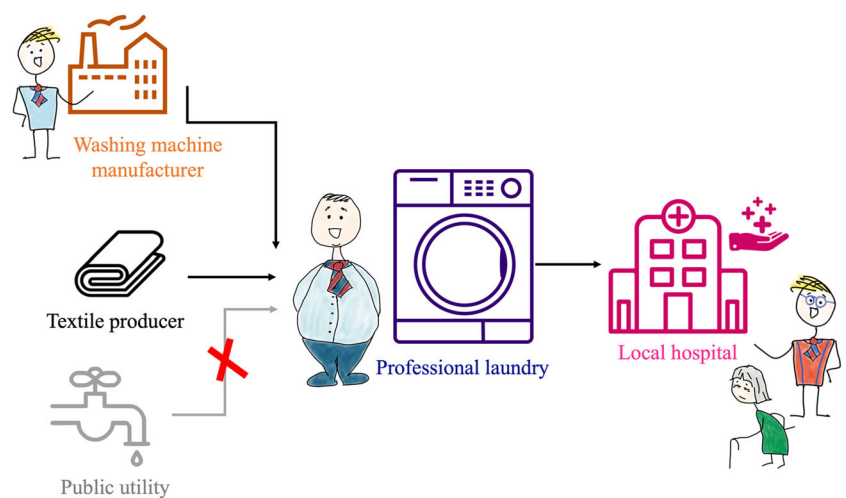


FIGURE 2 Illustration of the laundry value chain



flow models, and ranking games to be circulated as a central part of the negotiations.

3 | METHODS

The following in-depth case study (Baškarada, 2014) serves as an exemplary case illustrating how actors in a value chain negotiate sustainability and ways of collaborating towards a sustainable transition. This project is part of a larger research and development project funded by the Danish Industry Foundation called Sustainable Production 3.0. The aim of this research project was to study 20 cases of Danish companies embarking on a journey towards a transition to sustainable production and consumption inspired by circular economy principles (Jørgensen et al., 2018; Jørgensen & Remmen, 2018). Each company and thus each case are unique, meaning that the transition process was initiated based on situated local value network structures and motivations.

This particular case illustrates the iterative staging and negotiations during an innovation project focused on sustainability and

circular economy issues. The main project partner was a local professional laundry situated on the Danish island of Bornholm. Other central actors who became involved were a global washing machine manufacturer based on the island and the local hospital as the main customer of the professional laundry (see Figure 2).

All the actors depicted in Figure 1 were involved in the project to varying degrees and participated at least once through interviews, tours of their premises, and/or staged workshops. As mentioned, the main project partner was a local professional laundry company, which participated in interviews, visits from researchers, workshops, etc. The other actors in the value network became involved through snowballing techniques. As the network widened, the unit of analysis evolved and changed according to the framings and value propositions that were negotiated during the project period.

The first author played an active role as a researcher, designer, stager, and facilitator. She used ethnographic research techniques such as interviews, observations, thick descriptions and participant observation, and design methods such as staging and facilitation of generative workshops during a 6-month period in 2017. Her

involvement was informed by participant observation (Goffman and Lofland, 1989) in the form introduced by DeWalt et al. (1998) during the project period. She kept a logbook consisting of notes and presented it in the form of a PowerPoint with more than 60 slides that visually represented the gathered empirical material. Several interview transcriptions, together with a variety of created design objects, became the basis for the analytical research process. With respect to data analysis, the case narrative was written based on abductive analysis (Timmermans & Tavory, 2012) carried out by the authors to ensure collaborative reflection (Jarzabkowski et al., 2015). This led us to iteratively revisit our empirical data using the SNS co-design framework (Pedersen, 2020; Pedersen et al., 2022; Pedersen & Clausen, 2017).

4 | STAGING SPACES FOR NEGOTIATIONS ABOUT THE CIRCULAR ECONOMY

In this section, we follow the negotiations and consider their staging, and investigate the concerns, motivations, and strategies of the actors in the value network around the professional laundry on Bornholm (see Figure 3).

4.1 | TCO as the central initial framing of the project scope: Framing the project focus and solution space for future value offers

To kick off the research project, researchers from Aalborg University visited Bornholm equipped with an introductory PowerPoint presentation explaining the principles of sustainability and the circular economy. The essence of the presentation was that many industry

leaders have high expectations for circular economy initiatives, but only a few know how to implement them. The intended takeaway for the companies was that this project would demonstrate the practical and tangible value of the concept by fostering collaboration with companies from different industries on how to implement central principles. This PowerPoint thus represented the researchers' interpretation of the overall project and provided the initial framing for negotiating the focus of the innovation project on Bornholm with the professional laundry as a central actor.

The CEO of the local professional laundry (Victor) and the executive director of the washing machine manufacturer (Jens) welcomed the researchers and listened carefully to their presentation about sustainability and circular economy considerations. As an executive of a turnkey equipment manufacturer with global production, Jens quickly expressed considerable interest in total cost of ownership (TCO) considerations. A growing number of the firm's customers (especially the publicly owned hospitals in Denmark) had begun to focus on TCO considerations (operational costs) rather than traditional, linear procurement considerations (product acquisition costs). Hence, he stated that this could be an interesting angle to take on this case study and innovation project. Victor was open to this suggestion, and the researchers also found TCO considerations interesting, as they would fit nicely into the project brief. Thus, the initial reframing of the project scope from a general perspective on the circular economy to a more local perspective which included TCO considerations in relation to laundry services on Bornholm also defined the preliminary solution space for envisaged value offers.

4.2 | Staging negotiations with Jens and Victor

Time passed, during which several meetings were held between the researchers, Victor and Jens. Then, a new AAU researcher was

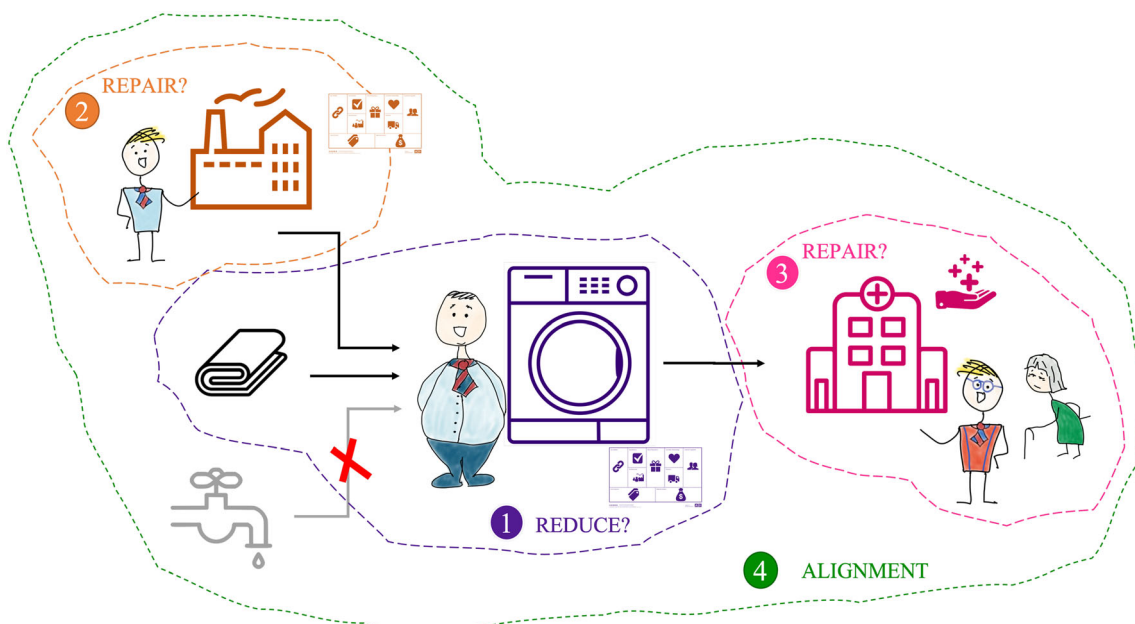


FIGURE 3 The four central negotiation spaces

introduced to the project. To get to know Jens and Victor, she arranged a trip to Bornholm to meet with each of them individually to hear in their own words what was at stake for them and what their concerns were. The new researcher staged the meetings by interpreting knowledge and insights from her colleagues related to the current TCO project framing, as well as academic literature on the circular economy and PSSs. She then translated these insights into material objects by producing a simple design game to use as a dialog tool during her interviews with Jens and Victor. The game pieces resembled central building blocks of business models such as service, costs, sustainability, price, and customer satisfaction to understand how Jens and Victor understood the connection between sustainability and their current business models. Although this design game would help frame the discussion, the space was intended to be open in order to invite new inputs from Victor and Jens.

4.3 | First negotiation space: Engaging the CEO of the professional laundry

In the first space, the researcher met with Victor from the professional laundry to learn more about the company, its business model(s), and motivations for being involved in the project. She asked Victor to rank the different words/concepts on the game pieces to initiate a discussion of his experiences with sustainability efforts in general and how circular economy considerations would fit into his current business strategy. Furthermore, she asked him to share his thoughts on TCO and how his company might benefit from exploring such considerations further. Taking a starting point in the game pieces, Victor began to give examples of his previous and ongoing efforts related to making the professional laundry as green as possible.

It quickly became clear that Victor wanted his professional laundry to be self-sufficient for several reasons. First, he felt a strong responsibility towards his children and grandchildren to take care of our planet. Second, he saw it as a way to help ensure the survival of his company in the face of rapidly increasing water and electricity expenses. Since 1996, Victor had had a clear strategy to increase the company's sustainability profile by reducing the use of energy, water, detergents, and textiles. Victor saw this project as a way to strengthen this profile further and to serve as an example to other companies on the island for how to care for the environment and think innovatively. By the time this project started, Victor had already established his own sewage treatment plant to clean and reuse the water from operations, and had engaged a local consultancy firm to help him optimize the flow of textiles through the sorting, washing, drying, and folding stages. Having done a lot to optimize his own washing setup, Victor then engaged with the turnkey manufacturer which supplied his washing machines and other equipment to explore a more environmentally and financially sustainable relationship. He had, as an experiment, convinced Jens to offer some of the equipment (for instance, a textile-folding machine) as a service. This meant that he would call the manufacturer when the machine broke down and they would fix it free of charge. Also, he had previously suggested improvements to some of the machines that had been implemented across his entire

fleet. Thus, the two of them already had a close working relationship and a mutual understanding that they could both benefit from using the professional laundry as a small test lab for the washing machine manufacturer.

But Victor also wanted to collaborate more with his customers in a manner that reflected his interest in PSS-related activities. Thus, he experimented with a PSS business model setup related to clean tablecloths, towels, and bed linens for his main private customers, including local hotels, nursing homes, and the local hospital. Instead of the customers buying the textiles and paying Victor to launder them, he bought the textiles and provided them as a service to his customers. This enabled him to reduce the number of textiles while satisfying demand. Also, he could administer the flow of textiles based on a just-in-time principle to prolong the useful life of the textiles and prevent them from deteriorating due to infrequent use. Because Victor owned the textiles and controlled the flow, he was incentivized to buy high-quality textiles to increase durability. Therefore, he engaged in discussions with a textile manufacturer to explore the possibility of designing new and more durable textiles using a blend of cotton and polyester. Eventually, these textiles were developed and bought for his PSS model with the restaurants and hotels to test and receive customer feedback. Once Victor had acquired the textiles, he also became aware of the large number of units that were lost during use. He had investigated the possibility of adding RFID tags to the textiles, but this solution turned out to be too expensive, as his laundry was still considered relatively small. Victor also took over the repair shop next to the local hospital's textile storage room to prolong the useful life of hospital-owned patient gowns and staff uniforms.

As is probably obvious by now, Victor was not afraid to try new things and was willing to expend significant effort to transform his business in a more sustainable direction, nor was he afraid to include his customers in dialogue and negotiations during the process. As a matter of fact, Victor wanted to learn more about the concerns and strategies of his public customer (i.e., the local hospital) and about the needs of end users (i.e., hospital staff and patients) who were in direct contact with the textiles. He reasoned that if he knew even more about his customers, then he would be able to provide them with even better value offers. Because the hospital was a central customer in the laundry ecosystem, it was therefore decided that the researcher should approach the facilities managers (FMs) from the hospital and invite them to participate in the project.

Prior to engaging with the hospital FMs, however, the researcher solicited Jens's thoughts on his business strategy related to TCO concerns.

4.4 | Second negotiation space: Engaging producers of washing equipment

The staging of this second space involving Jens from the turnkey manufacturer was similar to the one involving Victor from the professional laundry. The researcher once again brought the game pieces with her and initiated an open dialog with Jens about his thoughts on sustainability and TCO. She anticipated that Jens would be happy to talk

about his expectations of TCO structures. Jens had been one of the initiators of framing the current project in this direction and had also tested a PSS business model together with Victor from the professional laundry. However, much to the researcher's surprise, Jens did not even mention TCO at any point. When she eventually asked about it, Jens told her that after careful consideration, he had concluded that he did not want to pursue TCO and PSS models any further. He argued that it would be difficult for him to change his business model for three reasons. First, a TCO/PSS approach would require more focus on service and maintenance if he leased his machines to customers (like in the experiment with Victor), and it was too difficult to find skilled labor to perform maintenance work. The one thing that would change his mind, he said, would be pressure from customers: "We are a very customer-driven company, so if our major customers (e.g., the Chinese government) begin to require such service agreements, we will consider this again." Second, while a PSS setup of leasing the machines to the professional laundry would incentivize Jens to prolong the useful life of his machines through timely maintenance, Jens earned too much money selling spare parts to Victor and his other customers. Third, if the washing equipment provider decided to become a professional laundry to learn more about end users, they would cannibalize their current customers and thus become extremely unpopular in their current value network.

Because the manufacturer had abandoned the TCO approach, the project framing and thus also the solution space of sound value offers were open and could head in several directions based on the negotiations with other actors in the value chain. Thus, at this point, it was interesting to hear what the hospital FMs had to say.

4.5 | Third negotiation space: Engaging the customers at the local hospital

As agreed with Victor from the professional laundry, the researcher staged a meeting with two FMs from the local hospital to learn more about their experiences with the current system and their concerns, strategies, and aspirations for the future. The meeting took place at the hospital and began with a tour. Once again, the researcher had produced several game pieces—this time, posing questions related to their experiences with the laundered textiles. These game pieces were based on the researcher's interpretation of what Victor wanted to know about his customers, which then framed the initial dialogue to focus on the experience of using the laundered textiles (e.g., scent, comfort, aesthetics, and durability). These provided a starting point for negotiations with the FMs. They immediately added "functionality" as a new game piece and ranked it as one of the highest priorities. The FMs tried to rank the game pieces based on what they thought the staff and patients might say, but it quickly became obvious to them that they were merely guessing. Both managers really wanted to hear directly from the patients and staff, so it was decided that the researcher should conduct ethnographic fieldwork at the hospital by following the flow of textiles, engaging in participant observation and conducting informal semi-structured interviews with patients and staff along the way.

4.5.1 | Conducting fieldwork at the hospital focusing on users

The researcher had noticed that Victor and the hospital FMs shared an interest in understanding their end users. Based on her interpretation of what both Victor and the FMs wanted to learn, the researcher structured a guide for conducting semi-structured interviews with patients and staff at the hospital. In this sense, the researcher, Victor, and the FMs collectively staged this space by framing it in terms of gathering feedback from patients and staff with regard to, for example, how the textiles smell after being washed, how comfortable and wearable the fabrics are, and whether there were enough gowns available in the right sizes at the right time. Also, she brought her notebook and camera and started to document the journey of the textiles from the delivery of clean textiles, to use, to pick up of the used textiles. During her visits to the hospital, she engaged with more than five patients, two members of the nursing staff, and two cleaning personnel, as well as an employee in the linen room. Three central challenges for patients and staff emerged. We elaborate these below.

Limited availability of clothes, pillows, and linens

During her fieldwork, the researcher learned that the repair shop had previously been staffed by one full-time person from the hospital who oversaw the repairs and also ensured that the right patient gowns, pillows, etc. were available in the different wards throughout the hospital. However, now that the professional laundry and not the hospital ran the repair shop, the staff changed frequently, and they did not know much about the hospital's practices or patients' needs. So, while some aspects of the PSS worked perfectly, others were hindered by this system as the staff from the professional laundry were not explicitly incentivized to obtain situated knowledge and go the extra mile to provide the right textiles to the right people in the right hospital wards.

Bulky pillows

One of the themes that kept emerging when talking to patients and care personnel—and which had nothing to do with the questions about clothes and bed linens—was the discomfort of lying in bed with a pillow that was too hard and bulky. One patient said, "It's like lying on a cannon ball." As it turns out, the bulkiness of the pillows was a result of the washing process at the professional laundry that made the filling in the pillows clump together. For hygienic reasons, the pillows were washed much more frequently than the pillow designers anticipated. The result was hard and bulky pillows that provided a lot of discomfort for the patients lying in bed most of the day.

Strong preference for cotton

Another insight is related to the choice of fabric. As mentioned earlier, Victor had helped develop a new type of highly durable textiles made from a mix of cotton and polyester. However, both staff and patients expressed reluctance towards polyester and great support for cotton at a very general level. This thus conflicted with the PSS strategy of

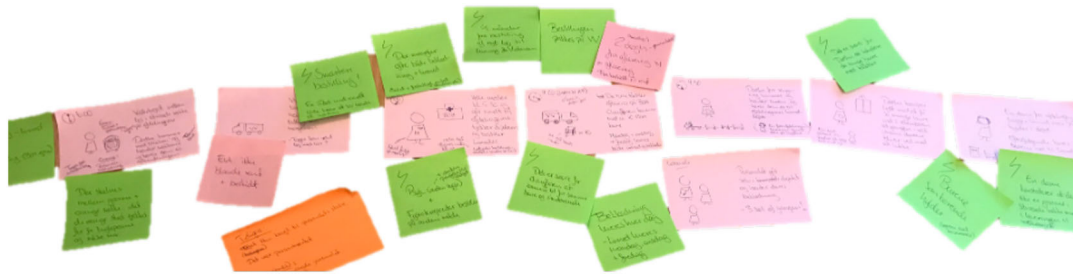


FIGURE 4 Design game prepared on the spot illustrating textile flow and breakdowns

making the textiles more durable and moving away from cotton, which typically requires a lot of water to produce.

4.5.2 | Presenting findings to the FMs

Based on her findings, the researcher prepared an improvised design game visualizing the different steps in the textile journey with identified breakdowns (see Figure 4).

During discussions of the breakdowns, the FMs discussed pros and cons of owning versus leasing textiles. In general, they were very interested in TCO, which could potentially eliminate costs and tasks not directly related to the hospital's main value proposition of healing patients. However, unlike Victor's private customers, the hospital FMs found it difficult to navigate TCO aspects due to external factors such as nationwide public procurement regulations. Implementing a PSS business model was difficult because capital investments and operating costs belonged to two different budgets that were not viewed as interconnected. Instead, the FMs had to navigate the situation by framing laundry tender in a way that allowed for PSS considerations. The researcher asked them to reflect on their experiences with *leasing* sheets and bed linens as a service based on Victor's PSS business model and *owning* staff uniforms, patients' gowns, duvets, and pillows bought through central public procurement. They expressed great satisfaction with the leasing model and highlighted the importance of prolonging the useful life of both leased and owned textiles, thanks to the repair shop at the hospital. However, it was interesting for them to hear about the challenges with Victor's employees, who, unlike the previous hospital employee, did not have the same sense of responsibility to ensure wards were properly stocked. A possible explanation is that they spent the majority of their time in the washing hall and thus did not feel part of the hospital and their mission. Notably, studies have identified patients' clothing as an important part of a "healing environment" (Topo & Iltanen-Tähkävuori, 2010) that fosters faster recovery. However, the laundry staff may not have seen themselves as contributing to patient recovery in a meaningful way.

Thus, although the current setup at the professional laundry had been optimized for environmental and financial sustainability with regard to washing standard products such as bed linens, it had not been optimized for social sustainability in terms of supporting patient

recovery by having the right gowns and comfortable pillows available for end users.

Until this point, the project had been in a very exploratory phase to investigate the potential for designing for sustainability and creating improved value offers for customers and end users. It was now time to converge the process by staging a space for identifying a shared value offer that hopefully would result in sustainable and user-centered network (re)alignment.

4.6 | Fourth negotiation space: Workshop space involving all actors from the value chain

4.6.1 | Staging the space

Based on the overall project framing and the (mainly environmental) sustainability perspective from Victor, the workshop was framed as a chance for all actors in the value chain to come together and discuss how to collaborate to ensure a sustainable transition for Bornholm.

The social aspects of sustainability articulated by end users were also represented at the workshop, since the designer had prepared various objects, such as personas that represented patients and staff encountered at the hospital, insightful quotes, and flowcharts representing the current flow of textiles and breakdowns. These objects had multiple functions, for instance, to document the activities and provide insights regarding the needs of end users to Victor and the FMs, as well as to facilitate "collective sensemaking" (Christensen et al., 2017) during the workshop in terms of the potential to create value for end users.

As a central part of the staging efforts, the researcher invited all local actors in the network to participate in the workshop: Victor from the professional laundry service, Jens from the manufacturer, a representative from a textile company, the two FMs from the public hospital, and the two representatives from the public utilities organization. To frame the dialogue around the connections between all actors in the value chain (including Jens, even though he could not participate in the workshop due to other obligations), a large illustration of the value network was prepared and mounted on one of the walls in the conference room at a local hotel (see Figure 5). This site was chosen to keep the dialog neutral so that none of the participants had a "home field advantage."



FIGURE 5 Illustration of the value chain mounted on the wall of the conference room to frame the negotiations



FIGURE 6 The value network with actors post-its

4.6.2 | Negotiations between actors from the value network to foster alignment

On the day of the workshop, the invited participants expressed great enthusiasm for having an opportunity to meet and engage in dialogue with each other.

Sustainability and customer-centricity define the space

To kick off the workshop, the participants were given Post-its to write down their matters of concern as well as their expectations for participating in the research project. These Post-its were placed on a diagram portraying the value chain. After placing their Post-its, they each presented what they had written as part of the introduction round (see Figure 6). The designer represented the patients and the staff

whom she had encountered at the hospital—both by speaking on their behalf and by circulating and referring to the objects she had prepared, which illustrated flows and concerns at the hospital.

While each actor had their own motivations and concerns for participating, as it turned out, what all actors ended up presenting was a shared desire to focus on creating sustainability throughout the value chain and to work together to help Bornholm become a “Bright Green Island” (BGI), which related to a newly presented political strategy. Committing to this strategy would provide the organizations with branding opportunities as well as opportunities to apply for public funding to promote Bornholm as a sustainable island and a role model for the rest of Denmark and the world. Hence, the BGI strategy turned out to be a crucial concept (Hansen & Clausen, 2017) for creating alignment among actors across the value network.

to keep procurement costs down rather than consider TCO. Therefore, new pillows were bought from the same producer and were only marginally better at maintaining the right shape.

5 | DISCUSSION

Analyzing the case through the SNS lens enabled us to investigate microlevel aspects of collaborative efforts to transition the laundry value network towards a more sustainable future.

5.1 | Strategically staging multiple spaces

Rather than a single space for reflection with stakeholders (Guldman et al., 2019) or a business model mediation space (Lüdeke-Freund, 2019), the SNS framework views the design process as consisting of multiple discursive spaces with varying configurations evolving over time. These spaces are strategically staged to engage value chain actors in due course (Pedersen et al., 2022). Initially, the university researcher staged two spaces with the “usual suspects” in terms of designing PSS, the service provider (Victor), and the manufacturer (Jens). Victor was particularly important to engage since he already had a strong motivation for engaging in sustainable transitions. Jens was also initially seen as a key actor since he and Victor shared an interest in TCO considerations and thus showed a willingness to innovate their current business models. Next, a space with the aim of translating the needs of a large public customer was staged, which led to the researcher doing fieldwork at the hospital. This fieldwork was collaboratively staged by the researcher, Victor, and the FMs from the hospital, all of whom were interested in understanding patients' concerns in relation to certain topics, such as the smell and comfort of the textiles. Finally, the insights gathered during these negotiations were used to stage the collaborative workshop involving all of the previously mentioned actors plus the public water utility. When we attend to the unfolding negotiations on a microlevel, we see how the order of the negotiations was not random but the outcome of strategic choices that yielded new insights to inform the configuration of subsequent spaces. In this sense, we suggest that navigation can be seen as a central aspect of staging sustainable innovation that relates to network-building activities around an evolving concept (Akrich et al., 2002; Pedersen et al., 2020).

With this in mind, we may also view Victor's efforts with the professional laundry prior to the launch of the research project as an act of staging. Below, we investigate Victor's efforts from this perspective.

5.2 | Staging within the value chain

Motivated by his desire to ensure his company's survival while also saving the planet, Victor staged negotiations with his customers. He did this by (a) selecting private customers who had more control over

their business models; (b) framing the discussions around the potential for a PSS business model that promised win-win outcomes for Victor, his customers, and the environment; and (c) purchasing new textiles that he circulated to his customers as part of his new PSS business model. By doing this, Victor tried to actively change the perspectives and business models of his customers and successfully recruited them to support a new business model informed by the PSS concept (Zott & Amit, 2010). The customers no longer had to buy large amounts of textiles and manage logistics associated with ordering, washing, repairing, and ensuring an adequate supply of clean textiles. Likewise, Victor had more control over the textile flow and could thus optimize the operations of the washing facility. On the other hand, this also led to new incentives for Victor, as he suddenly became concerned with the loss of textiles and with prolonging their useful life, and thus engaged in innovation efforts to source new and more durable textiles. Victor's ability to stage negotiations with his private customers played a key role in the success of this business model innovation process. While scholars tend to focus on the design-implementation gap (Naor et al., 2018; Pieroni et al., 2019), our case analysis illustrates that PSS is not something to simply “implement.” Instead, opening up the microlevel negotiations reveals the design and implementation of sustainable innovation to be an iterative process reflecting two sides of the same coin.

5.3 | Staging spaces to frame the project

Rather than seeing Victor's efforts as experiments (Bocken, Boons, et al., 2018; Bocken, Schuit, et al., 2018), we consider them as staging moves to understand the negotiations taking place during the design and implementation of a new PSS business model. His strategy worked well when engaging with his private customers, and the project initiated by the researchers allowed Victor to engage and involve even more actors from Bornholm's value network in negotiations around the topic of sustainability, which was very important to him.

By initiating this new project, the researchers took over the role as the primary stagers of negotiations. As an external third party, they did not know (or even think they knew) the concerns and values of the different actors beforehand. Rather than starting to experiment from the beginning of the project, the researchers instead initiated a process of staging several spaces for negotiation to allow actors in the value chain to reflect on the conditions of possibilities for sustainable innovation. This strategic approach involved investing time in understanding the individual and shared concerns and values of central actors in the value network. The case analysis reveals how the stager/researcher strategically navigated by talking to each individual about their concerns, values, and motivations. She used these insights to stage a workshop for all actors in the value chain to collaboratively negotiate with each other. The result or outcome of each of these negotiations added a piece to the puzzle of establishing a project framing consisting of a shared problem and solution space for the project (see Figure 8). As a result of the first negotiations with Victor and Jens, the project framing was narrowed to focus on TCO

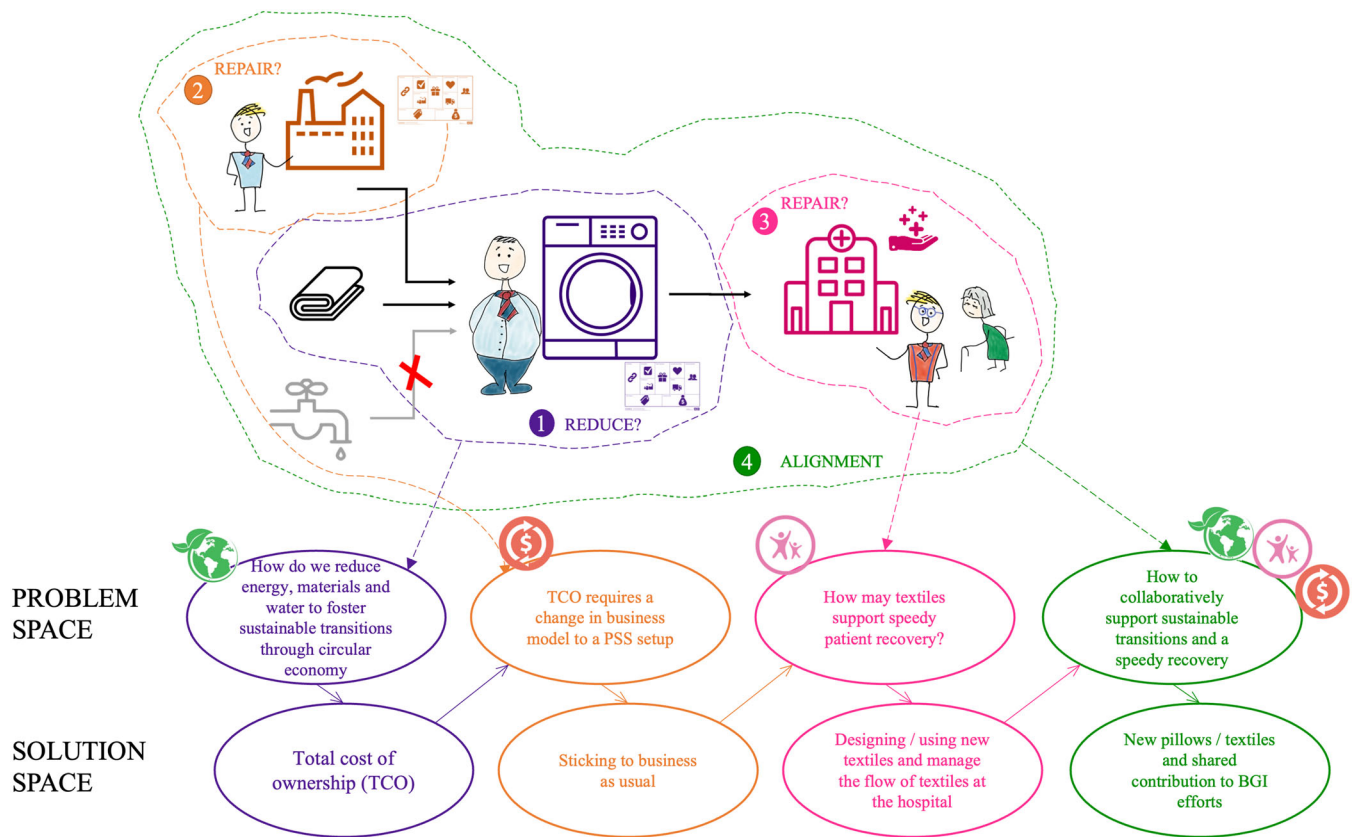


FIGURE 8 Co-evolution of problem and solution pairs as a result of negotiating value

considerations. However, as the result of multiple reflections and interactions with his colleagues at company headquarters, Jens reported during the next negotiation that TCO required a shift towards PSS that he was neither willing nor able to make at that time due to path-dependent practices (Garud & Karnøe, 2001), a lack of skilled labor, and vested interests (Bettis & Prahalad, 1995) since the washing machine manufacturer made money selling spare parts. Next, negotiations at the hospital revealed that their main concern related to ensuring a speedy recovery for patients. Because the FMs wanted the project to provide value for patients, the project was further reframed based on the researcher's interactions at the hospital. The result of these interactions with patients and staff was a further narrowing of the solution space to focus on re-designing pillows and patient gowns and optimizing the textile flow at the hospital. At this point, negotiations with actors in the value chain had helped narrow down a shared problem and solution space that was used to stage and frame the workshop.

During the collaborative workshop, the introduction of the shared vision of the BGI concept expanded the solution space to include collaborative efforts in more areas related to pillows and logistics/textile flow at the hospital. For instance, the participants discussed how the hospital could learn from Victor's wastewater management efforts.

While Keskin et al. (2020) divided their case companies into those with a market focus and those with a product idea focus, this case illustrates how market- and product-related concerns were

simultaneously and continuously negotiated during the project period. During the project, multiple value propositions existed temporarily until a shared value proposition and a shared problem and solution space for all actors in the value network were negotiated during the workshop. More specifically, the negotiations can be understood as spanning a series of problem-solution spaces (Dorst & Cross, 2001) that continued to evolve, expand, and converge. Thus, the project focus did not shift entirely but instead constantly adapted to encompass the multiple concerns and value creation priorities for actors in the value chain.

5.4 | Staging negotiations of value and sustainability as an alignment instrument

The solution space was also framed by the multiple interpretations of sustainability revealed during the negotiations. Initially, the space was mainly framed around environmental and financial incentives related to TCO concerns. Social incentives became a focus once the hospital became involved. Eventually, as a result of the negotiations, all three aspects were included in the solution space. Thus, in line with Goodman et al.'s (2017, p. 731) claim that sustainability is a multi-dimensional concept that needs to be "continuously negotiated between the multiple stakeholders concerned," the case illustrates how multiple interpretations of sustainability co-exist and are

negotiated continuously as part of the alignment between different actors in the network.

According to Antikainen et al. (2016) and den Ouden (2012), value needs to be negotiated to create a win-win-win situation where value is created for all participants in the network. The researcher's staging strategy not only allowed for negotiations of concerns but also for value chain actors to express their values and interpretations of sustainability throughout the process. These insights were used to stage the final workshop with the overall purpose of creating negotiations that would result in a win-win-win situation among all actors in the value chain (the shared problem space). The BGI concept became a shared concern and one of the driving forces for engaging with other actors from the value network. This motivation to be part of something bigger is very much in line with Bogers et al.'s (2020) findings that point to the power of non-pecuniary values such as "purpose" as initial motivating factors for participating in collaborative efforts. Furthermore, the focus on social sustainability introduced by the hospital related to health and well-being reflected their desire to support the "greater good" and practically also helped align the network and the shared solution space during later negotiations.

Along the same lines, Lüdeke-Freund (2020, p. 666) pointed to multiple ways to define business success, including "financial returns, nonfinancial effects such as improved innovative capacities, or a positive societal impact through the reduction of ecological and social ills," where especially positive societal impacts in terms of "BGI" and "speedy recovery" seemed to be a driving force at Bornholm.

5.5 | Staging negotiations as a new intermediary skill/role

While there is widespread consensus in the literature that sustainable innovation requires a mutual alignment of business models and a multiplicity of actors (Antikainen et al., 2016; Freudenreich et al., 2020; Geissdoerfer et al., 2018; Hansen & Revellio, 2020; Lüdeke-Freund, 2020; Oskam et al., 2021), there is still a lack of understanding regarding how the alignment process can be facilitated and performed in practice. Business models are oftentimes seen as useful alignment instruments and mediating devices in the hands of entrepreneurs (Doganova & Eyquem-Renault, 2009) for structuring internal relationships between areas in a firm to support business priorities (Al-Debei & Avison, 2010) or between social actors such as managers and investors (Lüdeke-Freund, 2020). Indeed, scholars such as Evans et al. (2017, p. 600) have argued that processes aimed at "aligning the interests of all stakeholder groups are seen as key aspects" of strategic business models. However, we suggest that staging multiple evolving spaces for negotiating concerns, values, and interpretations of sustainability with multiple actors in the value network can be perceived as another alignment instrument if such spaces are staged and navigated properly and strategically. From a staging perspective, a prerequisite for this alignment is that stakeholders are translated into actors through dialogue. This means that their concerns are being represented or they voice their own concerns

and may act upon agreed actions and ways forward. It is thus the foregrounding of different perspectives and making these actionable that eventually leads to negotiations and network (re)alignment.

5.6 | Navigation is an integral aspect of staging

Our case illustrates that "making perspectives actionable," among other things, depends upon the number of actors and the extent of their engagement in sustainable innovation efforts. Using Fichter's (2009) framework, we can identify different types of promoters in the case project. Victor, in an effort to transform his company towards a sustainable future, hired expert promoters to optimize his company's textile flow and develop a wastewater treatment plant. Victor himself may be seen as a relationship promoter, as he built strong relationships with his customers and his supplier (Jens). Similarly, he may be perceived as a classic, interest-driven intermediary at the value chain level (Agogué et al., 2013). The researcher/stager, on the other hand, may in Fichter's terms be understood as a neutral, third-party intermediary or facilitator at the framing and linking level who tried to coordinate the multiplicity of actors in the value chain (Howells, 2006). We suggest including the role, strategies, analytical and actionable tools, and particular competencies of the stager in the third-party intermediary category. To facilitate the dialog and negotiations, the stager must be able to involve and engage actors from the entire value network through strategic staging. Understanding the staging moves of a designer, researcher, or manager allows us to investigate microlevel negotiations to focus on content and make the SNS framework actionable. Some of the staging moves involved are as follows:

1. *Interpretation.* Interpretation may relate to the current situation or the initial framing. For instance, the grant from the Danish Industry Foundation framed the overall project in terms of sustainability and the circular economy and was the foundation for the initial negotiations.
2. *Potential reframing.* As a result of negotiations, the problem and solution spaces of the project may be reframed. Some of the reframings from this case are illustrated in Figure 8.
3. *Inscription and circulation.* The current framing should be inscribed into different materialities such as PowerPoint presentations, game pieces, personas, and flow charts to be circulated as potential intermediary objects (Pedersen et al., 2020; Vinck, 2012) and may lead to the translation of concerns and values during the negotiations.
4. *Invitation of actors.* Central actors should be invited to actively participate in negotiations. In contrast to traditional stakeholder-mapping exercises (Bryson, 2004; Guertler & Sick, 2021), network alignment is much more likely to happen if all actors from the value chain are engaged.
5. *Navigation.* The above staging moves should be decided based on the strategic navigation of evolving spaces to achieve value network realignment for sustainable innovation.

Thus, distinct from the fireworks model and the business models for sustainability innovation framework introduced by Lüdeke-Freund (2020), the SNS framework provides actionable staging strategies for network (re)alignment. In addition to serving as an analytical framework, SNS offers normative value since it offers an actionable staging approach to engaging in sustainable transitions.

5.7 | Staging as an appropriate analytical model to study sustainable innovation

From the above, we see that a staging approach promotes negotiations between multiple actors in the value chain, which allows different perspectives and interpretations to inform the agenda, the problem space, and the solution space. This process view on innovation and the transition towards a circular economy allows us to follow negotiations as they unfold and evolve, thereby revealing the content of these negotiations.

According to Wicki and Hansen (2019, p. 972), “few analytical models embrace the complexity of the innovation process.” We argue that the SNS framework does precisely that, as it opens up the innovation process by following negotiations and the multiple streams of concerns, interests, values and motivations at the microlevel. Like the fireworks model (Van de Ven et al., 2008), our staging approach is rooted in a process understanding of innovation, paying attention to the shifting situations and conditions for learning by investigating the different spaces for negotiation. But the staging approach directs key attention to the roles different actors play in the process and how learning (new insights gained and current understandings challenged) is an outcome of negotiations and thus translations of the interests and perspectives held by different actors in the network. Our perspective thus attends to the shifting network configurations and reframings taking place that underlie or result from the “nodes” of failure. From our perspective, nodes are not just points of learning opportunities and reflections (Wicki & Hansen, 2019), but situations wherein actors may change their interests and perspectives, reframe their understandings of problems and solutions, and either reposition themselves in the emerging socio-technical network or leave. Our staging perspective in this sense reveals the content of product conceptualization and service composition processes and related political dimensions. In this way, the SNS framework adds to the single-loop and double-loop learning presented by the fireworks model by adding an actionable and strategic level of consideration and action.

6 | CONCLUSIONS

We set out to investigate the microlevel negotiations during collaborative endeavors to innovate new business models and help transition value networks towards a circular economy. While current literature has been highly concerned with the implementation of the circular economy concept (Geissdoerfer et al., 2018), we have challenged this view by illustrating how innovation related to PSS and circular

economy considerations is not something that is readily *implemented* so much as it is something to be *negotiated* (Hall et al., 2003). Missing from the current literature are the microlevel negotiations and realignment of value chain actors and designed objects like business models and PSS concepts across the value network.

To address this shortcoming, we have analyzed how a value network on the Danish island of Bornholm sought to support the transition to a circular economy and have used the SNS co-design framework to investigate and analyze how multiple negotiations were staged across diverse actors in an effort to co-design systems. We have found that multiple spaces were staged by value chain actors and a third-party intermediary to engage the value network in a process of understanding central problems and creating new value propositions. Our analysis further illustrates that discursive spaces with staged negotiations of concerns across actors in the value network can be perceived as alignment instruments. Our findings thus connect with the work of Al-Debei and Avison (2010) and Lüdeke-Freund (2020), who see business models as alignment instruments between areas in a firm and its business or between social actors such as managers and investors.

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