

Untangling Coopetitive Dynamics: A Microanalysis of Collaborative and Competitive Tensions in an Ecosystem

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ABSTRACT

Objective: this study explores the complex dynamics of collaboration and competition within the Delta ecosystem, a mature, networked environment characterized by diverse coopetitive behaviors. The study interprets reality through a continuous process of reconstruction of meaning, using the theoretical lens of sensemaking. **Methods:** an intrinsic case study methodology is adopted, using the relationships between participants as the unit of analysis and triangulating primary and secondary data. Data collection integrates semi-structured interviews, desk research, and a sensemaking technique for pattern identification. **Results:** three key patterns of tension emerged: the interplay between identity formation and self-determination, the dichotomy of 'islands' and 'archipelagos,' and the nuances of performance asymmetries. Within this ecosystem, coopetition is evident as groups pool resources and insights, while competitive tensions arise from participants' similarities and performance differences, spurring innovation but also potential conflict. **Conclusions:** the study delineates the nuanced interplay of competitive and collaborative forces within that coopetitive ecosystem, emphasizing their impact on value creation, thereby shedding light on specific patterns of tension that arise from these coopetitive dynamics.

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INTRODUCTION

This study examines the dynamics of collaboration and competition within the Delta ecosystem to identify patterns of tension that impact cooperative behaviors and consequently innovation and value creation. It adopts a novel approach by centering its analysis on the relationships among ecosystem participants, thereby shedding light on specific patterns of tension that arise from these cooperative dynamics. The study highlights the need for flexible strategies to adapt to the unique demands of different cooperative relationships (Amatta et al., 2022; Chiambaretto et al., 2019).

Through a data collection approach that encompassed semi-structured interviews, desk research, and advanced sensemaking techniques, the study elucidated three primary patterns of tension that pervade the ecosystem: (1) the complex interplay between individual identity formation and self-determination, (2) the dichotomy of 'islands' and 'archipelagos' within the ecosystem, and (3) the subtle degrees of performance asymmetries, analyzing how differences in performance among participants lead to both collaboration and competition, thus impacting the ecosystem's innovation potential and conflict dynamics. This paper will present a detailed analysis of these three patterns.

In this study, cooperation goes beyond inter-firm dynamics and intra-firm complexities toward recognizing the multi-level nature of cooperation in ecosystems, where cooperative dynamics is broadly understood as an equilibrium between competition and collaboration. From a multilevel, multi-actor network perspective (Tsujiimoto et al., 2018), ecosystems incorporate cooperative relationships (Ritala et al., 2013) as parameters to measure the ecosystem's success (Adner & Kapoor, 2010; Moore, 1993; Zahra & Nambisan, 2012). Cooperation management involves strategically leveraging those relationships for mutual benefit while protecting proprietary interests and managing resource allocation (Corbo et al., 2023; Garri, 2021).

As defined by Nalebuff and Brandenburger (1996), cooperation embodies a balance of competitiveness and collaboration, contingent on how participants manage the coexistence of collaboration and competition (Corbo et al., 2023; Garri, 2021). A favorable combination of competition that refrains from destroying the opponent and collaboration that considers self-interest preservation lies in its paradoxical state where collaboration and competition coexist in tension. This configures a landscape in which stable and unstable conditions coexist in complexity (Chan, 2001; Chen & Miller, 2015). Entities must reconcile their collaborative objectives – which require trust, openness, and mutual dependency – with their competitive instincts, driven by

protectionism, secrecy, and independence. The exploration of these tensions in cooperation and their impact on value creation in ecosystems remains a significant topic of interest. To fully comprehend the scope and impact of tensions arising from cooperative dynamics on value creation within ecosystems, it is necessary to delve into inherent contradictions of collaboration in light of competitive dynamics (Engeström & Sannino, 2011; Seepana et al., 2020).

Although extensive, the current literature on cooperation appears to lack a robust exploration of the types of tensions that emerge from cooperative dynamics within business ecosystems and how they directly impact value creation (Bengtsson & Raza-Ullah, 2016). The tension that arises from the paradoxical nature of collaboration and competition is often observed. Still, its transformative impact on value creation within ecosystems remains under-researched (Nalebuff & Brandenburger, 1996).

Furthermore, the cooperation literature primarily studies firm-level phenomena and less frequently investigates multi-actor ecosystems where value creation is even more complex (Thomas & Ritala, 2022). For instance, the work of Adner (2017) illuminates the structural aspects of ecosystems; however, it fails to adequately address how tensions in cooperation influence the value creation process within these structures. In addition, the complex nature of value creation in ecosystems, which often involves multi-layered interactions among diverse actors, is seldom addressed adequately within cooperation research (Pushpanathan & Elmquist, 2022). This study intends to identify and categorize patterns of tensions emerging from the cooperative dynamics within a mature ecosystem, elucidating the relationship between cooperation tensions and value creation.

Despite the expansion of the cooperation literature, shortcomings persist, particularly in the ability to delve into the inherent contradictions of collaboration (Engeström & Sannino, 2011) when considering competitive dynamics (Seepana et al., 2020). Furthermore, there is a need to question the established competitive logic, considering different epistemological perspectives (Raza-Ullah et al., 2014). The inherent tension within the borderline disruptive and opportunity-focused interchange becomes discernible in cooperation through a multi-tiered network perspective (Kim, 2020). This state encapsulates the paradoxical states of stability and instability (Chan, 2001), potentially fostering agonism and antagonism within ecosystems (Clarke et al., 2016).

While extensive, the existing body of research on cooperation reveals a notable gap in understanding

the specific types of tensions that emerge from the interplay of collaborative and competitive forces within business ecosystems. The literature has yet to delve deeply into how these tensions can transform value-creation processes within such ecosystems. This study seeks to bridge this gap by comprehensively exploring these intricate dynamics. It scrutinizes the dual forces of competition and collaboration, seeking to unravel the complexities of their coexistence and their consequent impacts on ecosystem governance and value generation. Central to our investigation is the analysis of inter-participant relationships within these ecosystems. By closely examining these relationships, we aim to systematically identify and categorize the various patterns of tension that manifest. This approach aims to fill the identified research gap. It sheds light on the governing dynamics that shape the functionality and productivity of business ecosystems driven by coopetitive forces. It specifically explores how these dynamics of collaboration and competition influence value creation, using the relationships among participants as the focal point to identify patterns of tension.

The subject of the study is an ecosystem, here entitled Delta, which is a successful example of the merger of diverse participants from the corporate world that set out to build a self-managed venture to foster and disseminate socially relevant initiatives grounded on a shared ethos. It supports participants in their quest to act on their beliefs, enabling them to embrace their unique roles in life, contribute to the establishment of resilient organizations, and advance society. This networked operating model experiences constant tension arising from generating initiatives. It is an illustrative example of continual interaction involving 33 participants over two decades. It maintains an innovative, self-regulated network that produces and diffuses initiatives anchored in mutual philosophical principles and values.

This study is structured as follows: First, a literature review highlights essential dualities and their implications within the identified domains. Second, the research methodology is detailed and anchored in a structured, iterative cycle that includes distinct phases spread over several stages. Third, the empirical findings are interpreted within a broad framework, identifying and classifying patterns observed during the study. Fourth, a comprehensive discussion explores the multifaceted relationships and their implications for value creation.

LITERATURE REVIEW

Coopetition, a blend of competition and cooperation, is a strategic and dynamic process that significantly impacts ecosystem value creation and governance

(Garri, 2021; Efrat et al., 2022). It is rooted in a paradox involving simultaneous collaborative and competitive interactions among economic actors (Bouncken et al., 2015; Garri, 2021).

The contradictory nature of collaboration and competition presents significant managerial challenges. These tensions can lead to cognitive dissonance and operational difficulties, affecting overall performance and innovation outcomes. The literature stresses the importance of trust, governance mechanisms, and knowledge brokers in navigating these tensions effectively (Chiambaretto et al., 2019; Efrat et al., 2022). Effectively managing these tensions is vital to leveraging coopetition for enhanced innovation outcomes (Hückstädt, 2022). Coopetition management involves navigating interconnected drivers such as mutual benefits, external conditions, partner dynamics, and internal capabilities (Gernsheimer et al., 2021). Critical to this management is the balance of knowledge sharing versus protection, assessing risks and benefits, and fostering trust while guarding against opportunism.

A coopetitive mindset is crucial for balancing competitive pressures with collaborative opportunities that influence firm decisions, particularly under performance challenges and technological uncertainties (Zheng et al., 2023). This paradoxical nature of coopetition leads to tensions at multiple levels — inter-organizational, intra-organizational, and individual — affecting knowledge sharing, resource distribution, and psychological challenges (Efrat et al., 2022). The understanding of coopetition at multiple levels expands the concept of coopetition, identifying specific tensions, and highlighting the role of knowledge brokers and governance mechanisms (Amatta et al., 2022; Chiambaretto et al., 2019; Corbo et al., 2023; Foguesatto et al., 2021), and the importance of balancing collaboration and competition.

In the business realm, competition gives each participant a distinct position. However, when participants with closely aligned positions engage, the intensity of competition increases, potentially culminating in retaliation. In the competitive framework, the focus remains on the role that each actor curates to skilfully navigate the competitive forces that characterize an industry or sector (Porter, 2008). Under a firm-specific approach, competition is depicted as the pursuit of distinct market domains (Baum & Korn, 1996) that determine strategic positioning. However, competition, like collaboration, is multifaceted. As firms find themselves in proximate competitive positions, the nature of competition evolves. Rather than unyielding rivalry, there is a tendency toward mutual tolerance (Baum & Korn, 1996; Edwards, 1955), underpinned by a strate-

gic recognition that coexistence may yield better results in specific scenarios than outright confrontation (Jayachandran et al., 1999).

At the firm level, Chiambaretto et al. (2019) provide insights into internal competition within organizations, stressing the importance of knowledge sharing and protection and the role of knowledge brokers in managing tensions. Coopetition's internal dynamics also involve managing divisional interactions through cooperative strategies (Amatta et al., 2022). At the inter-firm level, Corbo et al. (2023) discuss coopetition as a balance between cooperative and competitive forces, particularly regarding resource management and innovation strategies.

Different cultural settings impact how collaborative and competitive relationships emerge and are managed, affecting cross-functional coopetition. This internal dynamic requires a sophisticated balance of collaboration and competition across different organizational units (Knein et al., 2020; Strese et al., 2016). Hückstädt (2022) sheds light on the tensions in research collaborations, emphasizing the central role of relationship problems, communication issues, and the importance of goal commitment and fairness. These findings underline the complex web of interdependencies and the need to manage collaboration problems effectively to ensure the success of research collaborations. Foguesatto et al. (2021) further elaborate on the dynamics of collaboration and competition in innovation ecosystems, focusing on the evolution from business ecosystems to more collaborative and innovative platforms.

Within the broader context of ecosystems, coopetition is conceptualized as a continuum of multidimensional relationships within multilevel, multi-actor networks (Tsujiimoto et al., 2018). This interplay involves a symbiotic relationship where entities work toward common goals, balanced with private motivations and opportunistic behavior. Such relationships often exhibit ambivalence, manifesting both harmony and discord within and between entities, highlighting the inherent tensions in coopetition (Czakov et al., 2020; Tidström, 2014).

Successfully navigating these complex environments requires understanding the tensions between competition and collaboration, which are critical to fostering coopetition and stimulating value creation within ecosystems (Seepana et al., 2020). Considering competition and collaboration as a dilemma of opposing forces (Czakov et al., 2020), these two contradictory pressures must be elucidated (Seepana et al., 2020). Contradictions reveal the best conditions for self-reproduction in challenging circumstances (Luhmann,

1995) and are understood as interrelated elements of tensions, inconsistencies, conflicts, or double-bind dilemmas (Engeström & Sannino, 2011). Tensions in cooperation arise from the conflicting goals of collaboration and competition. These tensions can manifest as cognitive difficulties and operational challenges, potentially leading to what is referred to as the 'dark side of cooperation' (Chiambaretto et al., 2019; Efrat et al., 2022). Managing these tensions is crucial for the stability and success of cooperative relationships.

Collaboration and competition: Sources of tension

Collaboration embodies a relationship characterized by tensions that culminate in what can be termed an 'ambivalent advantage' that encapsulates the challenges of reconciling control and diversity. In contrast, competition is characterized by self-interest, anchored in a paradigm where one entity's gain equals another's loss, defining the essence of a zero-sum game (Austen, 2018; Deutsch, 1949; Kilduff, 2019; Scherer & Ross, 1990). As such, competition hinges on articulating choices guided by the need for defense from threats and the overarching need to achieve or maintain dominance (Garcia et al., 2013), aiming to acquire resources and constrain opponents (Ferrier et al., 1999). Bourdin (2013) highlighted that competition plays a pivotal role in the emergence of 'violence among equals.' This nuanced understanding of conflict dynamics surfaces within groups or systems where members ostensibly hold equivalent power or status. An imbalance in the nature and intensity of disputes among these members precipitates such violence. The reactions to these imbalances, deeply influenced by the competitive landscape, can vary significantly, ranging from passive responses to outright acceptance of the discord.

Stacey (1996) states that collaboration is fundamentally a cross-fertilizing interaction, implying a mutualistic relationship in which the parties work symbiotically toward common goals. An essential aspect of collaboration is maintaining and fostering network relationships rooted in mutual trust, consistent communication, and unwavering commitment (Blomqvist & Levy, 2006). It requires sharing knowledge, aligning different goals, and coordinating activities toward a common goal (Camarinha-Matos & Afsarmanesh, 2018; Hoffmann et al., 2018; Russell & Smorodinskaya, 2018). Collaboration goes beyond mere interaction. It addresses the unique challenges of ongoing stakeholder negotiations (Thomson & Perry, 2006) based on a foundation of trust, effective communication, and unwavering commitment (Blomqvist & Levy, 2006).

Collaboration and competition as sources of tension refer to multilevel processes in cultural adaptation. Wilson (1997) explores the delicate balance between individual self-interest and altruism in evolutionary dynamics. This balance is central to understanding that altruistic behavior, which prioritizes the welfare of others even at personal cost, is fundamental to the successful adaptation of groups. Altruism can facilitate group-level benefits, but its emergence and persistence are not solely for the sake of the collective. Individual-level factors and potential benefits can also play a significant role in establishing altruistic behavior. This complexity highlights the need for a deeper understanding of the multifaceted relationship between individual organisms and broader group dynamics in the context of ecosystems.

Schlaile et al. (2022) delineated coevolutionary relationships in the context of ecosystems into three modes: mutualistic, where both entities benefit; antagonistic, where one benefits at the other's detriment; and competitive, where entities contend for the same ecological niche. This tension is initially governed by equality predicated on similarity or likeness. Over time, however, the equilibrium that began in a collaborative state may shift from mutual collaboration to a state where coercive threats dominate interactions. This transition underscores the dynamic nature of interdependent systems and the potential for evolving power dynamics within them.

In multilateral coopetition, the involvement of multiple horizontal and vertical competitors reinforces complexity. Hence, managing tensions is crucial because coopetition oscillates within a spectrum framed by dyads, such as flexibility vs. rigidity, autonomy vs. responsibility, and complexity vs. simplification (Vangen & Huxham, 2013; Vangen & Winchester, 2014). These tensions raise the need for formal and informal coalitions to manage conflicting interests and objectives among 'coopetitors.' The strategic management of these tensions, considering the diversity of partners and the need for open communication and strategic alignments, is fundamental for effective coopetition (Geurts et al., 2022).

Tensions are often detected in collaboration and competition among individuals, teams, and organizations (Czakoń et al., 2020) and manifest at both intra-organizational and inter-individual levels, challenging the balance between joint value creation and private value appropriation (Bengtsson & Kock, 2014; Geurts et al., 2022; Schad et al., 2017). Coopetitive relationships can result in conflicts and tensions due to the risk of opportunistic behavior and the potential degradation of relationships with other members (Tidström, 2014). This paradoxical nature can be traced in the literature

on territorial models of ecosystems, accentuating the importance of social and human capital (Scaringella & Radziwon, 2018) in regional clusters (Porter, 2000) and in Italian industrial districts (Becattini, 2004; Best, 1990; Boschma & Lambooy, 2002). Gernsheimer et al. (2021) offer managerial insights on navigating the complexities of coopetition, including strategies for managing tensions, building trust, and optimizing the level of coopetition for best outcomes.

Ever-changing relationships between collective interests and individual goals create tensions. Kilduff et al. (2010) explained a distinct dichotomy characterized by harmony and discord, which can manifest both within a single entity or group and between separate entities or groups. This dichotomy underscores the ambivalence inherent to the dynamic interplay of collaboration and competition. Those relationships are characterized by the dynamic interplay of collective interests and mutual value creation with private motivations and opportunistic behavior. While they may initially appear contradictory, closer analysis reveals convergent trajectories and interdependencies in specific contexts. While collaboration fosters synergistic interactions, promoting mutual benefits and shared goals, competition can drive entities to prioritize individual or group-specific objectives, potentially at the expense of others. More than a balance of opposing forces, it is a complex interplay of collaborative and competitive interactions where coopetitive dynamics transcend transactional interactions into a realm where different worldviews collide and intermingle (Huxham & Vangen, 2013).

The dynamics of collaboration and competition in multilateral contexts are characterized by increased complexity and intensified tensions. Tensions may arise from informal coalition formations, which can build trust within subgroups but may undermine trust across the entire coopetition entity. It highlights the importance of sensemaking in managing these coopetitive relationships instead of relying solely on a more objective, factual approach (Pattinson et al., 2018). Strategic management of these tensions is critical to balancing cooperation for joint value creation against competition for individual value capture (Geurts et al., 2022). Effectively managing these dynamics is crucial for successful value creation and governance in ecosystems.

Value creation in competitive ecosystems

Coopetition extends beyond traditional dyadic relationships to include complex triadic and multilateral interactions. This expansion toward the complexities of ecosystems necessitates a more nuanced understanding of coopetition as a multi-party phenomenon, where the strength and nature of relationships significantly influ-

ence value creation and governance. Understanding these relationships is crucial for value creation and governance in ecosystems, where coopetition involves explicit and implicit competitive and cooperative actions (Kim, 2020; Minà et al., 2020). Ecosystems characterized by coopetition facilitate value creation through interdependent and complex participant interactions, where value arises from both collective interests and private motivations (Adner & Kapoor, 2010; Moore, 1993; Zahra & Nambisan, 2012). Coopetition facilitates value creation through enhanced knowledge sharing, resource optimization, and innovation. However, it also requires a careful balance between value creation and appropriation, influenced by individual perceptions, organizational strategies, and external environmental factors (Corbo et al., 2023; Garri, 2021).

Understanding the interplay between these conflicting yet interrelated forces in ecosystems is critical to fostering coopetition and stimulating value creation (Seepana et al., 2020). Value creation refers to the benefits generated from characteristics and drivers embedded in different and possibly overlapping worldviews, as evidenced by the relationships between ecosystem participants (Adner & Kapoor, 2010; Osterwalder et al., 2005). In these settings, coopetition encapsulates the existence of multilevel paradoxes among participants (Keller et al., 2017) and constitutes a tension related to value capture and creation (Jarzabkowski & Bednarek, 2018). In ecosystems, value creation occurs co-dependently, with value arising from interactions between

participants motivated by both collective interests and benefits and private interests and opportunistic behaviors (Bengtsson & Raza-Ullah, 2016). Value creation in ecosystems depends on an operational 'boundary' that considers the challenge of a less obvious distinction between internal and external, with the risk of being caught in an almost infinite web of interdependencies (Adner, 2017).

The concept of value creation within an ecosystem refers to both the conditions and the outcomes. Outcomes refer to the beneficial results produced for the end user and, more broadly, for a wide range of stakeholders. Ecosystems create value through the complex interaction of participants, characterized by interdependence (Thomas & Autio, 2019) and varying degrees of multilateral complementarities, which could potentially be managed in a hierarchical structure (Pushpanathan & Elmquist, 2022). These linkages, which exhibit non-linear dynamics, are manifested in spaces conducive to the engagement of multiple entities (Adner & Kapoor, 2010; Dodgson et al., 2013; Granstrand & Holgersson, 2020; Jacobides et al., 2018).

Variables and dimensions

Table 1 defines variables and dimensions studied in the context of ecosystems. It synthesizes the complex interplay of four key dimensions: coopetition, collaboration, competition, and value creation, providing a broad view of those dimensions and their characteristics as outlined in the literature.

Table 1. Variable and dimensions.

Dimension	Definition	Key variables and characteristics	Sources
Coopetition	A strategic and dynamic process blending competition and cooperation, significantly impacting value creation and governance in ecosystems.	Tensions at multiple levels (interorganizational, intra-organizational, individual) affecting knowledge sharing, resource distribution, and psychological challenges; a symbiotic relationship where entities work toward common goals, balanced with private motivations and opportunistic behavior, often exhibiting ambivalence and inherent tensions.	Czaron et al. (2020); Kilduff et al. (2010); Stacey (1996); Tidström (2014)
Collaboration	A cross-fertilizing interaction implying a mutualistic relationship where parties work symbiotically toward common goals.	Mutual trust and consistent communication; sharing knowledge and aligning different goals; coordination toward a common goal; tensions like flexibility vs. rigidity, autonomy vs. responsibility.	Blomqvist & Levy (2006); Hoffmann et al. (2018); Camarinha-Matos & Afsarmanesh (2018); Russell & Smorodinskaya (2018); Stacey (1996)
Competition	A paradigm where one entity's gain is another's loss, characterized by self-interest and the pursuit of dominance.	The pursuit of distinct market domains determining the strategic positioning among ecosystem participants; articulating choices guided by defense or protection; achieving or maintaining dominance; acquiring resources and constraining opponents; evolutionary dynamics between individual self-interest and altruism.	Austen (2018); Deutsch (1949); Ferrer et al. (1999); Garcia et al. (2013); Kilduff (2019); Scherer & Ross (1990); Wilson (1997)
Value Creation	Benefits generated from interactions among ecosystem participants, influenced by both collective interests and private motivations.	Co-dependence in value arising from interactions; multilevel paradoxes among participants nurtured by benefits through interdependent and complex interactions among ecosystem participants.	Adner & Kapoor (2010); Jarzabkowski & Bednarek (2018); Keller et al. (2017); Osterwalder et al. (2005); Pushpanathan & Elmquist (2022); Thomas & Autio (2019); Zahra & Nambisan (2012)

METHODOLOGY

The research design focused on an in-depth examination of the Delta ecosystem. Employing a single case study method, the research was rooted in an interpretive ontological approach aimed at expanding interpretation possibilities rather than confirming established concepts. This choice was pivotal in exploring the unique characteristics of the Delta ecosystem, which serves as a rich source of insights into the dynamics of ecosystems and offers the potential for theoretical insights (Eisenhardt & Graebner, 2007). The selection of the ecosystem, a pioneering Brazilian self-managed structure founded in 2003, was due to its distinctiveness and relevance. It represents a specific form of participative governance, integrating philosophical, cognitive, and behavioral elements among senior professionals. Its operational characteristics are based on self-organization, horizontal governance, and a collaborative approach to initiatives, fostering diverse relationships and knowledge sharing among participants. This ecosystem, known for its decentralized, autonomous organizational structure, focuses on developing socially relevant ventures, particularly emphasizing the connections between its participants. In line with Stake's (2008) approach, the research method prioritizes understanding these relationships in their specific context without generalizing findings to other settings.

A reference model based on Brinberg and McGrath (1985) was employed to ensure coherence across the study's conceptual, methodological, and substantive domains. This model aligns the theoretical framework, research approach, and the phenomenon under investigation, particularly regarding data collection and analysis techniques. The conceptual foundation of the study is anchored in the sensemaking paradigm, recognizing the subjective and intersubjective nature of meaning construction (Weick et al., 2005). Methodologically, the

research adopts an intrinsic case study approach, focusing on the dynamics of collaboration and competition within the Delta ecosystem.

The study applied a qualitative research design with triangulation (Jack & Raturi, 2006), merging various perspectives and methodologies to understand the phenomenon thoroughly. This approach involves amalgamating data sources to gather diverse interpretations (Stake, 2008), matching an exploratory method adept at connecting relational aspects of the ecosystem with broader patterns and elements (Yin, 2014). The data collection, conducted from September to November 2021, utilized in-depth interviews, documentary research, and a focus group using the SenseMaker tool (Van der Merwe et al., 2019). Preliminary engagements with key participants from the Delta ecosystem set the stage for in-depth interviews and other data collection methods. The engagement of participants began with a thorough explanation of the research project to key participants, helping to garner support and participation and ensuring informed consent was obtained for recording the interviews.

The data collection and analysis methodology were designed to provide a multifaceted understanding of the Delta ecosystem, incorporating a combination of primary and secondary data sources that contributed to the study's depth and breadth. Participant perceptions were interpreted from 28 semi-structured interviews, ecosystem documents, and open narratives that translated symbolic content into tangible categories (Locke, 2000). The ecosystem's uniqueness is unveiled by capturing participants' assigned meanings while employing abductive learning through iterative data examination stages. The process includes triangulation methods (Table 2) to identify emerging themes, iterative sensemaking for conceptual constructions, and constant literature referencing (Vangen & Winchester, 2014).

Table 2. Triangulation methods and their roles.

Method	Description	Role in Triangulation
In-depth Interviews	Crafted to provoke reflective responses around challenges and dynamics of the research subject.	Provided subjective insights and personal perspectives of ecosystem participants, revealing underlying dynamics.
Documentary Research	Analysis of documents provided by the Delta ecosystem's acting president, including regulatory and financial documents, as well as public resources like websites and publications.	Offered objective, formal perspectives of the ecosystem, complementing personal narratives from interviews.
SenseMaker Tool	Participants shared stories, which were then analyzed in dyads and triads to identify patterns of meaning.	Facilitated collective reflection and co-production of interpretations, connecting individual experiences with shared narratives.

The integration of semi-structured interviews, documentary research, and the SenseMaker approach provided robust triangulation results. This mixed-method approach enriched the validity and reliability of the

findings. It offered a comprehensive view of the ecosystem's dynamics, mainly through the SenseMaker approach, which is instrumental in identifying patterns of meaning.

The triangulation also involved a complex data analysis process. This approach, consistent with epistemological and ontological coherence, sought to increase methodological robustness. The abductive path chosen for understanding collaboration, competition, and rivalry involved subjective perceptions of participants and the analysis of secondary documents, forming a composite reading of reality. This approach was supported by the cyclical coding methodology proposed by [Saldaña \(2013\)](#) and the NCT system ([Friese, 2019](#)). These systems facilitated an operational structure in triangulation, allowing for the rearrangement and reclassification of data, evolving into a continuous process where emerging themes became meta-codes.

The interview protocol and methodology were designed to accommodate the demands of the research subject. Conducting remote interviews was a strategic response to pandemic-related restrictions, ensuring safety while maintaining research continuity. This approach, although potentially affecting non-verbal communication, was necessary given the social distancing measures at that time. The interview requests resulted in a high participation rate (28 interviewees out of 33 ecosystem participants), indicating effective engagement strategies and the relevance of the research. Ethical considerations were addressed by obtaining consent to record the interviews, ensuring transparency and enabling accurate data transcription and analysis. The recorded interviews were transcribed using Sonix software and exported to Atlas Ti software.

In-depth interviews were a crucial component of the data collection process. Influenced by [Clarke et al., 2016](#), these interviews aimed to gain insights from relational stories and their meanings within the ecosystem, delving into the deeper, often unspoken dynamics. The research process was adaptive, allowing for adjustments in the interview script based on emergent themes. The research protocol for conducting interviews focused on various dimensions of individual experiences within Delta. Initially, interviewees were asked to share their journey leading to their association with the ecosystem, exploring their life context. Questions about Delta's identity followed this, asking interviewees to describe behaviors and actions that embody the essence of the organization. The protocol then delved into the reasons behind choosing the ecosystem, including the conditions influencing this decision, factors reinforcing or weakening their commitment to stay, and the perceived purpose and values of Delta, with a focus on how these translate into daily actions.

Further, the interviewees were queried about value creation for clients and professionals, including their

aspirations, benefits gained, and observations of value creation from different perspectives. The protocol also covered the operational characteristics of the Delta ecosystem, unique or peculiar aspects, initiatives involving partners, and exploring the homogeneity and heterogeneity among its participants. Moreover, it investigated the nature of partnerships and collaborations within and beyond the ecosystem. Lastly, the protocol probed into indications of competition and collaboration among Delta participants, examining events that create tension or foster closeness, handling of conflicting interests, and experiences of both negative and positive aspects of long-term coexistence.

The use of the SenseMaker tool represented an innovative approach to data collection. As described by [Van der Merwe et al. \(2019\)](#), this method engages participants in sharing their stories through an application, allowing for capturing the experiences and perspectives of individuals within the ecosystem. The stories were analyzed in dyads and triads, undergoing a rigorous analytical process, effectively identifying patterns of meaning and facilitating a deep dive into the relational and narrative aspects of the ecosystem. In addition to data collection, the SenseMaker approach involved participants in an iterative and participative process of meaning-making, exploring the connections between individual and shared narratives. This iterative and reflexive process involved participants in the analysis and interpretation of data, adding richness to the findings as participants were not just sources of information but active interpreters of the narratives.

Documentary research complemented the interviews, involving a range of documents from the Delta ecosystem's acting president, websites, and related publications. These documents provided a structural and formal perspective of the ecosystem, offering a backdrop to contextualize the interview data, lending depth and a different dimension to understanding the ecosystem.

The triangulation of these three methodologies — in-depth interviews, documentary research, and the SenseMaker approach — provided a comprehensive understanding of the Delta ecosystem. This approach was crucial in validating the findings, as each method compensated for the limitations of the others and was instrumental in uncovering the complex, multi-layered dynamics of the study subject. The combination of techniques allowed for an exploration of the ecosystem from various angles — personal narratives, formal structures, and collective interpretations, thus ensuring a nuanced understanding of the interplay of relationships, systems, and meanings within such a complex ecosystem.

The research design adopted a combined approach of cycles, phases, and stages, producing a linear, analytical, and deductive process intertwined with a constructivist-subjectivist perspective (Figure 1). This perspective was grounded in the meanings attributed by participants, creating a web of sensemaking that engaged the researcher and the research subject. The concept of sensemaking, as described by [Nardon and Hari \(2022\)](#), provides a valuable framework for analyzing the tensions and contradictions between competitive and collaborative forces in ecosystems, particularly regarding value creation and governance, offering a lens

to understand how individuals and organizations navigate complex and often contradictory environments.

The research design comprises a structured, iterative cycle to codify and categorize content derived from cyclical coding ([Saldaña, 2013](#)) and the noticing, collecting, and thinking (NCT) approach ([Friese, 2019](#)). These methods provided a structured, iterative approach to data analysis, allowing for the ongoing development and refinement of codes and themes. This process involved a continuous evolution from descriptive to more inferential stages, where emerging themes transitioned into meta-codes, providing a comprehensive understanding of the ecosystem's complexities.

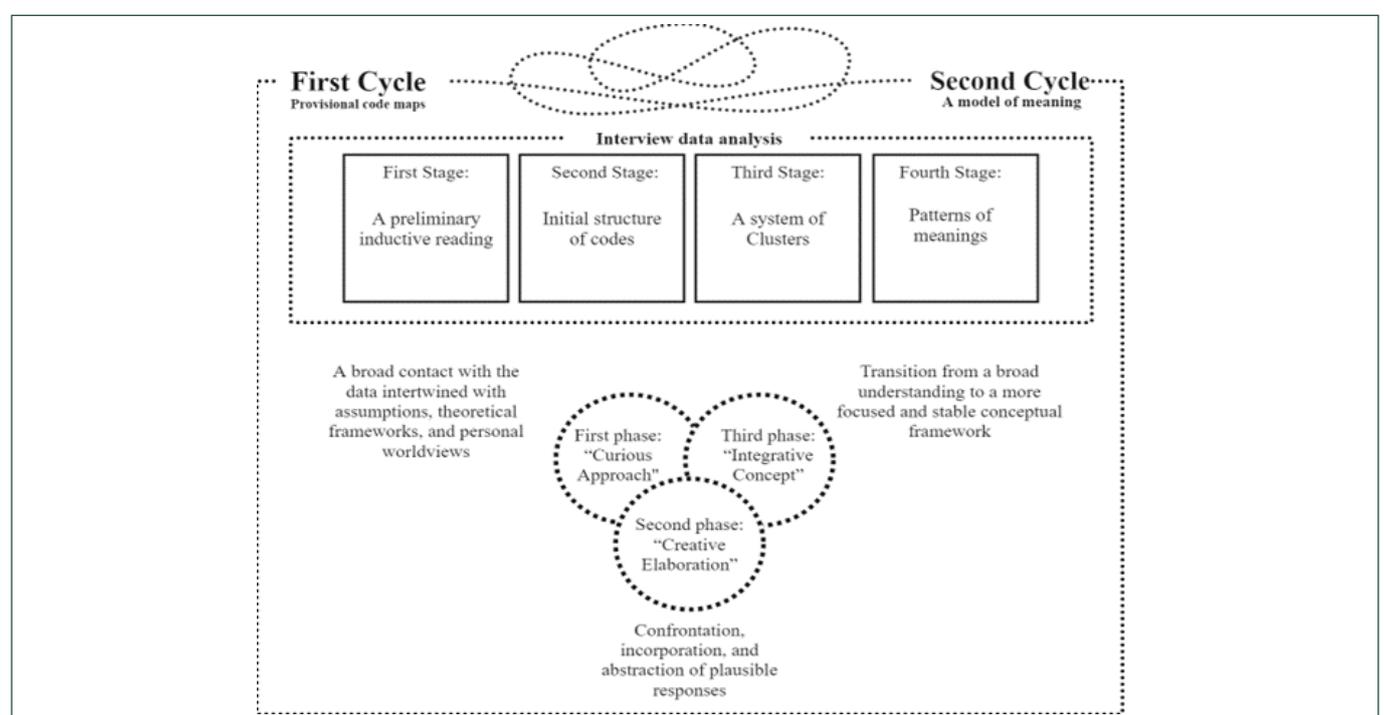


Figure 1. Research design: A combined approach of cycles, phases and stages.

The research implemented a two-cycle system, focusing on initial exploration and analysis and moving toward integration, abstraction, and conceptualization. This approach allowed the initial data to be organized descriptively, with the flexibility to reorganize, rename, and discard as the analysis progressed. The first cycle involved generating a provisional meaning based on in-depth interviews, documentary research, and the SenseMaker tool, leading to the construction of reflective inquiries and the conceptualization of a model of meaning in the second cycle.

This cyclical process involves an interdependent, abductive understanding in which perceptions are subjected to rigorous procedural consolidation. It involves three distinct phases. The first phase, termed the 'curious approach,' is characterized by an immersive exam-

ination of primary data alongside secondary material, guided by theoretical assumptions and the researcher's perspectives. This is followed by the 'creative elaboration' phase, which focuses on a meaning system that yields a provisional understanding. Lastly, the 'integrating concept' phase allows for potential answers around a pre-defined objective and information base.

Detailed interview data analysis unfolded in four stages: selection by a sampling of the interview corpus and initial data reading and reflections through memos; creation of a provisional structure of codes from statements made in the first stage and dialogue with an interim conceptual model; coding guided by an initial structure of codes, mapping exhaustive quotations, and clustering them into meaning clusters; and formation of a system of codes and categories around

transition patterns of meaning toward integration, abstraction, and conceptualization. The first stage was a preliminary inductive reading of the primary data, as proposed by Saldaña (2013). The next stage formulated an initial structure of codes in line with the research objectives. The third stage deepened the coding with an organized system, collating quotations into meaningful clusters. These codes and categories evolved into patterns in the fourth stage, leading to integration and abstract conceptualization.

The analysis focused on specific variables, including collaboration and competition, and various characteristics and drivers of value creation within the ecosystem. As outlined in the methodology, this process involved several stages that contributed uniquely to understanding these variables. Each stage was built upon the previous, evolving from concrete observations to more abstract interpretations, ensuring a thorough grasp of the complex dynamics within the Delta ecosystem.

FINDINGS

The triangulation of three methodologies – in-depth interviews, documentary research, and the SenseMaker approach – provided a comprehensive understanding of the Delta ecosystem. This multi-faceted analysis began with a combination of cyclical coding methodology (Saldaña, 2013) and the NCT system methodology (Friese, 2019), in structuring the initial data, ensuring coherence and reliability in the findings, then moving toward integration, abstraction, and conceptualization. That initial step ensured the results were grounded in data and reflected the ecosystem’s actual dynamics. A structure of codes developed from the semi-structured interviews, documents from the Delta ecosystem, and narratives collected through the SenseMaker tool provided a framework for categorizing data into meaningful clusters (Figure 2).

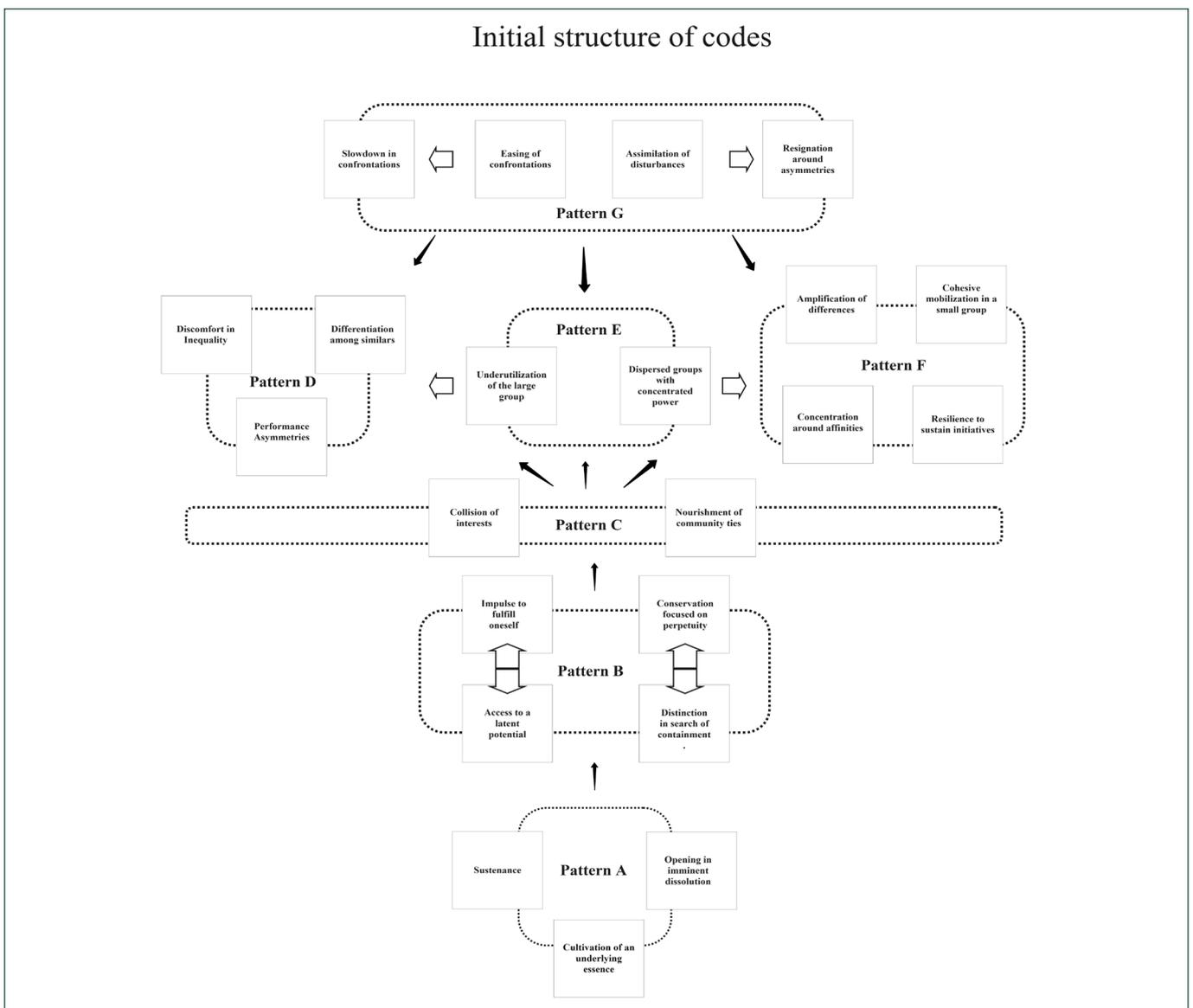


Figure 2. Structures of meaning.

The set of clusters evolved from the initial coding structure. These clusters were then analyzed for emerging themes and patterns, facilitating a deeper knowledge of the dynamic forces within the Delta ecosystem. The clusters were instrumental in identifying and understanding the relationships and in-

teractions within the ecosystem. The clusters encompassed various aspects of coopetition. This systematic clustering (Table 3) allowed the analysis of the coexisting collaborative and competitive elements embedded with value creation within the Delta ecosystem.

Table 3. A system of clusters and associated tensions.

Pattern	Description	Associated Tension
A	An ecosystem created and reproduced around an ideological, philosophical, or utopian substrate, where participants collaborate and compete in cycles of creation and dissolution, opening up to and resisting the new.	Identity building and individual drive
B	Ecosystems structures aimed at both change and permanence, in the reach and expansion of opportunities, and in the preservation of interests and demarcation of territories.	'Islands' and 'archipelagos'
C	Mechanisms of confrontation and cultivation, which reveal both a collision of interests, more or less veiled, and the nurturing of community ties, to a greater or lesser degree.	Identity building and individual drive
D	A structure that legitimizes and reproduces asymmetries among participants, whose effect is enhanced among similar entities in search of differentiation.	Performance asymmetries
E	Participants reinforce their strength in small groups as the confrontation is veiled in the larger group.	Performance asymmetries
F	The densification in small groups manifests itself in increasingly higher levels of cohesion and affinity as participants self-confirm at new levels of resilience.	'Islands' and 'archipelagos'
G	Structures to mitigate confrontations and absorb disturbances promote both the distancing of participants and the resignation of others, with the effect being seen in cordial action.	Identity building and individual drive

The set of clusters and its associated tension patterns developed three key tension patterns:

1. Identity building and individual drive: Delta's identity is acknowledged for its consistency and credibility. Participants see their association with Delta as part of their identity and personal growth, sometimes leading to competitive behavior as they pursue self-determination and cognitive advancement.
2. Islands and archipelagos: participants form groups ('islands') for collaborative initiatives, which later evolve into 'archipelagos' to achieve shared objectives. However, these 'islands' can become insular, protecting their domains and restricting idea diversity.
3. Performance asymmetries: differences in performance lead to disparities among participants, potentially causing mistrust and disputes. This can influence the ecosystem's health and stifle innovation, despite also fostering creativity in some instances.

The identification of three patterns of meaning within the Delta ecosystem — identity building and individual drive, islands and archipelagos, and performance asymmetries — revealed the underlying dynamics of coopetitive tension, highlighting how collaboration

and competition coexist and interplay within the ecosystem toward value creation.

A context for tensions

The participants in the Delta ecosystem are a cohesive group with similar personal and professional backgrounds. Over the past 20 years, they have fostered a community centered on knowledge, shared resources, and market and customer prestige. The Delta ecosystem is an example of a successful aggregate of participants committed to building an autonomously managed innovative ecosystem focused on creating and disseminating initiatives rooted in commonly agreed ontological principles and ethical values.

The desire to act as innovative protagonists strongly attracts these participants to the Delta ecosystem. They are searching for new ways of living and working that promise greater individual freedom and are less subject to traditional hierarchical command and control models. This quest embodies the ambivalent nature of coopetition, with collaboration evident in knowledge sharing and competition in optimizing resource extraction to enable initiative.

Participants in this ecosystem propose to create and experiment with alternatives based on an associative horizontal model. They exemplify a network operating model enveloped by patterns of tension that illustrate

the correlation between cooperative tensions and the value creation process within this ecosystem.

A context exists for Delta participants that merges the promise of integrating horizontal governance, innovative entrepreneurship, and a higher-order objective, which transcends commercial ventures, referring to dedication to acquiring a specific ethos and its subsequent dissemination. This aspect is tied to shared values and principles, promoting donation and service attitudes to the ecosystem. Delta participants also expect a collaborative experience of horizontal governance through articulation among equals.

It represents an ethos and a societal model rooted in personal development, blended with the possibility of contributing to a collaborative environment free of overt individualistic undertones from a founder or prominent leadership.

"... to the extent possible within your availability ... an exercise of collaboration, sharing, absolutely free and extraordinary." (Interview 05).

Participants articulate a deep intrinsic connection to the Delta entity, suggesting it represents a higher-order purpose for them. This profound connection is perceived not merely as an affiliation but as an inherent duty or calling. Such deep associations with a higher-order purpose may contribute to challenges when addressing pragmatic and operational subjects within the collective.

"... and it's a real connection, almost a responsibility for this Being..." (Interview 03).

"(Being in Delta is) almost a vocation, or something like a mission ... I think that's why things get so confused... we have difficulty talking about business... we have difficulty dealing with the topics of matter as a group..." (Interview 24).

A collaborative experience of horizontal governance happens through an articulation among equals, in a collaborative format. The promise of this ecosystem to spread and unite people around a collaborative framework creates the expectation of effective participatory decision-making.

"The decision process is very slow." (Interview 20).

"... if we get to thirty-three to come up with a definition someone might even exclude themselves from the story... Difficult." (Interview 07).

An entrepreneurial drive composes an image of the innovative protagonist driven by vision and freedom to act. The participant expects to realize the vision and make it concrete based on the defense of principles of freedom that imbue an innovative entrepreneurial mindset.

"... you have to break through on your own. ... create your space ... position yourself within the community on your own." (Interview 19).

"... not having a rigid model (and) all the freedom to develop the proposal as I feel like it, to (do) and to invite people to work that I feel an affinity with." (Interview 24).

The context around those participants' expectations comprises various tensions threatening this ecosystem. Guided by an individual drive, participants can create clusters that resemble each other and isolate themselves when they achieve economic success, acting to contain advances and preserve conquered spaces.

"... once created, it is hermetic. ... if you were not from the gang and you knock on the door to go there (and say) 'I have interest.' No, not here. ... I created, I had the idea, I developed, I called people to come, we have already worked a lot to get here. So now you don't come here." (Interview 06).

When an individual drive is dominant, performance asymmetries threaten a social fabric linked to a higher purpose. 'Islands' are formed, which isolate participants when they achieve economic success, acting to preserve conquered spaces and contain advances. That triggers horizontal governance over time and reduces the effect of network structures, which are insufficient to maintain a sense of symmetry of opportunities and coherence with the purpose in the large group. From those overlapping conditions, three tension patterns follow: identity building and individual drive; 'islands' and 'archipelagos'; and performance asymmetries.

Pattern 1: Identity building and individual drive

Delta ecosystem has forged an identity that its customers and the broader market acknowledge as a beacon of consistency and credibility. A commonly endorsed ethos, absorbed as a conceptual scheme and converted into business cognitive structures and professional strategies, characterizes their approach.

"... we have a conceptual foundation, an identity concerning the conceptual and philosophical foun-

dition, a clear purpose ... What we have already built up to this point over the last 18 years is this integration through identity." (Interview 04).

"... our relationship with content that brings a worldview in which a differential is already contained... and where we are constantly moving to delve deeper. I think that is our great value." (Interview 03).

"... to develop myself as a human being" (Interview 21).

"... the incubator I see... like a seedbed... ... this cradle bringing everyone together..." (Interview 12).

Conversely, the impetus for innovative, proactive action is a potent attraction vector, drawing these participants toward the Delta ecosystem. Being driven by individual motivations, they pursue freedom as a manifestation of self-determination and cognitive, intellectual advancement as a pathway to self-actualization. Nevertheless, the paramount focus lies on self-mastery, perceived as a spiritual manifestation.

"Delta is an organization that operates from freedom and acts with freedom. It presupposes that you take control of your life and your actions. So there's this condition that nobody is there pressuring you, directing you, monitoring you... you have to stand on your own two feet. So I think if there's anything to be mindful of, it's that people need to understand that it's an operation for themselves, they have to discover the path that makes sense, their unique place in the world as we say... And start to act from it and then I think from that moment the support comes." (Interview 14).

"You must be self-sufficient in securing your own jobs. You shouldn't expect that anyone is going to give you work." (Interview 21).

"... I don't have to support anyone, everyone supports themselves." (Interview 07).

In an environment where multiple initiatives compete for resources and recognition, participants are inclined to seek individual benefits, potentially escalating into a dispute. This tension pattern exhibits heightened significance within the Delta ecosystem, where the homogeneity of participant characteristics augments comparative interactions and competitive pressures. This phenomenon is detectable even within settings that nurture inventive symbiosis. This observation is

apparent in the intensification of community affinities, which enable the interchange and integration of concepts, thereby fortifying the cognitive aspect of knowledge acquisition and dissemination.

A contradiction regarding identity within this ecosystem's value creation arises from the extent to which adopting an ethos promoting self-determination through self-awareness empowers its members to engage with collaborative practices. These practices incorporate an inherent competitive drive that stems from their experiences within the context of a highly individualized corporate environment most participants came from.

Pattern 2: Islands and archipelagos

The Delta ecosystem operates on the logic of creating innovative initiatives through emergent articulation among participants united by shared affinities and driven by a common ethos. We call those groups 'islands' because they provide a contained, safe space to nurture ideas and act, allowing the spontaneous unfolding of genuine collaboration. A metaphorical set of 'islands' represents the eventual advent of 'archipelagos' in the ecosystem. In the 'archipelago,' participants form alliances, work together to achieve shared objectives, and simultaneously reinforce themselves as a group to compete for resources, influence, and recognition.

The development of affirmation and acquisition of autonomous and creative space occurs within the small group represented by the 'island.' Upon overcoming resistance and achieving success, it starts to experience homogeneity and perpetuation through increasing affinity with what is familiar and unique. This is aligned with a shielding stance — support and protection of what they have accomplished.

"Arrangements also occur to contain advances and preserve conquered spaces: ... once created, it's hermetic. ... if you weren't from the group and you knock on the door, go there and say: 'I'm interested.' No, not here. ... I created, I had the idea, I developed it, I called people to come, we have already worked hard to get here. So now you don't come here... you can have your idea." (Interview 06).

"The first reaction from people (when a new initiative is presented) is to heavily criticize it. (They must think) another initiative... because they think that the new initiatives, or the initiatives will fade away, draining the strength for instance from what we do which is service A and service B. From the moment I create a new initiative (in their perspective) I start to lose focus (because) out there the client (doesn't

know about these initiatives), they only see that we do, we do (generic services) A, B, C, D etc., you understand?" (Interview 20).

The tension arises when 'islands' act as silos, establishing their knowledge domains and effectively inhibiting the cross-pollination of ideas. The tendency toward homogenization represents a drift toward competitive behavior, where the 'islands' protect their knowledge domains, inhibiting the entry of new ideas and subsequently restricting diversity in the 'archipelago.'

"And the criterion for not letting in... it's not clear. It's not that everything can logically get in... each initiative must be taken care of, but often (it ends up being) understood as a sort of domain reservation, if you will... I created it, I rule here. This has happened several times... I mentioned the FFF initiative, I think it's the main one... because this happened a few times, but it also occurred in other initiatives. We don't have this clarity as to why we say no, when we say no to an initiative ... here we're not going to accept... it's not very clear. And this also leads to resentment, frustrations, loss of trust." (Interview 05).

The collaborative aspect, exhibited by the initial formation of 'islands,' demonstrates the participants' strategic choice to pool their resources and knowledge for mutual benefit. However, the advantages must be balanced against the risk of opportunistic behavior, information leakage, and potential dominance from more established participants.

Conversely, competition emerges among participants as they attempt to establish dominance over specific market opportunities or knowledge areas. This can lead to participants questioning their relative status ("Why him and not me?"). The competitive drive can encourage 'islands' participants to innovate and improve their offerings, ultimately leading to enhanced value creation. Yet, when carried to the extreme, it can also lead to detrimental effects such as resentment, boycotts, and the amplification of disparities and asymmetries, undermining the ecosystem's overall health and value-creation potential.

Employing an archipelago-like rationale to articulate distinct 'islands,' the resulting assembly with other 'islands' propelling akin initiatives can incite discomfort and lead to entrenched positions favoring self-replication of the pre-established arrangement. Consequently, a complex network of intersecting small groups is established, wherein interests collide, reflect one another, and seldom converge.

The tensions between collaboration and competition are intricately intertwined within the coopetition framework. The ecosystem's participants are simultaneously collaborators (within their 'islands') and competitors (against other 'islands' or participants). Balancing these contradictory forces is a complex task, and the tensions arising from this balancing act significantly impact the value-creation process.

Pattern 3. Performance asymmetries

Performance asymmetries refer to tensions related to differences in performance among participants. Within the ecosystem, tensions may arise between those who feel marginalized and the privileged few who gain disproportionately due to their innovative success and subsequent access to decision-making power and political influence. These tensions could lead to covert disputes, breeding mistrust, boycotts, slowness, and the use of subterfuges that could undermine the cooperative dynamics.

"It's a dispute of egos, a power struggle. ... when these disputes arise, they obviously aren't revealed. They end up emerging through someone who gets their ego hurt at some point... or because the other person stood out more... or because the other person made more money, or because the other person is talking more at a certain forum." (Interview 19).

When the success of the prevalence of some over others becomes cloaked by a fear of exposing performance differences or those excluded from the competitive process, jealousy, cynicism, and hypocrisy arise. Intensification of these tensions occurs in the preservation of individual interests. It refers less to a byproduct of an entrepreneurial action and more to a process of materializing a financial capacity that legitimizes the participant over others.

"There's a tension in relation to the financial aspect ... It's because there are some who are making a great deal of money and some who are making very little. There's a chasm of difference. And those who are not doing so well always get the sense that those who are doing well could share... there needs to be a level of awareness also regarding this position of waiting for someone in the Delta to save me... and we are there trying to show that we are a network of entrepreneurs and each one must drive their own. What is your part... there's no point waiting for the other one to come, for the one making almost

a million to come save me because I'm making so little." (Interview 10).

Power dynamics, as noted in the following statements, mean that some associates have more voice than others, which causes the most attractive from an economic point of view to nullify the intention of equality:

"So there is, for example, the predominance of those with more work, these people are less contested, because if you have a lot of work... I won't argue with you (because I run the risk of) you not calling me for a job then it always stays like that... I need to pay homage to that other person then differences of power start to arise internally." (Interview 24).

Performance asymmetries are evident not only in financial results, but also in successful aggregation spaces that mobilize people and groups around certain decisions. As participants move away from direct comparisons guided by objective criteria, they create space for the emergence of subjectivity shrouded in persistent mirroring between opposites. This is not just about gaining advantages over others in an economic context. Rather, it concerns the ability to acquire individual advantage in a comparative process between participants with similar profiles who find themselves amid intense competition when operating within an identical cultural resonance.

In terms of innovative value creation, these tensions can drive or inhibit innovation. On the one hand, asymmetries between participants can foster creativity and innovation, leading to new value propositions. On the other hand, excessive competition and the fear of losing competitive advantage can limit information sharing and stifle innovation.

Ultimately, this would require the development of governance mechanisms that foster trust and information sharing, introducing safeguards against opportunistic behavior, and establishing a culture that values both collaborative and competitive facets.

DISCUSSION

In the Delta ecosystem, the interplay of competitive and collaborative forces is central to understanding value creation, characterized by three key patterns: identity formation and self-determination, the emergence of 'islands and archipelagos,' and performance asymmetries. These patterns collectively highlight the complex web of relationships within ecosystems driven by a blend of individualistic and collaborative tendencies, significantly impacting innovation.

As discussed by Keller et al. (2017) and Efrat et al. (2022), identity formation and self-determination reveal the tension between individual and collective goals within the ecosystem. This tension demands ongoing negotiation between personal ambitions and the broader ecosystem's objectives, with participants striving to carve out their individual spaces while aligning with larger goals.

The concept of 'islands and archipelagos' refers to the formation of micro-ecosystems that foster internal collaboration but may lead to potential external conflict. This phenomenon, highlighted by Tsujimoto et al. (2018) and Tidström (2014), underscores the complexities of managing relationships within these groups, balancing altruism and self-interest. Although conducive to innovation, such dynamics can challenge broader ecosystem integration.

As explored by Thomas and Autio (2012) and Adner and Kapoor (2010), performance asymmetries within the ecosystem amplify competitive pressures due to shared aspirations for resources and recognition. These asymmetries can drive innovation but also risk escalating tensions, leading to perceived and actual contribution imbalances. Managing these asymmetries is essential for fostering a healthy, innovative environment.

The ambivalence inherent in cooptation, underscored by Czakon et al. (2020) and Bourdin (2013), presents both opportunities for innovation and potential for conflict. This duality necessitates a balanced approach to managing cooptative relationships, aiming to enhance innovative value creation while minimizing conflicts and inefficiencies.

These patterns reveal a web of tension-filled relationships within ecosystems, resulting from converging individualistic, competitive tendencies, and the need for collaboration. The impact of these relationships on value creation is significant, oscillating between the extremes of driving and stifling innovation.

Identity formation and self-determination

Identity building and self-determination rest on the need for participants within the ecosystem to assert their unique space of individual action while seeking alignment with the broader ecosystem's objectives. An ethos foundation around the catalyzation of personal purposes has led Delta to become, over time, a mature space for participants to build a shared purpose.

The identity formation and self-determination facets mirror the cultural conditions and paradoxical frames explored by Keller et al. (2017), who highlight how these conflicting forces shape organizational behavior. Additionally, Efrat et al. (2022) shed light on the critical stage of mitigating cooptation tensions, offer-

ing valuable insights into the formative phase of identity development within cooperative environments.

The research findings reveal a notable tension between individual identity and collective alignment within the ecosystem, resonating with the themes explored by Thomson and Perry (2006) and Bengtsson and Raza-Ullah (2016). These authors highlight the necessity for continuous negotiation and achieving a balance between collective and private motivations and provide a lens into this tension by illustrating how collective and personal motivations drive interactions. Participants often struggle to carve out their individual spaces and assert their unique identities within collaborative ecosystems. At the same time, they need to align themselves with the larger goals of the ecosystem. The Delta case illustrates this, evolving into a mature space where individual and collective purposes converge. The underlying ethos here depends on a tenuous balance between personal identity and joint alignment. That suggests participants in Delta strive for a collective identity while individualistic pursuits remain unabated, further complicating the collaborative landscape.

Islands and archipelagos

The emergence of distinct groups within the ecosystem, characterized as 'islands and archipelagos,' leads to micro-ecosystems that foster internal collaboration and the potential for external conflict. This concept, discussed by Tsujimoto et al. (2018) and Tidström (2014), highlights the complexities within these micro-ecosystems. 'Islands' are created as participants congregate, pooling resources and knowledge. Nevertheless, inherent tensions arise from fear of opportunistic behaviors, potential information leaks, or dominance by established participants (Tidström, 2014). While fostering intense collaboration internally, 'islands' can become protective and inward-looking, holding back broader ecosystem integration. This also expresses multilevel selection, where altruism can outweigh self-interest (Wilson, 1997). Within this framework, individual self-interests can be superseded by altruistic tendencies that benefit the collective, even at a potential cost to the individual. Kilduff et al. (2010) contribute to this concept by elucidating the inherent dichotomy of harmony (akin to altruism) and discord (resembling self-interest) that can manifest both within and between entities or groups. This dichotomy exemplifies the ambivalence in the dynamic interplay of collaboration (harmony) and competition (discord).

Wilson (1997) and Kilduff et al. (2010) delve into the balance between altruism and self-interest, a dichotomy evident within these groups. It is essential to explore how these micro-ecosystems encourage in-

novation and the challenges they present regarding integration with the broader ecosystem. The 'islands and archipelagos' concept within the ecosystem also aligns with Granstrand and Holgersson's (2020) exploration of innovation ecosystems, emphasizing the significance of internal dynamics and sub-group formations. Geurts et al. (2022) extend this understanding by examining tensions in multilateral cooperation, which are pertinent to these clusters' collaborative yet competitive nature within the Delta ecosystem.

Performance asymmetries

'Performance asymmetries' express how similarities among ecosystem participants amplify competitive pressures, given their shared aspirations for resources and recognition. Thomas and Autio (2012) highlighted the intricate web of interdependencies, suggesting that in pursuing performance, entities might become entangled in complex dynamics, often leading to imbalances in perceived and actual contributions and outcomes. While such competition can catalyze innovation, it simultaneously risks escalating tensions and disputes when performance asymmetries steadily grow.

As noted by Ritala et al. (2013) and Adner and Kapoor (2010), performance asymmetries within the ecosystem significantly impact the ecosystem's health. Thomas and Autio's (2012) exploration of the intricate web of interdependencies within ecosystems provides a framework for understanding the impact of these asymmetries. Hückstädt's (2022) research on cooperation among 'frenemies' further elucidates the intricate balance between collaboration and competition, which is prominently observed in the Delta ecosystem. The study's findings suggest that these asymmetries, often driven by competition for resources and recognition, can both stimulate innovation and intensify tensions. Analyzing how these asymmetries affect cooperative dynamics is crucial, as they can lead to mistrust and potentially impede innovation. That suggests that while asymmetries can pose challenges, they can also become indicative of ecosystem health and robustness.

The asymmetry of gains among participants and the absence of compensation mechanisms resonate with the notion of a multilevel phenomenon in interdependence (Schlaile et al., 2022) held hostage to a likeness-based equality that eventually shifts from a collaborative state to a state under coercive threat. Asymmetries in the Delta ecosystem manifest as tensions between marginalized participants and a privileged few with disproportionate gains that may hinder cooperative dynamics and breed mistrust. These asymmetries, extending beyond financial outcomes, can trigger jealousy and cynicism when individuals

with similar profiles are in intense competition. While such tensions can foster creativity and innovation, they may also stifle the innovative process due to excessive competition and information hoarding. In this sense, it reflects what Bourdin (2013) termed 'violence among equals' driven by the imbalance of disputes and the ensuing reactions, including passivity or acceptance. While competitive vigor can spur creativity and innovation, it may inhibit knowledge dissemination, consequently curbing innovative momentum.

Impact on value creation

The concept of value creation in coopetition is rooted in the understanding that participants, while competing, also engage in collaborative efforts that drive collective benefits. Granstrand and Holgersson (2020) suggest that the internal dynamics within innovation ecosystems play a crucial role in value creation. The benefits manifest in various forms, including innovation, resource optimization, and enhanced market reach. This insight is particularly relevant in ecosystems like Delta, where the interdependencies among participants can either catalyze or impede value creation.

In the context of identity formation and self-determination, value is created when participants successfully balance their individual goals with the collective objectives of the ecosystem. This delicate equilibrium, highlighted by Keller et al. (2017), suggests that organizational behavior, shaped by cultural conditions and paradoxical frames, plays a significant role in how value is conceived and pursued. Efrat et al. (2022) emphasize the importance of mitigating coopetition tensions, particularly during the formative stages, which is crucial for laying a foundation that supports value creation. The formation of 'islands and archipelagos' – or micro-ecosystems – is a testament to this in the Delta ecosystem. While fostering intense internal collaboration, these formations can also lead to isolationist tendencies that may hinder broader ecosystem integration, impacting the overall value-creation process. The ability of these groups to integrate and collaborate effectively with others in the ecosystem is critical to maximizing collective value creation.

Performance asymmetries in such ecosystems, as discussed by Thomas and Autio (2012), further complicate the value creation landscape. These asymmetries often arise from shared aspirations for resources and recognition, leading to competitive pressures. While competition can be a powerful driver for innovation and efficiency, excessive competition might lead to mistrust and reluctance to share information, thus stifling the collaborative efforts necessary for value creation. Managing these asymmetries is crucial for ensur-

ing that competition among participants contributes positively to value creation rather than undermining it.

The ambivalence inherent in coopetition, highlighted by Czakon et al. (2020), encapsulates the dual nature of value creation in such environments. On the one hand, tensions can stimulate innovation and drive excellence, leading to significant value creation. On the other hand, these tensions can also lead to conflicts and inefficiencies, potentially undermining the essence of value creation. Maintaining a balance between collaboration and competition would be fundamental to reconcile these tensions and enhance value creation. A potential solution may involve fostering a culture of openness where knowledge and ideas are freely shared, promoting diversity and encouraging mutual learning. Concurrently, maintaining some level of competition could spur motivation and creativity, driving the development of unique and competitive solutions.

The Delta ecosystem serves as a microcosm of the delicate balance required in coopetitive environments, where the interplay of competition and collaboration shapes the process of value creation. Understanding and effectively managing these dynamics is crucial for fostering a sustainable and innovative ecosystem.

FINAL CONSIDERATIONS

The Delta ecosystem, a cohesive group, with similar personal and professional backgrounds, is committed to building an autonomously managed innovative ecosystem. It is focused on creating and disseminating initiatives rooted in commonly agreed ontological principles and ethical values, integrating philosophical, cognitive, and behavioral elements among its participants. The ecosystem, marked by self-organized horizontal governance structures, fosters a variety of relationships and knowledge sharing, representing a contemporary advanced case deeply intertwined with its context and offering potential for theoretical insights.

The research protocol for the case study involved an in-depth exploration of value creation from different perspectives, using an interpretive ontological approach, aiming to explore Delta's unique characteristics. The protocol covered the unique operational features of the Delta ecosystem, its peculiar aspects and initiatives, and the homogeneity and heterogeneity among its participants, probing into indications of competition and collaboration.

In-depth interviews aimed to provoke reflective responses, providing subjective insights and personal perspectives of ecosystem participants. These interviews revealed the underlying dynamics within Delta. The analysis of documents offered objective, formal perspectives of the ecosystem, while the SenseMaker

tool facilitated a deep dive into the relational and narrative aspects, allowing for a comprehensive understanding of the ecosystem from various angles. The research implemented a two-cycle system focusing on initial exploration and analysis, then moving toward integration, abstraction, and conceptualization. This approach allowed the initial data to be organized descriptively with the flexibility to reorganize, rename, and discard as the analysis progressed.

From this analysis, a coding structure emerged, identifying significant clusters within the ecosystem. These clusters revealed key tension patterns: identity building and individual drive, islands and archipelagos, and performance asymmetries. These patterns reflect the intricate relationships and interactions within the ecosystem, encompassing aspects of cooperation and their influence on value creation.

1. Identity building and individual drive: this pattern highlights the ecosystem's dual focus on fostering individual identities and aligning with collective goals. Participants navigate between personal growth and community contribution, revealing a tension between self-determination and collaborative integration.

2. Islands and archipelagos: participants form collaborative groups or 'islands,' which evolve into more extensive 'archipelagos.' These formations promote internal collaboration but may lead to insularity, posing challenges for broader ecosystem integration. The balance between protecting individual knowledge domains and encouraging idea diversity is a key dynamic within this pattern.

3. Performance asymmetries: performance differences among participants create tensions, leading to disparities affecting trust and innovation. While these asymmetries can drive creativity, they may also result in conflicts, emphasizing the need for governance mechanisms that balance competitiveness and cooperation.

These patterns collectively illustrate the underlying dynamics of cooperative tension, demonstrating how collaboration and competition coexist and interact within the Delta ecosystem. The study's findings underscore the importance of managing these tensions effectively to foster a balanced environment that promotes value creation, innovation, and sustainable growth.

This study advances the cooperation literature by providing an in-depth exploration of the tensions with-

in cooperative dynamics in business ecosystems. It examines the integration of competitive and collaborative actions and elucidates their impact on individual and collective behaviors, and consequently on innovation and value creation. This work contributes to extant knowledge of cooperation and provides insights for managing these dynamics in complex business ecosystems. A practical implication involves actionable insights and strategies for practitioners managing cooperative environments, facilitating better decision-making processes in these complex settings.

Regarding the limitations of this study, the usual constraints apply, such as the lack of generalization inherent to a single case study in a specific context. In addition, this case deviates from the typical porous nature of ecosystems, considering its associative membership process. Furthermore, in several instances, individual perceptions represent a singular source for a specific innovative venture, although triangulation of different sources was applied to mitigate bias when possible. Conversely, the case's significance is due precisely to its ability to establish a proven state of multilateral coordination among participants embedded in similar interests and distributed structures within a self-managed, decentralized network.

An in-depth understanding of the elusive interplay between collaboration and competition is crucial to harness the potential benefits of cooperation. Tensions resulting from this dichotomy can both hinder and promote value creation. The challenge lies in managing these tensions effectively to encourage innovative outcomes while maintaining a cohesive and inclusive ecosystem. This investigation into the Delta ecosystem provides an empirical basis for further exploration into the theory of cooperation and its impact on value creation within mature ecosystems.

An ecosystem governance approach in future studies might provide a better comprehension of these contradictory forces. Regarding the decision-making processes, tensions might limit the formation of agreements and commitments that ensure the coexistence of competition and collaboration. In terms of affective community relations, these tensions might affect the strength and nature of the bonds formed within the ecosystem. Conversely, a higher commitment to common goals might strengthen kinship ties, enabling better pollination of ideas to stimulate the onset and development of co-created initiatives. A governance perspective to be explored in future research could deal with the decision-making process based on the cognitive dimensions of capturing and sharing knowledge and the impact of the affective community dimension on value creation. That governance perspective might

include aspects linked to distributed governance structures, particularly in mature ecosystems where value creation involves complex, multi-layered interactions among diverse actors.

Given the evolving nature of coopetition, future research could focus on longitudinal studies to better understand how coopetitive dynamics evolve over time. Future research could also focus on establishing empirical measures of coopetition within ecosystems to assess its impact on value creation quantitatively. Moreover, studies should delve deeper into how these coopetitive tensions influence individual and collective behaviors within the ecosystem, elucidating pathways to enhance innovation and value creation and laying the groundwork for future coopetitive strategies.

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