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Sustaining collective strategy through cross-level leadership: Microdynamics of managing paradoxical tensions in coopetition projects

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Abstract

Coopetition is a form of collective strategy in which firms collaborate to create value while competing to capture it, generating paradoxical tensions that may escalate over time. While prior research emphasizes firm-level mechanisms, it offers limited insight into how leaders across organizational levels manage these tensions. Drawing on 5 years of qualitative longitudinal data from innovation clusters, this study develops a model of how strategic and operational leaders manage paradoxical tensions in coopetitive projects. Under manageable tensions, top managers adopt a paradox mind-set while aware of emotional ambivalence, whereas project managers adopt a paradox-separating mind-set, prioritizing problem solving while blurring ambivalence. As tensions escalate, project managers elevate issues beyond their mandate, prompting top-manager engagement. Through their interplay, leaders recalibrate collaboration, enabling firm participation and sustaining collective strategy over time. These findings advance research on the microdynamics of cross-level leadership in coopetitive collective strategies while offering insights for managing coopetitive projects.

Keywords

collective strategy, coopetition, paradox, leadership, microfoundational, process

Introduction

Organizations increasingly pursue collective strategies to achieve shared strategic objectives (Astley, 1984; Fombrun and Astley, 1983; Raza-Ullah et al., 2024). An important context for such collective strategizing is regional innovation clusters, comprising interdependent firms engaged in joint initiatives (Porter, 1998). One form of collective strategy in such clusters is coopetition (Chim-Miki et al., 2025), in which firms simultaneously collaborate to create value and compete to capture it (Bengtsson and Kock, 2000; Brandenburger and Nalebuff, 1996). Through this simul-

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taneous pursuit of collaboration and competition, firms aim to foster innovation while strengthening their competitiveness (Corbo et al., 2023).

However, because firms must collaborate and compete simultaneously, coopetition generates persistent paradoxical tensions, including tensions between trust and opportunism as well as knowledge sharing and protection (Bengtsson and Raza-Ullah, 2016; Dorn et al., 2016). Although the participating firms aim to mitigate these tensions, they persist and may escalate over time, jeopardizing the interorganizational relationships and projects through which firms coopete (Raza-Ullah et al., 2014; Raza-Ullah and Kostis, 2020; Tidström, 2014). Consequently, sustaining collective strategy through coopetitive projects depends on effectively managing these persistent tensions.

Prior coopetition research has largely examined the management of paradoxical tensions from a macro-level perspective, emphasizing firm-level approaches and the strategic role of top management (Bengtsson and Raza-Ullah, 2016; Corbo et al., 2023). Past research emphasizes that top managers are primarily concerned with firms' broader strategic and competitive interests, whereas operational leaders are responsible for project progress and day-to-day collaboration (Le Roy and Fernandez, 2015). Yet paradoxical tensions emerge, persist, and may escalate through day-to-day interactions among competing partners in these projects (Fernandez and Chiambaretto, 2016; Le Roy and Fernandez, 2015). As projects unfold, operational leaders therefore become directly exposed to these tensions, making paradox management a challenge involving strategic and operational roles at different organizational levels.

Despite recognizing that tensions span levels and roles, existing research provides limited understanding of the responses leaders at different organizational levels employ to navigate such tensions over time (Bengtsson and Raza-Ullah, 2016; Fernandez et al., 2014). Particularly at critical junctures, tensions may intensify and require responses from leaders across organizational levels (Czakon et al., 2020). However, it remains unclear how these responses and their interplay contribute to maintaining the coopetitive projects through which firms enact collective strategy. Addressing this gap requires integrating insights from coopetition research and paradox theory (Miron-Spektor et al., 2018; Smith and Lewis, 2011) with microfoundational (Felin and Foss, 2005; Felin et al., 2012) and processual (Langley, 1999) perspectives. Drawing on these perspectives, this study addresses the following research question:

Research Question: How do cross-level paradox management responses interact over time to maintain coopetitive projects and, in turn, sustain collective strategy?

Empirically, the study draws on in-depth longitudinal qualitative data (Langley, 1999) from coopetitive interorganizational projects embedded within regional innovation clusters, where firms pursue collective strategic initiatives. Over a 5-year period (2018–2023), interviews with and observations of top managers and project managers were conducted across six industries during ongoing projects between competing firms. This immersive longitudinal design enabled a close examination of how paradoxical tensions emerged, evolved over time, and were managed across organizational levels as coopetitive relationships unfolded (Langley, 1999; Langley et al., 2013).

This study develops a dynamic cross-level model of how leaders manage paradoxical tensions in coopetitive projects as tensions evolve. Under manageable tensions, leaders rely on role-differentiated responses: top managers adopt a paradox mind-set, balancing collaboration and competition while remaining aware of emotional ambivalence, whereas project managers adopt a paradox-separating mind-set, prioritizing problem solving while blurring emotional

ambivalence in day-to-day collaboration to foster project progress. As paradoxical tensions escalate, leadership dynamics shift from role-differentiated responses to cross-level interplay, as project managers elevate tensions that exceed their mandate by involving top managers. Through this cross-level interplay, leaders jointly recalibrate collaboration in response to escalating tensions, enabling firms to maintain participation in coopetitive projects and thereby sustain collective strategies over time.

The study makes three contributions. First, it extends coopetition research (Bengtsson and Kock, 2000; Raza-Ullah et al., 2014) by developing an empirically grounded dynamic cross-level model explaining how leaders manage paradoxical tensions through role-differentiated leadership responses and, at critical junctures when tensions escalate, through cross-level interplay. Second, it advances paradox theory (Miron-Spektor et al., 2018; Smith and Lewis, 2011) by explaining how leaders at different organizational levels shift their cognitive and emotional responses as paradoxical tensions evolve. Third, it contributes to the literature on coopetition as a form of collective strategy (Astley, 1984; Fombrun and Astley, 1983; Raza-Ullah et al., 2024) by uncovering the leadership microdynamics through which firms recurrently recalibrate collaboration to maintain participation in coopetitive projects, thereby shedding light on how collective strategizing is sustained.

Theoretical background: From macro-level aspects to micro-level dynamics

An emerging question in the coopetition literature concerns how firms sustain collective strategies while navigating persistent paradoxical tensions between cooperation and competition, and which responses they employ while strategizing with other firms (Raza-Ullah et al., 2024). Addressing this question requires moving beyond macro-level explanations toward the microfoundational dynamics through which individual actors and their actions shape collective outcomes over time (Felin et al., 2012; Felin and Foss, 2005). The coopetition and paradox literatures are therefore integrated with the microfoundations perspective and process research to develop a theoretical framework for examining how leaders across organizational levels within firms respond to paradoxical tensions as these unfold over time.

Collective strategy, paradoxical tensions, and coopetitive projects

Coopetition, a collective interfirm strategy (Raza-Ullah et al., 2024), entails paradoxical tensions as participating firms simultaneously pursue collaboration and competition—elements that are "contradictory yet interrelated, and exist simultaneously and persist over time" (Smith and Lewis, 2011: 382). While joint value creation offers opportunities for mutual gains (Brandenburger and Nalebuff, 1996), it also increases vulnerability by granting partners access to valuable knowledge, resources, and capabilities. Unlike conflicts or disputes, which may be resolved through negotiation or agreement, paradoxical tensions stem from the enduring interdependencies inherent in coopetition (Smith and Lewis, 2011; Tidström, 2014).

Because these tensions persist, they may vary in salience as collective strategy is enacted through interorganizational coopetitive projects. Paradoxical tensions may surface throughout the coopetition process, from partner alignment through value creation to value capture (Dorn et al., 2016). Although generally less expected during value creation, changing partner intentions, emerging knowledge, and evolving competitive conditions may reshape tensions as

projects unfold. Tensions concerning knowledge sharing and protection, resource contributions, and benefit distribution may therefore fluctuate as projects progress (Raza-Ullah et al., 2014; Tidström, 2014). Trust among participating firms also remains conditional, while trust and distrust may coexist (Raza-Ullah and Kostis, 2020). Shifts in trust and distrust perceptions may signal that paradoxical tensions are escalating, with potential consequences for the broader collective initiative.

As tensions escalate, they may stall project progress, impede knowledge exchange, weaken commitment, or cause participating firms to withdraw, potentially disrupting complex relational ties across projects and ultimately threatening industry-wide initiatives (Corbo et al., 2023). These consequences become particularly important when collective strategy involves multiple coopetitive projects, as dysfunctional processes within individual projects may have implications beyond the immediate project. Managing tensions within projects is therefore important for maintaining project participation and progress and, ultimately, for sustaining coopetition as a collective strategy.

Leadership roles in managing paradoxical tensions in coopetitive projects

Within participating firms, the management of paradoxical tensions in coopetitive projects involves managers with distinct roles and responsibilities. Prior research has primarily emphasized the strategic role of top managers in managing tensions during coopetition because they make decisions about engaging in coopetition, establish coopetitive relationships, and manage firm interdependencies (Bengtsson and Raza-Ullah, 2016). In contrast, project managers are primarily responsible for managing projects, coordinating day-to-day project work, facilitating knowledge exchange, solving operational problems, and fostering progress across project partners (Fernandez et al., 2014).

This division of responsibilities is reflected both in managers' hierarchical positions and in the structural separation of coopetition into distinct interfirm projects (Bengtsson and Raza-Ullah, 2016; Le Roy and Fernandez, 2015). Consequently, top managers and project managers are exposed to paradoxical tensions at different points in the coopetition process. While top managers are more directly concerned with the broader strategic and competitive interests of the firm, project managers become particularly exposed during value creation, when collaboration is enacted through ongoing interactions with competing partners in day-to-day project work (Le Roy and Fernandez, 2015).

Project managers may therefore be the first to encounter tensions that arise during value creation through collaborative interaction and coordination with competing partners (Le Roy and Fernandez, 2015). While some tensions may be handled within the project, others may become increasingly consequential for firms' strategic and competitive interests in the coopetitive project or the collective strategy underpinning it. Top managers and project managers may therefore experience escalating tensions from their respective positions and responsibilities within the coopetition process.

These differences in roles, responsibilities, and exposure across roles suggest that managers may respond differently when navigating paradoxical tensions. At the same time, understanding how tensions are managed requires attention to the various responses that managers may draw upon as tensions unfold (Felin et al., 2012; Felin and Foss, 2005). The following section therefore examines the responses that leaders may employ when navigating paradoxical tensions.

Micro-level responses to paradoxical tensions

Past research indicates that navigating paradoxical tensions broadly involves two closely related aspects: balancing competing cognitions and regulating emotional ambivalence (Raza-Ullah, 2020). While these have primarily been discussed as firm-level capabilities, a paradox lens is useful for examining the cognitive and emotional responses that leaders draw upon when exposed to tensions (Miron-Spektor et al., 2018; Smith and Lewis, 2011; Vuori and Huy, 2022).

First, leaders need to balance competing cognitions as they navigate competing demands. For example, they must continually decide when to share knowledge and when to protect competitive interests. One response is to adopt a paradox mind-set, engaging in both/and thinking by simultaneously maintaining collaborative and competitive logics (Lewis et al., 2014; Miron-Spektor et al., 2018). This enables leaders to accommodate competing demands while remaining attentive to collaborative opportunities. However, maintaining both logics may also increase cognitive strain, particularly as tensions intensify (Schad et al., 2016). Alternatively, leaders may rely on either/or thinking, temporarily prioritizing one logic at the expense of the other to simplify interpretation and facilitate action under pressure. Although this may reduce cognitive strain and help leaders cope with immediate demands (Lazarus and Folkman, 1984), it can also narrow attention and reduce sensitivity to emerging paradoxical tensions (Raza-Ullah, 2020).

Second, leaders need to regulate emotional ambivalence. Paradoxical tensions often evoke ambivalent emotions, whereby leaders simultaneously experience positive and negative emotions toward the same partner (Ashforth et al., 2014; Tidström, 2014). One response is to be aware of this ambivalence while remaining attentive to the information it provides about the evolving relationship (Elfenbein, 2007; Miron-Spektor et al., 2018). Doing so allows leaders to recognize emotional cues without reacting immediately, although such an approach may be demanding. Alternatively, leaders may avoid, downplay, or suppress emotional ambivalence to reduce immediate overwhelm and maintain task focus (Gross, 1998; Jarzabkowski et al., 2013). This may help leaders cope with immediate demands, yet it may also reduce their sensitivity and responsiveness to escalating paradoxical tensions.

Taken together, prior research identifies different cognitive and emotional response strategies that leaders may draw upon when navigating paradoxical tensions. However, less is known about how these responses are employed as tensions unfold and whether they vary between leaders with different roles and responsibilities in coopetitive projects.

The missing link: Cross-level interplay during escalating tensions

Taken together, prior research shows that sustaining coopetition as a collective strategy requires managing persistent paradoxical tensions that may escalate within coopetitive projects. Top managers and project managers within firms participating in these projects have distinct roles and responsibilities (Bengtsson and Raza-Ullah, 2016; Le Roy and Fernandez, 2015), while prior research identifies different cognitive and emotional responses that leaders may draw upon to manage paradoxical tensions (Miron-Spektor et al., 2018; Raza-Ullah, 2020).

Bengtsson and Raza-Ullah (2025) conceptually suggest that escalating tensions may cascade across organizational levels and require the involvement of top management. Yet it remains unclear how managerial responses change as tensions evolve, whether they vary between managers with distinct roles and responsibilities at different organizational levels, or how top managers and

project managers respond separately and jointly. Particularly, the micro-interactional mechanisms underlying the interplay between their responses across organizational levels over time remain a black box.

These microdynamics are important because how leaders respond separately and jointly may shape whether participation and progress can be maintained in projects as tensions escalate and, ultimately, whether coopetition can be sustained as a collective strategy (Raza-Ullah et al., 2024). This study therefore examines how top managers and project managers respond within their respective roles and how their responses interplay across organizational levels as tensions unfold over time.

Methodology

To deepen understanding of how leaders manage coopetitive tensions across organizational levels over time, this study adopted a theory-elaborating qualitative research design (Edmondson and McManus, 2007; Langley, 1999; Langley et al., 2013). Five years of fieldwork (2018–2023) enabled repeated engagement with participants and generated insight into evolving cross-level interaction dynamics.

Research context and case selection

The study was conducted in five regional clusters in a Nordic region, geographically concentrated networks of firms that both compete and collaborate to innovate (Porter, 1998). The clusters spanned banking, insurance, aquaculture, seafood, subsea, and media sectors, enabling examination of coopetitive tension management across diverse settings (Crick, 2021). Purposeful sampling was used to capture variation in tension type, intensity, and duration across project structures, including differences in the number of partners and upstream versus downstream competitive settings (Eisenhardt, 1989; Raza-Ullah et al., 2014).

Insights from cluster chief executive officers (CEOs) into members' collective strategic coopetitive initiatives were used to identify nine potential projects. Six were selected based on three criteria: the project was ongoing, involved observable coopetitive tensions, and allowed repeated access for interviews, observations, and document collection. Three projects were excluded because one was inactive, one lacked a competitive element, and one did not provide sufficient access.

The final sample comprised six projects: a banking data exchange application, an insurance fraud detection application, an aquaculture data-sharing platform, a seafood export system, a multimedia cloud platform, and a subsea technology development project. The banking, insurance, and aquaculture projects primarily addressed upstream technical or common-pool challenges, whereas the subsea, seafood export, and media projects involved downstream, customer-facing competition.

Although all cases are referred to as projects, their coopetitive arrangements ranged from bilateral collaborations to multi-firm platform initiatives. The primary unit of analysis was the intra-firm leadership dyad between top managers and project managers, examined as embedded within interorganizational coopetition projects. This enabled analysis of how tensions were experienced and managed across organizational levels by top managers and project managers in 18 firms. Appendix 1 provides an overview of the projects, partners, key tensions, duration, and outcomes.

Table 1. Coopetition interviews by project, firm, and role.

Project	Partner firms	Top managers (TM)	Project managers (PM)	First round interview	Second round interview	Third round interview	Total interviews
Banking	3	3	3	6 (3/3)	4 (2/2)	2 (2/0)	12
Insurance	3	3	3	6 (3/3)	4 (2/2)	2 (2/0)	12
Media	2	2	2	4 (2/2)	2 (1/1)	1 (1/0)	7
Seafood—aquaculture	7	6	7	13 (6/7)	4 (1/3)	2 (2/0)	19
Seafood—export	2	2	2	4 (2/2)	2 (1/1)	0 (0/0)	6
Subsea	2	2	2	4 (2/2)	2 (1/1)	2 (2/0)	6
Cluster leaders				5	5	3	13
Total	19	18	19	42	23	12	77

Note. Parentheses indicate the distribution of interviewees by role; for example, 6 (3/3) = 3 TMs and 3 PMs.

Data sources, participants, and data collection

Cluster CEOs were interviewed first to identify relevant projects and participants and to gain an overview of collective strategic initiatives, project development and outcomes, and how these initiatives contributed to sustaining the broader collective strategy. Because they had limited insight into how tensions were managed in practice, data on tension management were drawn primarily from strategic leaders, including CEOs, top managers, and direct reports overseeing coopetitive initiatives, and operational leaders, represented by project managers responsible for daily operations.

Data were collected in three rounds across a 5-year period. Because projects started at different times, data collection occurred in different calendar years across cases. A theoretical sampling approach was used until saturation, when additional data no longer generated new insights (Eisenhardt, 2021; Gioia et al., 2013; Glaser and Strauss, 1967). In total, 42 individuals participated, many of whom were interviewed multiple times, resulting in 77 interviews. Table 1 provides an overview of participants and interviews.

In addition to interviews, the researcher attended cluster meetings involving multiple partners, producing 31 observational memos. These memos were used for triangulation, contextualization, and to support the data analysis. The memos captured partner interactions and observable behavioral expressions during joint meetings. The meetings enabled contextual immersion and exposure to partner interactions, although internal negotiations were not observed. Informal conversations during meetings provided cues for follow-up interviews. Eighteen press releases were also collected and used for data triangulation.

Semi-structured interviews were conducted face to face or via Microsoft Teams and lasted between 45 and 90 min. Interviews focused on project descriptions, phases, tension experiences, responses for managing tensions, relationship dynamics, and outcomes. The researcher conducted 62 interviews and supervised 15 conducted by trained student researchers to ensure consistency. All interviews were recorded, transcribed, and conducted with informed consent. Data collection and storage procedures were approved by SIKT, the Norwegian Agency for Shared Services in Education and Research, and all qualitative materials were managed using NVivo. See the interview guide in Appendix 2.

Data analysis

Data were analyzed using a coding approach (Gioia et al., 2013; Glaser and Strauss, 1967) combined with process-analytic strategies (Eisenhardt, 2021; Langley, 1999). The analysis followed a cyclical, abductive process, iterating between data collection, coding, triangulation, theory engagement, and analytic refinement. For clarity, the process is presented stepwise, although activities overlapped in practice.

First, each project was coded using interviews with cluster CEOs, top managers, and project managers, yielding 726 first-order codes across the dataset. Cluster CEO data were used to understand collective strategic initiatives, project development and outcomes, and the sustainment of the broader collective strategy, while top-manager and project-manager data provided the primary basis for analyzing leadership responses to tensions and their cross-level interplay. These codes were grouped into themes capturing projects, coopetitive phases, trust, including both trust and distrust quotations, tensions, tension-management responses, leadership roles, and cognitive and emotional responses, as well as outcomes. Although the specific content of tensions varied across projects, coding across interviews revealed persistent paradoxical tensions across all projects and phases, consistent with prior work (Raza-Ullah et al., 2014), including during the collaboration-oriented value creation phase.

Second, this pattern warranted closer analysis of how interviewees responded to escalating tensions during value creation. Through triangulation across interviews, cluster CEO accounts, and press releases, three to six escalation episodes were identified in each project. Interviewees described these episodes as shifts following marked changes in partner behavior, heightened concerns about competitive risks, or increasingly salient negative emotions. Notably, coding revealed ongoing vigilance between episodes, indicating that cognitive and emotional responses (Elfenbein, 2007) and tension-management responses were not limited to escalation events. Despite variation in tension type, intensity, and duration across different project structures and competitive settings, consistent patterns of tension escalation and cross-level leadership interplay emerged across cases.

Third, to examine role-based differences, codes were analyzed by leadership level, yielding 306 quotations from top managers, 255 from project managers, and 165 from cluster CEOs. To deepen focus on the lived experience of coopetition partners, this stage of the analysis centered on top-manager and project-manager data. While overt expressions of negative emotion were generally avoided across both roles, top managers and project managers displayed distinct cognitive and emotional responses in managing tensions. These responses shifted when tensions escalated, revealing interaction dynamics across levels not found in prior work on coopetition capabilities (Raza-Ullah et al., 2014). This prompted closer examination of how leadership responses interacted across levels.

Fourth, across projects, emergent categories were consolidated into an aggregated coding tree. Coopetition was found to unfold across three phases, partner alignment, value creation, and value capture, with tensions typically less overt during value creation. Responses for managing tensions varied across strategic and operational roles. Top-manager responses included paradox mind-set, ambivalence awareness, and paradox engagement, whereas project-manager responses included paradox-separating mind-set, ambivalence blurring, and paradox elevation. These responses varied over time, depending on cycles of escalation, and when tensions were resolved, were linked to three valued outcomes sustaining the collective initiatives: learning, innovation progress, and strengthened relationships. Figure 1 illustrates the resulting coding structure. All quotations were labeled by leadership role, participant number, and interview round (e.g. TM-01-R1).

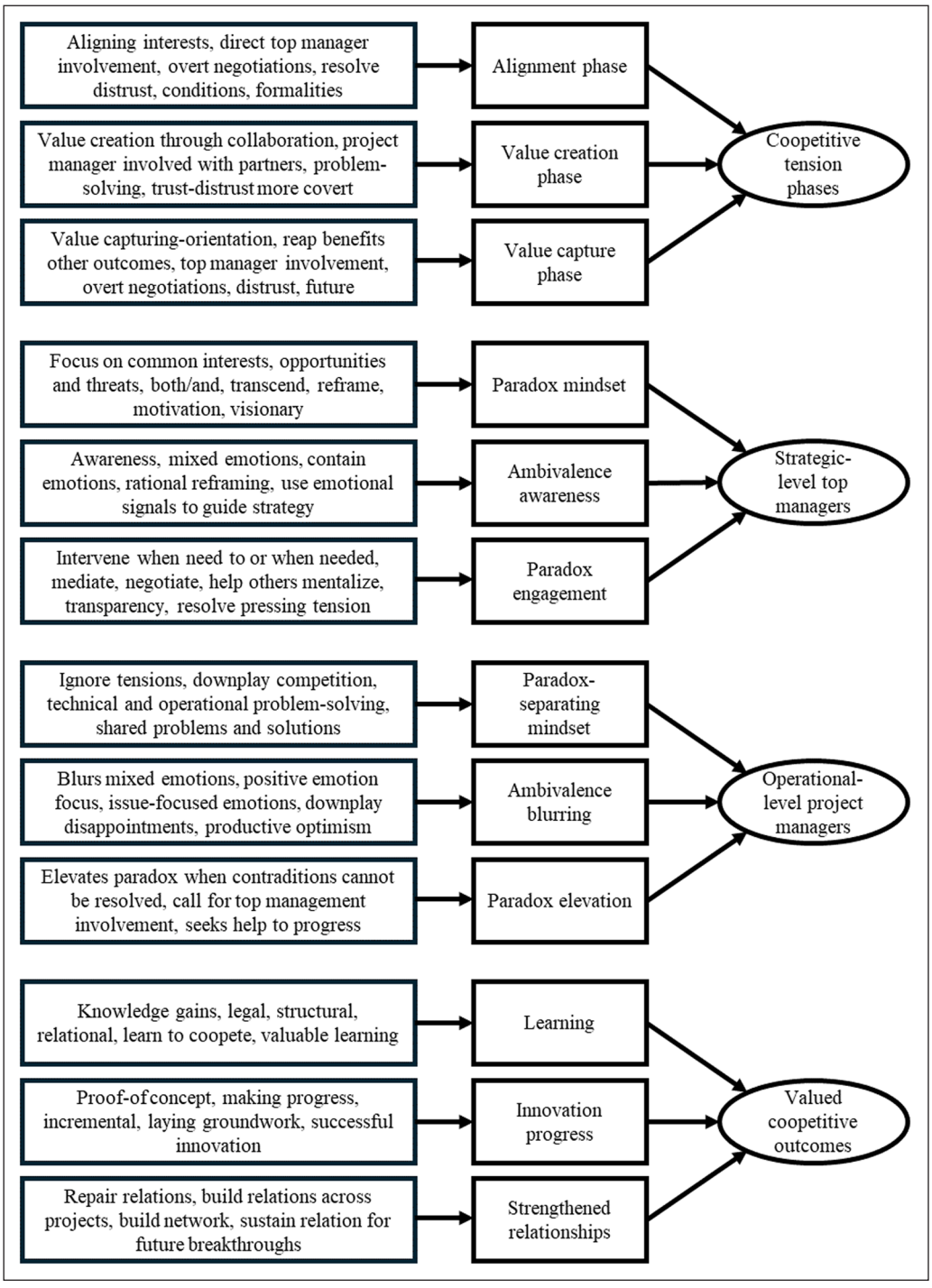


Figure 1. Coding tree: Key constructs in coopetitive management, including phases, responses, and outcomes.

Fifth, a process-analytic approach using temporal bracketing and visual mapping was applied to trace leadership responses during episodic shifts, including when tension levels escalated as well as during periods when tensions were less salient (Langley, 1999). Within the broader phases of partner alignment, value creation, and value capture, temporal brackets distinguished episodes of less salient tensions, critical junctions marked by tension escalation, and subsequent recalibration of leadership responses, enabling comparison of responses before, during, and following these shifts. This enabled analysis of separation and interaction dynamics over time, revealing recurring patterns across projects theorized as a recursive process (Eisenhardt, 2021). Visual process maps were developed for each project to link top manager and project manager actions across tension episodes before patterns were compared across cases. Drawing on the visual maps, conceptual leaping, and synthesis (Eisenhardt, 2021; Klag and Langley, 2012; Langley, 1999), these sequences were integrated into a process model. Figure 2 depicts how coopetitive leadership unfolds over time across three phases and two organizational levels, highlighting recurring cycles of cross-level interplay during the value creation phase.

Sixth, regarding quality and rigor, the multi-year and multi-case design allowed the sampling strategy to adapt to emerging differences, although such differences proved less salient than role-differentiated cognitive and emotional responses, as well as interplay between leadership levels, in explaining observed patterns. Interpretations were iteratively refined through prolonged engagement, multiple interview rounds, and member checks conducted in follow-up interviews and presentations to cluster participants and academic audiences. While the findings rely primarily on insider accounts from top managers and project managers, these were triangulated with cluster CEO interviews and observational memos, which provided evidence of the behavioral manifestations of coded cognitive and emotional responses, for example, during joint meetings, as well as engagement with prior literature (McKenzie and Bartunek, 2023). Table 2 summarizes the triangulation sources for different findings.

Table 2. Data-source triangulation across analytical categories.

Analytical category	Top manager interviews	Project manager interviews	Cluster CEOs interviews	Researcher memos	Documents
Tensions in different phases	x	x	x	x	x
Strategic leadership responses	x	x	—	x	—
Operational leadership responses	x	x	—	x	—
Valued outcomes	x	x	x	x	x

Findings: Managing paradoxical tensions through role-differentiated and cross-level leadership dynamics

The findings present a rich, empirically grounded account of how paradoxical tensions unfolded across coopetitive project phases in collective strategies within innovation clusters. While such tensions were expected during project alignment and value capture, interviewees consistently described them as recurring throughout the collaborative value creation phase, where day-to-day collaboration between competing firms unfolded. During this phase, leaders at both organizational levels attempted to keep tensions manageable, although tensions could escalate over time,

requiring shifts in leadership responses. The analysis first examines how top managers and project managers responded differently to paradoxical tensions to keep them manageable before turning to the critical junctions at which escalating tensions prompted cross-level interplay between the two leadership levels. This led to recalibrations that enabled them to maintain project participation and in turn to sustain the broader collective strategic initiative across participating firms.

Persistent tensions in coopetitive projects within collective strategic initiatives

Interviewees consistently described paradoxical tensions as persistent throughout coopetitive projects despite commitment to the broader collective strategic initiative within the innovation clusters. This was expected during the alignment phase, where tensions centered on firms' willingness to participate, perceived fairness, and acceptable terms of collaboration, placing top managers at the forefront of addressing these strategic concerns. As one top manager explained:

> Even though it seemingly is a win-win situation, if one of the parties doesn't feel that way, you need to clarify that before starting; otherwise, there's a significant risk that someone will hit the brakes along the way. (TM-02-R1)

Similarly, during value capture, tensions resurfaced around value appropriation and competitive positioning, again requiring top management attention. As one top manager explained:

> Towards the end, openly expressed tension increased again [. . .] it was about who would reap the benefits from the project and once again issues regarding trust came up. (TM-02-R3)

The collective strategic initiative was supported by innovation clusters set up to support projects such as these, providing a neutral space for collaboration among the participating firms. As the cluster leader from the seafood cluster explained:

> Having a neutral space in the middle, a neutral actor, who's not in it for economic incentive, who has interest of actually getting the project off the ground and having the interest of their members in the middle [. . .] I think that's been really important. (CL-02-R1)

However, although firms aligned interests before project start-up and agreed on value capture, tensions continued to emerge throughout the collaborative value creation phase, either abruptly or gradually. As one top manager in the media industry reflected:

> [. . .] you are not always sure about when you stretch out a hand, if you will be met by a friendly handshake or a knife. (TM-01-R1)

At the outset and toward the end, top managers were expected to manage such tensions, while cluster CEOs remained available to support and facilitate the collective strategic initiative.

In contrast, during value creation, project managers became more directly exposed to paradoxical tensions through their day-to-day collaboration with competing firms, while top managers stepped back from regular interaction. Cluster CEOs perceived themselves to have no direct role in managing tensions during this phase. Nevertheless, project managers were expected to remain attentive to balancing collaborative value creation with competitive value capture. As one top manager explained:

> I think everyone will understand. . .not just value creation mode, but also value capture mode. [. . .] I think that's very important for them to kind of keep building the cake and making it bigger. (TM-07-R2)

As projects progressed, tensions emerged around sharing sensitive data, disproportionate contributions, and unequal returns. These tensions remained manageable as long as they generated concern or ambivalence without threatening project progress, partner commitment, or trust between partners. If left unresolved, however, they could undermine trust, evoke distrust, delay collaboration, disrupt partner relationships, and ultimately jeopardize firms' continued participation in the project and the broader collective strategic initiative. As one project manager explained:

> A concern arose that could potentially undermine trust and bring the entire innovation project to a halt. It is, therefore, crucial to address it quickly—almost immediately. (PM-03-R2)

Critical junctions emerged when tensions exceeded what could be managed within ongoing project work and began to threaten project progress, continued participation, or commitment to the collective strategic initiative. At this point, project managers increasingly involved top managers to jointly determine how to proceed. As one top manager noted:

> It's really important to get the views of all actors on the table to actually open up for real discussion when we have real kind of junctions. . .Let people speak. . .when you are confused about the arguments, you need to ask very detailed questions. (TM-06-R2)

The vignette below illustrates one such trajectory, showing how tensions escalated and, at critical junctions, were elevated by project managers, engaged by top managers, and ultimately adjusted through their cross-level interplay. Table 3 provides additional illustrative quotes on project phases, exposure to tensions, and critical junctions.

Table 3. Persistent paradoxical tensions across phases and critical junctions.

Category	Example quotes
Alignment—top manager tension exposure	"In the first meetings, you want to gauge if everyone is aligned or if someone's holding back, because misalignment early on leads to trouble later." (TM-11-R3) "How can we ensure that the dynamics between the companies are fair and that they would like to continue working?" (TM-01-R1)
Value creation—project manager tension exposure	"All of the companies are in a comfortable state at the moment. Right. And that might be one reason why things are lagging a bit. If we go into the [collaboration] phase, then we don't know what will happen." (PM-03-R1) "We have lots of disagreements here and people are afraid of being disadvantaged, so there are a number of completely natural challenges in a collaboration. . . I won't claim that this is painless, but it goes well." (PM-04-R2) "I think just by having the stamina. . . some things will solve themselves." (PM-11-R3)
Value creation–cross-level tension exposure	"[The project] has suffered from that and gradually lost engagement. At least from our perspective, it has moved further and further down the priority list." (PM-11-R2) "Whether it is justified or not doesn't really matter—the key is to recognize that it exists and address it. There could very well be a legitimate concern that requires adjustments to strengthen trust." (TM-15-R2) "When uncertainty arises midway about the exchange ratio in a collaboration, it's better to put the facts on the table about who gains what. For collaboration between competitors to work, there must be full transparency and mutual benefits for all parties." (TM-01-R2)
Value capture—Top management exposure	"Towards the end, openly expressed tension increased again. [. . .] It was about who would reap the benefits from the project. . ." (TM-02-R3) "[. . .] there was surprisingly a lot of tension in the end, because then people became concerned with appearing as innovative and being first." (PM-05-R3)

Vignette: From manageable tensions to cross-level interplay in an aquaculture platform project

The Seafood Innovation Cluster brought together seven competing fish farming firms to develop a shared data platform for fish welfare, sustainability, and operational performance. The initiative addressed shared challenges, including disease, sea lice, and escapes, while requiring firms to contribute resources and data without compromising commercially sensitive information or acceptable terms of participation.

From the outset, the top manager of one of the largest firms publicly backed the initiative and served on its steering group, while making clear that commercially and stock market-sensitive information would not be shared and that the firm should not carry a disproportionate share of the resource commitment. He thus supported the initiative while remaining wary of the risks it posed to the firm.

Within the project, the firm's project manager and technical personnel focused on securing sensitive data and advancing the platform's technical development. The project manager grew increasingly confident that the project was moving in the right direction and communicated this to the executive. Over time, however, he realized that the firm was carrying an increasing share of the technical workload. At first, he recognized the growing imbalance but chose not to act in order to maintain momentum. As the other firms repeatedly failed to contribute the agreed resources, he grew increasingly weary and disappointed by the growing imbalance in the firm's terms of participation.

A turning point came when the concern could no longer be managed within the project. The firm's terms of participation were no longer perceived as reciprocal, and the project manager felt that the concern exceeded his mandate. What had previously been manageable had become a strategic issue. The project manager therefore shared his concern with his top manager before the next project status meeting. Because the project manager was highly regarded by the other project leads, the executive deliberately avoided publicly taking over the discussions or undermining the project manager's position in the project.

Instead, they jointly reviewed the firm's contributions of time, competence, and data relative to the other firms. They agreed that the top manager would remain in the steering group while the project manager continued leading the firm's day-to-day involvement in the project. However, the number of technical personnel assigned to one of the three workstreams, and the resources allocated to it, were gradually reduced in favor of internal priorities. This reduced the firm's technical resource exposure without disrupting the relationships the project manager had built within the initiative.

Over the following months, the adjustment became visible as the firm reduced the number of technical personnel assigned to one of the three workstreams. To several partners, it appeared that the firm had left the project. However, the firm had not formally withdrawn from the initiative. Throughout this period, the project manager maintained close contact with the other project leads and participated in status and coordination meetings.

As the remaining firms contributed more evenly and the quality of the platform improved, the concerns of the firm's top manager and project manager about its terms of participation gradually diminished. Eighteen months later, the firm increased its participation across all three workstreams. Because it had stepped back selectively rather than formally withdrawing, it remained part of the collective strategic initiative and was able to re-engage once the terms of participation had become more acceptable.

The following sections, building on data from all six projects, unpack the role-differentiated leadership responses that characterized manageable tensions before revealing the cross-level interplay that emerged once tensions escalated into critical junctions.

Role-differentiated leadership responses under manageable tensions

As long as paradoxical tensions remained manageable, leaders responded through role-differentiated leadership responses. The data reveal that top managers responded through a paradox mind-set and awareness of ambivalence, whereas project managers adopted a paradox-separating mind-set and ambivalence blurring.

Paradox mind-set. When tensions remained manageable, top managers typically responded by embracing collaboration and competition rather than prioritizing one side of the tension. This involved balancing sharing versus withholding knowledge or contributing more or fewer resources than their partners.

They viewed this as fundamentally different from either collaborating or competing. As one top manager in the seafood industry explained:

> Coopetition is not collaboration. The competition part is equally important as the collaboration part. But now you need to join the two. (TM-15-R2)

Top managers drew on both-and reasoning, directing attention to shared objectives, opportunities, and common threats while keeping competitive concerns in play. As one top manager put it:

> You have to balance how much you absorb from others and how much you protect. If you try to block everything, collaboration is impossible. (TM-18-R3)

When contributing more resources than a partner became a potential trigger of tensions, top managers could, for example, view this as a potential advantage. As one top manager in the media industry explained, this involved reframing the situation:

> If you [. . .] decide to put in more effort than the others, that means that you also capture the value of the additional effort [. . .] Although you may say it's kind of unfair, that comes from a competition perspective. It's actually a driving motivation to reach a little further than the others. We turned that into a kind of motivation more than a competition. (TM-02-R3)

These responses are referred to here as a paradox mind-set. By directing attention to shared gains, common threats, competitive motivation, and the need to balance openness with precaution, top managers kept both sides of coopetition in play, enabling collaboration to continue despite the presence of tensions.

Ambivalence awareness. Alongside this paradox mind-set, top managers also described experiencing mixed emotions, for example, feeling positive about contributing to shared success while also being wary of being taken advantage of. Across the interviews, they experienced this ambivalence and, at times, drew on it as a strategic cue. As one banking industry leader put it:

> When collaborating with competitors, you need to have some level of paranoia. Being open and forward-thinking, but not naïve, is crucial. (TM-06-R2)

Remaining aware of their own conflicting emotions, top managers rarely displayed them openly. Instead, interviewees emphasized using these emotions as internal signals while projecting composure externally.

Top managers also described paying close attention to the emotions of project managers and using these as cues for how the collaboration was unfolding and how to proceed. As one media industry leader reflected, he gathered information without becoming directly involved in the project:

> It's a lot about listening, getting people to voice their fears and risks. That's more or less what I'm doing every day, talking to people, analyzing information and gauging their feelings. (TM-02-R3)

Paying attention to the emotional reactions of project managers helped gauge whether additional safeguards might become necessary, although no direct intervention in the project was initiated at this stage.

At the same time, paying attention to emotions did not mean allowing them to circulate unchecked. Rather, top managers sought to contain emotions rather than allowing them to spread more widely internally or between and across partnering firms. As one leader explained:

> Ignore emotions, I do not. [. . .] If people have feelings, I would rather talk with them and discuss it. But we can contain emotions within our small group. It may be that we don't necessarily share it with everyone, in our own or the other firms. (TM-1-R2)

Across the interviews, these responses illustrate ambivalence awareness. By being attentive to mixed emotions while containing their outward expression, top managers used ambivalence as a strategic cue, preventing emotions from contributing to the escalation of otherwise manageable tensions. Table 4 provides additional illustrative quotes.

Table 4. Top managers' leadership responses under manageable tensions.

Category	Example quotes
Paradox mind-set	"I think we've had a good understanding of where we're competing, and where we cooperate, sort of the value of cooperating within this space." (TM-04-R2) "[Among us there] needs to be a shared understanding of the 'burning platform,' meaning the reasons to act. Furthermore, [the parties] must have similar visions and thoughts about how collaboration can help them seize new opportunities and protect them against threats." (TM-07-R2) "Some of the things I find most difficult. . .is that attitude: why should we give a piece of the cake to others, we just do it ourselves somehow. That is a pretty big challenge in companies like ours, and that is something I work with overcoming all the time." (TM-07-R2)
Ambivalence awareness	"I will highlight the importance of understanding: who are the people sitting on the side of the table, their emotional states, their strategy and always trying to get as many inputs as you can in those meetings." (TM-15-R2) "I use emotions too [. . .] I think I would probably describe myself as [having] very sort of rational, sort of mathematical kind of thinking. So, I'm very, sort of, it's like playing chess: If you have a bad position, you try to figure out how to make your position better, you know, that's what I have worked with." (TM-02-R3) "You can't let emotions mess up the process—but if you ignore them, they'll come back. It's about addressing them and containing them, so they don't dominate or destroy the chance of success." (TM-10-R2)

Paradox-separating mind-set. Turning to operational leaders, interviewees explained that project managers were well aware that collaborating with competitors could give rise to tensions. However, they temporarily set the competing demands aside to maintain operational momentum. Rather than focusing on these in day-to-day project work, they actively directed attention toward how the project could move forward.

This was reflected in how project managers tended to set aside the competitive dimension and focused instead on the project's immediate purpose and what was needed to achieve it. As one project manager in the insurance industry explained:

> The subject matter of the project is pretty technical. Of course, I am, I'm interested in finding fraudulent cases, making the best models, and I'm not a technician, but I know that to be able to do that, we need more data [. . .] and that's why we are a part of the initiative. (PM-03-R2)

When competitive concerns became salient in the course of project work, project managers directed attention to translating these into operational and technical problem-solving challenges. For example, in the seafood industry, concerns about competitive data sharing were addressed through the architecture of the digital platform. As one project leader explained:

> We do not share data. No, we collect data, and then our data is put in a container for firm A, B, and C, and then the algorithms process them. (PM-09-R2)

At times when tensions seemed to be increasing, for example, evident in slowing project progress, project managers tended to accept that collaboration would take time. Rather than forcing resolution, they kept focusing on moving the project forward. As one project manager in the media industry noted:

> I wouldn't say I've experienced much tension in meetings. Everyone's accepted that it takes time. It's harder to establish cooperation and innovate when competing. We have a common goal, but also compete. But internally [in the project], everyone's aimed at sharing as much as we can and doing as much as we can. (PM-01-R2)

Overall, these responses reflected a paradox-separating mind-set. By temporarily setting competitive aspects aside, focusing on the project's immediate purpose and what was needed to achieve it, translating strategic tensions into operational challenges through technical problem-solving, and continuing to work toward project progress as tensions increased, project managers kept tensions at bay until another response became necessary.

Ambivalence blurring. Regarding emotional responses, project managers were not naïve or ignorant of emotional ambivalence stirred by coopetition. They could acknowledge disappointment, for example, when a partner stepped back from a project, while still hoping for their return. Instead of dwelling on them, project managers kept negative emotions from dominating day-to-day project work until a different response became necessary.

For example, they could quickly acknowledge frustration, if at all, before quickly pivoting toward hope and optimism. One project manager in the seafood industry briefly mentioned that the project had faced negative developments before instantly emphasizing his optimistic stance, pointing to the timing:

> If there has been something negative, it's that the project has big goals and historically, such projects haven't been very successful in aquaculture. But I'm not particularly worried. I've done this before, and now's the right time. (PM-11-R3)

When experiencing setbacks or delays associated with rising tensions, project managers actively foregrounded positive developments, even when work moved more slowly than expected. One insurance industry project manager explained:

> We are keeping them in the loop with positive messages, showing stuff is happening even though it's happening slower than expected. (PM-04-R2)

When concerns about partners' intentions or possible opportunistic behavior gave rise to suspicion or even some degree of paranoia, project managers avoided dwelling on such feelings. Instead, they focused on how to handle the pressing issues. As one subsea industry project manager explained:

> For me, I always try to stay focused on the issues we're working with, not on the people or second-guessing their intentions. Just focus on the issues at hand and how to deal with them. (PM-18-R2)

These responses reflected ambivalence blurring. By responding to ambivalence through briefly acknowledging negative emotions, directing attention toward positive developments, and focusing on pressing issues, project managers temporarily kept ambivalence at bay in day-to-day project work. Table 5 provides additional illustrative quotes.

Together, these contrasting, role-differentiated cognitive and emotional responses were used when tensions were manageable and, importantly, could help prevent them from escalating. However, as tensions escalated at critical junctions, managing these required cross-level interplay, examined in the following section.

Table 5. Project managers' leadership responses under manageable tensions.

Category	Example quotes
Paradox-separating mind-set	"There aren't any competitors, meaning the reason why we are cooperating is that we all depend on the [aquaculture conditions for the] same product, salmon. So, no, I don't feel like we are competing." (PM-09-R2) "If there has been something then it would have been on a type of cost issues and cost distribution but it is not a big deal, it is natural that the discussion [is about those things], it is not a big deal and has not stopped the collaboration you could say." (PM-19-R3) "There hasn't been a controversy for a long time, so it works out, one agrees almost all the time." (PM-03-R3)
Ambivalence blurring	"The people we interacted with were very supportive. I'm not sure if we sort of felt so much ambivalence during the project." (PM-18-R2) "There's only positive emotions here. . . positive emotions were simply more productive for solving technical challenges." (PM-02-R2) "I have a tendency of trusting people fast [. . .] when there is a good feeling in the project group and everyone is working towards the same goal, it creates trust, and I think that takes away that fear element." (PM-09-R2)

Critical junctions: Cross-level leadership responses to escalating tensions

Critical junctions occurred when tensions could no longer be managed through role-differentiated leadership responses alone. This would occur when tensions threatened project progress, extended beyond project managers' mandate, or risked undermining the broader collective strategic initiative. At these points, project managers increasingly involved top managers. The data reveal that this shift unfolded through project managers' paradox elevation and top managers' paradox engagement, whose interplay enabled the resolution of tensions through the recalibration of collaboration.

Paradox elevation. Project managers described how, as tensions reached a threshold, their responses changed. They increasingly directed attention to the competing side of tensions and the emotions these evoked. Recognizing that tensions could no longer be contained within ongoing project work, they increasingly involved top managers to understand what was happening and determine how to proceed.

This shift became evident when frustrations intensified and became difficult to handle. One project manager described how his concern had developed into fear, which immediately prompted him to involve a top manager from his own firm:

> If there was a real reason to be fearful because you were feeling that something's going very wrong then the first thing I would do is talk to my superiors. . .discuss the situation and figure out who do we involve? How do we solve this? (PM-09-R2)

Such emotional reactions immediately triggered cross-level involvement, such as here where the project manager and top manager discussed the situation, identified who needed to be involved, and determined how to address the issue.

Project managers also involved top managers when they perceived that issues that surfaced required strategic assessments beyond their own project mandate. As one project manager in the insurance industry explained:

> So, business potential. To avoid conflict and assess that, we needed [the top manager]. We've covered the first phase now, kind of a proof of concept—can we actually do this? A challenge was assessing the business opportunity, both the potential upside and the cost. So, we needed [top managers] to weigh both sides. It's a fair question. (PM-04-R2)

Similarly, they involved top managers when collaborative challenges became increasingly difficult to interpret. They sought top managers' perspectives to better understand what was happening, as here in the seafood industry:

> Yeah, it was mostly when [another firm] was part of it. They were very passive and didn't want to explain their actions. We engaged top management to understand what was going on, and because they wouldn't share data, they ended up leaving the collaboration [which they had planned to do] before we could start the process. (PM-11-R3)

They described this involvement of top management as a deliberate approach to addressing issues as they arose. Together they discussed frustrations, reassessed the situation, and considered their options. As one subsea industry project manager explained:

> When I get frustrated, I usually contact internal resources, usually managing roles. We'll have a status meeting or talk about where we are, what needs to be done, and then we all kind of turn around and get things done. Then maybe we wait three more weeks for others to respond, and repeat. (PM-18-R2)

Across the cases, concerns were revisited as tensions intensified, enabling project managers and top managers to jointly determine possible ways forward.

Hence, paradox elevation refers to project managers increasingly directing their attention to the competing side of tensions and to the concerns and emotions these evoked, and bringing these tensions to top managers once they judged that they could no longer be contained within ongoing project work.

Paradox engagement. In response to project managers' paradox elevation, top managers became involved in addressing the concerns that project managers raised. They moved beyond maintaining awareness of ambivalence to directly examining competing issues and negative emotions to assess whether the situation required their involvement.

First, top managers assessed the concerns underlying fear or skepticism and determined whether they required action. If so, they considered how the concerns should be addressed internally and which resources should be mobilized. As one top manager in the banking industry explained:

> If there is fear or skepticism, it must be respected and taken seriously rather than denied with statements like, 'Oh, there's nothing to be skeptical about.' We need to show understanding and work with the right resources who have the legitimacy to eliminate unnecessary fear or address challenges. Often, the concerns are real, and must be resolved in a sound and effective manner. (TM-06-R2)

For example, in the fraud detection project, legal expertise was brought in to support the internal assessment when firms needed to move from fictitious to real data to test a system function. After discussing it, they agreed to require that the project used data only from the firm where the legal risks had been ruled out, while the remaining firms addressed the issue internally.

Top managers also examined whether tensions reflected misunderstandings or genuine disagreements by making the different positions explicit before determining how their own firm should proceed. As one top manager in the subsea industry explained:

> Sometimes, debates actually reveal misunderstandings. [. . .] Sometimes, we really have a different interpretation. And just to be sure I go in and—okay, you're standing there, I'm standing here, and that's our positions. Then it's okay to have transparency in those issues as well. (TM-17-R2)

Top managers became more directly involved when tensions reflected substantial and strategic differences in interests or expectations. This involved providing direction and advice to project managers, and supporting negotiations, while keeping the broader collective strategy in mind. As one top manager in the media industry described:

> I stayed close to negotiations that came up, as it was important to see the big picture, not win every small match. So, 'let's give them a good chunk, give in a little, incentivize the best possible fit.' My role was to see it from their side and influence our people to join that journey. (TM-02-R3)

Top managers supported project managers in revisiting emerging issues and reassessing evolving situations, and together they evaluated possible ways forward.

Hence, paradox engagement entails top managers becoming directly involved in addressing concerns raised by project managers by assessing the legitimacy of concerns, clarifying misunderstandings and disagreements, and guiding their firm's position when tensions required resolution. Table 6 provides additional illustrative quotes.

Table 6. Cross-level leadership responses to escalating tensions at critical junctions.

Category	Example quotes
Paradox elevation	"Then the other thing is giving regular updates and maybe underlining things that are happening behind the scenes." (PM-16-R2)
	"I think it's been very constructive and every time we've faced a challenge, we have arranged to have an extra meeting [with top management] or something to clarify what we're doing or how we are going to, but it's always been very constructive meetings, and there's always been a willingness to find solutions." (PM-06-R2)
Paradox engagement	"It's really important to get the views of all actors on the table. . . Let people speak. . . when you are confused about the arguments, you need to ask very detailed questions." (TM-06-R2)
	"[A top manager role] in that kind of situation, does not mean that you as a leader need to act or do something. It means you as a leader need to involve everyone to try to work together to find a good solution. So it's about motivation and enablement." (TM-04-R2)
	"I basically listen; and I'm trying to put forward my view; and then there is a kind of dynamic in that discussion. Most people are flexible. They listen to the others' arguments. And they move a little bit left to right or back or forth whatever. And the same goes for me." (TM-11-R3)

Recalibration through cross-level interplay. Through the interplay between paradox elevation and paradox engagement, project managers and top managers jointly adjusted expectations, commitments, and collaboration arrangements in response to escalating tensions.

They determined which concerns could be addressed within their own firms and which required action across partnering firms. As one project manager explained:

> I think we had quite open dialogue, when tensions have escalated, actually trying to identify what was OK or not OK, and share considerations. (PM-16-R2)

This could include joint discussions involving partnering firms. As one top manager explained, project managers could be reluctant to raise concerns directly in such meetings. Instead, top managers often introduced the issue before project managers would be asked to elaborate on it:

> It's often hard for an engineer that sits with a bad feeling to voice it in a meeting with 20 different people, so sometimes I voiced issues for them and made the introduction to their problem and then they could elaborate [. . .]. (TM-15-R2)

Resolving heightened tensions could require changes to a project's scope and ambitions. In one project, these discussions led the firms to conclude that the scope of the collaboration had become too ambitious:

> The scope was maybe too broad and there were coordination problems. . .I think the whole project wasn't really working. . .but that got fixed by narrowing down the scope. (PM-11-R3)

Such recalibrations involved revised expectations, concessions, and changes in commitments that enabled the collaboration to regain momentum.

This also extended beyond project-level tensions to strategic issues involving partnering firms. In the fraud detection project, a project manager raised concerns with his top manager about how one firm publicly took credit for the jointly developed fraud detection solution, stirring strong feelings in the project team. Through dialogue, top managers across partnering firms jointly agreed to communicate the initiative through a shared press release, reinforcing the collaboration as a collective effort. As one project manager reflected, the collective "we" across firms became stronger:

> . . .now they have gradually changed into saying: we are fighting insurance fraud because it is so important to us—we are actually teaming up with our worst enemies. (PM-03-R2)

Hence, during cross-level interplay, project managers and top managers jointly worked through tensions by recalibrating and adjusting expectations, commitments, collaboration arrangements, and their firms' approaches to strategic issues. In doing so, they enabled project managers to resume day-to-day collaboration and, in some cases, strengthened commitment to the collective initiative across firms.

Sustaining the collective: Strategizing together beyond projects

As projects unfolded, evolving paradoxical tensions required cross-level interplay to enable recurrent recalibrations across organizational levels and, at times, across partnering firms, thereby restoring collaborative momentum. Although these tensions could threaten continued participation, the resulting recalibrations typically generated valued outcomes for the participating firms beyond projects. These outcomes, in turn, reinforced participants' motivation to continue collaborating, thereby sustaining the collective strategic initiative beyond projects.

First, recalibrations within, between, and across firms during projects created opportunities for learning. Delays, temporary impasses, and the efforts to move beyond them improved firms' understanding of technological solutions, legal requirements, governance arrangements, and coopetition dynamics, strengthening their ability to navigate common challenges. As one project manager in the banking industry reflected, in a project that was resumed after an impasse:

> I'm quite convinced that we've learned a lot about [a specific digital platform technology . . .] and how to formulate what is needed and so on—that would smooth a restart or starting again. We know now a lot of what needs to be in place. (PM-05-R3)

Such learning also had value for the broader collective. As one cluster leader explained:

> Some of the bumps along the way, or those that become failures, beyond generating internal learning in the projects, also provide useful learning in the cluster. (CL-01-R3)

Second, recalibrations enabled projects to gain traction through visible innovation progress. Proof-of-concepts, pilot implementations, and incremental technical advances demonstrated that the initiative remained viable, motivating continued firm participation despite recurring challenges. These achievements reinforced commitment by showing that collaboration across firms could generate value. As one top manager in insurance explained:

> I think the novel thing here is data sharing for machine learning. We haven't come that far yet, but to my knowledge, we're one of the first, especially in insurance, doing something like this. Naturally, it gets a good score. I still think we have the most interesting conversations and decisions ahead of us. (TM-06-R3)

Cluster leaders further emphasized that innovation extended beyond the immediate technological output. As the finance cluster leader explained:

> The big deal is not the machine learning model. [It] is the collaboration between three companies, and maybe more, because that is the revolutionary part. For three different companies to share the data and get something to hold in common, that's extraordinary. The platform that we are making, the infrastructure and this collaboration [. . .] that's the really innovative or new part. (CL-2-R3)

Third, these cycles of recurrent cross-level interplay strengthened relationships by recalibrating the ongoing conditional trust–distrust expectations permeating coopetition. Participants came to accept that caution to protect competitive interests would surface. Adjustments, postponed activities, or

temporary withdrawals were therefore expected, yet occurred without rupturing relationships. This allowed firms to re-engage in these relationships when conditions became more favorable, sustaining initiatives over time. As one project manager explained:

> Even when some firms withdrew to handle things themselves, there wasn't negativity; we respect that and continue developing something they might join later. (PM-11-R3)

Cluster leaders pointed to relational value not only between partnering firms but also across the wider cluster ecosystem. As one cluster leader described:

> One of the effects achieved in the cluster is that we have developed a much greater fundamental understanding of this and of the whole ecosystem and how we work. (CL-04-R3)

Across the six projects, these outcomes and the commitment they generated became visible in different project trajectories, including innovations, a project that ended but led to a new project, cases of temporary withdrawal and re-engagement, and one long-standing project that ended while firms continued collaborating in other projects and initiatives. Taken together, learning, innovation progress, and strengthened relationships generated value beyond projects, sustaining the collective as firms within the cluster continued strategizing together over time. Table 7 provides additional illustrative quotes.

Table 7. Sustaining collective initiatives: Learning, innovation progress, and strengthened relationships.

Category	Example quotes
Learning	"There has been knowledge gained. That's the value of [. . .] experience. There's quite a bit of value in just doing this collaboration, having the legal discussions, and so on." (PM-05-R3) "It's one of the key reasons for being in a project like this. Even if it fails, it won't have been for nothing because we gain knowledge and insight." (TM-01-R3) "I think we are looking at this from two different angles. One is the sort of direct value that a project like this can have in order to have better solutions. The other is from a pure learning perspective [. . .] Yeah, we're building competency that we think of as strategic for the future. So that's the other important aspect." (PM-05-R3)
Innovation progress	"This data-sharing-based product is a success and is becoming its own joint venture company, which is progress, but we can develop it more, to new markets [. . .]." (TM-11-R3) "Innovation doesn't guarantee immediate profit and is often seen as a business risk. . .. [. . .] innovation takes longer—but it is precisely through this slower process that new value is ultimately created." (TM-5-R3) "Even if it fails, it won't have been for nothing because we gain knowledge and insight into how to build this kind of solution usable in other areas of the business." (PM-05-R3)
Strengthened relationships	"We gain information, and see how other companies within the cluster solve things, and form relationships for the future. That's most important. So, in that way, it provides value." (TM-06-R3) "Many of these meetings and workshops don't lead to anything concrete. And that's fine. It's part of networking and cluster-building." (TM-02-R3) "You might have a meeting where you argue about who should cover certain costs, and an hour later, you're discussing a new opportunity together. So, you have to be able to let go of previous disagreements. And that's interesting—it actually works fine, moving from project to project." (PM-11-R3)

A phase-based, two-level leadership model for managing paradoxical tensions

The findings reveal a dynamic, phase-based, cross-level leadership process for managing paradoxical tensions in coopetitive projects, as illustrated in Figure 2. A shared opportunity or risk motivates firms to participate in a collective coopetitive strategy (Box 1), unfolding under persistent paradoxical tensions (Box 2). Across three phases, leaders' exposure to partners varies (Box 3), with top managers more exposed during alignment (3a) and value capture (3c), and project managers during value creation (3b). As illustrated by the leadership trajectories, under manageable tensions, top managers adopt a paradox mind-set while remaining aware of emotional ambivalence, whereas project managers adopt a paradox-separating mind-set and blur emotional ambivalence. However, as tensions escalate and reach critical junctions (X), leadership dynamics shift from role-differentiated responses to cross-level interplay, where project managers elevate tensions to top managers, who engage more directly. Through this interplay, leaders jointly recalibrate collaboration to resolve tensions, enabling projects to regain momentum and generate valued outcomes from the initiative (Box 4), including learning, innovation progress, and strengthened relationships, thereby sustaining collective strategy.

The model and the empirical findings supporting it illustrate that coopetition, as a form of collective strategy, is motivated by pursuing shared opportunities while managing shared risks together (Raza-Ullah et al., 2024). Paradoxical tensions stem from simultaneously competing and collaborating (Bengtsson and Raza-Ullah, 2016) and persist as projects progress through the alignment, value creation, and value capture phases (Dorn et al., 2016). While leaders' exposure to these tensions varies across phases, both top managers and project managers remain central to managing them throughout the value creation phase through role-differentiated leadership responses until escalating tensions trigger a shift to cross-level interplay.

Beginning with the top manager trajectory, under manageable tensions, top managers adopt role-differentiated responses comprising a paradox mind-set and awareness of emotional ambivalence. They embrace opposing demands and engage in both/and thinking, reflecting the paradox mind-set described by Miron-Spektor et al. (2018). This requires complex cognitive processing (Kahneman, 2011), representing cognitive rather than emotional coping (Lazarus and Folkman, 1984). While aware of emotional ambivalence, top managers regulate these emotions (Gross, 1998) through perspective-taking and reflection (Elfenbein, 2007; Williams, 2007), as well as through meta-emotions such as future-oriented optimism (Norman and Furnes, 2016). Ambivalence serves as an informational cue signaling when closer engagement with project managers and strategic intervention are required.

Turning to the project manager trajectory, under manageable tensions, project managers adopt role-differentiated responses comprising a paradox-separating mind-set and emotional ambivalence blurring. Rather than reconciling competing demands, they focus on problem solving to keep projects progressing. While this is consistent with their operational role (Le Roy and Fernandez, 2015), it also reflects a cognitive coping response (Lazarus and Folkman, 1984) that differs from that of top managers. By temporarily separating competing demands, they reduce complexity and facilitate task execution (Jarzabkowski et al., 2013), although such separation may lead them to ignore important information (Smith and Lewis, 2011). Likewise, emphasizing positive emotions blurs emotional ambivalence, enabling project managers to remain productive when possible (Jarzabkowski and Lê, 2017). As tensions escalate, however, negative emotions that can no longer be contained at the project level signal that tensions should be elevated to top managers.

As illustrated by the model, at critical junctions, tensions reach a threshold that triggers a shift from role-differentiated leadership responses to cross-level interplay. Project managers involve top managers when frustration and distrust can no longer be contained, or uncertainty exceeds what

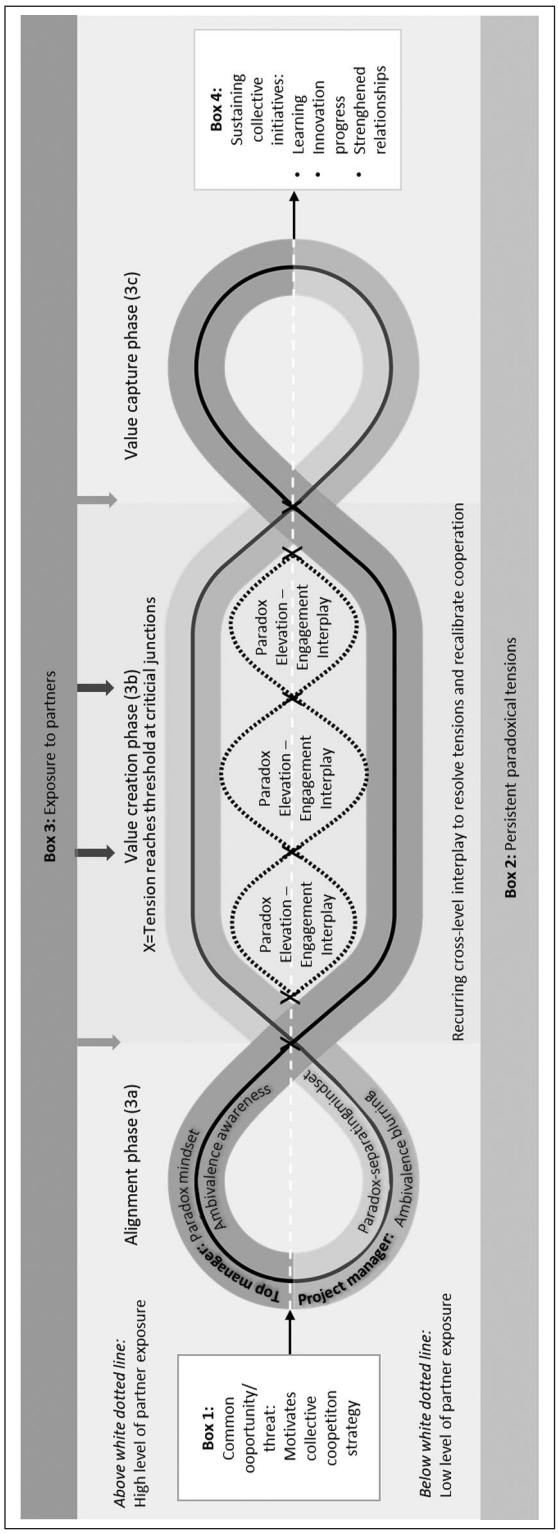


Figure 2. Cross-level leadership dynamics in coopetition participation to sustain collective strategy.

can be managed within their mandate. Project managers respond through paradox elevation by shifting from temporarily separating competing demands and blurring emotional ambivalence to openly acknowledging competitive concerns and the negative emotions they evoke. Top managers, in turn, move beyond maintaining a paradox mind-set and ambivalence awareness. Through paradox engagement, they work directly with project managers to examine these competitive concerns and their accompanying emotions. Throughout the value creation phase, top managers and project managers jointly resolve tensions by recalibrating collaboration through renegotiating expectations, commitments, and the terms of participation within and between partner firms.

Finally, as shown in the model, through recalibrating collaboration, projects may regain momentum and generate valued outcomes, including learning, innovation, and strengthened interorganizational relationships, as highlighted in prior coopetition research (e.g. Corbo et al., 2023). Achieving these valued—yet often partial and evolving—outcomes motivates firms to maintain participation in coopetitive projects, thereby sustaining the pursuit of shared strategic objectives through collective strategy (Astley, 1984; Fombrun and Astley, 1983).

Discussion: A cross-level process model of managing paradoxical tensions in coopetition

This study develops a microdynamic, cross-level process model of how leaders within firms manage paradoxical tensions over time in coopetitive projects. In doing so, it contributes a microfoundational (Felin and Foss, 2005; Felin et al., 2012) and processual (Langley, 1999) perspective on how paradoxical tensions (Carmine and Smith, 2021; Miron-Spektor et al., 2018; Smith and Lewis, 2011) are managed during coopetition (e.g. Raza-Ullah, 2020). The study responds to recent calls to examine how managers navigate tensions between cooperation and competition in collective strategizing (Raza-Ullah et al., 2024). Building on these findings, the study makes three contributions.

First, the study advances coopetition research by explaining how the management of paradoxical tensions shifts from role-differentiated leadership responses to cross-level interplay as tensions escalate. Previous research has differentiated the roles of project and top managers and highlighted the increasing importance of top-management involvement as tensions intensify (Bengtsson and Raza-Ullah, 2025; Le Roy and Fernandez, 2015). Extending this research, the findings show that escalation not only requires greater top-management involvement but changes how paradoxical tensions are managed across organizational levels. Role-differentiated responses under manageable tensions become insufficient as tensions escalate, requiring cross-level interplay through which leaders jointly recalibrate collaboration. This suggests that future theorizing, rather than examining each leadership role separately, needs to consider the temporal dynamics between role-differentiated leadership responses and cross-level interplay as tensions escalate.

Second, the study extends paradox theory (Carmine and Smith, 2021; Miron-Spektor et al., 2018; Smith and Lewis, 2011) by showing that cognitive and emotional responses to paradoxical tensions vary across leadership roles and as tensions evolve. Building on research emphasizing the need to balance competing demands and regulate emotional ambivalence (Raza-Ullah, 2020), the findings challenge the assumption that a paradox mind-set is inherently energizing (Miron-Spektor et al., 2018). Top managers are energized by the strategic potential of coopetition, whereas emotional ambivalence and, particularly, negative emotions provide demanding but important informational cues as tensions intensify. Although separating competing demands is often viewed as defensive or suboptimal relative to integrating them (Boemelburg et al., 2023; Miron-Spektor et al., 2018), it enables project managers to contain manageable tensions

and maintain project progress. As tensions escalate, however, negative emotions shape lower-level managers' sensemaking and can prompt them to elevate tensions to top managers (Lundgren-Henriksson and Kock, 2016), bringing top managers into paradox management (Stadtler and Van Wassenhove, 2016). This extends research showing how engagement with emotions shapes paradox navigation (Pradies, 2023; Raza-Ullah et al., 2020; Vince and Mohamed, 2025). As leaders increasingly work through both competing demands and negative emotions together, doing so helps redirect tensions toward virtuous rather than vicious cycles (Schad et al., 2016). Together, these findings suggest that separating and integrating competing demands may be complementary across time and leadership levels, and that what matters is not whether cognitive and emotional responses are inherently constructive or defensive, but how they interact as tensions evolve.

Third, the study contributes to research on coopetition as a form of collective strategy (Astley, 1984; Fombrun and Astley, 1983; Raza-Ullah et al., 2024) by explaining how micro-level leadership dynamics within firms engaged in coopetitive projects contribute to sustaining collective strategy. Building on microfoundational and process perspectives, the study advances research on the microdynamics through which leaders navigate persistent coopetitive tensions over time (Raza-Ullah et al., 2024). The findings reveal how leaders' responses and their interplay in managing tensions enable recurrent collaboration recalibration, maintaining project participation and progress. These recalibrations generate learning, innovation progress, and strengthened interorganizational relationships, valuable coopetition outcomes (e.g. Corbo et al., 2023) that extend beyond projects and support continued strategizing together across firms. Theoretically, this implies that sustaining collective strategy needs to be understood as a recurrent cross-level process through which micro-level leadership dynamics within firms enable continued strategizing together across firms despite persistent paradoxical tensions.

Managerial implications

The findings offer practical implications for managers engaging in coopetition and other forms of collective strategy. First, while coopetition is increasingly used to address collective challenges, its paradoxical nature remains underestimated in managerial advice (Corbo et al., 2023). Paradoxical tensions should be kept at a workable level where collaboration coexists with vigilance (Bengtsson and Raza-Ullah, 2016; Raza-Ullah, 2020). Managers across levels must therefore develop a shared understanding of how tensions evolve, enabling them to recognize when tensions shift and when their leadership responses need to adapt.

Second, effective coopetition depends on complementary leadership roles across organizational levels. In interorganizational projects, project managers, through role-differentiation, are well positioned to contain operational tensions and maintain collaborative momentum. When tensions exceed operational mandates, however, top managers and project managers must jointly recalibrate collaboration. Organizations should therefore develop cross-level leadership responses rather than relying on either leadership level to manage paradoxical tensions independently.

Third, sustaining coopetition as a collective strategy requires investment in building experience in tension management, not only within but also across projects and firms. Despite the persistence of such tensions, it is key to recognize that recurrent collaboration recalibrations can generate valuable outcomes, even after setbacks. These outcomes can reinforce continued collaboration and sustain collective strategizing. Regional innovation clusters can support this process by facilitating the sharing of experience across firms and actors.

Boundary conditions and future research

This study is based on a qualitative, longitudinal multiple-case design in innovation clusters within a region and should therefore be interpreted within that context. While the model shows how leaders' cognitive and emotional responses vary across leadership roles, and shift from role-differentiated responses to cross-level interplay as tensions escalate, how this process unfolds is likely to depend on institutional, cultural, and governance conditions surrounding different forms of coopetitive collective strategy.

Future research could further examine how different conditions and levels of tension escalation shape paradox management over time, including the temporal dynamics between role-differentiated leadership responses and cross-level interplay. It could also investigate how cognitive and emotional responses complement each other across leadership roles and as paradoxical tensions evolve, especially in cross-level interplay. A further avenue is to examine how cross-level interplay and recurrent collaboration recalibration may, by generating valuable outcomes across partnering firms, contribute to the endurance of collective strategy over time.

These dynamic processes could also be examined across settings beyond those studied here, including other forms of collective strategy such as strategic alliances and public-private partnerships, as paradoxical tensions are not confined to coopetitive arrangements (Jarzabkowski et al., 2013). Longitudinal, observational, and mixed-method designs could be particularly valuable for capturing how these microdynamics unfold in collective strategizing across different contexts.

To conclude, this study develops a cross-level process model explaining how leaders manage paradoxical tensions in coopetitive projects, contributing to research on microfoundational and processual perspectives on collective strategy. By showing how leadership responses are reconfigured from role-differentiated responses toward cross-level interplay at critical junctions as tensions escalate, the study offers a microdynamic explanation of how collective strategizing is sustained over time.

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Ethical considerations

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Informed consent statements

Written informed consent was obtained from all participants.

Author contributions

Synnøve Nesse is the sole author of this paper.

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Data availability statement

The data supporting the findings of this study are available upon reasonable request from the corresponding author.*

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Appendix 1. Project overview.

Industry-partner project	Key paradoxical tensions	Duration and outcome
Banking (3 partners)—*Interbank PSD2-Compliant API Platform*	Opportunity to gain a first-mover advantage, mitigate market share loss, and shape industry, yet risk of exposing strategic data to competitors and long-term competitive implications.	Launched and completed in 2018; set industry benchmark; involved more cluster members in 2023 for new projects
Insurance (3 partners)—AI-Driven Fraud Detection Platform	Opportunity to reduce fraud, lower premiums, and strengthen analytics through shared data, yet risk of uneven advantage from shared insights, dependence on data contributions, and challenges of trust and standardization.	Proof-of-concept 2020–2021; pilot 2022; ongoing in 2023, including more partners in the cluster
Aquaculture (7 partners)—Predictive Big Data Sea Lice Forecasting Platform.	Opportunity to improve regulatory alignment and environmental performance in the industry, yet risk of sensitive data sharing, facing barriers to adoption due to weak standardization, and uneven technological resource commitment.	2017–2020 forecasting pilot; evolved into a scalable, industry-wide central data hub in 2023
Seafood export (2 partners)—Joint Seafood Export and Logistics System	Opportunity to strengthen pricing power, improve logistics efficiency, and expand international market reach, yet risk of reduced autonomy in pricing decisions and strategic conflicts around branding and market representation.	10-year project ended in 2020; ongoing in other areas in 2023
Media (2 partners)—End-to-End Multimedia End-to End Cloud Streaming and Monetization Platform	Opportunity to enable scalable cloud-based video services and strengthen joint market presence, yet risk of integration complexity, overlapping product portfolios, replication concerns, and competitive strategies.	Started and completed in 2018; project-by-project based on business opportunities until 2023
Subsea (3 partners)—Subsea Communication and Sensor Technology for New Markets	Opportunity to diversify into marine markets and develop new technologies, yet risk of technology replication, intellectual property and patent leakage, integration delays, and competition in overlapping market areas.	Completed 2018–2019; ongoing project-by-project in the cluster; used as example for new projects in 2020–2023

Appendix 2

Semi-structured interview guide

Background and role. Can you briefly describe your background, position, prior and current experience with coopetition, and your role in the project?

Coopetition project and context. What is the purpose of the project, and why did your organization decide to participate?
How is the project set up, and how are cooperation and competition combined in this project?
How is collaboration and communication organized among the participating actors (e.g. roles, meeting structure)?
What conditions promote or inhibit successful coopetition?
What role does the innovation cluster play in the project?

Coopetition experiences during the project. How do you experience cooperating with competitors in this project?
Do you experience any paradoxes, tensions, or trust–distrust issues?
How do these experiences affect how you work with other actors in the project?

Trust, tensions, and phases. How has trust and distrust evolved during the project, and how salient are trust-related tensions?
Are there any other tensions—new or recurring—that you are experiencing?
Have tensions been handled differently across phases? If so, how, why, and by whom?

Leadership roles, tension management, and escalation. What kinds of tensions have emerged or are emerging?
What leadership roles are important in managing these tensions?
How are tensions handled by you and by other roles?
Can you describe a situation where tensions escalated and required involvement beyond your role?

Outcomes. How has the project developed over time from initiation to outcome?
How do you assess the project in terms of coopetition success or failure?
What innovation-related outcomes resulted from the project?
Are there other outcomes you consider valuable?
Interviews were contextualized to specific phases (e.g. "in this phase or situation"), the focal project, and prior interviews and other data sources (e.g. to probe emerging and recurring known tensions within a project). Follow-up questions, tailored to each interview, were used to explore issues relevant to the research question in greater depth.